THERMEC'2018

International Conference on

PROCESSING & MANUFACTURING OF ADVANCED MATERIALS

Processing, Fabrication, Properties, Applications

July 9-13, 2018

Paris, FRANCE

CONFERENCE PROGRAM

IMPORTANT REQUEST TO THERMEC'2018 PARTICIPANTS

THERMEC LUNCHEON GROUP A, B and C & TIMINGS FOR EACH GROUP

The dining hall (au LOFT, where luncheon on Monday, Tuesday, Wednesday & Thursday) at this venue has maximum sitting capacity of 550 persons.

Due to safety reasons, it is important that not more than 550 persons take luncheon at a time. We request your cooperation in this matter.

LUNCHEON TIMES FOR GROUPS ARE:

GROUP-A (Last Names : A to H)	**12h00**	**to**	**12h40**
GROUP-B (Last Names : I to P)	**12h40**	**to**	**13h20**
GROUP-C (Last names : Q to Z)	**13h20**	**to**	**14h00**

We would appreciate if you please observe above arrangement in order to avoid overcrowding in the dining hall & area

THERMEC'2018

INTERNATIONAL CONFERENCE

on

PROCESSING & MANUFACTURING

OF

ADVANCED MATERIALS

July 09- 13, 2018

Cité des Sciences et de l'industrie,
30 Avenue Corentin Cariou, 75019 Paris, France

CONFERENCE PROGRAM

Contents

Session K – Room : Auditorium

General Information

Registration Desk

All delegates and companions should register for the conference and collect their name badges at the Registration Desk, which is situated in the Conference Foyer at the Cité des Sciences et de l'industrie Paris (CSL).

Sunday July 8, 2018: PRE-REGISTRATION -16 hrs to 19hrs

The Registration Desk will be opened from 4.00 pm to 6.00 pm in the Foyer Ground Floor. We strongly recommended that you please try to register on this day and collect the name badge, conference program and the catering tickets.

Monday, July 9 to Friday, July 13, 2018:

Registration Desk will be opened from 7:30 am to 6:30 pm during the conference period, except on Friday July 13, 2018 when it will be opened until 2:00 pm.

Identification Name Badge

Due strict security reasons at the Conference venue, Cité des Sciences et de l'industrie Paris (CSL), all participants and accompanying persons are kindly requested to wear their personal name badge during all Conference events, including the Conference Dinner on July11, 2018. Please note that security personnel placed at entry doors of the CSL venue will only allow entry if name badge is worn. THIS IS A STRICT SECURITY REQUIREMENT.

July 9, 2018: COLD SPRAY SYMPOSIUM:

Participants in COLD SPRAY symposium should preferably register and collect delegate bag with name badge from the Registration Desk on July 8, 2018, between 16 to19 hrs.

If you cannot come on July 8 to register, and you plan to register on July 9, you must come to Registration Desk between 7:30 am and 8:30 am to collect your name badge. After 8:30am, you can only collect your name badge from the Cold Spray Symposium Coordinator, Prof. Michel Jeandin, in the session Auditorium room.

Cold Spray Symposium is planned ONLY on Monday, July 9, 2018. The participants registered only for this symposium will be given a DIFFERENT COLOR name badge which will allow entry to CSL venue only on July 9, 2018.

Your name badge is not valid after July9, 2018 due to security reasons. If you wish to attend sessions after July 9, 2018, you must re-register and pay additional fee to get the NEW, valid name badge for the FULL THERMEC2018 CONFERENCE valid from Tuesday July10 to July13.

ALL PARTICIPANTS ARE WELCOME TO THE COLD SPRAY SYMPOSIUM
Any THERMEC2018 registered participant is entitled to attend the COLD SPRAY symposium sessions without any extra fee.

Plenary Lecture: Monday, July 9, 2018 in Gaston Berger room

The Plenary Lecture will be given by Prof Yves Brechet, SIMAP, France on Monday,
July 9th 2018 at 9:00 am in the Auditorium - the Gaston Berger room, at Cité des Sciences et de l'industrie.

Location of Parallel Sessions

Eleven parallel sessions (A-K) will take place concurrently in 11 rooms at CSL, and Poster sessions. The location of the lecture rooms and posters areas are given in the floor plan included in this book.

Message Board near Registration Desk

Personal Messages and Program changes will be announced on the message board located near the registration desk. We strongly suggest that you check the message board every day please.

Important announcements will be made from time-to- time if needed in the session rooms by the Chairpersons.

Manuscript Inclusion in Proceedings/ Materials Science Periodical:

The list of authors who submitted their manuscripts to THERME Committee by due date available on the Conference Webpage. The manuscripts are being reviewed by the Program Committee and expected to be included in the Materials Science Forum (MSF) periodical/THERMEC2018 proceedings to be courier mailed to all registered participants by Oct 2018. If your name is not on the list of received manuscripts, please contact the Editorial Team at mio@ansto.gov.au before June 22, 2018.

Telephone & ATM Locations:

Some public telephones are located the Cite des Sciences-Ask Business Centre about it.
ATM service is also available and located at CSL, to facilitate cash withdrawals.

Office Facilities at CSL:

If you want to make any photocopies or any other office work, please contact the Business Centre at CSL located near the registration desk. The Business Centre will charge you for any office services that you require.

The photocopying will NOT be handled by staff at the registration desk in Paris.

Presentation Preview Centre and Internet room

For participants who do not have a laptop, a few computers with internet connections may be available to preview your oral presentations and urgent email communications. Please contact the Conference Registration Desk to access this service.

Luncheons: July 9 to July12, 2018, in AU LOFT room

Luncheons are served from Monday the 9-th July to Thursday the 12-th July, in "Au Loft" area on Ground Floor, between 12:30 and 14:30, and to avoid over-crowding, it will take place in two separate groups: GROUP-A and GROUP-B:

GROUP A: Luncheon Time: 12:30-13:30

GROUP B: Luncheon Time: 13:30-14:30

YOUR COOPERATION IN THIS MATTER WILL BE GREATLY APPRECIATED.

The reason for this arrangement is that the lunch area can accommodate only a maximum of 700 delegates, and THERMEC2018 has over 1,400 participants. The Program Committee has prepared the Program in such a way as to avoid over-crowding in the luncheon area.

For admission to the dining hall please show your Conference identification badge.

In the lunch area, the delegates will have the opportunity to admire art exhibits by the internationally renowned artist Syvie Guyomard, (www.sylvie-guyomard.com) inspired by materials processing.

Coffee/Tea Breaks: Foyer S1, Foyer S2 & Foyer S3 areas

Coffee breaks will take place from July 9 to July 13 in the mid-morning and mid-afternoon. On July 13, Friday there is coffee break in the mid-morning only.

Company Exhibition

The following organizations are exhibiting at **THERMEC'2018**:

- Dynamic Systems Inc. USA
- PULSTEC Industrial Co., Japan
- ThermoCalc, Sweden
- MDPI, China/Spain
- AMVALOR Institut CARNOT, France
- MatCalc Engineering, Australia

The exhibitor's space at THERMEC2018 is located in the Foyer. The mid-morning/afternoon coffee breaks will also take place there during the Conference days (except Friday the 13-th of July), in addition to other locations near the session rooms.

THERMEC'2018 Proceedings

THERMEC Committee makes no distinction between the manuscripts submitted by students and non-students. All manuscript will be reviewed and included in the **THERMEC'2018** Proceeding and in the periodical.

The manuscripts submitted will be included in the conference proceedings and in the periodical after the manuscripts are reviewed by the Program Committee. The review process is over but a considerable number of authors have not returned their revised manuscripts to us yet which is causing a delay in the publication of the proceedings. Due to unavoidable circumstances, the conference proceedings are now expected to be ready by October 2018 and Trans Tech Publishers will courier mail to you the copy of the proceedings once ready.

Parallel Sessions

The 11 parallel sessions (A to K) which will run concurrently in the eleven separate rooms at the CSL, and their locations are given below. Please check your paper presentation time and session/date/room location carefully. The rooms location can be found in the floor plan included in this book.

The sessions are held in the following rooms:

Session A: Room Louis Armand East
Session B: Room Louis Armand West
Session C: Room 1

Session D: Room 2
Session E: Room 3
Session F: Room 4
Session G: Room A/B
Session H: Room C/D
Session I: Room Salle Bastille
Session J: Room Salle Etoile
Session K: Auditorium
Session Poster Cold Spray: Auditorium
Session Poster Non-Students: Foyer
Session Poster Students: Foyer

Session Chairpersons and Speakers

Chairpersons are requested to meet speakers of their sessions in the allotted session rooms at least 15 minutes prior to the commencement of the session. Speakers are requested to load their power point presentation files on the computer provided in the respective session room with the help of the session monitor. See your session monitor at least 15 mins before the start of the session.

Due to the tight schedule, the use of personal computers is not possible. Please contact your session Chairpersons for special requests.

Session Chairpersons

The Program Committee would like to thank each Chairperson for their time and effort in chairing sessions at **THERMEC'2018**. If, due to unavoidable circumstances, the Chairperson listed is not able to chair the allotted session, please contact Professor R. Shabadi, Prof. R. Srinivasan, Prof. C. Richard, Prof. T. Chandra , Dr Sophie Primig, or Prof. M. Ionescu at the registration desk at least 24 hours prior to the start of your session, so that we can find an alternative arrangement.

A list of Chairpersons together with their allocated sessions and chair duty dates is included in the Final Program book under Session Chairpersons.

Social Programme

Welcome Reception: July 8, 2018 Cite des Sciences, 16 to 19hrs Conference Foyer CSL

It is strongly recommended that you pre-register on July the 8th from 16:00 pm to 18:00. Pre-registration is to be held in the Conference Foyer. All registered delegates and registered spouses are cordially invited for drinks and socialising with delegates from other countries. Drink coupons will be provided with your registration papers on Sunday July 8, 2018.

THERMEC Conference Gala Dinner & Awards: July 11, 2018

Wednesday, July 11, 2018 - 7.30 pm to 10.30 pm – PAPILLON PARIS TRAITEUR

The Conference dinner will be held at Papillon Paris Traiteur, 104 Avenue de France,75-13 Paris together with the distinguished **THERMEC** Award Ceremony to honour our peers from various countries.

The Conference Dinner ticket will be provided to each full fee paying participant at the time of registration. Student registration does NOT include the conference dinner.

THERMEC Dinner is now full, and no more extra tickets are available.

The dinner ticket will be collected from you by the venue staff inside the Dinner Hall once you are seated at your table, so please bring the dinner ticket with you.

Poster Presentation Sessions at THERMEC2018

Maximum poster size allowed at THERMEC'2018 is: **1,200 mm height x 1,000mm wide**

It is the responsibility of presenters to produce their posters within the above dimensions, to bring the posters to their allocated poster session, to display their poster under the allocated poster number and to remove their posters at the end of the poster session.

THERMEC Secretariat will not assume any responsibility for mailed posters.

All participants are encouraged to visit the poster sessions and authors will be available for discussions.

Three Poster Presentation sessions are planned and included in the Conference Program as follows:

COLD SPRAY POSTER SESSION: July 9, AUDITORIUM

Only the participants registered for one day COLD SPRAY symposium will make poster presentation on July9, 2018 in AUDITORIUM.

The participant Name Badge for Cold Spray Symposium will allow access to the Conference Venue only on Monday July 9, 2018.

Prof Michel Jeandin is the Cold Spray Symposium Coordinator, and will also Chair the COLD SPRAY Poster Presentation session.

Authors making POSTER presentation are requested to take their posters to AUDITORIUM where poster boards are located. Please affix your posters on the poster board latest by 8:30 on July 9, under the allocated poster number, which is the poster number given in the Program.

GROUP A: NON-STUDENT POSTER SESSION: July10, 17:00-19:00, in FOYER S1, S2 and S3

Authors making POSTER presentation in Group A are required to bring their posters on July 10 and install them between 11:00 am and 12:30 in the *FOYER S1, S2 and S3*, located on the same floor where Registration Desk. Please identify your poster number which will be displayed on the boards, and do not change the location of your poster ID.

Authors in Group A are requested to take their poster off the poster board latest by at July 11, 2018 by 9:30am in order to make the poster boards available for the next poster group presentation on July 12, 2018**.** If you fail to remove your poster the cleaning staff will remove all the displayed posters, and the THERMEC Committee will not take any responsibility for those posters.

Prof Caroline Richard and Prof R. Shabadi will chair the Non-Student Poster Session

GROUP B: STUDENT POSTER SESSION: July12, 17:00-19:00, in FOYER S1, S2 and S3

All students are scheduled to make poster presentations at THERMEC'2018. The student presenters are required to bring their posters on July 11, 2018, and install them between 11.00 and 12.30. Please

identify your poster number which will be displayed on the boards, and affix your poster on the poster boards provided. Please do not change the location of your poster ID displayed on the poster boards.

Students are requested to take their poster off the poster board at the end of the poster session on July 13, 2018. If you fail to remove your poster by 11 am on July 13, the staff will remove all the displayed posters, and the THERMEC Committee does not take any responsibility for those posters left on the boards.

The Group B Poster Session will be chaired by Prof Caroline Richard and Prof Michel Jeandin, who are also on the **THERMEC'2018 Students' Affairs Committee**, and additional enquiries can be addressed to them.

Acknowledgements

The following organizations supported **THERMEC'2018**, and the Committee expresses sincere thanks them.

- Dynamic Systems Inc (DSI), U.S.A.
- Trans Tech Publications, Switzerland
- PULSTEC Industrial Co.Ltd-Japan
- ThermoCalc
- MDPI – PR China/Spain
- MatCalc Engineering, Austria
- AMVALOR Institut CARNOT - France
- ThermoCalc- Sweden
- CEA-France
- CENTERLINE-Canada
- EDF –France
- MALLARD-France
- PMG QUEST COATING –France
- PLASMA GIKEN-Japan
- SAFINA-Czech republic
- SAFRAN-France
- IMPACT INNOVATIONS-Germany
- TOYAL (Europe)-France
- THALES-France
- DYCOMET(Europe) –France
- SURFO3M-France
- Schneider Electric- France
- ARCELORMITTAL

THERMEC'2018 Distinguished Award Recipients

Professor J.T. M. De Hosson
University of Groningen, The Netherlands

Professor Jeff Th.M. DeHosson holds a PhD in Physics of the University of Groningen, the Netherlands (with honours and highest distinction, 'cum laude'). After his postdoctoral years in USA (Northwestern U. and UC-Berkeley –LBLab) he was appointed in 1977 by the Crown (H.M. Queen Juliana) as professor of applied physics at the University of Groningen, the Netherlands.

Professor DeHosson is internationally recognized for his outstanding contributions to structure-property relations in materials. He focuses on physical materials science, especially in-situ electron microscopy, dislocation dynamics, grain-boundaries and interface science. He pioneered the relationship between microstructures and (size-dependent) properties of metals and alloys, nanocomposite materials, nanostructured materials, laser and PVD surface treated materials.

He published more than 1,000 scientific papers, more than 30 elaborate review papers /chapters in books and edited 25 books on dislocation dynamics, transmission electron microscopy, and surface science & engineering. He holds several patents on (electron microscopy) image processing, coatings and nanosensors and nanoactuators, including 'metallic muscles'. The unbridled respect of professor DeHosson's peers also appears from the numerous accolades showered upon him. His work has been internationally recognized and awarded by prestigious international awards, including the European Materials Gold Meda , Acta Materialia Inc Appreciation and Best Paper Awards , Eminent Scientist Medal, MRS Trophy Award, Nanostructured Materials Prize and NanoSmat Prize, et cetera. His research has built bridges between science and engineering of materials, and has provided elegant solutions to complex engineering problems in technology and in industry.

He is inducted member of the Royal Netherlands Academy of Sciences (Koninklijke Nederlandse Akademie van Wetenschappen, KNAW, division physics), of the 'Academia Europaea' , of the Royal Holland Society of Science and Humanities, editor of international scientific journals, including Scripta Materialia for Acta Materialia Inc, member of numerous editorial boards of international journals and Elected Fellow of various foreign scientific societies, including Triple M (Materials Metals Minerals) Society USA and American Society for Metals ASM-International. He acts as Honorary Professor of Tsinghua University -Beijing, University Science & Technology UST-Beijing and Nelson Mandela Metropolitan University, Port Elisabeth –SA.

Professor DeHosson has an equally impressive list of achievements as mentor, advisor and thesis supervisor of academic research. His enthusiasm has been extremely inspirational and stimulating for young people. Professor DeHosson has directed many individuals during the careers as bachelor, master, PhD student and PostDoc. Until now he supervised more than 80 PhD theses and more than 500 Ba/MSc students. The International NANOSMAT Society has appointed professor DeHosson in 2016 'Head of the international NANOSMAT School', focusing on advances in fundamental theory and applications related to nanostructured materials, e.g. nano-architectures, nano-medicine and nano-actuators.

CITATION:

" For outstanding contributions to the field of applied physics and for significant contributions to advanced in-situ electron microscopy bridging structure-property relations in materials science & engineering "

Professor Elisabeth Aeby- Gautier
Institut Jean Lamour(IJL), Universite de Lorraine, France

Elisabeth Aeby-Gautier is presently Emeritus Research Professor "Directeure de Recherche CNRS émérite" at Institut Jean Lamour (IJL), Université de Lorraine - CNRS. She has joined the Laboratory of Science and Engineering of Materials, Metallurgy (LSG2M, now IJL) as Attachée de Recherches in 1979 and earned her Doctorate (Doctorat es Sciences) in 1985 from Institut National Polytechnique de Lorraine. From 1991 to 2012, Prof Aeby-Gautier was the head of the research team (15 persons) "Microstructures and Stresses" at LSG2M-IJL. Since then she worked in the field of physical metallurgy, focusing on the microstructure control associated with solid/solid phase transformations, in steels, titanium alloys, titanium composites... She has developed and used original devices/in-situ techniques to study the effect of processing routes including the effect of stresses or plastic deformation on the phase transformation kinetics, the mechanical behavior during phase changes (transformation plasticity mechanisms) and the relationships between thermal treatments microstructures and properties. Several studies were also focused on the numerical modelling of the kinetics of the phase transformation as well as some micromechanical features. She has published over 220 technical papers, 11 books (participation) and has 2 patents to her credit. Prof Aeby-Gautier received several awards from SF2M (Prix Jean Rist, Médaille Sainte Claire Deville). She is/was member of several scientific committees for research funding, conference organizations, professional organizations.

CITATION:

"For significant contributions in the field of solid/sold phase transformations, microstructure formation and control of steels and titanium alloys and collaborative research to optimize the thermal treatments "

Professor Chong Soo Lee
Pohang University of Science & Technology (POSTECH), South Korea

Professor Chong Soo Lee received B.S. and M.S. degrees in Metallurgical Engineering from Seoul National University, Korea, in 1979 and 1981, respectively, and the Ph.D. degree in 1985 from the Polytechnic Institute of New York University, USA. He became an assistant professor at Pohang University of Science and Technology (POSTECH) Korea in 1987 and promoted to be a full professor in 1998. He moved to the Graduate Institute of Ferrous Technology (GIFT), POSTECH as a Director of Materials Reliability Lab, and served as a Dean of GIFT from 2012 to 2016. Prof. Lee has worked extensively in the area of physical metallurgy of Ti-alloys and steels, especially in the areas of fatigue, hydrogen embrittlement, formability and bio-Ti alloys. He has published over 350 technical papers and 5 book chapters, and received many academic achievement awards including POSCO Academic Achievement Award from Korean Institute of Metals and Materials. Prof. Lee has served as a president of the Korean Society for Technology of Plasticity (2010), and a president of the Korean Institute of Metals and Materials (2016). He has been working as an Editorial board member of International Journal of Fatigue (2004-present). Owing to his active academic contribution, he has been elected as a member of the European Academy of Science (2009), the National Academy of Engineering of Korea (NAEK) (2012) and the Korean Academy of Science and Technology (KAST) (2014). Prof Lee has been an active member of the THERMEC International Advisory/Executive Committee.

CITATION:

"For significant contributions in advancing the understanding of structure/property relations of Ti-alloys and steels, and for leadership in materials science and engineering society of Korea"

Professor Brajendra Mishra
Worcester Polytechnic Institute, USA

Brajendra Mishra is the Kenneth G. Merriam Distinguished Professor of Mechanical Engineering and Director of the Metal Processing Institute (MPI) at the Worcester Polytechnic Institute (WPI). Prof. Mishra is the Director of the NSFI/UCRC on Resource Recovery & Recycling. Brajendra received his Bachelor of Technology degree in Metallurgical Engineering from the Indian Institute of Technology

in Kharagpur, India and his M.S. and Ph.D. in Materials Science & Engineering from the University of Minnesota in Minneapolis. Brajendra was a Professor of Corrosion and Physico-chemical processing in Metallurgical & Materials Engineering at the Colorado School of Mines (CSM) for twenty five years, where he now serves as a University Emeritus Professor. He has over thirty years of research experience in materials recovery and recycling, pyrometallurgy and electrochemistry and has many contributions to the application of these technologies to materials development and processing. Prof Mishra has authored over 600 technical publications in refereed journals and conference proceedings. He holds thirteen patents and has authored/edited 20 books.

Prof Mishra is a Fellow of ASM and TMS, and received the Distinguished Service Award from the Minerals Metals & Materials Society and Honorary Membership form the Indian Institute of Metals. He is an Honorary Professor of Kazakh National Technical University, and served as the 2006 President of The Mineral, Metals & Materials Society of AIME and the 2011 President of American Institute of Mining, Metallurgical & Petroleum Engineers. Prof Mishra received the Presidential Citation of AIME in 2015 and the Kenneth Andrew Roe Award from the American Assoc. of Engineering Societies. In addition, Prof Mishra received the Distinguished Alumnus Award from IIT in India.

CITATION:

"For his seminal contributions in the area of process metallurgy, corrosion and surface engineering, advanced materials development and secondary materials processing for resource recovery"

Professor Werner Skrotzki
Technical University Dresden, Germany

Werner Skrotzki is Professor of Metal Physics at the Dresden University of Technology, Germany. He received his PhD in 1980 in Physics from the Göttingen University, Germany, and spent a two years postdoctoral research period at the prestigious Cornell University, USA. After his habilitation in Geology in 1989, he was awarded a Heisenberg fellowship of the German Research Society (DFG). Prof. Skrotzki held guest professorships at the University of Lorraine in Metz, France, and at the University of Vienna, Austria. Since 2004 he is leader of the Expert Committee "Textures" of the German Society for Materials Research (DGM). Prof. Skrotzki's research fields comprise: Plasticity of metals, intermetallic compounds, semiconductors, ionic crystals and rocks; microstructure and texture development during solidification, deformation, recrystallization, phase transformation and deposition. He has published more than 300 papers and articles in scientifically highly esteemed research journals and books and is editor of several proceedings. For his basic research on the plasticity and texture formation in ionic crystals, metals and intermetallic compounds, in 2011 Prof Skrotzki was awarded the Tammann-Gedenkmünze of the German Society for Materials Research (DGM). In 2016 he was honored with a symposium at the International Conference on Plasticity held on Big Island, Hawaii. In 2009, Prof Skrotzki very successfully organized in Dresden the 15th International Conference on the Strength of Materials (ICSMA 15) and in 2014 the 17th International Conference on Textures of Materials (ICOTOM 17). For each conference he was awarded the Dresden Congress Award.

CITATION:

"For pioneering work on the fundamental understanding of the mechanisms of plastic deformation and development of microstructure and texture of advanced materials & for leadership in metal physics education in Germany"

Professor Tadashi Furuhara
Tohoku University, Japan

Tadashi Furuhara is a Professor of Microstructure Control in Structural Metallic Materials Laboratory and the Head of Cooperative Research and Development Center for Advanced Materials in the Institute for Materials Research (IMR) at Tohoku University, Japan.

Prof Furuhara received Ph. D. in Metallurgical Engineering and Materials Science from Carnegie Mellon University, USA in 1989 after he earned B.E and M.E degrees in Metal Science and Technology from Kyoto University, Japan. He joined IMR in 2005 after research and education experiences as an assistant/associate professor in Kyoto University. His main research area is physical metallurgy of steels focusing on fundamentals of phase transformations, precipitation, deformation and recrystallization as well as microstructure control by thermo-mechanical processing in steel and titanium alloys. He has published over 280 academic papers, 50 review articles and 14 books. He received 19 awards from various academic societies including the Japan Institute of Metals and Materials (JIM), the Iron and Steel Institute of Japan (ISIJ), the Japan Society for Heat Treatment (JSHT), and the Institute of Materials, Minerals and Mining, UK.

Prof Furuhara has been an active member of JIM, ISIJ, JSHT, The Minerals, Metals & Materials Society (TMS) and ASM International (ASMI). He was a past vice president of JIM and hosted the 9th Pacific Rim International Conference on Advanced Materials and Processing (PRICM9) hosted by JIM as the conference chair. He is currently on Board of Directors as a vice president of ISIJ and also serving as an editor of Acta and Scripta Materialia. He has been also a very active member of the THERMEC International Advisory Committee.

CITATION:

"For outstanding contributions in the area of physical metallurgy of steels and titanium alloys & for significant research to solution to industrial problems in secondary processing"

Professor Armelle Vardelle
University of Limoges France

Prof Armelle Vardelle is a distinguished Professor in Process Engineering and Surface Treatment at the University of Limoges. She earned B.Sc (1973) and M.Sc (1975) degrees, PhD in physics and Chemistry (1979) and state doctorate in ceramics (1981). She held different senior positions at the University of Limoges including Head of the Institute for Processes and Materials, chair of the Department of Materials Engineering and Co-Chair of the Graduate School of Science and Engineering of Materials, Mechanics, Energy and Aeronautics.

Prof Vardelle is working in the field of thermal spraying with a focus on emerging plasma spray technologies (suspension and solution plasma spray, plasma spray-PVD), plasma torch operation, and elaboration of coatings for energy and transport applications and Life Cycle Assessment of thermal spray processes. Prof Vardelle has published over 240 scientific papers that attracted more than 5,000 citations. She has received several awards and honours including "Legion of Honour" (highest French order of merit for military and civil merits), "Palmes Académiques "(French academic decoration for services to education), ASM Fellow, TSS-ASM Hall of Fame and International Plasma Chemistry Society Fellow. Prof Vardelle is Editor of Journal of Thermal Spray Technology (Springer), member of the Editorial board of Plasma Chemistry and Plasma Processing journal and active member of the organizing committees of International Plasma Conferences and Round Tables.

CITATION:

"For globally recognised contributions in the field of plasma spray processes and leadership in surface engineering education in France"

Dr. C. G. Krishnadas Nair
Jain University, Bangalore, India

Dr. CG Krishnadas Nair is the Chancellor of Jain University, Bengaluru; Professor & Chairperson Governing Council, International Institute for Aerospace Engineering and Management (IIAEM); formerly Chairman, Hindustan Aeronautics Ltd. (HAL).

Dr. Nair was graduated in Metallurgical Engineering from IIT Chennai and obtained PhD from University of Saskatchewan, Canada.

He has served as the first Vice Chancellor of MATS University and Chairman / Member of Governing Council and also as visiting Professor to various Indian & Overseas Universities including IIT, Chennai. He has published over 230 technical & research papers and presented in the invited talks for various international conferences including Aerospace seminars during Airshows at France, UK, Berlin, Germany, Singapore and Hong Kong.

He has been a member of various scientific advisory councils and committees like the Scientific Advisory Committee to the Cabinet, Govt. of India, Research Council, Regional Research Laboratory, National Aerospace Laboratories, Governing Council, Jawaharlal Nehru Research and Development Centre for Aluminium, and Standing Scientific Advisory Committee, Department of Steel and Mines, Govt. of India. He has served as president for two leading Professional Associations, viz., President, Aeronautical Society of India, and President, Indian Institute of Metals. He has been a Director / Member Board of several public and private sector corporates metallurgical industries and continued by guiding researchers.

CITATION:

"He has made outstanding contribution through research by developing High Strength to Weight Ratio of Aluminium alloys, Titanium alloys, Special Steels through alloying and Thermo Mechanical Treatment. Innovations in materials and processes engineering have been transferred to industry application of light weight aerospace structures including Aircraft, Helicopter and India's Space Satellite and Launch Vehicle. He developed Fibre Reinforced Plastics and Ultra-Light Metal Honeycomb, Sandwich Structures for aerospace structures. For significant contributions in materials and process engines he has been honoured with Life Time Achievement Award by Indian National Academy of Engineering (INAE) and Life Time Achievement Award by the Ministry of Steels and Mines, Govt. of India & Prime Minister's Gold Trophy"

THERMEC – INDUSTRY EXCELLENCE AWARD
Dynamic Systems Inc.-USA
(Designer & Manufacturer of the GLEEBLE Testing System)
Mr. James Papa

"For consistent and excellent partnership with the THERMEC COVENTION for over 25 years since 1997"

THERMEC'2018 Inaugural Session

Monday, July 9, 2018

GASTON BERGER ROOM

8.30 AM – 9.00 AM: Introductory Remarks

- Welcome: Professor. Michel Jeandin, General Chair, MINES ParisTech
- Introductory Remarks: Professor. T. Chandra, THERMEC'2018 International Committee
- Inaugural Address: Professor. Vincent Lafleche, Dean, MINES ParisTech
- Vote of Thanks: Professor. Caroline Richards, Program Chair, Universite de Tours
- Conference Information: Professor. R. Shabadi, Program Vice-Chair, Universite de Lille

9.00 AM – 9.30 AM: Distinguished Plenary Lecture

Architectured Materials: A new paradigm for sustainable efficiency, potential and challenges

Prof. Yves BRECHET
High Commissioner at CEA
SIMAP France

Chairman: Prof T.G. Langdon, University of Southampton, UK

9.30 – 10:00 Coffee Break

THERMEC2018 Program Matrix Table

	July 09		July 10		July 11		July 12		July 13	
Session	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
A	Adv. Steels I 1	Adv. Steels I 2	Adv. Steels I 3	Adv. Steels I 4	Adv. Steels I 5	Adv. Steels I 6	Adv. Steels I 7	Adv. Steels I 8	Composites 9	
B	High & U High Temp. Mat. 1	High & U High Temp. Mat. 2	High & U High Temp. Mat. 3	High & U High Temp. Mat. 4	Smart/Intel. Materials 5	Smart/Intel. Materials 6	Smart/Intel. Materials 7	Composites 8	Composites 9	
C	Neutron & X-ray Studies of Mat. 1	Neutron & X-ray Studies of Mat. 2	Neutron & X-ray Studies of Mat. 3	Aluminium Alloys 4	Aluminium Alloys 5	Aluminium Alloys 6	Aluminium Alloys 7	Aluminium Alloys 8	Aluminium Alloys 9	
D	Adv. Coatings & Surface Eng. 1	Adv. Coatings & Surface Eng. 2	Adv. Coatings & Surface Eng. 3	Adv. Coatings & Surface Eng. 4	Ti Alloys 5	Ti Alloys 6	Ti Alloys 7	Ti Alloys 8		
E	Fuel Cells & H Storage Technol. 1	Fuel Cells & H Storage Technol. 2	Fuel Cells & H Storage Technol. 3	Fuel Cells & H Storage Technol. 4	Additive Manufacturing 5	Additive Manufacturing 6	Additive Manufacturing 7	Additive Manufacturing 8	Additive Manufacturing 9	
F	Interfaces GB & Structural Charact. 1	Interfaces GB & Structural Charact. 2	Interfaces GB & Structural Charact. 3	Interfaces GB & Structural Charact. 4	Interfaces GB & Structural Charact. 5	Adv. Steels II 6	Adv. Steels II 7	Adv. Mat. For Bioengineering 8	Adv. Mat. For Bioengineering 9	
G	Metallic Glass Amorphous Mat 1	Metallic Glass Amorphous Mat 2	Mat. Under Extreme Cond. 3	Mat. Under Extreme Cond. 4	Mat. Under Extreme Cond. 5	Mat. & Technol. For Fusion 6	Welding & Joining 7	Welding & Joining 8	Welding & Joining 9	
H	High Entropy Alloys 1	High Entropy Alloys 2	High Entropy Alloys 3	High Entropy Alloys 4	Nanomat. for Structural & Energy Applic. 5	Nanomat. for Structural & Energy Applic. 6	Nanomat. for Structural & Energy Applic. 7	Nanomat. for Structural & Energy Applic. 8	Texture 9	
I	Ultra fine Grained Mat 1	Ultra fine Grained Mat 2	Ultra fine Grained Mat 3	Ultra fine Grained Mat 4	Mg Alloys 5	Mg Alloys 6	Mg Alloys 7	Mg Alloys 8		
J	Modelling & Simulation 1	Modelling & Simulation 2	Modelling & Simulation 3	Modelling & Simulation 4	Modelling & Simulation 5	Modelling & Simulation 6	Biomimetic Mat. Nanostructured Biol. Applic. 7	Biomimetic Mat. Nanostructured Biol. Applic. 8	Biomimetic Mat. Nanostructured Biol. Applic. 9	
K	Cold Spray Symposium 1	Cold Spray Symposium 2	Materials Performance 3	Materials Performance 4	Materials Performance 5	Materials Performance 6	Materials Performance 7	Materials Performance 8		

Rooms Allocations

Session	Room	Capacity	Session	Room	Capacity
Plenary	Gaston Berger	950	F	4	80
A	Louis Armand East	210	G	A/B	70
B	Louis Armand West	210	H	C/D	70
C	1	80	I	Salle Bastille	80
D	2	80	J	Salle Etoile	80
E	3	80	K	Auditorium	310

Oral Presentations

Session A

Session: A1, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 1

Session Chairs: Setsuo Takaki; Beatrix Lopez

A1 July-09 10:00 Keynote
*** Short range ordering phenomena in high Mn steels**
Wolfgang Bleck, Wenwen Song, Simon Sevsek
University of Aachen, Germany

A1 July-09 10:30
* Microstructure engineering of the heat affected zone in state-of-the-art line pipe steels
Matthias Militzer, Warren Poole, Thomas Garcin, Madhumanti Mandal, Nicolas Romualdi
The University of British Columbia, Canada

A1 July-09 10:50
* High dimensional materials informatics -Materials Genome Integration System for Phase and Property Analysis: MIPHA
Yoshitaka Adachi
Nagoya University, Japan

A1 July-09 11:10
* Modelling critical aspects of alloy- and process design of high-strength steels
John Ågren
KTH, Sweden

A1 July-09 11:30
Application of the "Quenching and Partitioning" concept for the production of high-strength hot-rolled steels
Manuela Ahrenhold, Roland Sebald, Richard Thiessen
Thyssenkrupp Steel Europe AG, Germany

A1 July-09 11:50
* Link between microstructure and mechanical behavior of double annealed medium Mn steel
Artem Arlazarov, Mohamed Gouné, Alain Hazotte, Olivier Bouaziz, Frédéric Kegel
ArcelorMittal Global Research & Devellopment, France

A1 July-09 12:10
The effect of test temperature on deformation microstructure and fracture mechanisms in CrMn high-nitrogen steels alloyed with (0-2.5 wt.%) vanadium
Elena Astafurova, Valentina Moskvina, Galina Maier, Eugene Melnikov Nina, Galchenko, Sergey Astafurov, Antonina Gordienko, Alexander Burlachenko, Alexander Smirnov, Vladimir Bataev
Institute of Strength Physics and Materials Science, Russia

Lunch break 12:30 - Sessions restarts at 13:30

Session: A2, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 2

Session Chairs: Sung Joon Kim; Andrey Belyakov

A2 July-09 13:30 Keynote
*** Grain boundary engineering approach to improve hydrogen embrittlement resistance in high-Mn TWIP steels**
Chong Soo Lee, Young Jin Kwon, Hyun Joo Seo
POSTECH, Korea

A2 July-09 14:00 Keynote
*** Hot Cracking Susceptibility in Duplex Stainless Steel Welds**
Kazuyoshi Saida, Ogura Tomo
Osaka University, Japan

A2 July-09 14:20
* Thermomechanical Simulation: A Reliable Route for Weld Heat Affected Zone Assessment and Product Development in Steels
Kumkum Banerjee
National Institute of Technology, Surathkal, India

A2 July-09 14:40
* Influence of Aluminium on Castability of V-Microalloyed Steels
Kevin Banks, Muthoiwa Netshilema, Alison Tuling
University of Pretoria, South Africa

A2 July-09 15:00
Micro-alloying additions to commodity C-Mn structural steels: fundamental strengthening mechanisms leading to improvements in mechanical properties, alloy optimization, reduced alloy costs and robustness of hot rolling processing
Ronaldo Barbosa, Uranga Pello, Douglas Stalheim, Marcelo Rebellato, Qiao Mingliang, Houxin Wang
Universidade Federal de Minas Gerais, Brazil

A2 July-09 15:20
* Mechanical behavior of high-Mn steels processed by warm to hot rolling
Andrey Belyakov, Vladimir Torganchuk, Rustam Kaibyshev
Belgorod State University, Russia

A2 July-09 15:40
* Effect of alloying elements and coiling temperature on phase transformation and microstructure of dual-phase steels
Ekaterina Bocharova, Kirill Khlopkov, Roland Sebald
Thyssenkrupp Steel Europe AG, Germany

Session A2: Advanced Steels & TMP Micro-alloyed Steels 2
Coffee / Tea break 16:00 to 16:30

A2 July-09 16:30
Effect of ausforming on creep strength of G91 heat-resistant steel
Javier Vivas, Rosalia Rementeria, Eberhard Aldstadt, Marta Serrano, David San Martin, Carlos Capdevila
CENIM-CSIC, Spain

A2 July-09 16:50
Impact of intercritical rolling on the strength/toughness balance in heavy gauge structural steel plates
Matteo Caruso, Ulrike Lorenz, Minh Tuan Nguyen, Pello Uranga, Roumen Petrov
Centre de Recherches Métallurgiques, Belgium

A2 July-09 17:10
* An overview of the effect of heating rate on steel microstructure and textures
Felipe Castro Cerda, Leo Kestens, Alberto Monsalve, Roumen Petrov
Universidad de Santiago de Chile, Chile

A2 July-09 17:30
Micro-yielding Behaviour Observation of Ultrahigh Strength Mooring Chain Steel during Hydrogen-Charged Tensile Deformation using Neutron Diffraction
Jiang Yin, Gang Qian, Yun Bai, Xuejun Bao, Tung-Lik Lee, Joseph Kelleher, Shu Yan Zhang, Pingguang Xu
Shanghai Bainite Chain Material Technology Co. Ltd, China

A2 July-09 17:50
* Microstructural Evolution and Mechanical Properties of a Martensitic Heat-resistant Stainless Steel 403Nb During Long-term Aging
Liqing Chen, Zhouyu Zeng, Yang Zhao
Northeastern University, China

A2 July-09 18:10
Microstructure and mechanical properties of a novel δ-QP steel
Peng Chen, Guodong Wang, Xiaowu Li, Hongliang Yi
Northeastern University, China

A2 July-09 18:30
* Spinodal decomposition and ordering reaction for the formation of fine D03 particles in the ferrite grains of an Fe-Mn-Al alloy
Wei-Chun Cheng, Yi-Chun Lin Lin
National Taiwan University of Science and Technology, Taiwan

A2 July-09 18:50
New insight into the strain-induced martensite reversion in austenitic stainless steels
Grzegorz Cios, Tomasz Tokarski, Piotr Bala
AGH University of Science and Technology, Poland

Session: A3, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 3

Session Chairs: Ronald Schnitzer; Claudio Testani

A3 July-10 8:00 Keynote
*** Roles of transformation interface in controlling microstructure and properties of high strength steels**
Tadashi Furuhara
Tohoku University, Japan

A3 July-10 8:30
* Microstructure evolution during annealing of a 17wt% Mn steel
Sudipta Pramanik, David Mitchell, Ahmed Saleh, Azdiar Gazder, Elena Pereloma
University of Wollongong, Australia

A3 July-10 8:50
* Cube{100}<001> grains nucleation during annealing of S-oriented aluminum single crystal
Magdalena M. Miszczyk, Henryk Paul
Polish Academy of Sciences, Institute of Metallurgy and Materials Science, 30-059 Krakow, Poland

A3 July-10 9:10
* Microstructure of Fe-Si powders in as mechanically alloyed and annealed states
Catherine Cordier
University of Lille, France

A3 July-10 9:30
* Optimisation of pulse-step method for liquid steel alloying in one strand slab tundish
Adam Cwudzinski
Czestochowa University of Technology, Poland

A3 July-10 9:50
* Microstructure characterization of Quenching and Partitioning steels
Irene De Diego-Calderón, Matthieu Salib, Artem Arlazarov
ArcelorMittal Global Research & Devellopment, France

Session A3: Advanced Steels & TMP Micro-alloyed Steels 3
Coffee / Tea break 10:10 to 10:40

A3 July-10 10:40
Ferrite-martensite dual-phase steel produced by a modified quenching and partitioning process
Hongshuang Di, Yonggang Deng, Jianping Li
Northeastern University, China

A3 July-10 11:00
Analysis of the interaction between moving alpha/gamma interface and interface precipitated carbides during the cyclic phase transformations
Haokai Dong, Chi Zhang, Zhigang Yang, Hao Chen
Tsinghua University, China

A3 July-10 11:20
* Cyclic deformation behaviour of an ultra-high strength austenitic-martensitic steel treated by novel Q&P processing with various cooling temperatures
Matthias Droste, Marco Wendler, Olena Volkova, Horst Biermann
Technische Universität Bergakademie Freiberg, Germany

A3 July-10 11:40
On the link between chemistry and recrystallization in steels
Myriam Dumont, Marion Bellavoine, Nikolas Mavrikakis, Josée Drillet, Véronique Hébert, Wahib Saikaly, Lode Duprez, Philippe Maugis, Dominique Mangelinck
Aix-Marseille University - IM2NP, France

A3 July-10 12:00
* Special Alloy Strip Production in a Micro-Mill Environment
Yvonne Durandet
Swinburne University of Technology, Australia

A3 July-10 12:20
Precipitation Optimization by Thermo Mechanical Control Process in Castable Nanostructured Alloys
Chenchong Wang, Wei Xu, Xiaoming Liu
Northeastern University, China

Lunch break 12:40 - 13:20

Session: A4, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 4

Session Chairs: Maria Santofima; Wang Pei

A4 July-10 13:20 Keynote
*** Role of C and N in Austenitic Stainless Steels**
Sung-Joon Kim, Saenarjhan Nithi, Kyung-Shik Kim, Jee-Hyun Kang
Pohang University of Science and Technology, Korea

A4 July-10 13:50
* Prediction of strength and fracture mode of heterogeneous spot welds made of AHSS by finite elements simulation
Damien Fabrègue, Thibaut Huin, Sylvain Dancette, Thomas Dupuy
INSAVALOR SA, France

A4 July-10 14:10
* The secondary hardening of low-carbon Nb-Mo-bearing bainitic steels
Jer-Ren Yang, Yu-Wen Chen, Yu-Ting Tsai
National Taiwan University, Taiwan

A4 July-10 14:30
* Attempt to improve the intergranular corrosion resistance of Super304H stainless steel by post-nanocrystallization aging
Yan Gao, Ruikun Wang
South China University of Technology, China

A4 July-10 14:50
* Developing Nanostructured Bainite by means of Ausforming.
Carlos Garcia-Mateo, Adriana Eres-Castellanos, Mahesh Somani, David Porter, Andreas Latz, Lieven Bracke, Francisca G. Caballero
CENIM-CSIC, Spain

A4 July-10 15:10
* In situ analysis of partitioning mechanisms in Q&P steels by high energy X-ray diffraction
Guillaume Geandier, Sébastien Allain, Mohamed Gouné, Samy Aoued, Frédéric Danoix, Michel Soler, Jean-Christophe Hell
Univsersité de Lorraine, France

A4 July-10 15:30
Correlation between compositional distribution and mechanical properties in a segregated low-alloy steel
Khouzani Morteza Ghasri, Carl Slater, Claire Davis
University of Warwick, UK

A4 July-10 15:50
Effect of heat treatment on the HAZ microhardness of 150 mm weld joint of low-carbon micro alloyed steel E420 for offshore oil and gas platforms
Eugene Goli-Oglu
NLMK DanSteel, Denmark

Session A4: Advanced Steels & TMP Micro-alloyed Steels 4
Coffee / Tea break 16:10 to 16:40

A4 July-10 16:40
* An Integrated Model for Rolling Schedule Design of Microalloyed Steels
Zhanli Guo, Nigel Saunders, Jean-Philippe Schillé
Sente Software Ltd, UK

A4 July-10 17:00
Effect of strain rate on the ferrite restoration mechanisms in a duplex stainless steel
Nima Haghdadi, Pavel Cizek, Hossein Beladi, Peter Hodgson
Deakin University, Australia

A4 July-10 17:20
* Honey-like steel: 1300% superplasticity in a Fe-Mn-Al alloy
Jeongho Han, Seok-Hyeon Kang, Seung-Joon Lee, Megumi Kawasaki, Han-Joo Lee, Dirk Ponge, Dierk Raabe, Young-Kook Lee
Chungnam National University, Korea

A4 July-10 17:40
Concentration distributions and crystal structures of thermally grown surface oxides on AISI 316L
Robert Hanke, Andreas Undisz, Katharina Freiberg, Martin Seyring, Markus Rettenmayr
Friedrich Schiller University, Germany

A4 July-10 18:00
The effect of the austenite interface on the pearlite transformation behaviour
Hiroshi Hasegawa, Tatsuya Nakagaito, Yoshimasa Funakawa
JFE Steel Corporation, Japan

A4 July-10 18:20
* Effect of the interstitial elements and heat treatments on mechanical properties of martensitic stainless steel X4CrNiMo16-5-1 (1.4418).
Clara Herrera
Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG, Germany

A4 July-10 18:40
* The Effect of Surface Preparation on Surface Damage and Sigma Formation in Duplex Stainless Steel
Rebecca Higginson, Michael Cenci, Matthew Rowlett, Vladislav Kornienko, Mark Jepson
Loughborough University, UK

A4 July-10 19:00
* Isothermal transformation, microstructure refinement and mechanical properties of ausformed low-carbon carbide-free bainitic steel
Lihe Qian
Yanshan University, China

Session: A5, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 5

Session Chairs: Manuel Carsi; Elena Pereloma

A5 July-11 8:00 Keynote
*** The Microstructure of 12Mn Steel As-quenched**
John Morris
University of California, Berkeley, USA

A5 July-11 8:30
* Ferrite slip system activation unravelled by uniaxial micro-tensile tests and crystal plasticity simulations
Johan Hoefnagels, Chaowei Du, Francesco Maresca, Marc Geers
Eindhoven University of Technology, Netherlands

A5 July-11 8:50
Comparison of two different nitriding processes applied to high Co-Ni steels
Christina Hofer, Roman Landes, Ronald Schnitzer
Montanuniversität Leoben, Austria

A5 July-11 9:10
Different structures effects to the splitting fracture performance of the air-cooled forging steel 46MnVS5 for connecting rod application
Wei Yang, Ba Xin, Fang Wen, Chaolei Zhang
University of Science and Technology Beiging, China

A5 July-11 9:30
* Growth behavior of austenite phase in duplex stainless steel
Yuji Iwasaki, Shigeo Fukumoto
Nippon Steel & Sumikin Stainless Steel Corporation, Japan

A5 July-11 9:50
* Reheat furnace thermodynamic, kinetic and combustion considerations for TMCP processing
Steven Jansto
CBMM North America, Inc., USA

Session A5: Advanced Steels & TMP Micro-alloyed Steels 5
Coffee / Tea break 10:10 to 10:40

A5 July-11 10:40
Induction Hardening of a 0.40 % C Novel Microalloyed Steel: Effects of Initial Microstructure and Thermal Cycle
Vahid Javaheri, Nassseh Khodaie, Tun Tun Nyo, David Porter
University of Oulu, Finland

A5 July-11 11:00
* Integration of press-hardening technology into processing of advanced high strength steels
Hana Jirková, Katerina Opatová, Josef Kána, Dagmar Bublíková
University of West Bohemia, Czech Republic

A5 July-11 11:20
* Bendability of shot blasted high-strength steels
Antti Kaijalainen, Vili Kesti, Jouko Heikkala, Raimo Ruoppa, David Porter, Jukka Kömi
University of Oulu, Finland

A5 July-11 11:40
* Low Density Steels for forging
Idurre Kaltzakorta, Teresa Gutierrez, Roberto Elvira, Pello Jimbert, Teresa Guraya
Tecnalia Research and Innovation, Spain

A5 July-11 12:00
* The effect of flue gas environment on the corrosion behavior of the sulfuric acid dew-point corrosion-resistant steel
Byoung Ho Lee
POSCO, Korea

Lunch break 12:20 - 13:20

Session: A6, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 6

Session Chairs: Matthias Militzer; Ilana Timokhina

A6 July-11 13:20 Keynote
*** Effect of grain size on the dislocation density of cold worked ferritic steels**
Setsuo Takaki, Yuki Tanaka, Toshihiro Tsuchiyama, Ryuji Uemori
Kyushu University, Japan

A6 July-11 13:50
* Hydrogen trapping at solutes and carbides in Fe-Nb-C Modeling and experiments
Sabine Zamberger, Dominik Zuegner, Guenther Rupprechter, Nevzat Yigit, Ernst Kozeschnik
Voestalpine Forschungsservicegesellschaft Donawitz GmbH, Austria

A6 July-11 14:10
* In-situ characterisation of phase transformations during heat treatment of precipitation hardening steel 17-4 PH
Olaf Kessler, Christian Rowolt, Benjamin Milkereit
University of Rostock, Germany

A6 July-11 14:30
* High strength automobile suspension spring steels, PosHIS125RC, with excellent resistance to corrosion and hydrogen delayed fracture
Kwanho Kim, Youngsoo Chun, Byounggab Lee, Chulmin Bae
Gyeongsang National University, Korea

A6 July-11 14:50
Effect of tempering on bendability and impact property of hot rolled low-carbon martensitic steel
Sungil Kim, Seokjong Seo, Insik Suh
POSCO Technical Research Laboratories, Korea

A6 July-11 15:10
* 3rd Generation AHSS by Thin Slab Technology
Christian Klinkenberg
SMS Group, Germany

A6 July-11 15:30
* Thermomechanical processing as an effective technique to produce ultra-fine grained steels
Georgii Kodzhaspirov, Andrei Rudskoi
Peter the Great St. Petersburg Polytechnic University, Russia

A6 July-11 15:50
*Physical Simulation Methods applied to Hot Rolling of Plain C-Mn and Microalloyed Steels
Fulvio Siciliano, Brian Allen, Samuel Rodrigues, John Jonas
Dynamic Systems Inc., USA

Session A6: Advanced Steels & TMP Micro-alloyed Steels 6
Coffee / Tea break 16:10 to 16:40

A6 July-11 16:40
* Structure-property relationship in batch-annealed medium-Mn TRIP steels
Daniel Krizan, Katharina Steineder, Reinhold Schneider, Coline Béal, Christof Sommitsch
Voestalpine Stahl GmbH, Austria

A6 July-11 17:00
* Fatigue mechanisms of advanced high strength steel microstructures
Matthias Kuntz
Robert Bosch GmbH, Germany

A6 July-11 17:20
Critical Strain for Complete Austenite Recrystallisation during Rough Rolling of C-Mn steel, and Nb-Ti-V Microalloyed Steels
Dannis Rorisang Nkarapa Maubane, Charles Siyasiya, Kevin Banks, Waldo Stumpf
University of Pretoria, South Africa

A6 July-11 17:40
*Recent research progress on medium-carbon pearlitic steels for high speed railway wheel
Zhaodong Li, Shitong Zhou, Tao Pan, Qilong Yong, Caifu Yang
China Iron and Steel Research Institute Group, China

A6 July-11 18:00
* Hydrogen embrittlement in austenitic Fe-20Cr-5Mn-2Mo-0.3N-0.1C: Effect of sensitization
Kyung-Shik Kim, Jee-Hyun Kang, Sung-Joon Kim
Pohang University of Science and Technology, Korea

A6 July-11 18:20
* Overview on the development of roll materials for its use in Hot Strip Mills (HSM)
Leonel Elizondo, Brandner Michael, Trickl Thomas, Paar Armin, Aigner Michael
Eisenwerk Sulzau Werfen R&E Weinberger AG, Austria

A6 July-11 18:40
Do we need hot deformation to produce high strength steel?
Andrii Kostryzhev, Olexandra Marenych
University of Wollongong, Australia

Session: A7, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 7

Session Chairs: Wolfgang Bleck; Andre Tschipschin

A7 July-12 8:00 Keynote
*** Challenges of Nb application in thermomechanical processes of steels for long products**
Beatriz Lopez, Beatriz Pereda, Felipe Bastos, Marcelo Rebellato, Jose Maria Rodriguez-Ibabe
Centro Tecnologico Ceit-IK4, Spain

A7 July-12 8:30
* Microstructures and Mechanical Properties of Tough Ductile Ultrahigh-strength Steels Processed through Direct Quenching and Partitioning
Pekka Kantanen, Mahesh Somani, David Porter, Jukka Kömi, Devesh Misra
University of Oulu, Finland

A7 July-12 8:50
* Virgin martensite in Fe-Ni-C alloys: low-temperature ordering and spinodal decomposition.
Philippe Maugis, Cazottes Sophie, Sara Chentouf, Sergiu Curelea, Frédéric Danoix, Myriam Dumont, Jonathan Emo, Mohamed Gouné, Dmytro Kandaskalov, Helena Zapolsky
CNRS IM2NP, France

A7 July-12 9:10
* Thermal Processing and Mechanical Properties of Prototype Medium-Mn Third-Generation Advanced High Strength Steels Compatible with the Continuous Galvanizing Process
Joseph McDermid, Kazi Bhadhon, Daneilla Pallisco, Frank Goodwin
McMaster University, Canada

A7 July-12 9:30
* Models for intercritical austenite formation in a dual-phase steel
Michel Perez, Mélanie Ollat, Alexandre Mathevon, Matthias Militzer, Damien Fabregue, Véronique Massardier, Eric Buscarlet, Fanny Keovilay, Patrice Chantrenne
University of Lyon

A7 July-12 9:50
* Influence of Nb addition on impact toughness of as-quenched martensitic stainless steel for automotive applications
Jean-Denis Mithieux, Hélène Godin, Anne-Françoise Gourgues-Lorenzon, Coralie Parrens
APERAM R&D, France

Session A7: Advanced Steels & TMP Micro-alloyed Steels 7
Coffee / Tea break 10:10 to 10:40

A7 July-12 10:40
* Strain partitioning in medium manganese steels
Dirk Ponge, Aniruttha Dutta, Stefanie Sandlöbes, Dierk Raabe
Max-Planck-Institut für Eisenforschung GmbH, Getrmany

A7 July-12 11:00
In situ neutron diffraction investigation into the effect of temperature on deformation induced martensite in 301 Stainless Steel
Richard Moat, Yadu Das
The Open University, UK

A7 July-12 11:20
* Through-scale analysis of strain path effects in microalloyed austenite subjected to reverse rolling
Krzysztof Muszka, Janusz Majta, Marcin Gliwinski
AGH University of Science and Technology, Poland

A7 July-12 11:40
* Effect of matrix switch on yielding behavior in Fe-Ni austenitic alloy with duplex microstructure
Nobuo Nakada, Shouhei Kawasaki, Yuuki Kogakura, Toshihiro Tsuchiyama, Setsuo Takaki
Tokyo Institute of Technology, Japan

A7 July-12 12:00
* Evaluation of Nano size NbC Precipitates in HSLA Steel through Microstructural Analysis and Small Angle Neutron Scattering
Haruo Nakamichi, Katsumi Yamada, Kaneharu Okuda, Toshinori Ishida, Masato Ohnuma
JFE Steel Corporation, Japan

Lunch break 12:20 - 13:20

Session: A8, Venue: Room Louis Armand East

Advanced Steels & TMP Micro-alloyed Steels 8

Session Chairs: Toshihiro Tsuchiyama; Liqing Chen

A8 July-12 13:20 Keynote
*** Designing Maraging Steels**
Ronald Schnitzer, Jadranko Zivkovic, Harald Leitner
Montanuniversität Leoben, Austria

A8 July-12 13:50
* Grain coarsening in niobium containing steels
Sven Erik Offerman, Hemant Sharma, John Wright, Jilt Sietsma
Delft University of Technology, Netherlands

A8 July-12 14:10
Microstructural evolution during heating of supermartensitic stainless steel
Frank Niessen, Matteo Villa, Daniel Apel, Frédéric Danoix, John Hald, Marcel Somers
Technical University of Denmark, Denmark

A8 July-12 14:30
Strain ratio effect on the low cycle fatigue behavior and microstructure of high-Mn austenitic alloy undergoing the strain-induced?-martensitic transformation
Ilya Nikulin, Takahiro Sawaguchi
National Institute for Materials Science, Japan

A8 July-12 14:50
Development of Thin Hot-Rolled Martensitic Steel with Giga Strength
Kyong Su Park, Jaeyong Chae, Chulmin Bae
POSCO, Korea

A8 July-12 15:10
* Effect of coiling temperature on the hardening mechanisms of a high-Ti steel
Beatriz Pereda, Leire García-Sesma, Beatriz Lopez
Centro Tecnologico Ceit-IK4, Spain

A8 July-12 15:30
*Statistical Evaluation of the Relationship between Crystallographic Texture and Brittle Fracture Behaviour in Dynamic Three Point Bending of Steels
Sebastian Scholl, Volker Schwinn
AG der Dillinger Hüttenwerke, Germany

A8 July-12 15:50
Design and Properties of 1000 MPa Strength Level Hot-Formed Steels Possessing Dual-Phase and Complex-Phase Microstructures
Maribel Arribas, Radhakanta Rana, Chris Lahaije, Xabier Gómez, Iñigo Aranguren, Iñaki Pérez
TECNALIA, Spain

Session A8: Advanced Steels & TMP Micro-alloyed Steels 8
Coffee / Tea break 16:10 to 16:40

A8 July-12 16:40
* Physical and thermodynamic simulations of the recrystallization behavior in Nb and Nb-Ti microalloyed steels
Eric Detemple, Bastian Philippi, Volker Schwinn
AG der Dillinger Hüttenwerke, Germany

A8 July-12 17:00
Strengthening of low carbon steel by nano-sized vanadium carbide in ferrite and tempered martensite
Yongjie Zhang, Goro Miyamoto, Tadashi Furuhara
Institute for Materials Research, Japan

A8 July-12 17:20
Novel hot-rolled structural plate steels with yield strength of 700 MPa and excellent usability
Ville Ritola
SSAB Europe Oy, Finland

A8 July-12 17:40
* In-situ investigation of Carbide-Free Bainite steels using High Energy X-Ray Diffraction method.
Irina Pushkareva, Fateh Fazeli, Colin Scott, Sebastien Allain, Guillaume Geandier
Canmet MATERIALS, Canada

A8 July-12 18:00
Improved ductility of medium manganese steels subjected to an intermediate annealing prior to cold rolling
Binhan Sun, Ran Ding, Hao Chen, Fateh Fazeli, Colin Scott, Stephen Yue
McGill University, Canada

A8 July-12 18:20
* The strongest bulk material combined with toughness: a low-density carbon steel
J. C. Pang, G.d. Wang, Hongliang Yi
Northeastern University, China

A8 July-12 18:40
The effect of precipitation state on strength and toughness of precipitation hardened hot rolled steel sheet
Takafumi Yokoyama, Taniguchi Shunsuke
Nippon Steel & Sumitomo Metal Corporation, Japan

A8 July-12 19:00
***** The austenite-martensite interface in steels revealed by atomistic simulations guides a new predictive theory of martensite crystallography
Francesco Maresca, William Curtin
EPFL, Switzerland

Session: A9, Venue: Room Louis Armand East

Composites 3

Session Chairs: Jean Francois Silvain; Qiang Zhang

A9 July-13 8:00 Keynote
*** Development of Tool Steel Matrix Composites with High Thermal Conductivity**
Gen Sasaki, Yongbum Choi, Kenjiro Sugio, Kazuhiro Matsugi
Hiroshima University, Japan

A9 July-13 8:30
* Field assisted sintering and mechanical properties of bioinspired ceramic/metal laminated composites
Sylvain Meille, Marcinkowska Malgorzata, Deville Sylvain, Maire Eric, Chevalier Jérôme
Matériaux, Ingénierie et Sciences, France

A9 July-13 8:50
*Interfacial fibre decohesion in Friction Stir Processed Mg-C composites under tensile and compression loading
Aude Simar, Mertens Anne, Ryelandt Sophie, Delannay Francis, Brassart Laurence
Université Catholique de Louvain, Belgium

A9 July-13 9:10
Formation of embedded silver wiring in glass substrate by field-assisted solid-state ion exchange
Souta Matsusaka, Kawamura Hirofumi, Hidai Hirofumi, Chiba Akira, Morita Noboru
Chiba University, Japan

A9 July-13 9:30
Microstructure evolution correlated damage behaviors of the high-cycle fatigued in-situ TiB2/2024 Al composite
Geng Jiwei, Liu Geng, Wang Feifei, Dai Jichun, Mingliang Wang, Chen Dong, Ma Naiheng, Wang Haowei
Shanghai Jiao Tong University, China

A9 July-13 9:50
Influence of intermetallic compounds on functional properties of architectured Copper-Clad-Aluminium wire composite
Florent Moisy, Gueydan Antoine, Keller Clément, Nguyen Nga, Sauvage Xavier, Guillet Alain, Hug Eric
Laboratoire de Cristallographie et Sciences des Matériaux, France

Session A9**: Composites 3**
Coffee / Tea break 10:10 to 10:40

A9 July-13 10:40
Carbon-fibre/metal-matrix composites: to be or not to be?
Nelly Prokopenko, Mileiko Sergei, Galyshev Sergei
Institute of Solid State Physics of Russian Academy of Sciences, Russia

A9 July-13 11:00
Behaviors of carbon nanotubes doped in Fe-base composite under laser irradiation
Dong Zhaoyue, Li Da, Sun Youhong, Ming Qian
Jilin University, China

A9 July-13 11:20
Copper effect on mechanical properties of Al-CNF composite material elaborated by liquid metallurgy with induction melting
Paul Royes, Masquelier Nicolas, Balloy David, Breville Thierry–
Nexans Research Center Lens, France

A9 July-13 11:40
* Molybdenum based heat resistant composites
Sergei Mileiko
Institute of Solid State Physics of Russian Academy of Sciences, Russia

A9 July-13 12:00
*Hot straining and quenching and partitioning of a TRIP assisted steel: mechanical properties and microstructural characterization
André Paulo Tschiptschin
Escola Politécnica da Universidade de São Paulo, Brazil

A9 July-13 12:20
*Microstructures and properties of DP 600 steel conventionally treated and intercritically annealed from as-quenched martensite
Helio Goldenstein
Escola Politécnica da Universidade de São Paulo, Brazil

A9 July-13 12:40
Processing and mechanical properties of highly formable ferritic high strength steel containing titanium nanocarbides for automotive applications
Alexander Lange, Sarah Abraham, Rainer Fechte-Heinen, Andreas Kern
Thyssenkrupp Steel Europe AG, Germany

A9 July-13 13:00
Effect of Al on the microstructure and mechanical properties of hot-rolled medium-Mn steel
Han Dingting, Yun-Bo Xu, Ying Zou, Zhi-Ping Hu, Shu-Qing Chen, Yong-Mei Yu *Northeastern UniversityChina China*

A9 July-13 13:20
Investigating the effect of Cu-rich phase on the corrosion behavior of Super 304H austenitic stainless steel by TEM
Bo Zhang, X.Y. San, B. Wu, X. X. Wei, X. L. Ma
Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

A9 July-13 13:40
Characteristics and formation mechanism of the interface of Mg/Al bimetallic composites prepared by lost foam casting
Wenming Jiang, Fan Zitian, Li Guangyu
Huazhong University of Science and Technology, China

Session B

Session: B1, Venue: Room Louis Armand West

High & Ultra-high Temperature Materials 1

Session Chairs: Didier Blavette; Christof Sommitsch

B1 July-09 10:00 Keynote
***Strength of the as-spsed IRIS-TiAl alloy at high temperatures**
Alain Couret, Monchoux Jean-Philippe, Thomas Marc, Voisin Thomas
Centre d'Elaboration des Matériaux et d'Etude des Structures, France

B1 July-09 10:30
*Advanced titanium aluminides-how to improve the creep resistance via compositional and microstructural design
Helmut Clemens, Svea Mayer
Montanuniversität Leoben, Austria

B1 July-09 10:50
* Ni-based alloys for high temperature and heavy duty wear condition application
Piotr Bala, Grzegorz Cios
AGH University of Science and Technology, Poland

B1 July-09 11:10
* Oxidation and emissivity of refractory metals and alloys in severe space environment (very high temperature, high vacuum, air plasma)
Marianne Balat-Pichelin
PROMES-CNRS Laboratory, France

B1 July-09 11:30
* The Dislocation behaviour and GND Development in Nickel Based Superalloys during Creep
Soran Birosca
Swansea University, UK

B1 July-09 11:50
* The early stages of precipitation in model CoAlW superalloys
Didier Blavette, Ahmad Azzam, Fréderic Danoix, Annie Hauet, Thomas Philippe, Didier Locq, Pierre Caron
University of Rouen, France

B1 July-09 12:10
* High temperature oxidation behaviour of a novel Nb-free TiAl alloy
Alexander Donchev, Alain Couret, Mathias Galetz
DECHEMA-Forschungsinstitut, Germany

B1 July-09 12:30
* From prealloyed rod to gas-atomized powder and spark-plasma-sintered samples: how the microstructure of an Nb silicide based alloy evolves
Stefan Drawin, Virgil Malard, Anne Denquin, Alain Couret
ONERA, France

B1 July-09 12:50
* Niobium segregation and O-phase formation in a Gamma-TiAl alloy
Heike Gabrisch, Tobias Krekeler, Uwe Lorenz, Marcus Rackel, Martin Ritter, Florian Pyczak, Andreas Stark
Helmholtz-Zentrum Geesthacht, Germany

B1 July-09 13:10
* Application of Titanium Aluminide Alloy TNM as Low-Pressure Turbine Blade Material in an Advanced Aircaft Engine
Ulrike Habel, Falko Heutling, Dietmar Helm, Claudia Kunze, Wilfried Smarsly, Helmut Clemens
MTU Aero Engines, Germany

Lunch break 13:30 - 14:30

Session: B2, Venue: Room Louis Armand West

High & Ultra-high Temperature Materials 2

Session Chairs: Manja Krueger; Helmut Clemens

B2 July-09 14:30 Keynote
*** Ambient-Temperature Plasticity of Brittle Intermetallics at Micron-Meter Size Scales**
Haruyuki Inui
Kyoto University, Japan

B2 July-09 15:00
* Analysis of the creep behaviour of dissimilar welds-microstructural investigations and numerical simulations using a strain based damage criterion
Florian Kauffmann, Johannes Schleyer, Magdalena Speicher
University of Stuttgart, Germany

B2 July-09 15:20
* Microstructures of ternary eutectic refractory Me-Si-B alloy systems
Georg Hasemann, Manja Krüger, Martin Palm, Frank Stein
Forschungszentrum Jülich GmbH, Germany

B2 July-09 15:40
* Stability and ordering in the Ti-Al-Mo system: What happens at the atomic scale?
David Holec, Neda Abdoshahi, Mohammad Dehghani, Svea Mayer, Andrei Ruban, Jürgen Spitaler
Montanuniversität Leoben, Austria

Session B2: High & Ultra-high Temperature Materials 2
Coffee / Tea break 16:00 to 16:30

B2 July-09 16:30
* Phase field simulation of microstructure and sequence of reactions evaluation in Mo rich area of Mo-Si-B alloys
Thorsten Halle, Omid Kazemi, Georg Hasemann, Manja Krüger
Otto-von-Guericke-University Magdeburg, Germany

B2 July-09 16:50
* Influences of ternary and quaternary additions on mechanical properties of MoSi2/Mo5Si3-based in-situ composites
Kyosuke Kishida, Yuki Kambara, Haruyuki Inui
Kyoto University, Japan

B2 July-09 17:10
* Recent developments in additive manufacturing of Mo-Si-B alloys
Manja Krüger, Janett Schmelzer, Silja Rittinghaus, Andreas Weisheit, Martin Stobik, David Fichtner, Christoph Heinze
Forschungszentrum Jülich, Germany

B2 July-09 17:30
* Development and properties of cast TiAl matrix in-situ composites reinforced with carbide particles
Juraj Lapin, Alena Klimová, Tatiana Pelachová, Zuzana Gabalcová, Michaela Stamborská, Oto Bajana
Institute of Materials and Machine Mechanics, Slovak Academy of Sciences, Slovak Republic

B2 July-09 17:50
* Tribological properties of aluminum and silicon borides at high temperatures
Takashi Murakami, Atsushi Korenaga, Tsuguyori Ohana, Haruyuki Inui
National Institute of Advanced Industrial Science and Technology (AIST), Japan

B2 July-09 18:10
Micro addition element in austenitic heat resistant steels: insights the link between composition, microstructure and mechanical properties
Damien Magne, Mathieu Couvrat, Xavier Sauvage
St Etienne du Rouvray, France

B2 July-09 18:30
* Modification of the grain size distribution in polycrystalline superalloys based on the relative activity of the heteroepitaxial recrystallization mechanism
Victoria Miller, Brady Dowdell, Adam Pilchak, Eric Payton
North Carolina State University, USA

B2 July-09 18:50
Formation of surface defect grains in 3rd generation nickel-based single crystal superalloy turbine blades
Keehyun Kim, Paul Withey
University of Birmingham, UK

B2 July-09 19:10
* Validation of a genetic algorithm alloy grade optimisation method: Case study over superalloy AD730 composition span
Franck Tancret, Camille Pineau, Edern Menou, Emmanuel Bertrand, Gérard Ramstein, Alexandre Devaux, Coraline Crozet
IMN - Université de Nantes – CNRS, France

B2 July-09 19:30
* Effect of platinum group elements on microstructures and properties of nickel-base single crystal superalloys
Xiofeng Sun, Yizhou Zhou
Institute of Metal Research, Chinese Academy of Sciences, China

B2 July-09 19:50
Effect of carbon on the microstructure and stress rupture properties of a new Ni-Cr-W-Fe alloy for advanced ultra-supercritical power plants
Yingche Ma, Meiqiong Ou, Xianchao Hao, Kui Liu
Institute of Metal Research, Chinese Academy of Sciences, China

Session: B3, Venue: Room Louis Armand West

High & Ultra-high Temperature Materials 3

Session Chairs: Kyosuke Kishida; Yizhou Zhou

B3 July-10 8:00 Keynote
*** Stress Contributions in Nickel-Base Superalloys**
Uwe Glatzel, Fabian Krieg, Ernst Fleischmann, Mike Mosbacher, Rainer Völkl
Universität Bayreuth, Germany

B3 July-10 8:30 Keynote
*** Advances in the field of high temperature resistant Boron containing 8-13%Cr steels**
Christof Sommitsch, Ernst Plesiutsching
TU Graz, Austria

B3 July-10 9:00
* Zinc oxide lubricative coatings for industrial system application
Masahiro Tosa, Michiko Sasaki, Masahiro Goto, Akira Kasahara, Hiroshi Honda, Hiroshi Suzuki
National Institute for Materials Science, Japan

B3 July-10 9:20
* Influence of Borides on the beta/alpha Phase Transformation Kinetics in gamma Titanium Aluminide Alloys
Michael Oehring, Andreas Stark, Marcus Rackel, Norbert Schell, Florian Pyczak
Helmholtz-Zentrum Geesthacht Germaany

B3 July-10 9:40
Investigation of heat treatment of metal injection moulded Inconel 718 using differential scanning calorimetry
Julian Oflynn, Stephen Corbin
Dalhousie University, Canada

Session B3: High & Ultra-high Temperature Materials 3
Coffee / Tea break 10:00 to 10:30

B3 July-10 10:30
* Dynamic recrystallization behavior of superalloy 718
Katsunari Oikawa, Jingjing Ruan, Dongxu Wen, Nobufumi Ueshima
Tohoku University, Japan

B3 July-10 10:50
* The promise of nanotwins beyond strength
Jessica Krogstad, Megan Emigh, Pralav Shetty
University of Illinois at Urbana-Champaign, USA

B3 July-10 11:10
* High temperature corrosion in molten salts & molten salts technology: past, present and future
Francisco Javier Perez Trujillo
Universidad Complutense de Madrid, Spain

B3 July-10 11:30
* Direct versus conventional ageing of nickel-based alloy 718
Sophie Primig, Felix Theska, Aleksandar Stanojevic, Simon Ringer
University of NSW, Australia

B3 July-10 11:50
* Deformation behaviour of Fe-Al single crystals containing Fe2AlTi precipitates
Hiroyuki Yasuda, Hiroyuki Yakage, Yunima Shinohara, Ken Cho
Osaka University, Japan

B3 July-10 12:10
* Scanning for the orthorhombic O-phase formation in gamma-based TiAl alloys
Marcus Willi Rackel, Andreas Stark, Heike Gabrisch, Norbert Schell, Florian Pyczak
Helmholtz-Zentrum Geesthacht, Germany

B3 July-10 12:30
* α-TiAl Low Pressure Turbine blades: opportunities and new challenges
Pierre Sallot
SAFRAN, France

B3 July-10 12:50
* Influence of process route on the microstructure of the beta-solidifying TNM TiAl alloy
Martin Schloffer, Wilfried Smarsly, Helmut Clemens, Svea Mayer
MTU Aero Engines AG, Germany

B3 July-10 13:10
* Crack initiation and propagation in CoCuFeNiTi eutectic high entropy alloy: an in-situ tensile study
Ehsan Ghassemali, Boina Sagar, Krishanu Biswas, Nilesh Gurao
Jönköping University, Sweden

Lunch break 13:30 - 14:30

Session: B4, Venue: Room Louis Armand West

High & Ultra-high Temperature Materials 4

Session Chairs: Haruyuki Inui; Sophie Primig

B4 July-10 14:30 Keynote
*** Microstructural changes during creep and ageing of gamma-L12 hardened Co-base superalloys**
Yuzhi Li, Michael Oehring, Jonathan Paul, Florian Pyczak
Helmholtz-Zentrum Geesthacht, Germany

B4 July-10 15:00
*Ageing of a cast 25Cr-35Ni heat resistant alloy and its effect on oxidation behaviour
Sophie Cazottes, Nicolas Vaché, Thierry Douillard, Claude Duret, Philippe Steyer, Christel Augustin, Francois Dupoiron
MATEIS INSA Lyon, France

B4 July-10 15:20
* Physical Modelling of Creep of High Temperature Steels
Florian Riedlsperger, Bernhard Sonderegger
Graz University of Technology, Austria

B4 July-10 15:30
* Implementation of porous metallic structures for combustion chamber applications
Marc Thomas, Cécile Davoine, Aurélie Jankowiak, Daniel Gaffié, Axel Vincent, Christian Guin, Philippe Reulet, Olivier Léon, Emmanuel Laroche, Frank Simon
ONERA, France

B4 July-10 15:50
*Influence of Re/Ru on concentration distribution in the g/g' phases of nickel-based single crystal superalloys
Sugui Tian, Delong Shu, Lirong Liu, Baoshuai Zhang, Ning Tian
Shenyang University of Technology, China

Session B4: High & Ultra-high Temperature Materials 4
Coffee / Tea break 16:10 to 16:40

B4 July-10 16:40
* Combinatorial metallurgical screening: what is in it for high temperature applications?
Nele Van Steenberge, Lode Duprez, Serge Claessens
OCAS NV, Belgium

B4 July-10 17:00
*Plasticity in hard and anisotropic crystals
Sandra Korte-Kerzel, James Gibson, Sebastian Schröders, Christoffer Zehnder
Aachen University, Germany

B4 July-10 17:20
* On the Embrittlement of TiAl After Elevated Temperature Exposure
Jonathan Paul, Fritz Appel, Michael Oehring, Florian Pyczak
Helmholtz-Zentrum Geesthacht, Germany

B4 July-10 17:40
Rapid construction of phase diagram by combinatorial materials chip with a continuous composition spread
Lanting Zhang, Bingbing Zhao, Yujie Wang, Jindong Li, Ningning Yan, Xing Hui, Hong Wang
Shanghai Jiao Tong University, China

B4 July-10 18:00
Impact of L12-ordered precipitation on alumina-forming austenitic heat-resistant steels
Bingbing Zhao, Xianping Dong, Feng Sun, Lanting Zhang
Shanghai Jiao Tong University, China

B4 July-10 18:20
* The investigation of influence factors on differential scanning calorimetry (DSC) analysis of Ni-based superalloys
Liang Zheng
Beijing Institute of Aeronautical Materials, China

B4 July-10 18:40
Composition Optimization of In718 Superalloy Powder for Additive Manufacturing
Che-Yi Lin, Hui-Yum Bor, Chao-Nan Wei, Chien-Hung Liao
National Chung-Shan Institute of Science and Technology, Taiwan

B4 July-10 19:00
* Solidification Microstructures of alpha-Al/Intermetallics Eutectic Alloys in AlZnMg Ternary System
Naoki Takata, Taiki Okano, Asuka Suzuki, Makoto Kobashi
Nagoya University, Japan

B4 July-10 19:20
* Internal stress analysis on oxide layers obtained by high temperature oxidation of metallic alloys
Vincent Ji, Ning Li, Nathalie Prud'homme, Linwei Li
Université Paris-Sud, France

Session: B5, Venue: Room Louis Armand West

Smart/Intelligent Materials 1

Session Chairs: Yoko Yamabe-Mitarai; Elisabetta Gariboldi

B5 July-11 8:00 Keynote
*** Recent development of AuCuAl biomedical superelastic alloys**
Hideki Hosoda, Serizawa Rui, Toriyabe Ayano, Goto Kenji, Umise Akira, Tahara Masaki, Sone Masato, Hanawa Takao
Tokyo Institute of Technology, Japan

B5 July-11 8:30 Keynote
*** Variant reorientation mechanisms of Ni-Mn-Ga 7M modulated martensite during compression, studied by in-situ neutron diffraction and SEM-EBSD**
Yudong Zhang, Zou Naifu, Li Zongbin, Yang Bo, Weimin Gan, Michael Hofmann, Zhao Xiang, Esling Claude, Zuo Liang
Laboratoire d'étude des Micro-structures et de Mécanique des Matériaux, France

B5 July-11 9:00
* Core-shell composite nanoparticles by post-Plasma SiOx coating for thermal stability and tunable photoactivity
Jean-Pascal Borra, Jidenko Nicolas, Weber Alfred, Post Patrick
Laboratoire de Physique des Gaz et des Plasmas, France

B5 July-11 9:20
* Martensitic transformation entropy change in ferromagnetic shape memory alloys
Eduard Cesari, Pérez-Landazábal Jose Ignacio, Recarte Vicente, L'vov Victor, Kosogor Anna, Torrens-Serra Joan
Universitat de les Illes Balears, Spain

B5 July-11 9:40
* Fabrication of Bi2Te3-based Bulk Thermoelectric Materials by a Hot-extrusion Technique
Zhong-Chun Chen, Wang Zhi-Lei, Onda Tetsuhiko
Tottori University, Japan

B5 July-11 10:00
Microstructural evolution of Fe-20mass%Mn damping material during thermo-mechanical training
Tadachika Chiba, Yongzhi Dong, Sato Hisashi, Watanabe Yoshimi
Nagoya Institute of Technology, Japan

Session B5: Smart/Intelligent Materials 1
Coffee / Tea break 10:20 to 10:40

B5 July-09 10:40
* Magneto-mechanical characterisation of Giant Magnetostrictive Materials: influence of loading boundary conditions
Domenjoud Mathieu, Laurent Daniel
Group of Electrical Engineering – Paris, France

B5 July-11 11:00
* Modern ways in process control of material properties in the field of highly stretchable bioelectronics and sensors
Michael Fischlschweiger, Cakmak Umut, Graz Ingrid
Ottronic GmbH, Austria

B5 July-11 11:20
Magnetic domain observation of Fe-Ga alloy single crystal grown by CZ method
Shun Fujieda, Asano Shimpei, Hashi Shuichiro, Ishiyama Kazushi, Fukuda Tsuguo, Suzuki Shigeru
Tohoku University, Japan

B5 July-11 11:40
* Metallic composites as form stable phase change alloys
Elisabetta Gariboldi
Politecnico di Milano, Italy

B5 July-11 12:00
* Experimental analysis about Heat Treatment distortion in bearing race
Hideyuki Hidaka, Miyamoto Yuji, Matoba Riishiro
Core Technology Research and Development Center, NSK Ltd, Japan

B5 July-11 12:20
* Hot Compaction of Mechanically Alloyed High-Nitrogen Steel Powders by Simple Spark Plasma Sintering Apparatus
Hidenori Ogawa
College of Industrial Technology, Japan

B5 July-11 12:40
* Effects of P doping on the thermoelectric performance of heterogeneous ?-FeSi2/Si composites
Mikio Ito, Farah Liana, Masatoshi Takeda
Osaka University, Japan

B5 July-11 13:00
*Transport and thermodynamic properties of CeRu2Al10 controlled by pressure at around critical pressure
Yukihiro Kawamura, Sekine Chihiro, Matsubayashi Kazuyuki, Uwatoko Yoshiya, Nishioka Takashi
Muroran Institute of Technology, Japan

Lunch break 13:20 - 14:20

Session: B6, Venue: Room Louis Armand West

Smart/Intelligent Materials 2

Session Chairs: Yoshimi Watanabe; Jean-Marc Raulot

B6 July-11 14:20 Keynote
*** Shape Memory Polymer Composites in the Space Environment**
Loredana Santo
University of Rome "Tor Vergata", Italy

B6 July-11 14:50
* Quaternary modifications of mechanical alloyed and SPS sintered Fe-Al-Si powders
Jaromir Kopecek, Hausild Petr, Karlík Miroslav, Prusa Filip, Novák Pavel
Institute of Physics of the CAS, Czech Republic

B6 July-11 15:10
* Effect of Ni, Co, and Pt on phase transformation and shape recovery of TiPd high temperature shape memory alloys
Yoko Mitarai, Tasaki Wataru, Ohl Brandon, Sato Hirotaka
National Institute for Materials Science, Japan

B6 July-11 15:30
* Design of new functional magnetostrictive cobalt ferrite nanocrystals as building blocks for the preparation of flexible PVDF based magnetoelectric self-standing films
Fayna Mammeri, Ammar Souad, Breitwieser Romain, Ben Osman Chirine
Interfaces, Traitements, Organisation et Dynamique des Systèmes, France

B6 July-11 15:50
* Transformation system and stability of stress-induced phases in Au-Cd-Ag martensitic alloy
Yuki Matsuoka
Nara Women's University, Japan

Session B6: Smart/Intelligent Materials 2
Coffee / Tea break 16:10 to 16:40

B6 July-11 16:40
* Ununiformity of sintering behaviour in the boundary between material and graphite die on Spark Plasma Sintering Process
Tatsuya Misawa, Sakamaki Takumi, Sakata Kodai, Kawakami Yuji, Kawahara Masakazu
Saga University, Japan

B6 July-11 17:00
* Multiscale approach for the modeling of chemo-magneto-thermo-mechanical couplings-reversible framework
Olivier Hubert, Karine Lavernhe-Taillard, Mame-Daro Fall, Xuyang Chang, Maxime Savary, Olivia Sevestre
Laboratoire de Mécanique et Technologie, France

B6 July-11 17:20
* In-situ observation of melting and solidification behaviors of nickel and nickel alloys by using synchrotron radiography
Kohei Morishita, Kawarasaki Takuya, Yasuda Hideyuki
Kyoto University, Japan

B6 July-11 17:40
* Influence of DC Current Flow on High Temperature Deformation of 8Y2O3-ZrO2 Polycrystals
Koji Morita, Yoshida Hidehiro, Kim Byung-Nam, Hiraga Keijiro, Sakka Yoshio
National Institute for Materials Science, Japan

B6 July-11 18:00
* Crystal growth of Na-Si clathrates by evaporation of Na from the Na-Si-Sn solution
Haruhiko Morito
Tohoku University, Japan

B6 July-11 18:20
* Rapid synthesis of Li2O-(Nb/Ta)2O5-TiO2 solid solution having superstructure by smart processing techniques
Hiromi Nakano
Toyohashi University of Technology, Japan

B6 July-11 18:40
* Effect of shearing distance on mechanical and electrical properties for Cu-11Mn-4Ni thin plate formed by Compression Shearing Method at Room Temperature
Noboru Nakayama, Inoue Hayato, Kusunoki Hideharu, Horita Masaomi, Kumeda Yoshitaka, Nakamura Keishi
Shinshu University, Japan

B6 July-11 19:00
* Mastering of the filling stage in Low Pressure Sand Casting process
Marie Bedel, Sanitas Antonin, Khelladi Sofiane, El Mansori Mohamed
AMVALOR, France

Session: B7, Venue: Room Louis Armand West

Smart/Intelligent Materials 3

Session Chairs: Hisashi Serizawa; Yudong Zhang

B7 July-12 8:00
***** Creation of protein-based molecular motors moving on DNA nanostructure
Kazuhiro Oiwa, Ibusuki Ryota, Furuta Ken'ya
National Institute of Information and Communications Technology, Japan

B7 July-12 8:20
* Joining of AlN and Al with Compositional Graded Layer by Centrifugal Mixed-Powder Method
Yoshimi Watanabe, Murase Masaki, Sato Hisashi, Tsukamoto Hideaki
Nagoya Institute of Technology, Japan

B7 July-12 8:40
* In-situ biaxial loading and strain path change tests on superelastic alloys employing HR-DIC and synchrotron X-ray diffraction
Efthymios Polatidis, Hsu Wei-Neng, Smid Miroslav, Van Petegem Steven, Van Swygenhoven Helena
Paul Scherrer Institute, Switzerland

B7 July-12 9:00
* Structural, electronic and mechanical properties of Heusler compounds by ab initio calculation
Xiaomeng Liu, Jean-Marc Raulot, Bai Jing, Xu Nan, Zhang Yudong, Esling Claude, Zuo Liang, Zhao Xiang
Laboratory of Excellence on Design of Alloy Metals for low-mass Structures, France

B7 July-12 9:20
* Development of Self-Lubricating SUS430-Based Composites Containing Graphite Particles by Centrifugal Mixed-Powder Method
Hisashi Sato, Tanaka Kentaro, Watanabe Yoshimi
Nagoya Institute of Technology, Japan

B7 July-12 9:40
* Effect of Slit Shape on Joinability of Zircaloy - SiC/SiC Composite Tube Joint with Titanium Powder
Hisashi Serizawa, Sato Yuji, Nakazato Naofumi, Tsukamoto Masahiro, Kishimoto Hirotatsu
Osaka University, Japan

Session B7: Smart/Intelligent Materials 3
Coffee / Tea break 10:00 to 10:30

B7 July-12 10:30
* Large magnetoelectric effects in nanoporous electrodeposited films and patterned structures
Jordi Sort, Quintana Alberto, Navarro-Senent Cristina, Dislaki Evangelia, Robbennolt Shauna, Fornell Jordina, Isarain-Chavez Eloy, Menéndez Enric, Baró Dolors, Nogués Josep, Pellicer Eva
Universitat Autònoma de Barcelona, Spain

B7 July-12 10:50
* Analytical Design Of Superelastic Ring Springs For High Energy Dissipation
Andrea Spaggiari, Scirè Mammano Giovanni, Dragoni Eugenio
University of Modena and Reggio Emilia, Italy

B7 July-12 11:10
* Microstructure control of ceramics by using strong magnetic field
Tohru Suzuki
National Institute for Materials Science, Japan

B7 July-12 11:30
* Laser shape setting of NiTi alloys: thermo-mechanical properties and microstructures
Ausonio Tuissi, Gialanella Stefano, Ischia Gloria, Coduri Mauro, Biffi Carlo Alberto
Institute of Condensed Matter Chemistry and Technologies for Energy, Italy

B7 July-12 11:50
* Change in the Density of States during the Martensitic Phase Transformation for NiMn-based Metamagnetic Shape Memory Alloys
Rie Umetsu, Xu Xiao, Ito Wataru, Tsujikawa Masahito, Shirai Masafumi, Kainuma Ryosuke
Tohoku University, Japan

B7 July-12 12:10
* Engineering aspects of natural NiTi surfaces for medical application
Andreas Undisz, Freiberg Katharina, Hanke Robert, Rettenmayr Markus
Friedrich Schiller University, Germany

B7 July-12 12:30
* Deformation Studies of the R-phase in Superelastic NiTi
Raj Vaidyanathan
University of Central Florida, USA

B7 July-12 12:50
* Variant selection of NiMnIn-based alloy under mechanical loading during martensitic transformation
Haile Yan, Li Zongbin, Yang Bo, Zhang Yudong, Esling Claude, Zhao Xiang, Zuo Liang
Key Laboratory for Anisotropy and Texture of Materials, China

B7 July-12 13:10
* Time evolution and magnetocaloric effects linked to out of equilibrium states in Ni45Mn36.7In13.3Co5 Alloys
Jose Ignacio Perez-Landazabal, Recarte Vicente, Sánchez-Alarcos Vicente, Beato J. Jesús, Rodríguez-Velamazán José Alberto, Sánchez-Marcos Jorge, Gómez-Polo Cristina, Cesari Eduard
Universidad Pública de Navarra, Spain

B7 July-12 13:30
* Highly sensitive H2S gas sensors based on Pd-doped CuO nanoflowers with low operating temperature
Zhigang Zhu
Shanghai Polytechnic University, China

Lunch break 13:50 - 14:50

Session: B8, Venue: Room Louis Armand West

Composites 1

Session Chairs: Hansang Kwon; Michal Basista

B8 July-12 13:20 Keynote
*** Fabrication and characterization MMC composite materials using an innovative solid-liquid co-existent phase process**
Jean-Francois Silvain, Azina Clio, Battaglia Jean-Luc, Sommier Alain, Mortaigne Bruno, Lu Yongfeng
Institut de Chimie de la Matière Condensée de Bordeaux, France

B8 July-12 13:50
* Particle distribution and mechanical properties of nano-SiCP/Al-Cu composites
Shusen Wu, Li Jianyu, An Ping, Lü Shulin
Huazhong University of Science and Technology, China

B8 July-12 14:10
Evaluation of effective thermal conductivity of metal matrix composites by using image-based calculation
Kenjiro Sugio, Choi Yongbum, Sasaki Gen
Hiroshima University, Japan

B8 July-12 14:30
* Development of ZrW2O8-containing composites with tailored thermal expansion
Qiang Zhang, Zhou Chang, Wu Gaohui
Harbin Institute of Technology, China

B8 July-12 14:50
* Hierarchically structured nanowires through the oriented attachment of colloidal semiconductor nanocrystals
Mark Jhon, Chan Yinthai
Institute of High Performance Computing, ASTR, Singapore

B8 July-12 15:10
* Modeling of fracture of chromium-alumina microcantilever beams in bending
Michal Basista
Institute of Fundamental Technological Research of Polish Academy of Sciences, Poland

B8 July-12 15:30
* A New Class of Two Phase Ceramic-Metal Materials
Helen Chan
Lehigh University, USA

B8 July-12 15:50
* A novel composite powder with dispersed pre-embedded nano-particles for selective laser melting and powder metallurgy
Zhe Chen, Ji Gang, Zhong Shengyi, Li Xiaopeng, Zhang Fengguo, Wu Yi, Wang Haowei
Shanghai Jiao Tong University, China

Session B8: Composites 1
Coffee / Tea break 16:10 to 16:40

B8 July-12 16:40
* Fabrication and tailoring interface structure of a diamond/Al composite for heat sink applications by vacuum hot pressing and selective laser melting
Gang Ji, Tan Zhanqiu, Li Xiaopeng, Li Zhiqiang, Kruth Jean-Pierre
Unité Matériaux et Transformations, Université de Lille, France

B8 July-12 17:00
Additive laser deposition of NiCrAlY-YSZ composites on IN625-NiCrAlY substrate and evaluation of the deposit microstructure, thermo-physical properties and adhesion
A A Gokhale, U Savitha, G Jagan Reddy, Vajinder Singh, M Sundararaman
Indian Institute of Technology Bombay, India

B8 July-12 17:20
Effect of processing route on microstructure and mechanical properties of a Ti-3Al-2.5V/TiB composite
Sophie Gourdet, Ropars Ludovic, Dehmas Moukrane, Aeby-Gautier Elisabeth, Tricker David, Schuster Dominique
Ariane Group, France

B8 July-12 17:40
* Controlling of mechanical properties on the functionally graded dual-nanoparticles reinforced composites
Hansang Kwon, Jehong Park, Mark Leparoux, Jean-Francois Silvain, Kawasaki Akira
Pukyong National University, Korea

B8 July-12 18:00
* Post-extrusion of copper/carbon fibre composites with reactive interfaces
Jean-Marc Heintz, Lechartier Marine, Whitney Mark, Wells Mary, Silvain Jean-François
Institut de Chimie de la Matière Condensée de Bordeaux, France

B8 July-12 18:20
*Gamma irradiation as a tool to improve energy harvesting in PVDF/Fe-ZnO nanocomposites
Almaadeed Mariam, Hemalatha P., Ponnamma Deepalekshmi
Qatar University, Qatar

B8 July-12 18:40
On the fracture of Al/NiTi composite manufactured by friction stir processing
Lv Zhao, Simar Aude, Turteltaub Sergio
Université Catholique de Louvain, Belgium

B8 July-12 19:00
Effect of flake powder metallurgy on thermal conductivity of graphite flakes reinforced aluminum matrix composites
Nabil Chamroune, Grosseau-Poussard Jean-Luc, Silvain Jean-François
Institut de Chimie de la Matière Condensée de Bordeaux, France

Session: B9, Venue: Room Louis Armand West

Composites 2

Session Chairs: Aude Simar; Subodh Kumar

B9 July-13 8:00 Keynote
*** 40 years after the promises of "ceramic steel": zirconia based composites with a metal-like mechanical behaviour**
Jerome Chevalier, Reveron Helen, Liens Alethea, Reynaud Pascal, Zhang Fei
Matériaux, Ingénierie et Sciences, France

B9 July-13 8:30
* Recycle Processor for Commercial Aircraft Wing Trimmings
Craig Johnson, Minasyan Misha, Morrow Jason
Central Washington University, USA

B9 July-13 8:50
* Multiferroic and magnetoelectric nanocomposites for data processing
Wolfgang Kleemann
University Duisburg-Essen, Germany

B9 July-10 9:10
* Synthesis of novel aluminium based composite materials exhibiting magnetic properties fabricated by mechanical alloying and spark plasma sintering processes
Masahiro Kubota
Nihon University, Japan

B9 July-13 9:30
* Improvement in mechanical properties of epoxy composite by reinforcement of poly (ether ether ketone) grafted carbon nanotubes or graphene oxide
Subodh Kumar, Katti Prajakta, Bose Suryasarathi
Indian Institute of Science, India

B9 July-13 9:50
* Tensile fracture of TiB whisker reinforced Ti alloy matrix composites
Hiroki Kurita, Kondoh Katsuyoshi, Umeda Junko, Yodoshi Noriharu
Shizuoka University, Japan

Session B9: Composites 2
Coffee / Tea break 10:10 to 10:40

B9 July-13 10:40
Hot deformation behavior and microstructural evolution of bimodal sized particulates reinforced (TiB+La2O3)/Ti Composites
Yuanfei Han
Shanghai Jiao Tong University, China

B9 July-13 11:00
*Thermally Sprayed Sandwich Structures: Mechanical Performance
Tom Coyle, Saeid Salavati, Javad Mostaghimi
University of Toronto, Canada

B9 July-13 11:20
* Simple powder metallurgy route for processing Aluminium nanocomposites exhibiting outstanding mechanical properties
Marc Leparoux
Swiss Federal Laboratories for Materials Science and Technology, Switzerland

B9 July-13 11:40
* 3D printing of nanostructures using carbon-nanotube/resin composites
Yongfeng Lu, Xiong Wei, Jiang Lijia, Zhou Yunshen, Li Dawei, Jiang Lan, Silvain Jean-François, Lu Yongfeng
University of Nebraska-Lincoln, USA

B9 July-13 12:00
* A novel strategy for fabricating 2D materials-reinforced metal matrix composites
Yin Shuo, Zhang Zhao, Ekoy Emmanuel, Wang Jing Jing, Dowling Denis, Nicolosi Valeria, Rocco Lupoi
Trinity College Dublin, Ireland

B9 July-13 12:20
* Discontinuously reinforced TiB + TiC/Ti6Al4V Titanium matrix composite by isothermal extrusion
Weijie Lyu, Han Yuanfei, Huang Guangfa, Zhang Di
Shanghai Jiao Tong University, China

B9 July-13 12:40
* Fabrication of a matrix by activated nitridation of a TiSi2 powder for Ceramic Matrix Composites
Laurence Maille, Le Petitcorps Yann, Roger Jérôme
Université de Bordeaux, France

B9 July-13 13:00
* New copper composites with high mechanical properties and good electrical performance
Nicolas Masquelier, Turner Stuart, Janssen Jan
Nexans, France

B9 July-13 13:20
Mechanical and thermal properties of nanocarbon-reinforced aluminum matrix composites at elevated temperatures
Se Eun Shin, Donghyun Bae
Sunchon National University, Korea

B9 July-13 13:40
New process to improve reinforcement quality, structure and thermal conductivity of copper-graphite composites
Adrien Morvan, Grosseau-Poussard Jean-Luc, Caillault Nathalie, Silvain Jean-François
Institut de Chimie de la Matière Condensée de Bordeaux, France

Session C

Session: C1, Venue: Room 1

Neutron and X-ray Studies of Materials 1

Session Chairs: Eugene Bychov; Matt Tucker

C1 July-09 10:00 Keynote
***Atomic and electronic structures of disordered materials revealed by a combination of quantum-beam measurements and computer simulations**
Shinji Kohara
National Institute for Materials Science, Japan

C1 July-09 10:30
* High temperature emphanitic-like anharmonicity in PbX (X=S, Se, Te) system
Emil Bozin
Brookhaven National Laboratory, USA

C1 July-09 10:50
* Using High Energy X-Ray Diffraction to Probe Additively Manufactured Metals over a Range of Length and Time Scales
John Carpenter
Los Alamos National Laboratory, USA

C1 July-09 11:10
* XRD and DFT Studies of Perovskite Photovoltaics
Davor Balzar, Amani Alfaifi
University of Denver, USA

C1 July-09 11:30
*Local strain characterization in a nickel based superalloy subjected to shot-peening, fatigue or thermal exposure investigated using synchrotron X-ray Laue microdiffraction coupled to energy measurements
Mathieu Fevre, Gader Altinkurt, Jean-Sebastien Micha, Odile Robach
ONERA, France

C1 July-09 11:50
*Structural evolutions and internal stresses in Zr alloys during oxidation at high temperature and subsequent cooling
Raphaëlle Guillou, Matthieu Le Saux, Jean-Christophe Brachet, Didier Hamon, Dominique Thiaudière, Caroline Toffolon-Masclet, Denis Menut, Jean-Luc Béchade, Elodie Rouesne
CEA Saclay, France

C1 July-09 12:10
*Neutron and high-energy x-ray diffraction studies of chalcogenide glasses and liquids: from simple model systems to advanced functional materials
Eugene Bychkov
University of Littoral, 59140 Dunkerque, France

Lunch break 12:30 - 13:30

Session: C2, Venue: Room 1

Neutron and X-ray Studies of Materials 2

Session Chairs: Shinji Kohara; Brendan Kennedy

C2 July-09 13:30 Keynote
*** In-Situ Diffraction Studies of Uranium Oxides**
Brendan Kennedy, Gabriel Murphy, Zhaoming Zhang
Sydney University, Australia

C2 July-09 14:00
*Evaluation of railway rails suffered from rolling contact fatigue using X-ray cosα method
Toshihiko Sasaki
Kanazawa University, Japan

C2 July-09 14:20
* Network structure for anomalous thermal expansion coefficients in binary zinc phosphate glass
Yohei Onodera, Shinji Kohara, Hirokazu Masai, Akitoshi Koreeda, Takahiro Ohkubo
Kyoto University, Japan

C2 July-09 14:40
*In situ investigation of grain refining mechanism during laser beam welding of a gamma-TiAl alloy
Nikolai Kashaev, Jie Liu, Peter Staron, Stefan Riekehr, Andreas Stark, Norbert Schell, Martin Müller, Andreas Schreyer, Norbert Huber
Helmholtz-Zentrum Geesthacht, Germany

C2 July-09 15:00
Study of Consistency between Two Dimensional, sin2{psi}, cos{alpha} and Fourier Transformation Methods for X-ray Residual Stress Measurement by Debye Ring Simulation
Muneyuki Imafuku, Yuki Ishikawa
Tokyo City University, Japan

C2 July-09 15:20
*Modern diffraction methods for the investigation of thermo-mechanical processes: In-situ studies with neutron and synchrotron quantum beams
Klaus-Dieter Liss
Guangdong Technion - Israel Institute of Technology, China

C2 July-09 15:40
*Evaluation of work hardening behavior in austenitic steel by direct fitting / modified Williamson-Hall method
Takuro Masumura, Fulin Jiang, Toshihiro Tsuchiyama, Setsuo Takaki
Kyushu University, Japan

Session C2: Neutron and X-ray Studies of Materials 2
Coffee / Tea break 16:00 to 16:30

C2 July-09 16:30
*Structural analyses of functional oxide glasses prepared by a levitation technique
Atsunobu Masuno
Hirosaki University, Japan

C2 July-09 16:50
*In-Situ Studies of the Dynamic Evolution of Intermetallic Phases during Solidification under External Fields
Jiawei Mi
University of Hull, UK

C2 July-09 17:10
*Microstructure characterisation of advanced materials via 2D and 3D X-ray refraction techniques
Bernd Randolf Müller, Andreas Kupsch, René Laquai, Jens Nellesen, Wolfgang Tillmann, Galina Kasperovich, Giovanni Bruno, Guillermo Requena
BAM - Bundesanstalt für Materialforschung und prüfung, Germany

C2 July-09 17:30
*Characterization of Microstructure in Steel using Simultaneous Measurement of Neutron Diffraction, Small-angle Neutron Scattering, and Neutron Transmission
Yojiro Oba, Satoshi Morooka, Kazuki Ohishi, Jun-Ichi Suzuki, Toshihiro Tsuchiyama, Elliot Gilbert
Japan Atomic Energy Agency, Japan

C2 July-09 17:50
* Site-selective Disorders in Crystalline Functional Materials
Shinichi Shamoto
Japan Atomic Energy Agency, Japan

C2 July-09 18:10
*Ti designed by spark plasma sintering: study of in situ cyclic tests under synchrotron X-Ray diffraction
Tarik Sadat, Pierre Godard, Pierre-Olivier Renault, Damien Faurie, David Tingaud, Guy Dirras, Guillaume Geandier, Fréderic Mompiou, Mie Ota, Kei Ameyama
Université de Poitiers, France

C2 July-09 18:30
Dislocation densities in dispersion-strengthened copper with aluminium oxide from X-ray line profile analysis
Mutsumi Sano, Sunao Takahashi, Atsuo Watanabe, Ayumi Shiro, Takahisa Shobu, Kengo Nakada
Japan Synchrotron Radiation Research Institute, Japan

Session: C3, Venue: Room 1

Neutron and X-ray Studies of Materials 3

Session Chairs: Toshihiko Sasaki

C3 July-10 8:00 Keynote
***Local Structures of Crystalline Ionic Conductors Used for Electrochemical Devices**
Naoto Kitamura
Tokyo University of Science, Japan

C3 July-10 8:30
* Analysis of retained austenite transformation behavior in TRIP steel by in-situ neutron diffraction and microstructure observation
Hitoshi Sueyoshi, Katsumi Yamada, Yo Tomota, Yu Arakaki, Stefanus Harjo, Syo Matsumura
JFE Steel Corporation, Japan

C3 July-10 8:50
* Structural study of amorphous InGaZnO4 by high-energy X-ray total scattering and EXAFS measurements
Shuta Tahara, S. Kohara, O. Sakata, L. Kumara, A. Yang, C. Song, K. Ohara, H. Tajiri, T. Ina, J. Akola, S. Hosokawa, K. Ishikawa, H. Hiramatsu, H. Hosono, T. Kamiya
University of the Ryukyus, Japan

C3 July-10 9:10
Order and disorder structure analysis by a high intensity neutron total scattering instrument, NOVA, at J-PARC
Toshiya Otomo
High Energy Accelerator Research Organization (KEK), Japan

C3 July-10 9:30
* Self-healing of creep damage in Fe-based alloys studied by synchrotron radiation
Niels Van Dijk
Delft University of Technology, Netherlands

C3 July-10 9:50
* X-ray phase-contrast imaging with gratings-future potentials for material sciences
Yashiro Wataru
Tohoku University, Japan

Session C3: Neutron and X-ray Studies of Materials 3
Coffee / Tea break 10:10 to 10:40

C3 July-10 10:40
* Tensile deformation and texture evolution in brittle/ductile multilayered steel sheet studied by neutron diffraction
Pingguang Xu, Mayumi Ojima, Hiroshi Suzuki, Shoichi Nambu, Junya Inoue, Yusuke Onuki, Stefanus Harjo, Koichi Akita
Japan Atomic Energy Agency, Japan

C3 July-10 11:00
* Local structure analysis on piezoelectric PbZr1-xTixO3
Hiroko Yokota
Chiba University, Japan

C3 July-10 11:20
* Isolation of Specific Microstructural Effects on the Observed Enhanced Strength of Additively Manufactured 304L Stainless Steel
Don Brown
Los Alamos National Laboratory, USA

C3 July-10 11:40
* Analysis of Bridgman Growth of Scintillator Crystals via Neutron Imaging and Finite-Element Modelling
Jeffrey Derby, Chang Zhang, Jeffrey Peterson, Jan Seebeck, Anton Tremsin, Didier Perrodin, Gregory Bizarri, Edith Bourret, Sven Vogel, Mark Bourke
University of Minnesota, USA

C3 July-10 12:00
* Revealing conduction pathways in solid lithium electrolytes by total scattering X-ray and neutron diffraction measurements using molecular dynamics simulation and RMCPOW methods
Laszlo Temleitner, Shinji Kohara
Wigner Research Centre for Physics, Hungarian Academy of Sciences, Hungary

C3 July-10 12:20
* Structural Characterization of Halide Materials
Edith Bourret, Roberto Dos Reis, Sven Vogel, Drew Onken, Didier Perrodin, Ulrich Dahmen, Anton Tremsin
Lawrence Berkeley National Laboratory, USA

C3 July-10 12:40
* RMC Profile: Moving closer to complex modelling
Matt Tucker
Oak Ridge National Laboratory, USA

Lunch break 13:00 - 14:00

Session: C4, Venue: Room 1

Aluminium Alloys 1

Session Chairs: Paola Bassani; Charle-Andre Gandin

C4 July-10 13:20 Keynote
***Behavior of hydrogen in tensile-deformed aluminum alloys**
Toshiaki Manaka, Goroh Itoh
Ibaraki University, Japan

C4 July-10 13:50
* Microstructural Stability, Mechanical Properties and Corrosion Behavior in Powder-Processed Icosahedral-Phase-Strengthened Aluminum Alloys
Mark Aindow, Benjamin Bedard, Iuliana Cernatescu, Alexis Ernst, Mauricio Gordillo, Hannah Leonard, Aaron Nardi, Sarshad Rommel, Venkat Vedula, Thomas Watson
University of Connecticut, USA

C4 July-10 14:10
*Wide scale approach in Aluminium alloys microstructure analyses: from component to atom scale in order to understand behaviour of new alloys
Paola Bassani, Albu Mihaela, Gariboldi Elisabetta
National Research Council of Italy, Italy

C4 July-10 14:30
*Effect of crystal orientation on lamellar-eutectic solidification microstructures : a first study on Al-Al2Cu thin samples
Sabine Bottin-Rousseau, Akamatsu Silvère, Faivre Gabriel
Institut des nanosciences de Paris, France

C4 July-10 14:50
The corrosion behaviour of sputtered nanocrystalline stainless steel coating
Ying Li
Northeastern University, China

C4 July-10 15:10
*Advanced ex- and in-situ high resolution S/TEM characterization of alloys
Mihaela Albu, Kothleitner Gerald, Hofer Ferdinand
Graz Centre for Electron Microscopy, Austria

C4 July-10 15:30
Thermal Expansion of (ZrW2O8+SiCp)/Al Composite
Zhou Chang
Harbin Institute of Technology, China

C4 July-10 15:50
Application of metal chill for low pressure casting of Al-Si alloy
Si Young Chang, Suh Jun-Young, Kim Yong Hyun, Lee Heekwon
Korea Aerospace University, Korea

Session C4: Aluminium Alloys 1
Coffee / Tea break 16:10 to 16:40

C4 July-10 16:40
*Mechanical Surface treatment for Corrosion Resistance and Fatigue Life Enhancement of Advanced Materials
Tahany El-Wardany, Hawkes Justin, Clavette Patrick, Sharon John, Rampone Joseph
United Technologies Research Centre, USA

C4 July-10 17:00
* Atomic-resolution electron microscopy for aluminum alloys as high-performance industry materials
Jianghua Chen, Wu Cuilan
Hunan University, China

C4 July-10 17:20
Forging Process Design and Simulation Optimization of a Complex-shaped Aluminium Alloy Component
Song-Wei Wang, Yan Chen, Song Hong-Wu, Zhang Shi-Hong, Zhou Bin
Institute of Metal Research, Chinese Academy of Sciences, China

C4 July-10 17:40
*Changing an Al-Si based casting alloy into a wrought Al alloy: achieving high deformability and high strength in an A356 Al casting alloy
Yuzeng Chen
Northwestern Polytechnical University, China

C4 July-10 18:00
*Cryogenic Sheet Metal Forming? An Overview
Christian Chimani, Grabner Florian, österreicher Johannes, Schlögl Carina
AIT Austrian Institute of Technology, Austria

C4 July-10 18:20
*Quantitative strain analysis on metals and alloys from atomic-resolution electron microscopy images
Kui Du, Song Miao, Lu Ning, Wang Chunyang
Institute of Metal Research, Chinese Academy of Sciences, China

C4 July-10 18:40
*Development of Al-Fe-(Cu) series alloys for aluminum cables and the related annealing behaviors
Chen Hua, Yang Rongkai, Wu Xiaodong, Yuan Yuan, Zhang Bing, Lingfei Cao
Chongqing University, China

Session: C5, Venue: Room 1

Aluminium Alloys 2

Session Chairs: Knut Marthinsen; Kenji Matsuda

C5 July-11 8:00 Keynote
*** Precipitation in a concentrated binary alloy: the Al-Al3Li test case**
Christophe Sigli
Constellium Technology Center, France

C5 July-11 8:30
* Characterization and simulation of direct-chill cast ingots of 7xxx aluminium alloys during homogenization
Ahmad Falahati, Rafiezadeh Siamak, Böttcher Holm, Povoden-Karadeniz Erwin, Ernst Kozeschnik
Institute of Materials Science and -Technology TU-Wien, Austria

C5 July-11 8:50
High throughput quantitative characterization of dislocations in Al-Cu-Mg alloy
Zongqiang Feng, Lin Chengwei, Wu Guilin, Huang Xiaoxu
Chongqing University, China

C5 July-11 9:10
*Finding Process Parameters in the Initial Operation Stage of a Large Continuous Solution Annealing Furnace via Scale-Up Calculations from a Previous Line
Werner Fragner, Eder-Augustin Josef, Jedlicka Christian
Austria Metall GmbH, Austria

C5 July-11 9:30
*Modelling of grain boundary segregation and precipitation
Jesper Friis, Gouttebroze Sylvain, Zhao Dongdong, Li Yanjun
SINTEF Materials and Chemistry, Norway

C5 July-11 9:50
Experimental investigation of temperature distribution during wire-based laser metal deposition of the Al-Mg alloy 5087
Martin Froend, Bock Frederic, Riekehr Stefan, Kashaev Nikolai, Klusemann Benjamin, Enz Josephin
Helmholtz-Zentrum Geesthacht, Germany

Session C5: Aluminium Alloys 2
Coffee / Tea break 10:10 to 10:40

C5 July-11 10:40
* Optimization and Adaptive Control of Processing of Aluminium Products
Trond Furu
Hydro Aluminium, Norway

C5 July-11 11:00
*Determination of the mechanical properties of nanoprecipitates and fine second phase particles in Al-Mg-Si alloys
Kai Li, Yang Mingjun, Lan Xinyue, Du Yong, Song Min, Orekhov Andrey, Schryvers Dominique, Su Yanqing
Central South University, China

C5 July-11 11:20
* The contribution of temperature and microstructural features to cube texture development in AA3104 can body stock during hot finishing
Sarah George, Mias Candice
Centre for Materials Engineering, South Africa

C5 July-11 11:40
*Microstructural evolution in Friction Stir Welding processes ? Application to the prediction of the mechanical properties of AA2024 Aluminium Alloys
Gildas Guillemot, Legrand Valentine, Gandin Charles-André
CEMEF UMR CNRS, France

C5 July-11 12:00
*Strain-rate dependent deformation mechanism of graphene-Al nanolaminated composites Qiang Guo, Zhao Lei, Li Zan, Li Zhiqiang, Fan Genlian, Xiong Ding-Bang, Su Yishi, Di Zhang
Shanghai Jiao Tong University, China

Lunch break 12:20 - 13:20

Session: C6, Venue: Room 1

Aluminium Alloys 3

Session Chairs: Goroh Itoh; Zhihong Jia

C6 July-11 13:20 Keynote
***Cellular automaton? Parabolic thick needle modelling of dendritic grain structures**
Fleurisson Romain, Guillemot Gildas, Charles-Andre Gandin
MINES ParisTech, France

C6 July-11 13:50
* Microstructure evolution during hot deformation of Al-1%Mg
Ke Huang, Logé Roland
Xi'an Jiaotong University, China

C6 July-11 14:10
Properties of Short Carbon Fiber Reinforced Aluminum Composites fabricated by pressure infiltration method
Guoqing Chen
Harbin Institute of Technology, China

C6 July-11 14:30
*Extended range USAXS facility for advanced alloy development
Jan Ilavsky, Zhang Fan, Levine Lyle, Allen Andrew, Kuzmenko Ivan
Advanced Photon Source, ANL, USA

C6 July-11 14:50
*Superplastic-Like Elongation by Transition of Deformation Mechanism from Grain Boundary Sliding to Solute Drag Creep in Fine-Grained Al-Mg Solid Solution Alloy
Tsutomu Ito, Takashi Mizuguchi
National Institute of Technology, Kagawa College, Japan

C6 July-11 15:10
*Integration of hot forming and precipitation hardening ? a breakthrough in fabrication of high strength aluminium components
Ola Jensrud
SINTEF Raufoss manufacturing, Norway

C6 July-11 15:30
*Strain softening of aluminum in shear at elevated temperatures
Michael Kassner, Roya Ermagan
University of Southern California, USA

C6 July-11 15:50
*Synergistic effect of ultrasonic melt treatment and fast cooling on the refinement of primary Si in a hypereutectic AlSi alloy
Jae-Gil Jung, Ahn Tae-Young, Cho Young-Hee, Kim Su-Hyeon, Lee Jung-Moo
Korea Institute of Materials Science, Korea

Session C6: Aluminium Alloys 3
Coffee / Tea break 16:10 to 16:40

C6 July-11 16:40
Development and characterization of new 7xxx aluminum alloys for automotive applications
Dongeung Kim, Shin Jesik, Kim Taehyeong, Kim Kitae
Korea Institute of Industrial Technology, Korea

C6 July-11 17:00
*Dimensional stability of aluminum based materials
Jan Kinast, Risse Stefan, Tünnermann Andreas
Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Germany

C6 July-11 17:20
Structural stability of novel multicomponent AlZn-based cast alloy
Witold K. Krajewski, A. Lindsay Greer, Marek Faryna, Pawel K. Krajewski
AGH University of Science and Technology, Poland

C6 July-11 17:40
Investigation of quench sensitivity in 6xxx aluminum alloys
Mehdi Lalpoor, Vossen T., Xhonneux M., Schlegel A.
Aleris Aluminum Duffel BVBA, Belgium

Session: C7, Venue: Room 1

Aluminium Alloys 4

Session Chairs: Trond Furu; Ke Huang

C7 July-12 8:00 Keynote
* **Clusters in age-hardenable Al alloys with Mg and Cu, and/or Si, Ge, Zn**
Kenji Matsuda, Seungwon Lee, Calin D. Marioara, Sigurd Wenner, Katsuhiko Nishimura, Teiichiro Matsuzaki, Norio Nunomura, Tatsuo Sato, Randi Holmestad, Susumu Ikeno
Graduate School of Science and Engineering for Research, Japan

C7 July-12 8:30
*FE Modelling of Asymmetric Rolling of textured aluminium sheet material for automotive bodywork
Paul Van Houtte, Diarmuid Shore, Albert Bael
KU Leuven, Belgium

C7 July-12 8:50
* Fabrication of a nano-TiB2 reinforced AlSi10Mg metal matrix composite by selective laser melting
Xiaopeng Li, Ji Gang, Chen Zhe, Addad Ahmed, Wu Yi, Wang Haowei, Vleugels Jef, Van Humbeeck Jan, Kruth Jean-Pierre
The University of New South Wales, Australia

C7 July-12 9:10
*Characterization of precipitation evolution in a Zn-added Al-Mg-Si-Cu alloy during artificial aging at 170 ℃
Zhu Shang, Zhi-Hui Li, Yan Li-Zhen, Li Xi-Wu, Huang Shu-Hui, Yan Hong-Wei, Zhang Yong-An, Xiong Bai-Qing
General Research Institute for Nonferrous Metals, China

C7 July-12 9:30
The design and influence of hot rolling on tensile properties of novel neutron shielding (Gd+B4C)/Al composites
Jiang Longtao
Harbin Institute of Technology, China

C7 July-12 9:50
*Precipitation kinetics of solute clusters in an Al-Zn-Mg alloy during natural aging
Jizi Liu, Rong Hu, Gang Sha, Yang Jia, Yuntian Zhu
Nanjin University of Science and Technology, China

Session C7: Aluminium Alloys 4
Coffee / Tea break 10:10 to 10:40

C7 July-12 10:40
Experimental Study on Cylindrical Extrusions on Aluminium Alloy Plates Fabricated by Friction Stir Forming
Takahiro Ohashi
Kokushikan University, Japan

C7 July-12 11:00
Characterization and modelling of the precipitation sequence of Al-Mg-Si alloys with silicon excess for the prediction of the mechanical properties during ageing
Veronique Massardier-Jourdan, Meyruey Gwenaelle, Perez Michel
Laboratoire MATEIS, France

C7 July-12 11:20
*Microstructure evolution of the growing composite precipitates in Al-4.16Cu-1.15Li-0.29Mg alloys
Cuilan Wu, Duan Shiyun, Gao Zhen, Chen Jianghua
Hunan University, China

C7 July-12 11:40
Foaming and compressive properties of A359/SiCP metal matrix composites
Ravi Nadella, Ginuga Jagan, Pati Sampath, Gokhale Amol
Defence Metallurgical Research Laboratory, India

C7 July-12 12:00
* In situ heating EBSD investigations: Recrystallization behaviour and microstructure evolution of an Al-Si-Mg-alloy
Stefan Mitsche, Grasserbauer Jakob, Poelt Peter
Graz University of Technology, Austria

Lunch break 12:20 - 13:20

Session: C8, Venue: 1

Aluminium Alloys 5

Session Chairs: Simon Ringer; Xiong Bai-Qing

C8 July-12 13:20 Keynote
*** Through thickness variations of deformation texture evolution in AlMgSi-extrusions: experiments, FEM and crystal plasticity modelling**
Knut Marthinsen
NTNU, Norway

C8 July-12 13:50
* In-situ Manufacturing Techniques for Aluminum Matrix Nano-composites
Brajendra Mishra, Anza Inigo, Lee Eunkyung
Metal Processing Institute, USA

C8 July-12 14:10
* Effects of homogenization-free on the microstructures of an Al-Mg-Si-Cu hot-rolled plate for automotive panels
Ni Tian, Zhang Hao, Zhou Yiran, Zhao Gang
Northeastern University, China

C8 July-12 14:30
*Investigations on self- hardening aluminum alloys for automotive application: from as cast state to modified surface layer
Ildiko Peter
Politecnico di Torino, Italy

C8 July-12 14:50
*Traveling waves induced by sweeping flows on solidification interfaces
Alain Pocheau, Jiang Tania, Georgelin Marc
Aix-Marseille University, France

C8 July-12 15:10
*Strategies for improved formability during processing and high strength in service for automotive Al-Mg-Si alloys
Stefan Pogatscher
Montanuniversitaet Leoben, Austria

C8 July-12 15:30
* Plasticity and grain structure—new insights into the roles of twinning, stacking faults and phase transformations in Mg, Al and Fe-based Alloys
Simon Ringer
The University of Sydney, Australia

C8 July-12 15:50
Structural transformations and properties in thermally and thermo-mechanically processed quasi-crystal reinforced Al-Mn-Fe-TM alloys
Jorg Wiezorek, Katarzyna Stan-Gowiska, Lidia Lityska-Dobrzynska
University of Pittsburgh, USA

Session C8: Aluminium Alloys 5
Coffee / Tea break 16:10 to 16:40

C8 July-12 16:40
*Forensic Analyses of Stress-Strain Diagrams to Evaluate Contributions from Microstructure Shigeo Saimoto, Langille Michael, Niewczas Marek
Queen's University, Canada

C8 July-12 17:00
* Microstructure and mechanical properties at room and high temperature in Al-5wt%La2O3 and Al-5wt%Y2O3 fabricated by mechanical alloying
Tatsuaki Sakamoto, Kukeya Shota
Ehime University, Japan

C8 July-12 17:20
*4D nano-tomography and its application in the metallurgy of aluminium alloys
Luc Salvo, Villanova Julie, Daudin Rémi, Lhuissier Pierre, Jauffres David, Martin Christophe, Kumar Richi, Lou Siyu
Univ. Grenoble Alpes, France

C8 July-12 17:40
*Residual Stress Analysis of A362 Aluminum Alloy Gear Case using Neutron Diffraction Dimitry Sediako, Alexandra Mcdougall, Stroh Joshua
University of British Columbia, Canada

Session: C9, Venue: Room 1

Aluminium Alloys 6

Session Chairs: Kui Du; Cuilan Wu

C9 July-13 8:00 Keynote
***Atomic-scale study of Al3Zr precipitate with anti-phase boundaries in Al-Cu-Zr alloy** Zhihong Jia, Zhao Mingqi, Ding Lipeng, Liu Qing
Chongqing University, China

C9 July-13 8:30
* Microstructural comparison of an Al-8.0Zn-1.8Mg-2.0Cu alloy with typical T6 and T76 tempers
Baiqing Xiong, Wen Kai, Zhang Yong-An, Li Zhi-Hui, Li Xi-Wu, Huang Shu-Hui, Yan Li-Zhen, Yan Hong-Wei, Liu Hong-Wei
General Research Institute for Nonferrous Metals, China

C9 July-13 8:50
* First-Principles Study of Chlorine Adsorption on Clean aluminium surface
Jun Yamashita, Nunomura Norio
Yazaki Research and Technology Centre, Japan

C9 July-13 9:10
* Series seed crystal master alloys and high strength and heat resistant aluminum alloys
Yuying Wu, Xiangfa Liu, Guiliang Liu, Qianqian Sun
Shandong University, China

C9 July-13 9:30
High-temperature interfacial evolution of Ti3Al/Al reaction couples
Xiu Ziyang
Harbin Institute of Technology, China

C9 July-13 9:50
* Effect of alloy composition and pre-ageing on the stretch formability of 6xxx automotive sheet alloys
Hao Zhong, Cao Lingfei, Rometsch Paul, Estrin Yuri
Suzhou Nonferrous Metals Technology Co. Ltd., China

Session C9: Aluminium Alloys 6
Coffee / Tea break 10:10 to 10:40

Session D

Session: D1, Venue: Room 2

Advanced Protective Coatings & Surface Engineering 1

Session Chairs: Veronique Vitry; Giuseppina Raffaini

D1 July-09 10:00 Keynote
*** Plasma Processing of Materials: challenges and opportunities**
Michael Tatoulian, C. Guyon
Chimie ParisTech, France

D1 July-09 10:30
*Flexible diamond-like carbon thin film coated rubbers
Yutao Pei
University of Groningen, Netherlands

D1 July-09 10:50
*Tribo-chemical Damage Processes in 2-D Materials, Graphene and MoS2, in Comparison to DLC Coatings
Ahmet Alpas, Guanhong Sun, Zaixiu Yang, Sukanta Bhowmick
University of Windsor, Canada

D1 July-09 11:10
*The effect of Cu content on the microstructures and corrosion resistance of PEO (plasma electrolytic oxidation) coatings on AlxCu alloys
Wei Zhang, Liye Zhu, Tao Zhang, Fuhui Wang
Institute of Metal Research, Chinese Academy of Sciences, China

D1 July-09 11:30
*Morphology, crystalline and cell compatibility of nanotubes on the surface of Ti-30Zr alloy via anodization
Yan Li, Mingyang Yuan, Yujie Zhao, Jieying Yang, Henan Wang, Lidong Sun
Beihang University, China

D1 July-09 11:50
*New sustainable hybrid porous materials for air particulate matter trapping
Elza Bontempi
University of Brescia, Italy

D1 July-09 12:10
Emerging Plasma Processes for Transport and Energy Applications
Armelle Vardelle
Institut de Recherche sur les Céramiques, Limoges, France

D1 July-09 12:30
*Comparative study of high temperature corrosion of NiCrAlY and nanocrystalline coatings
Minghui Chen, Shenglong Zhu, Fuhui Wang
Northeastern University, China

D1 July-09 12:50
*Electrochemical Metallisation of Fabric Fibres: An Enabling Technology for Wearable Electronics
Andrew Cobley, Kathryn Wills, Roya Ashayer-Soltani, John Graves, Chris Hunt
Coventry University, UK
D1 July-09 13:10

* Use of low temperature plasma methods for synthesis of epitaxial films and nanostructures : Application to management of III-V High Power High Frequency Devices.
Mohammed Abdou Djouadi
Nantes University, France

Lunch break 13:30 - 14:30

Session: D2, Venue: Room 2

Advanced Protective Coatings & Surface Engineering 2

Session Chairs: Stefano Rossi; Kazuyuki Hokamoto

D2 July-09 14:10
* Selective Laser Melted Tungsten and Tungsten Alloys? Processing, Microstructure and Plasma Irradiation Effects
Li Kailun, Wang Dianzheng, Wei Liu, Shen Zhijian
Tsinghua University, China

D2 July-09 14:30
* Laser shock processing: an advanced technique for the modification of surface and mechanical resistance properties of biocompatible/bioreabsorbable metallic alloys
José L. Ocaña, José L. González-Carrasco, Marcela Lieblich, Juan A. Porro, Marcos Díaz, Francisco Cordovilla, Ignacio Angulo
Polytechnic University of Madrid, Spain

D2 July-09 15:00
***** Ultrasound assisted electroless nickel-boron plating from alkaline borohydride bath
Véronique Vitry, Luiza Bonin, Narinder Bains, Andrew Cobley
Université de Mons, Belgium

D2 July-09 15:20
*Graphene Coating: Novel Nano Approach for Remarkable Corrosion Resistance
Raman Singh
Monash University, Australia

D2 July-09 15:40
*Stress gradient determination in a corrosive protection multilayer coating
Pierre-Antoine Dubos, Quentin Hatte, Pascal Casari, Mireille Richard, Pierre-Yves Jouan, Samuel Branchu, Nadia Guitter
Université de Nantes, France

Session D2: Advanced Protective Coatings & Surface Engineering 2
Coffee / Tea break 16:00 to 16:30

D2 July-09 16:30
*NanoDiamond: from basic properties to applications and engineered microparts
Hans Fecht
Ulm University, Germany

D2 July-09 16:50
*Laser Shock Peening for Life Extension of Structural Aerospace Components
Michael Fitzpatrick, Niall Smyth, Kristina Langer
Coventry University, UK

D2 July-09 17:10
* Mass Transfer in Yb-silicate Environmental Barrier Coatings at High Temperatures
Satoshi Kitaoka, Tsuneaki Matsudaira, Masashi Wada, Naoki Kawashima, Daisaku Yokoe, Masasuke Takata
Japan Fine Ceramics Centre, Japan

D2 July-09 17:30
* Atmospheric Plasma process for surface functionalization
Cedric Guyon, Manon Saget, Michael Tatoulian
IRCP- Chimie Paristech, France

D2 July-09 17:50
*Explosive welding of thin plate using water and other pressure transmitting medium
Kazuyuki Hokamoto
Kumamoto University, Japan

D2 July-09 18:10
*Effects Ti/TiAlN composite multilayer coatings on high temperature corrosion resistance of titanium alloy
Xin Li, Mingming Zhang, Shenglong Zhu, Fuhui Wang
Institute of Metal Research, Chinese Academy of Sciences, China

D2 July-09 18:30
Microstructure characterization of multilayered metal matrix composite tool cladding
Josef Domitner, Mustafa Kicin, Christoph Egger, Christof Sommitsch
Graz University of Technology, Austria

D2 July-09 18:50
*First-principles Surface Electrochemistry of Metals and Alloys
Shaoqing Wang
Institute of Metal Research, Chinese Academy of Sciences, China

D2 July-09 19:10
*Constructing monolayer organic-inorganic hybrid perovskite films towards photovoltaics
Jianjun Tian
University of Science and Technology Beijing, China

Session: D3, Venue: Room 2

Advanced Protective Coatings & Surface Engineering 3

Session Chairs: Armelle Vardelle; Caroline Sunyong Lee

D3 July-10 8:00 Keynote
* **Oxidation and interdiffusion based coating degradation under isothermal and thermocyclic conditions in different atmospheres**
Dmytro Naumenko, Rishi Pillai, Timor Galiullin, Willem Joe Quadakkers, Lorenz Singheiser
Forschungszentrum Jülich GmbH, Germany

D3 July-10 8:20
*Chemical vapor deposition of advanced carbide coatings by direct liquid injection of metalorganic precursors for protection in harsh environments.
Francis Maury, Alexandre Michau, Frédéric Schuster, Yoan Gazal, Thomas Duguet
CIRIMAT-INPT, France

D3 July-10 8:40
*High temperature protective coatings with restricted interdiffusion between coatings and superalloy substrates
Shenglong Zhu, Hongrui Yao, Lanlan Yang, Mingli Shen, Minghui Chen, Zebin Bao, Wen Wang, Fuhui Wang
Institute of Metal Research, Chinese Academy of Sciences, China

D3 July-10 9:00
*Control quality on process of laser heat treatment
M. Angeles Montealegre, Laorden Carlos, Arejita Beñat, Alvarez Piera, Sancho Paula
Talens Systems, Etxe-Tar Group, Spain

D3 July-10 9:20
*Overview of dry deposited multi-compositional printed device
Caroline Sunyong Lee
Hanyang University, Korea

D3 July-10 9:40
*Ultra-high vacuum dc magnetron sputter-deposition and microstructural characterization of Zr and ZrCx thin films
Hicham Zaid, Koichi Tanaka, Joshua Fankhauser, Angel Aleman, Masaki Sato, Dian Yu, Abbas Ebnonnasir, Chao Li, Makoto Kobashi, Mark Goorsky, Suneel Kodambaka
University of California at Los Angeles, USA

Session D3: Advanced Protective Coatings & Surface Engineering 3
Coffee / Tea break 10:00 to 10:30

D3 July-10 10:30
* Effect of Plasma Processing on Carbon Nanotubes to Enhance Wear-resistance of Polyurethane Composite Film
Daisuke Ogawa, Kazuki Michiya, Hideo Uchida, Keiji Nakamura
Chubu University, Japan

D3 July-10 10:50
*Self-Organized Porous Anodic Films Formed on Magnesium
Sachiko Ono, Reiji Hyodo, Hideki Hashimoto, Hidetaka Asoh
Kogakuin University, Japan

D3 July-10 11:10
Efficient oxidation protection of Ti6242S alloy by MOCVD processed alumina coatings
Loic Baggetto, Diane Samelor, Raphaël Laloo, Thomas Duguet, Viviane Turq, Daniel Monceau, Constantin Vahlas
CIRIMAT, France

D3 July-10 11:30
*Understanding Cold Spray for Enhanced Manufacturing Sustainability
Christian Widender
South Dakota School of Mines & Technology, USA

D3 July-10 11:50
*A New Approach to Develop MCrAlY Overlay Coatings by Electrodeposition
Xiao Peng
Nanchang Hangkong University, China

D3 July-10 12:10
Numerical study on relationship between nanolayers thickness and identified material properties
Konrad Perzynski, Grzegorz Cios, Grzegorz Szwachta, Mohan Setty, Lukasz Madej, Piotr Bala
AGH University of Science and Technology, Poland

D3 July-10 12:30
Principles of Epanizing, a potential substitute to hot-dip galvanizing
Etienne Petit
University of Lorraine, France

D3 July-10 12:50
*Effect of pre-oxidation of C/C composites and SiC nanowires on the properties of silica-based ceramic coatings
Qian-Gang Fu
Northwestern Polytechnical University, China

D3 July-10 13:10
Superelastic behaviour of magnetron sputtered Ti-based films characterized by nanoindentation
Hamza Jabir, Amélie Fillon, Thierry Gloriant
Institut National des Sciences Appliquées de Rennes, France

Lunch break 13:30 - 14:30

Session: D4, Venue: Room 2

Advanced Protective Coatings & Surface Engineering 4

Session Chairs: Lidong Sun; Joon Sik Park

D4 July-10 14:30 Keynote
***Microstructures and high-temperature properties of thermal barrier coatings produced by PS-PVD**
Hongbo Guo, Liangliang Wei, Baopeng Zhang, Shengkai Gong, Huibin Xu
Beihang University, China

D4 July-10 14:50
*Molecular modelling of organic inhibitors in concrete
Giuseppina Raffaini
Politecnico di Milano, Italy

D4 July-10 15:10
*Relaxation mechanisms in gold thin film on a polymeric substrate as revealed by synchrotron X-ray diffraction
Pierre-Olivier Renault, Pierre Godard, Damien Faurie, Dominique Thiaudière
University of Poitiers – CNRS, France

D4 July-10 15:30
*Study of thermal behaviour of different coloured and finished powder paints used as roof coating
Stefano Rossi, Michele Fedel, Pietro Zandonai
University of Trento, Italy

D4 July-10 15:50
*Study and development of multilayer coatings to improve hard metal cutting tools performances
Mario Rosso, Federico Gobber
Politecnico di Torino, Italy

Session D4: Advanced Protective Coatings & Surface Engineering 4
Coffee / Tea break 16:10 to 16:40

D4 July-10 16:40
*Plasma enhanced hydro / pyro metallurgy to improve the recycling of strategic elements
Frédéric Rousseau, Jonathan Cramer, Daniel Morvan
Chimie ParisTech, France

D4 July-10 17:00
*Sub-Surface Microstructure of Aluminum Alloys after Laser-Interference Structuring
Adrian Sabau
Oak Ridge National Laboratory, USA

D4 July-10 17:20
* TiO2 Nanotube Coatings of Superwettability from Large-scale Tubes to Micro Channels for Energy Applications
Lidong Sun
Chongqing University, China

D4 July-10 17:40
*Supercritical High Pressure Cryogenic Nitrogen Jet for Clean Coating Removal: Experimental Study and Numerical Simulations of Polyamide Ablation
Thierry Grosdidier, Yassine Hajji, Denis Entemeyer, Jerome Serri, Mustapha Yahiaoui, Abdel Tazibt
Laboratoire d'Étude des Microstructures et de Mécanique des Matériaux, France

D4 July-10 18:00
* Pack-Aluminized Coatings on Ti-6Al-4V Alloys and oxidation behaviors under flame conditions
Kwang Soo Choi, Minkyu Kim, Jongwan Lee, Joon Sik Park
Hanbat National University, Korea

D4 July-10 18:20
Relation between the morphology and the corrosion protection of aluminium coating obtained from electrodeposition in ionics liquids.
Benoit Ter-Ovanessian, Monserrat Gutierrez, Bernard Normand
INSAVALOR, France

D4 July-10 18:40
Multiscale elemental analysis of buried materials and interfaces
Patrick Chapon
Horiba, France

D4 July-10 19:00
Synthesis and Characterization of Rare Earth Pyrochlores by Reactive Spray Deposition Technology for Thermal Barrier Coating Applications
Yang Wang, Radenka Maric, Timothy Myles
University of Connecticut, USA

D4 July-10 19:20
*Development of Hydroxide Based Composite Coating on Ti-6Al-4V by Plasma Spraying and Post Spray Heat Treatment
Jyotsna Dutta Majumdar
Indian Institute of Technology Kharagpur, India

D4 July-10 19:40
*Impact Energy for Comparison of Kinetic and Thermal Spraying
Frank Gaertner, Hamid Assadi, Sebastian Krebs, Makoto Watanabe, Seiji Kuroda, Werner Kroemmer, Hiroshi Katanoda, Thomas Klassen
Helmut Schmidt University, Germany

Session: D5, Venue: Room 2

Ti Alloys & Aerospace Structural Metallic Materials 1

Session Chairs: Sengo Kobayashi; Christophe Desrayaud

D5 July-11 8:00 Keynote
*** Microstructure evolution of Ti5553 after hot deformation at large and moderate strains**
Maria Cecilia Poletti
TU Graz, Austria

D5 July-11 8:30
* Laser beam welding and straightening of stiffened Ti aeronautical structures- modelling and experimental optimization
Pedro Alvarez, Ruben Escribano, Ane Altuna, Aritz Mendizabal, Fedor Formin
IK4-LORTEK Technological Centre, Spain

D5 July-11 8:50
* Effect of thermal path on the precipitation sequences and mechanical properties in beta metastable titanium alloy
Moukrane Dehmas, Elisabeth Aeby-Gautier, Amico Settefrati, Benoît Appolaire, Eiichi Sukedai, Benoît Denand
Centre Interuniversitaire de Recherche et Díngenierie des Matériaux, France

D5 July-11 9:10
* Microstructure evolution of Ti64 alloys through the Hybridation of additive manufacturing and forging process
Christophe Desrayaud
Université de Lyon, France

D5 July-11 9:30
* Development in Beta Titanium Alloys
Yvon Millet, John Fanning
TIMET Savoie, France

D5 July-11 9:50
Development of an optimised shielding strategy for laser beam welding of Ti6Al2Sn4Zr2Mo
Irmela Burkhardt, Volker Ventzke, Stefan Riekehr, Nikolai Kashaev, Josephin Enz
Helmholtz-Zentrum Geesthacht, Germany

Session D5: Ti Alloys & Aerospace Structural Metallic Materials 1
Coffee / Tea break 10:10 to 10:40

D5 July-09 10:40
Effect of strain on microstructure evolution of beta matrix and alpha precipitation during subsequent cooling in a metastable beta titanium Ti-17 alloy
Elango Chandiran, Goro Miyamoto, Tadashi Furuhara
Tohoku University, Japan

D5 July-11 11:00
Study on Pack Rolling process of Ti-6Al-4V alloy
Miseon Choi, Hyunseok Lee
Research Institute of Industrial Science & Technology, South Korea

D5 July-11 11:20
*Effect of Surface Gradient Nanostructures on Local Corrosion Resistance of Nitrided Layer on Titanium Alloy
Tianlin Fu, Yan Gao
South China University of Technology, China

D5 July-11 11:40
* Studying the microstructures evolution in cold-rolled Ti-Mn alloys to determine reason behind its superior strength
Mohamed Gepreel
Egypt-Japan University of Science and Technology, Egypt

D5 July-11 12:00
* Strengthening titanium alloys via three kinds of homogeneous microstructures
Yulin Hao
Institute of Metal Research, Chinese Academy of Sciences, China

D5 July-11 12:20
* Effect of different shot peening treatments on fatigue life in titanium alloy
Yasunori Harada, Yuto Saeki, Katsuhiko Takahashi
University of Hyogo, Japan

D5 July-11 12:40
* Development of Low Cost Titanium-Manganese Shape Memory Alloys
Masahiko Ikeda, Masato Ueda
Kansai University, Japan

D5 July-11 13:00
*Cost Effective High Performance Powder Metallurgy Titanium Alloys for Aerospace Applications
Ali Yousefiani
Boeing Research and Technology, USA

Lunch break 13:20 - 14:20

Session: D6, Venue: Room 2

Ti Alloys & Aerospace Structural Metallic Materials 2

Session Chairs: Osamu Umezawa; Yulin Hao

D6 July-11 14:20
Temperature dependence of proof stress and fatigue crack growth rate in Ti-0.490
Masaki Tanaka, Yelm Okuyama, Tatsuya Morikawa
Kyushu University, Japan

D6 July-11 14:40
* Development of Ga-added near-alpha titanium alloys
Tomonori Kitashima
National Institute for Materials Science, Japan

D6 July-11 15:00
***** Effect of oxygen addition on phase decomposition in Ti-Mo alloy
Sengo Kobayashi, Shogo Saeki, Satoshi Okano
Ehime University, Japan

D6 July-11 15:20
* Recent Progress in Alpha/Beta Titanium Alloys in TIMET
Yoji Kosaka, Yvon Millet, Matthew Thomas
Titanium Metals Corporation, USA

D6 July-11 15:40
* Interlink between Process Parameters, Microstructure and Mechanical Properties in Ti-6Al-4V Forgings
Alfred Krumphals, Josef Kortschak
Bohler Schmiedetechnik GmbH & Co KG, Austria

Session D6: Ti Alloys & Aerospace Structural Metallic Materials 2
Coffee / Tea break 16:00 to 16:30

D6 July-11 16:30
Development of β-Ti Alloy Powders for Additive Manufacturing
Eugene Ivanov, Eduardo Del-Rio, Igor Kapchenko, Maija Nystrom, Juha Kotila
Tosoh SMD Inc, USA

D6 July-11 16:50
Influence of prior thermo-mechanical process on hot workability of Ti-6Al-4V Titanium alloy
Hyunseok Lee, Miseon Choi, Kijo Jeong
Research Institute of Industrial Science & Technology, South Korea

D6 July-11 17:10
* Mechanical Behavior of Titanium Alloys under Different Conditions of Loading
Pavlo Markovsky
G.V. Kurdyumov Institute for Metal Physics of National Academy of Sciences, Ukraine

D6 July-11 17:30
* The Avrami kinetics of dynamic recrystallization in nickel niobium alloy
Nedjoua Matougui, David Piot, Mohamed Lamine Fares, John Joseph Jonas, Frank Montheillet
École Nationale Supérieure des Mines et Métallurgie, Algeria

D6 July-11 17:50
Application of Calphad calculations and simulations in material design and processing of Ti alloys and TiAl-based alloys
Hai-Lin Chen, Qing Chen, Yang Yang, Ying Tang, Anders Engström, Johan Bratberg, Andreas Markström
THERMOCALC, Sweden

D6 July-11 18:10
Crystal plasticity analysis of α-Ti polycrystalline with Temperature dependence of the yield stress
Yelm Okuyama, Masaki Tanaka, Tetsuya Ohashi, Tatsuya Morikawa
Kyushu University, Japan

Session: D7, Venue: Room 2

Ti Alloys & Aerospace Structural Metallic Materials 3

Session Chairs: Maria Poletti; Ragu Shrinivasan

D7 July-12 8:00 Keynote
* Microstructure formation in titanium alloys and associated mechanical properties
Elisabeth Aeby-Gautier, Benoït Appolaire, Moukrane Dehmas
University of Lorraine, France

D7 July-12 8:30
* The Role of Microstructure, Texture, and Microtexture on the Dwell Fatigue Behavior of Ti-6Al-4V
Raghavan Srinivasan, Alec Blankenship, Michelle Harr, Adam Pilchak
Wright State University, USA

D7 July-12 8:50
* Observation of slip deformation in stress-induced martensite single crystal of Ti-27mol%Nb alloy
Masaki Tahara, Nao Okano, Tomonari Inamura, Hosoda Hideki
Tokyo Institute of Technology, Japan

D7 July-12 9:10
* Elastic-modulus enhancement during room-temperature aging in β-Ti alloys
Masakazu Tane, Akihiro Umeda, Koji Hagihara, Masato Ueda, Takayoshi Nakano, Tohru Sekino, Tetsu Ichitsubo
Osaka University, Japan

D7 July-12 9:30
Formation of uniform microstructure by multidirectional compression at elevated temperature in Ti alloys
Shiro Torizuka, Atsushi Ito, Yuusei Hatanaka
University of Hyogo, Japan

D7 July-12 9:50
* Effects of thermomechanical treatments on cyclic shear behavior of titanium beta Ti15V3Al3Cr3Sn processed by SPS
Zofia Trzaska, Azziz Hocini, David Tingaud, Shota Yokoyama, Kei Ameyama, Guy Dirras
Laboratoire des Sciences des Procédés et des Matériaux, France

Session D7: Ti Alloys & Aerospace Structural Metallic Materials 3
Coffee / Tea break 10:10 to 10:40

D7 July-12 10:40
* A Subsurface Fatigue Crack Generation Model in Near Alpha Titanium at Low Temperature
Osamu Umezawa, Weibo Li
Yokohama National University, Japan

D7 July-12 11:00
Effect of Heat treatments on the Mechanical Properties and Microstructure of Ti55531 Alloy
Min Xinhua
Baosteel, China

D7 July-12 11:20
* Local atomic arrangement near Nb and V in aged βTi alloys
Tokujiro Yamamoto, Yoshihiro Ebisu, Koji Kimura, Kouichi Hayashi, Naohisa Happo, Shinya Hosokawa Hiroo, Tajiri, Ozaki Toru
Utsunomiya University, Japan

D7 July-12 11:40
*Method for optimizing powder selection for metal injection moulding through a determination of evolved gas during thermal de-binding and sintering using thermogravimetric-gas chromatographic-mass spectrometric methods
Catherine Whitman, Stephen F. Corbin
Dalhousie University, Canada

D7 July-12 12:00
*Cost-effective producing of high-property titanium alloy from powder
Fei Yang
University of Waikato, New Zealand

D7 July-12 12:20
Creep Features of Ti-600 Alloy at the temperature of 650ºC
Liying Zeng, Yongqing Zhao, Xiaonan Mao, Quan Hong, Yunlian Qi
Northwest Institute for Nonferrous Metal Research, China

D7 July-12 12:40
*Titanium aluminides and titnucarbide obtained by titanium scraps
Elena Colombini
University of Modena and Reggio Emilia, Italy

D7 July-12 13:00
Preparation of TiAl Intermetallic Compound Alloy Powder using Slow Reaction Synthesis Process
Toru Shimizu
Tokyo Denki University, Japan

Lunch break 13:20 - 14:20

Session: D8, Venue: Room 2

Ti Alloys & Aerospace Structural Metallic Materials 4

Session Chairs: Yasunori Harada; Eri Miura-Fujiwara

D8 July-12 14:20
* Wear behaviour and mechanical properties of Ti-Mo alloys in Hanks balanced salt solution
Eri Miura-Fujiwara, Ayaka Watanabe, Yasuhiro Tanaka, Thoru Yamasaki
Hyogo University, Japan

D8 July-12 14:40
* Combined AFM, SEM and crystal plasticity analysis of grain boundary sliding in titanium at room temperature
Véronique Doquet, Bassem Barkia
Ecole Polytechnique, France

D8 July-12 15:00
* Yield strength improvement strategies applied to ?strain-transformable? Ti beta-metastable alloys
Philippe Vermaut, Lola Lilensten, Yolaine Danard, Fan Sun, Prima Frédéric
Paris Tech, France

D8 July-12 15:20
* On the origin of the peculiar {332}<113> twinning system in metastable beta titanium alloys
Philippe Castany, Yang Yang, Emmanuel Bertrand, Thierry Gloriant
INSA Rennes, France

D8 July-12 15:40
Twinning and de-twinning mechanisms in beta-Ti alloys
Ivan Gutierrez-Urrutia, Cheng-Lin Li, Ji Xin, Satoshi Emura, Koichi Tsuchiya
National Institute for Materials Science, Japan

Session D8: Ti Alloys & Aerospace Structural Metallic Materials 4
Coffee / Tea break 16:00 to 16:30

D8 July-12 16:30
Image analysis tensile test method at elevated temperature to obtain true stress-true strain curves up to large strain
Atsushi Ito, Masatoshi Yamato, Shiro Torizuka
University of Hyogo, Japan

D8 July-12 16:50
*Infrared emissivity, a useful property to optimize materials and processes
Iñigo González De Arrieta, Telmo Echániz, Raquel Fuente, Irene Urcelay-Olabarria, Manuel Tello, Josu M. Igartua, Gabriel Lopez
University of the Basque Country, Spain

D8 July-12 17:10
* The challenging effect of the specimen size on the fatigue properties behaviour of Ti-6Al-4V designed in harmonic structure
Benjamin Guennec, Kawabata Mie Ota, Kei Ameyama, Shoichi Kikuchi, Akira Ueno
Ritsumeikan University, Japan

D8 July-12 17:30
* Manufacturing affordability associated with an innovative high-strength alpha/beta Titanium alloy
Luis Ruiz-Aparicio
Allegheny Technologies Inc., USA

D8 July-12 17:50
Effect of Heat Processing Technique on Microstructure and Mechanical properties of Extrusion Beta Titanium Alloy Tube blank
Yun-Lian Qi, Zeng Li-Ying, Du Yu, Xin She Wei, Liu Wei, Sun Hua Mei
Northwest Institute for Nonferrous Metal Research, China

D8 July-12 18:10
*Towards Synchronous Coordinating of Evolution of Inhomogeneous Deformation and Crystallographic Orientation: Pilgering of Titanium Alloy Tube
Heng Li, Dong Wei, Zhang Haiqin, Wang Sen
Northwestern Polytechnical University, China

D8 July-12 18:30
Thermo-mechanical treatment of titanium based layered structures fabricated by blended elemental powder metallurgy
Sergey Prikhodko, Pavlo Markovsky, Dmytro Savvakin, Oleksandr Stasiuk, Orest Ivasishin
University of California Los Angeles, USA

Session E

Session: E1, Venue: Room 3

Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 1

Session Chairs: Viginie Viallet; Bun Tsuchiya

E1 July-09 10:00 Keynote
*** An analysis of factors affecting the performances of anion exchange membranes**
Maria Luisa Di Vona
University of Rome Tor Vergata, Italy

E1 July-09 10:30
* Metal hydrides as powerful conversion anodes for lithium-ion batteries: State of the art and perspectives
Luc Aymard, Chartrel Thibaut, Bonnet Jean-Pierre
Laboratoire de Reactivite et Chimie des Solides, France

E1 July-09 10:50
* Thermoelectric properties of carbon nanomaterial/polymer composites
Corinne Binet, Brun Jean-François, Tahon Jean-François, Islam Rakibul
Unité Matériaux et Transformations, France

E1 July-09 11:10
* Enhancing the Sodium Storage Performance of NaFePO4 Cathode by Polymer Coating and Elucidating the Reaction Mechanism
Kyung Yoon Chung
Korea Institute of Science and Technology, Korea

E1 July-09 11:30
*Surface properties and activation behaviors of TiFe-based hydrogen absorbing alloys
Etsuo Akiba, Hayashi Rika, Li Hai-Wen, Arita Makoto, Horita Zenji, Edalati Kaveh
Kyushu University, Japan

E1 July-09 11:50
Novel methodology for the selection, dosing and on-line control of corrosion inhibitors for industrial acid pickling
Massimo De Sanctis, Lovicu Gianfranco, Richetta Maria, Varone Alessandra
Department of Civil and Industrial Engineering, Italy

E1 July-09 12:10
The role of Fe particle size and oxide distribution on the hydrogenation properties of ball-milled nano-crystalline powder mixtures of Fe and Mg
Julien Fadonougbo, Jung Jee-Yun, Suh Jin-Yoo, Lee Young-Su, Shim Jae-Hyeok, Cho Young Whan
Korea Institute of Science and Technology, Korea

Lunch break 12:30 - Sessions restarts at 13:30

Session: E2, Venue: Room 3

Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 2

Session Chairs: Philippe Knauth; Jae-Hyeok Shim

E2 July-09 13:30 Keynote
*** Development of Hydrogen Storage Materials and its Applications**
Yoshitsugu Kojima
Hiroshima University, Japan

E2 July-09 14:00
* Microwave Dielectric and Neutron Scattering Characterization of Hydrogenous Materials
Jones Martin
University of St Andrews, UK

E2 July-09 14:20
* All-solid-state batteries with sulfide-based solid electrolytes: achievements and ongoing challenges
Virginie Viallet, Seznec Vincent, Morcrette Mathieu, Fleutot Benoit, Dedryvere Remi, Auvergniot Jérémie, Cassel Alice
Réseau Français sur le Stockage Electrochimique de l'Energie, France

E2 July-09 14:40
* The Influence of Gas Diffusion Media Morphology on Hydrogen Fuel Cell Performance Benjamin Gould, Garsany Yannick, Atkinson Robert, Zenyuk Iryna, Swider-Lyons Karen
U.S. Naval Research Laboratory, USA

E2 July-09 15:00
* Enhanced electrochemical performance of SnSb anode for Li-ion batteries by coating with a thermoplastic block copolymer elastomer film.
Sebastien Maria, Tesfaye Alexander, Yücel Yasemin D., Dumur Frederic, Gigmes Didier, Monconduit Laure, Djenizian Thierry
Institut de Chimie Radicalaire, France

E2 July-09 15:20
* Structural analysis of Al-based hydrides by neutron and x-ray scattering techniques Kazutaka Ikeda, Otomo Toshiya
High Energy Accelerator Research Organization, Japan

E2 July-09 15:40
* Metal boron hydrides for high density hydrogen storage and fast ionic conductivity
Hai-Wen Li, He Liqing, Nakajima Hironori, Hwang Son-Jong, Filinchuk Yaroslav, Hagemann Hans, Jensen Torben, Akiba Etsuo
Kyushu University, Japan

Session E2: Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 2
Coffee / Tea break 16:00 to 16:30

E2 July-09 16:30
* High-Pressure Synthesis of New Intermetallic Compounds in Mg-TM Systems and Their Hydrogen Storage Properties (TM=Transition Metals)
Atsunori Kamegawa, Horie Ryuki, Burapornpong Siree, Kimura Toru
Muroran Institute of Technology, Japan

E2 July-09 16:50
* Direct sulfonation, crosslinking, and activation process using polyphenylsulfone for PEM fuel cells
Jedeok Kim, Satoshi Matsushita
National Institute for Materials Science, Japan

E2 July-09 17:10
* Mechanical tuning of hydrogen diffusivity in palladium: An ab initio path-integral molecular dynamics modelling
Hajime Kimizuka, Ogata Shigenobu, Shiga Motoyuki
Osaka University, Japan

E2 July-09 17:30
* Metallic hydrides as innovative materials for solid state Li-ion battery
Michel Latroche, Zhang Junxian, Cuevas Fermin
Institut de Chimie et des Matériaux Paris-Est, France

E2 July-09 17:50
*Methane Formation and Conversion in a Pressurized Solid Oxide Cell Stack
Søren Højgaard Jensen
Technical University of Denmark, Denmark

E2 July-09 18:10
*Multiple roles of ionic liquids in dehydrogenation of ammonia borane
Tessui Nakagawa, Sho Sashida
University of the Ryukyus, Japan

Session: E3, Venue: Room 3

Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 3

Session Chairs: Isabella Nicotera; Nicola Perry

E3 July-10 8:00 Keynote
*** State-of-Charge Monitoring for the Vanadium Redox Flow Battery**
Rolf Hempelmann
Saarland University and KIST Europe, Germany

E3 July-10 8:30
* In Silico Materials Design for Next Generation Batteries
Nikhil Medhekar
Monash University, Australia

E3 July-10 8:50
* Electrodeposition of ionomer membranes for energy storage and conversion
Philippe Knauth
Aix Marseille University, CNRS, France

E3 July-10 9:10
* Ions diffusion study and recent development of materials for anion- and proton-exchange membranes fuel cells
Isabella Nicotera, Simari Cataldo, Enotiadis Apostolos
University of Calabria, Italy

E3 July-10 9:30
* Development of disordered materials for use in intermediate temperature solid oxide electrochemical cells
Stephen Skinner
Imperial College London, UK

E3 July-10 9:50
* Factors Impacting Oxygen Surface Exchange Kinetics and Associated Expansion in Mixed Conducting Solid Oxide Fuel Cell Electrodes
Nicola Perry
University of Illinois at Urbana-Champaign, USA

Session E3: Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 3
Coffee / Tea break 10:10 to 10:40

E3 July-10 10:40
* Mass and Charge Transport across the Solid Electrolyte Interphase of Lithium-ion Batteries: Experiments on a Model SEI
Bernhard Roling
University of Marburg, Germany

E3 July-10 11:00
* Thick Binder-Free Electrodes For Li-ion Battery Fabricated Using Templating Approach and Spark Plasma Sintering Reveals High Areal Capacity
Elango Rakesh, Demortière Arnaud, De Andrade Vincent, Morcrette Mathieu, Vincent Seznec
Laboratoire réactivité et chimie des solides, France

E3 July-10 11:20
* Mechanical Degradation and Optimization of Solid Electrolyte Interphases in Li Ion Batteries
Brian Sheldon, Kumar Ravi, Zhang Wei
Brown University, USA

E3 July-10 11:40
*Emerging polymer electrolyte membranes for energy storage and conversion
Luca Pasquini, Cavaliere Sara, Knauth Philippe, Di Vona Maria Luisa
Aix Marseille University, CNRS, France

E3 July-10 12:00
* Modification of MgH2 for solid-state hydrogen storage applications
Jae-Hyeok Shim, Im Yeon Ho, Cho Young Whan
Korea Institute of Science and Technology, South Korea

Lunch break 12:20 - 13:20

Session: E4, Venue: Room 3

Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 4

Session Chairs: Ricardo Narduci; Gael Gautier

E4 July-10 13:20 Keynote
*** Synthesis and characterization of composite membranes using layered double hydroxides (LDH) and metal organic framework (MOF) as fillers to enhance the properties of anion exchange membranes (AEM)**
Riccardo Narducci
University of Rome Tor Vergata, Italy

E4 July-10 13:50
* Thermo-catalytic decomposition of methane for hydrogen production using carbon catalysts with different structures and specific surface areas
Yoshiyuki Suda, Hamaguchi Hiroaki, Suzuki Masashi, Umeda Yoshito
Toyohashi University of Technology, Japan

E4 July-10 14:10
* Competitive reactions and formation mechanism of microstructures in Mg/Cu super-laminate composites during initial hydrogenation
Koji Tanaka, Kondo Ryota, Takeshita Hiroyuki
National Institute of Advanced Industrial Science and Technology, Japan

E4 July-10 14:30
* Dependence of hydrogen-storage and -release on density of oxide ceramics exposed in air at room temperature
Bun Tsuchiya, Yamaguchi Shotaro, Miyaoka Hiroki, Ichikawa Takayuki, Kojima Yoshitsugu
Meijo University, Japan

E4 July-10 14:50
* Real Time Electron Microscopy of Energy Storage Materials
Reza Shahbazian
University of Illinois at Chicago, USA

E4 July-10 15:10
* Cellulose Nanofibrils: A New 1D Building Block for Flexible Paper Batteries
Sang-Young Lee, Jung-Hwan Kim
Ulsan National Institute of Science and Technology, Korea

E4 July-10 15:30
* Alloy Design of V-based Hydrogen Permeable Membrane and its Application to High Capacity Hydrogen Separation Device
Hiroshi Yukawa, Nambu Tomonori, Matsumoto Yoshihisa, Yoshinaga Hideo
Nagoya University, Japan

E4 July-10 15:50
* Engineering Solutions in Scale-up and Tank Design for Metal Hydrides
Giovanni Capurso, Jepsen Julian, Bellosta Von Colbe José, Pistidda Claudio, Metz Oliver, Yigit Deniz, Cao Hujun, Hardian Rifan, Strauch Anselm, Taube Klaus, Klassen Thomas, Dornheim Martin
Helmholtz-Zentrum Geesthacht, Germany

Session E4: Fuel Cells, Hydrogen Storage Technologies, Batteries, Supercapacitors & Thermoelectric Materials 4
Coffee / Tea break 16:10 to 16:40

E4 July-10 16:40
* Recombination of 2D-transition metal (oxyhydr)oxides into nanocomposites for supercapacitors : a novel material engineering strategy for property synergy
Liliane Guerlou-Demourgues, Tang Céline, Adan-Mas Alberto, Giaume Domitille, Taberna Pierre-Louis
University of Bordeaux, France

E4 July-10 17:00
* Porous silicon as a new material for Lithium-ion micro-batteries and micro-fuel cells
Gael Gautier, Luais Erwann, Defforge Thomas, Desplobain Sébastien, Ghamouss Fouad, Tran-Van François, Sakai Joe
Groupe de Recherche en Matériaux, Microélectronique, Acoustique et NanotechnologiesGREMAN, France

E4 July-10 17:20
The application of molecular self-assembled nanocomposite materials in proton exchange membrane fuel cells
Jinlin Lu
University of Science and Technology Liaoning, China

E4 July-10 17:40
* Ion Exchange Membranes based on Aromatic Polymers
Emanuela Sgreccia
International Associated Laboratory, Italy

Session: E5, Venue: Room 3

Additive Manufacturing 1- Non Beam & Solid State Topics

Session Chairs: Olaf Andersen; Lisa Biasetto

E5 July-11 8:00 Keynote
*** Modelling techniques suitable for AM processes which use organic binders**
Torsten Kraft, Bierwisch Claas, Schmidt Ingo
Fraunhofer IWM, Germany

E5 July-11 8:30
* A Robocasting Approach to 3D Print Metallic Complex Structures
Lisa Biasetto
University of Padova, Italy

E5 July-11 8:50
* Significant Benefits of 3D Screen Printing for Manufacturing Micro-Channel Heat Exchangers
James Zess, Dressler Martin
Zess & Lin Industries, LLC, USA

E5 July-11 9:10
Lithographic additive manufacturing of functional metal components
Schwentenwein Martin, Gerald Mitteramskogler
Lithoz GmbH, Austria

E5 July-11 9:30
* Particle size and temperature effects on slumping in 3D printed parts
Zachary Cordero
Rice University, United States

E5 July-11 9:50
* Improvement of the debinding and sintering of fused filament fabricated metallic parts by in-situ furnace atmosphere analysis
Olaf Andersen, Quadbeck Peter, Riecker Sebastian, Studnitzky Thomas, Kieback Bernd
Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Branch Lab Dresden, Germany

Session E5: Additive Manufacturing 1-Non Beam & Solid State Topics
Coffee / Tea break 10:10 to 10:40

E5 July-11 10:40 Keynote
*** Cold Spray Additive Manufacturing**
Jean-Gabriel Legoux
National Research Council, Canada

E5 July-11 11:10
* Additive manufacturing of functionally graded titanium parts using 3d plasma metal deposition
Peter Mayr, Hoefer Kevin
Chemnitz University of Technology, Germany

E5 July-11 11:30
* Flow rate with time dependent material rheology in 3D Printing of mortar/concrete

Liu Zhixin, Li Mingyang, Wong Teck Neng, Ming Jen Tan
Nanyang Technological University, Singapore

E5 July-11 11:50
* 3D printing by robocasting and characterization of metallic macroporous scaffolds
Xavier Boulnat, Kachit Mahmout, Kopp Alexander, Adrien Jérôme, Dancette Sylvain, Maire Eric
Université de Lyon, France

E5 July-11 12:10
* Fatigue Behavior of Solid-State Additive Manufactured Inconel 625
J Jordon, Avery Dustin, Allison Paul, Hardwick Nanci
The University of Alabama, USA

E5 July-11 12:30
* Novel Processes and Materials Solutions for Metals Additive Manufacturing Andrew
Andrew Kustas, Argibay Nicolas, Chandross Michael, Whetten Shaun, Keicher David, Michael Joseph, Susan Donald, Johnson Kyle, Rodriguez Mark, Dagel Daryl, Wilson Mark, Lu Ping, Roach R. Allen
Sandia National Laboratories, USA

Lunch break 12:50 - 13:50

Session: E6, Venue: Room 3

Additive Manufacturing 2-Beam Topics

Session Chairs: Stephane Godet; Ming-Jen Tan

E6 July-11 13:50 Keynote
*** Post-processing of additively manufactured Ti-6Al-4V: improving the mechanical properties of near-net shape parts**
Stephane Godet, Guilhem Martin, Frédéric Prima, Antonio Cutolo, Van Hooreweder Brecht, De Formanoir Charlotte
Université libre de Bruxelles, Belgium

E6 July-11 14:20
* Additive Manufacturing of Aluminium alloys via Selective Laser Melting: Process, Metallurgy, & Mechanical Properties
Nesma T. Aboulkhair, Nicola M. Everitt, Ian Ashcroft, Christopher Tuck
University of Nottingham, UK

E6 July-11 14:40
* Fatigue behaviour of EBM processed high alloy TRIP steel - A novel AM alloy with excellent damage tolerance
Horst Biermann, Droste Matthias, Günther Johannes, Niendorf Thomas
Technische Universität Bergakademie Freiberg, Germany

E6 July-11 15:00
Critical assessment of the hydrogen uptake during the powder-bed laser 3D-printing of Al-Si grade
Cedric Georges, Delroisse Pauline, Simar Aude, Jaques Pascal
CRM Group, Hybrid & Additive manufacturing, Belgium

E6 July-11 15:20
* Design of aluminium alloys suitable for additive manufacturing
Carmen Cepeda-Jimenez, Martín Arturo, Cejuela Marcos, Milenkovic Srdjan, Pérez-Prado Teresa
IMDEA Materiales, Spain

E6 July-11 15:40
* Microstructure and fatigue properties of TiAl with unique layered microstructure fabricated by electron beam melting
Ken Cho, Kobayashi Ryota, Fukuoka Takuma, Oh Jong Yeong, Yasuda Hiroyuki Y., Todai Mitsuharu, Nakano Takayoshi, Ikeda Ayako, Ueda Minoru, Masao Takeyama
Osaka University, Japan

Session E6: Additive Manufacturing 2- Beam Topics
Coffee / Tea break 16:00 to 16:30

E6 July-11 16:30
Influence of microstructure on fracture mechanisms of AlSi10Mg parts processed by Selective Laser Melting
Jocelyn Delahaye, Dedry Olivier, Rigo Olivier, Habraken Anne Marie, Mertens Anne
University of Liège, Belgium

E6 July-11 16:50
* Microstructure and porosity of Ti-6Al-4V samples produced by Electron Beam Melting
Fabienne Delaunois, Blanchard Pol, Rigot Olivier, Kairet Thomas
Laboratoire de Métallurgie, FPMs, UMONS, Belgium

E6 July-11 17:10
*Microstructural Characteristics of Laser Metal Deposited Magnesium Alloy AZ31
Stefan Riekehr, Ventzke Volker, Konovalova Anna, Kashaev Nikolai, Enz Josephin
Helmholtz-Zentrum Geesthacht, Germany

E6 July-11 17:30
*The role of powder recycling on the mechanical performance of additive manufactured parts
Tony Fry, Butler David, Woolliams Peter, Brown Stephen
National Physical Laboratory, UK

E6 July-11 17:50
* 3D printing of high-strength dense bodies: key requirements
Vincent Garnier, Camposilvan Erik, Gremillard Laurent, Chevalier Jérôme
Université de Lyon, INSA-Lyon, France

Session: E7, Venue: Room 3

Additive Manufacturing 3- Beam Topics

Session Chairs: Peter Mayr; Anne Mertens

E7 July-12 8:00 Keynote
*** Additive Manufacturing: the best choice?**
Jean-Yves Hascoet, Marya Surendar, Rauch Mathhieu
École Centrale de Nantes, France

E7 July-12 8:30
***** Modelling the laser cladding process of M4 high speed steel
Jardin Ruben, Tran Hoang, Hashemi Neda, Tchoufang Tchuindjang Jérôme, Carrus Raoul, Mertens Anne, Anne Marie Habraken
Liege Université, Belgium

E7 July-12 8:50
Additively manufactured AlSi40 alloy for optical applications in space
Enrico Hilpert, Henrik Von Lukowicz, Heidler Nils, Risse Stefan
Fraunhofer Institute for Applied Optics and Precision Engineering IOF, & Friedrich Schiller University of Jena, Germany

E7 July-12 9:10
* Hot cracking in alloys produced by additive manufacturing
Eric Jaegle, Hariharan Avinash, Raabe Dierk
Max-Planck-Institut für Eisenforschung, Germany

E7 July-12 9:30
* Processing of titanium aluminides by selective electron beam melting
Vera Juechter, Körner Carolin
Heraeus Additive Manufacturing GmbH, Germany

E7 July-12 9:50
* From powder to part: the processing-microstructure-properties relationship in AM
Bij-Na Kim, Rivera-Diaz-Del-Castillo Pedro
LPW Technology & Lancaster University, UK

Session E7: Additive Manufacturing 3- Beam Topics
Coffee / Tea break 10:10 to 10:40

E7 July-12 10:40
* Alloy development for additive manufacturing
Prashanth Konda Gokuldoss
Norwegian University of Science and Technology Gjøvik, Norway

E7 July-12 11:00
* Developing new materials for Electron Beam Melting: experiences and challenges
Andrey Koptyug, Bäckström Mikael, Botero Carlos, Popov Vladimir, Chudinova Ekaterina
Mid Sweden University, Sweden

E7 July-12 11:20
Cladding of Stellite-6/WC Composites Coatings by Laser Metal Deposition
Takahiro Kunimine, Miyazaki Ryusei, Yamashita Yorihiro, Funada Yoshinori, Sato Yuji, Tsukamoto Masahiro
Kanazawa University, Japan

E7 July-12 11:40
The thermal analyses of the selective laser melting process and the effectiveness of pre-heating in optimizing metal microstructure
Masahiro Kusano, Miyazaki Shiho, Kishimoto Satoshi, Yumoto Atsushi, Watanabe Makoto
National Institute for Materials Science, Japan

E7 July-12 12:00
* Melting and solidification behavior of high-strength aluminum alloy during selective laser melting
Hideki Kyogoku, Yamamoto Kohei, Ikeshoji Toshi-Taka, Nakamura Kazuya, Yonehara Makiko
Kindai University, Japan

Lunch break 12:20 - 13:20

Session: E8, Venue: Room 3

Additive Manufacturing 4- Beam Topics

Session Chairs: Kee-Ahn Lee; Irene Beyerlein

E8 July-12 13:20 Keynote
*** Laser Shock Peening combined with Selective Laser Melting: a new method for the 3D control of residual stresses and associated distortions**
Roland Logé, Kalentics Nikola, Peyre Patrice, Burn Andreas, Boillat Eric
Ecole Polytechnique Fédérale de Lausanne, Switzerland

E8 July-12 13:50
* Effect of Post-Processing on the High Temperature Oxidation and Compressive Deformation Behaviors of Inconel 718 Alloy Manufactured using Selective Laser Melting Kee-Ahn Lee, Kang Yeon-Ji
Inha University, Korea

E8 July-12 14:10
* Microstructural Characterization of AlSi10Mg Fabricated by Selected Laser Melting Process
Takashi Maeshima, Keiichiro Oh-Ishi, Hiroaki Kadoura, Masashi Hara
TOYOTA CENTRAL R&D Labs., Inc., Japan

E8 July-12 14:30
* 3D printing of Al, Ti and Ni based alloys by laser powder bed fusion
Diego Manfredi, Calignano Flaviana
Istituto Italiano di Tecnologia, Italy

E8 July-12 14:50
On the relationships between process parameters, microstructure and properties of selectively laser-melted Ti-6V-4V
Angeline Poulon-Quintin, Jonathan Stef, Mohamed Goune
Institut de chimie de la matière condensée de Bordeaux, France

E8 July-12 15:10
* Hot cracking mechanism in a non-weldable Ni-based superalloy produced by Electron Beam Melting
Guilhem Martin, Chauvet Edouard, Blandin Jean-Jacques, Dendievel Rémy
Science et Ingénierie des Matériaux et Procédés, France

E8 July-12 15:30
* High Temperature Wear Behaviour of High Speed Steel Thick Deposits Obtained by Laser Cladding
Tchuindjang Jérôme, Dedry Olivier, Montrieux Henri-Michel, Lecomte-Beckers Jacqueline, Carrus Raoul, Habraken Anne, Anne Mertens
University of Liège, Belgium

E8 July-12 15:50
* The influence of powder particle and grain size on parts manufacturing by powder bed fusion
Ioana Ghiuta, Andrea Gatto, Elena Bassoli, Sorin Ion Munteanu, Tibor Bedo, Mihai Alin Pop, Camelia Gabor, Maria Covei, Mihaela Cosnita, Daniel Cristea, Bela Varga, Daniel Munteanu
Transilvania University of Brasov, Romania

Session E8: Additive Manufacturing 4- Beam Topics
Coffee / Tea break 16:10 to 16:40

E8 July-12 16:40
* Heat Treatment Behaviour of the 18Ni300 maraging steel additively manufactured by Selective Laser Melting
Qiang Zhu, Guo Wenfeng, Hu Xiaogang
Southern University of Science and Technology, China

E8 July-12 17:00
* Microstructure-property relationships in additively manufactured steels? Tailoring properties by process design
Thomas Niendorf, Brenne Florian, Guenther Johannes, Droste Matthias, Biermann Horst, Wu Liang, Leuders Stefan
Universität Kassel, Germany

E8 July-12 17:20
* Fatigue mechanisms of Ti-6Al-4V cellular structures fabricated by Electron Beam Melting Theo Persenot, Buffière Jean-Yves, Maire Eric, Dendievel Rémy, Martin Guilhem
Centre de Matériaux, Ingénierie et Sciences, France

E8 July-12 17:40
* Economisation of Selective Laser Melting Processes via new software based reductions of support structures and enhanced laser strategies
Rudolf Pichler, Stadlmayr Daniel
Graz University of Technology, Austria

E8 July-12 18:00
* Additive manufactured austenitic stainless steel part for hydrogen service
Seung-Wook Baek, Jung Hyun Kim, Yun-Hee Lee, Un Bong Baek, Myeong-Sik Jeong, Min-Soo Suh, Bo Sik Kang, Seung Hoon Nahm
Korea Research Institute of Standards and Science (KRISS), Korea

E8 July-12 18:20
* Light-matter interactions melt pool dynamics and spatter formation in laser powder bed fusion processing
Matthews Manyalibo, Andrew Anderson, Nicholas Calta, Philip Depond, Gabe Guss, Saad Khairallah, Wayne King, Tien Roehling, Alexander Rubenchik, Johannes Trapp, Sheldon Wu
Lawrence Livermore National Laboratory, USA

Session: E9, Venue: Room 3

Additive Manufacturing 5- Beam Topics

Session Chairs: Priti Wanjara

E9 July-13 8:00 Keynote
***Wire-Fed Electron Beam Additive Manufacturing**
Priti Wanjara, Gholipour Javad, Bescond Christophe
National Research Council Canada, Canada

E9 July-13 8:30
* Progress Towards a Complete Model of Metal Additive Manufacturing
Vu Nguyen, Anthony Murphy, Gary Delaney, Sharen Cummins, Paul Cleary, Dayalan Gunasegaram, Peter Cook, Mark Styles, Matthew Sinnott
Commonwealth Scientific and Industrial Research Organisation, Australia

E9 July-13 8:50
* Additive manufacturing of Ti-15Mo-5Zr-3Al alloy: Microstructure and mechanical property comparison in electron and laser beam melting
Shihai Sun, Ishimoto Takuya, Hagihara Koji, Nakano Takayoshi
Osaka University, Japan

E9 July-13 9:10
* Microstructure evolution of commercially pure titanium during electron beam additive manufacturing
Kenta Yamanaka, Mori Manami, Sato Shigeo, Chiba Akihiko
Tohoku University, Japan

E9 July-13 9:30
Micromechanical behavior and thermal stability of a dual-phase titanium alloy produced by additive manufacturing
Charlotte De Formanoir, Martin Guilhem, Dessolier Thibaut, Prima Frédéric, Sun Fan, Allain Sébastien, Godet Stéphane
Université Libre de Bruxelles, Belgium

E9 July-13 9:50
A continuous crystallographic approach to generate cubic lattices and its effect on relative stiffness of architectured materials
Julien Favre, Lohmuller Paul, Piotrowski Boris, Kenzari Samuel, Laheurte Pascal
Ecole de Mines de Saint-Etienn, France

E9 July-13 10:10
*Comparison of the Hot Working Behavior of Wrought, Selective Laser Melted and Electron Beam Melted Ti–6Al–4V
Markus Bambach**,** Irina Sizova, Ole Geisen, Omar Fergani
Brandenburg University of Technology Cottbus, Germany

Session F

Session: F1, Venue: Room 4

Interfaces, Grain Boundaries & Structural Characterisation 1

Session Chairs: Sadahiro Tsurekawa; Amy Clarke

F1 July-09 10:00 Keynote
*** Plastic deformation by grain boundary motion: Evaluation of boundary migration - shear coupling**
Dmitri Molodov, Konstantin Molodov
RWTH Aachen University, Germany

F1 July-09 10:30
*Effect of triple lines on grain boundary migration and grain growth studied by computer simulations
Luis Barrales-Mora
George W. Woodruff School of Mechanical Engineering, France

F1 July-09 10:50
* Interactions between solute atoms and <111> dislocation loops in α-FE: a DFT study
Charlotte Becquart, Domain Christophe
Unité Matériaux et Transformations – UMR, France

F1 July-09 11:10
*Parameters Affecting Grain Boundary Network in Polycrystalline Materials
Hossein Beladi
Deakin University, Australia

F1 July-09 11:30
*Morphology control of core-shell Fe@Au faceted Nanoparticles
Patrizio Benzo, Combettes Ségolène, Benoît Magali, Pécassou Béatrice, Tarrat Nathalie, Combe Nicolas, Ponchet Anne, Casanove Marie-José
Centre d'élaboration de Matériaux et d'études Structurales, France

F1 July-09 11:50
*Impact of hydrogen content on the thermal stability of hydride phases in zirconium alloys Egle Conforto, Girault Patrick, Berziou Cyril, Lotte Guillaume, Milet Rémy, Cohendoz Stephane, Feaugas Xavier
Laboratoire des Sciences de l'Ingénieur pour l'Environnement, France

F1 July-09 12:10
*Developing Crystal Plasticity Models from the Basics Single Crystal Experiments
Jay Carroll, Lim Hojun, Lane Matthew, Battaile Corbett, Boyce Brad
Sandia National Laboratories, USA

F1 July-09 12:30
*An unconventional twin interface in magnesium that questions the shear paradigm
Cyril Cayron, Logé Roland
Ecole Polytechnique Fédérale de Lausanne, Switzerland

F1 July-09 12:50
Study of Mechanical Degradation and Microstructural Characterization in a Ni-based Superalloy Component of a Gas Turbine
Erika Avila-Davila, Lopez-Hirata Victor M., Saucedo-Muñoz Maribel L., Palacios-Pineda Luis M., Ramirez-Vargas Ignacio, Cueto-Rodriguez Maria M., Trapaga-Martinez Luis G., Alvarado-Orozco Juan M.
Instituto Tecnológico de Pachuca, Mexico

F1 July-09 13:10
Accessing 3D Grain Boundary Characteristics with LabDCT
Florian Bachmann, Bale Hrishikesh, Gueninchault Nicolas, Holzner Christian, Lauridsen Erik, Lavery Leah, Sun Jun
Xnovo Technology ApS, Denmark

Lunch break 13:30 - 14:30

Session: F2, Venue: Room 4

Interfaces, Grain Boundaries & Structural Characterisation 2

Session Chairs: Thimothy Rupert; Olivier Hardouin-Dupark

F2 July-09 14:30 Keynote
***Melting of metals: experiments and theory**
Roberto Montanari, Alessandra Varone
University of Rome-Tor Vergata, Italy

F2 July-09 15:00
*New discoveries in recovery of heavily deformed metals
Tianbo Yu
Technical University of Denmark, Denmark

F2 July-09 15:20
*Plasticity of free-standing nanocrystalline metallic thin films: New insights from atomistic simulations
Arun Prakash, Vaid Aviral, Preiss Eva, Merle Benoit, Bitzek Erik
Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

F2 July-09 15:30
*Atomic scale study of twinning in hcp metals
Mackain Olivier, Rodney David, Emmanuel Clouet
CEA, DEN, Service de Recherches de Métallurgie Physique, France

F2 July-09 15:50
*Shear-coupled grain boundary migration: homogeneous and heterogeneous disconnection nucleation
Nicolas Combe, Mompiou Fréderic, Legros Marc
Centre d'élaboration de Matériaux et d'études Structurales, France

Session F2: Interfaces, Grain Boundaries & Structural Characterisation 2
Coffee / Tea break 16:10 to 16:40

F2 July-09 16:40
*****Amorphization and dislocation motion promoted by twin at crack tip in Al observed in situ by HRTEM
Yanqing Yang, Kou Zongde, Feng Zongqiang
Northwestern Polytechnical University, China

F2 July-09 17:00
* AG induced phase transformation of a sigma 5 grain boundary in copper
Gerhard Dehm, Peter Nicolas, Kirchlechner Christoph, Liebscher Christian
Max-Planck-Institut für Eisenforschung, Germany

F2 July-09 17:20
*Ductile localization: Grain Boundary Sliding, the best supporting role
Alexandre Dimanov, Raphanel Jean, Bornert Michel
Laboratoire de Mécanique des Solides, France

F2 July-09 17:40
* Stabilization and toughening of nanocrystalline alloys through the incorporation of amorphous complexions
Timothy Rupert
University of California, Irvine, USA

F2 July-09 18:00
* Grain boundary character distributions in select laser melted and annealed Inconel 625 alloy
Xiaoying Fang, Guo Y.b., Wang Ming
Shandong University of Technology, China

F2 July-09 18:20
*Atomic-level characterization study of platinum/transition alumina interfaces combining transmission electron microscopy and density functional theory
Clauser Arielle, Oware Sarfo Kofi, Ophus Colin, Giulian Raquel, Árnidóttir Líney, Melissa Santala
Oregon State University, USA

Session: F3, Venue: Room 4

Interfaces, Grain Boundaries & Structural Characterisation 3

Session Chairs: Dimitri Molodov; Weiguo Wang

F3 July-10 8:00 Keynote
*** Topological Model of Type II Deformation Twinning**
Robert Pond
University of Exeter, UK

F3 July-10 8:30
* Georges Friedel Coincident Site Lattice Grain Boundaries and Otto Mügge mechanical twins. A pedagogical and historical perspective
Olivier Hardouin Duparc
École Polytechnique, France

F3 July-10 8:50
*Structure and magnetism of grain boundaries and surfaces in nickel-based intermetallic compounds
Mojmir Sob, Vsianska Monika, Friak Martin, Meng Fanshun
Masaryk University, Czech Republic

F3 July-10 9:10
*Discovering the Atomic Building Blocks of Grain Boundaries using Machine Learning
Eric Homer, Rosenbrock Conrad, Priedeman Jonathan, Hart Gus, Csányi Gábor
Brigham Young University, USA

F3 July-10 9:30
*A revisit to theories of grain boundary migration and a new approach to solute effect
Yan Huang
Brunel University London, UK

F3 July-10 9:50
*Cohesive stress heterogeneities and the transition from intrinsic ductility to brittleness
Dome Tanguy
Institut Lumière Matière, France

Session F3: Interfaces, Grain Boundaries & Structural Characterisation 3
Coffee / Tea break 10:10 to 10:40

F3 July-10 10:40
* In-situ TEM observation of dislocation-grain boundary interaction in aluminum
Ii Seiichiro, Enami Takero, Ohmura Takahito, Tsurekawa Sadahiro
National Institute for Materials Science, Japan

F3 July-10 11:00
* Structure-dependent local mechanical properties near the grain boundaries in aluminum bicrystals
Sadahiro Tsurekawa, Tokuda Yoshiyuki, Molodov Dmitri
Kumamoto University, Japan

F3 July-10 11:20
*Grain growth in fine-grained metallic thin films
Öncü Ahu, Halle Thorsten, Dana Zöllner
Otto-von-Guericke-University, Germany

F3 July-10 11:40
*Key Designs on Weak-Beam Scanning Transmission Electron Microscopy for Atomic-Scale/ Three-Dimensional Visualization of Dislocation Loops in Steels
Nagai Yasuyoshi, Yoshida Kenta, Shimodaira Masaki, Toyama Takeshi, Inoue Koji, Yoshiie Toshimasa, Konstantinovic Milan, Gerard Robert
Tohoku University, Japan

F3 July-10 12:00
*Grain boundary engineering based on fractal analysis for control of intergranular corrosion in metallic materials
Shigeaki Kobayashi, Yang Weitao, Okada Rei, Tsurekawa Sadahiro
Ashikaga Institute of Technology, Japan

F3 July-10 12:20
Influence of Cr content on cellular precipitation behaviour of Ni-38Cr-3.8Al alloy with lamellar structure
Yoshihiko Koyanagi, Takabayashi Hiroyuki, Yasuda Hiroyuki
Osaka University, Japan

F3 July-10 12:40
*Prediction of grain boundary segregation in binary alpha-iron based alloys
Pavel Lejcek, Hofmann Siegfried
Institute of Physics, Academy of Sciences of the Czech Republic, Czech Republic

F3 July-10 13:00
*Interface effects in mono- and multi-layered metal nitride films as revealed by atomic resolution TEM
Zaoli Zhang
Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria

Lunch break 13:20 - 14:20

Session: F4, Venue: Room 4

Interfaces, Grain Boundaries & Structural Characterisation 4

Session Chairs: Douglas Medlin; Xiaodong Han

F4 July-10 14:30
*Effect of microstructure on fracture in AHSS
Kesler D. Clarke
Colorado School of Mines, USA

F4 July-10 14:50
* Revisiting the Cd influence on the age hardening behaviour of Al-Cu alloys
Yanjun Li, Zhao Dongdong, Marioara Calin, Jin Shenbao, Sha Gang, Andersen Sigmund, Qian Feng
Norwegian University of Science and Technology, Norway

F4 July-10 15:10
*Atomic-Scale Investigation of Dislocation Structure in Layered Chalcogenide Materials
Douglas Medlin
Sandia National Laboratories, USA

F4 July-10 15:30
*4D analysis of the nanoporous structure of sintered Ag at high temperature
Xavier Milhet, Nait-Ali Azdine, Tandiang Diouwel, Signor Loic, Legros Marc
Institut Pprime, France

F4 July-10 15:50
*Dislocation structures and electrical conduction properties of low angle grain boundaries in strontium titanate
Atsutomo Nakamura
Nagoya University, Japan

Session F4: Interfaces, Grain Boundaries & Structural Characterisation 4
Coffee / Tea break 16:10 to 16:40

F4 July-10 16:40
* Grain boundary inter-connections in polycrystalline aluminium
Weiguo Wang, Rohrer Gregory, Chen Song
Fujian University of Technology, China

F4 July-10 17:00
Planar interfaces in hexagonal metals
Vaclav Paidar, Ostapovets Andriy
Institute of Physics, AS, Czech Republic

F4 July-10 17:20
*****Suppression of Thermal Conduction at Nano-Interfaces
Masato Yoshiya, Funai Kohei, Fujii Susumu, Yokoi Tatsuya
Japan Fine Ceramics Centre & Osaka University, Japan

F4 July-10 17:40
* Influence of interphase boundary anisotropy on eutectic solidification microstructures
Mathis Plapp, Ghosh Supriyo
Laboratoire de Physique de la Matière Condensée, France

F4 July-10 18:00
*Phase Transformation and Structure Engineering of Nanoporous TiO2 Films
Hangsheng Yang
Zhejiang University, China

F4 July-10 18:20
*In-situ Imaging of Liquid-Solid and Solid-Solid Interfaces in Metallic Alloys during Phase Transitions and Microstructural Evolution
Amy J. Clarke, A.W. Stokes, F.G. Coury, J.A. Jankowski, R.D. Field, VD. Tourret, S.D. Imhoff, J.W. Gibbs, P.J. Gibbs, T.G. Holesinger, J.F. Hunter, M.A. Espy, F.E. Merrill, F.G. Mariam, C.H. Wilde, C. Morris, J.K. Baldwin, K. Fezzaa, T. Sun, J.T. McKeown, J.D. Roehling, T.M. Rodgers, J.D. Madison, Y. Song, A. Karma
Colorado School of Mines, USA

Session: F5, Venue: Room 4

Integrated computational Grain Boundary Engineering 1

Session Chairs: Lorenz Romaner; Vsevold Raumowskiy

F5 July-11 8:00 Keynote
***Nanocrystalline Alloys: Designing for Grain Boundary Segregation**
Christopher Schuh
MIT, USA

F5 July-11 8:30
* The kinetics of grain boundary segregation in multicomponent materials
Lorenz Romaner, Scheiber Daniel, Svoboda Jiri, Fischer Franz
Materials Center Leoben Forschung GmbH, Austria

F5 July-11 8:50
*Temperature dependent interface energetics from first principles
Daniel Scheiber, Popov Maxim, Ruban Andrei, Romaner Lorenz
Materials Center Leoben Forschung GmbH, Austria

F5 July-11 9:10
*Phase field modelling of solute segregation at interface during phase transformation in binary alloys
Hao Chen, Zhang Congyu, Zhang Chi, Yang Zhigang
Tsinghua University, China

F5 July-11 9:30
*Diffusion and segregation of solutes in grain boundaries: from pure metals to high-entropy alloys
Sergiy Divinski
University of Münster, Germany

F5 July-11 9:50
*Influence of structure and composition on H segregation at grain boundaries in Fe: Insights from ab-initio DFT calculations
Rebecca Janisch, Tahir Arshad, Huang Xiang, Subramanyam Aparna, Guzman Abril, Hartmaier Alexander
Interdisciplinary Centre for Advanced Materials Simulation, Germany

Session F5: Integrated computational Grain Boundary Engineering 1
Coffee / Tea break 10:10 to 10:40

F5 July-11 10:40
*Modelling thermodynamics and kinetics of general grain boundaries: Challenges and successes
Joerg Neugebauer, Hadian Sherri, Huber Liam, Race Chris, Grabowski Blazej
Max-Planck-Institut fuer Eisenforschung, Germany

F5 July-11 11:00
*Heterogeneous Grain Boundary Segregation in Platinum-Gold Alloys
Stephen Foiles, Jacobson David, Thompson Gregory, Abdeljawad Fadi
Sandia National Laboratories, USA

F5 July-11 11:20
*Heterogeneous Nucleation Sequence at the Interface of TiB2 to Form Al
Jiehua Li
Montanuniversität Leoben, Austria

F5 July-11 11:40
* High-throughput calculations and modelling of solute-GB segregation
Liam Huber, Grabowski Blazej, Militzer Matthias, Neugebauer Joerg, Rottler Joerg
Max-Planck-Institut fuer Eisenforschung GmbH, Germany

F5 July-11 12:00
*Thermodynamic Stabilization of Precipitates through Heterophase Interfacial Segregation
Srikanth Patala, Kadambi Sourabh
North Carolina State University, USA

F5 July-11 12:20
*Bulk and grain-boundary diffusion of Copper in Ti nitride from first principles
Maxim Popov, Bochkarev Anton, Razumovskiy Vsevolod, Puschnig Peter, Spitaler Jürgen
Materials Center Leoben Forschung GmbH, Austria

F5 July-11 12:40
* Solute segregation in Cu: DFT vs. Experiment
Vsevolod Razumovskiy, Divinski Sergiy, Romaner Lorenz
Materials Center Leoben Forschung GmbH, Austria

Lunch break 13:00 – 14:00

Session: F6, Venue: Room 4

Advanced Steels & TMP Micro-alloyed Steels 9

Session Chairs: Atti Kaijalainen; Xinguo Li

F6 July-11 14:00 Keynote
*** Ferrite growth in the Fe-C-Mn-Mo system? Solute drag, coupled solute drag and transformation stasis**
Christopher Hutchinson, Wenwen Sun, Hatem Zurob
Monash University, Australia

F6 July-11 14:30
* Electropulse-induced Microstructure Evolution
Rongshan Qin
Imperial College, UK

F6 July-11 14:50
* The Effects of Hot Deformation of Austenite on the Bainitic Transformation in a Fe-C-Mn-Si-Cr Steel
Radhakanta Rana
TATA Steel, Netherlands

F6 July-11 15:10
* Effect of the annealing conditions on the dissolution process of complex carbonitrides in a V-Nb-Ti microalloyed steel
Ana Rivas, Gloria Basanta, E. Diaz, Carlos Parra, Andre Costa
Escuela Superior Politécnica del Litoral, Ecuador

F6 July-11 15:30
*Influencing the kinetics of bainite formation in low carbon steels
Maria J. Santofimia, Ashwath M. Ravi, Alfonso Navarro Lopez, Jilt Sietsma
Delft University of Technology, Netherlands

F6 July-11 15:50
* Microstructure, Texture, Mechanical and Corrosion Performance of The Stainless Duplex Steel UNS S32205 Submitted to Warm Rolling
Dagoberto Santos, Raphael Assumpção, Daniela Perasoli, Davi Alves, Aline Ferreira, Dalila Sicupira
Universidade Federal de Minas Gerais, Brazil

Session F6: Advanced Steels & TMP Micro-alloyed Steels 9
Coffee / Tea break 16:10 to 16:40

F6 July-11 16:40
* Mechanical property of a core-shell structured medium manganese steel fabricated by interrupted quenching and intercritical annealing
Toshihiro Tsuchiyama, Takayuki Sakamoto, Takuro Masumura, Setsuo Takaki
Kyushu University, Japan

F6 July-11 17:00
Effect of Ti on the microstructure and mechanical properties of a hot rolled advanced high strength steel strip
Ali Smith, Florian Vercruysse, Roumen Petrov, Patricia Verleysen, Bernd Linke
RINA Consulting-CSM, Italy

F6 July-11 17:20
*Controlling the ferrite-pearlite band formation in medium manganese steels
Sybrand Van Der Zwaag
Delft University of Technology, Netherlands

F6 July-11 17:40
* Prediction of Recrystallisation Kinetics based on Grain Size Distributions
Martin Strangwood
University of Birmingham, UK

F6 July-11 18:00
* Multi-scale Modeling for Microstructural Evolution in First-order Phase Transformations
Kang Wang, Feng Liu
Northwestern Polytechnical University, China

F6 July-11 18:20
Lubrication mechanism of SiO_2 nano-fluids under steel/steel contact
Jianlin Sun, Xudong Yan, Yueyue Bao, Ping Wu
University of Science & Technology Beijing, China

F6 July-11 18:40
*3rd Generation AHSS; Mechanistic Responses Enabling Cold Deformation during Stamping
Daniel Branagan, Parsons Craig, Tad Machrowicz, Andy Frerichs, Brian Meacham, Sheng Cheng, Alla Sergueeva
The NanoSteel Company, USA

Session: F7, Venue: Room 4

Advanced Steels & TMP Micro-alloyed Steels 10

Session Chairs: Rongsheng Qin; Yun Peng

F7 July-12 8:00 Keynote
*** Toward the Development of AHSS for Wear Resistant Applications**
Preston Wolfram, Christina Hensley, Ronald Youngblood, Rachael Stewart, Emmanuel De Moor, John Speer
Advanced Steel Processing and Products Research Centre, Colorado School of Mines, USA

F7 July-12 8:30
* Investigation on the scattering of the impact energy in low alloy bainitic steel
Pei Wang, Zhonghua Jiang, Hui Zhou, Dianzhong Li, Yiyi Li
Institute of Material Research, China

F7 July-12 8:50
S-N fatigue behavior of high-Mn steel/304L stainless steel welds at 298 and 110 K
Kwanho Lee, Daeho Jeong, Hyokyung Sung, Youngju Kim, Jehyun Lee, Sangshik Kim
Gyeongsang National University, Korea

F7 July-12 9:10
*A Discussion of Bendability in Terms of Local and Global Formability for Advanced High Strength Steels
Clemens Suppan, Thomas Hebesberger
Voestalpine Stahl GmbH, Austria

F7 July-12 9:30
* Combined strengthening from nanotwins and nanoprecipitates in a Fe-based superalloy
Nairong Tao
Institute of Metal Research, Chinese Academy of Sciences, China

F7 July-12 9:50
* Structural resetting by local or bulk thermal treatments
Cem Tasan, Menglei Jiang, Ke Qu, Atieh Moridi
Massachusetts Institute of Technology, USA

Session F7: Advanced Steels & TMP Micro-alloyed Steels 10
Coffee / Tea break 10:10 to 10:40

F7 July-12 10:40
Nucleation effect of Ca-oxysulfide inclusions of low carbon steel in heat affected zone by welding
Yusuke Terazawa, Ichimiya Katsuyuki, Hase Kazukuni

F7 July-12 11:00
*Response of hydrogen desorption in copper- containing martensitic steel
Yu-Chen Lin, Hung-Wei Yen
National Taiwan University, Taiwan

F7 July-12 11:20
* A Novel Approach to New Generation of High Strength Steels via Cluster Strengthening
Ilana Timokhina
Deakin University, Australia

F7 July-12 11:40
Formation of ultrafine equiaxed single variant martensite structure and its mechanical properties
Shiro Torizuka, Yuu Takahara, Hiroki Adachi
University of Hyogo, Japan

F7 July-12 12:00
The Study in Improvement of Hole Expansibility for High-Strength Steel of 980MPa Grade
Kuo-Chang Yang, Jui-Fan Tu, Lung-Jen Chiang, Wei-Jen Cheng, Chin-Yuan Huang
China Steel Corporation, Taiwan

F7 July-12 12:20
* Strengthening Mechanisms in Low Carbon Lath Martensite as Influenced by Austenite Conditioning
Shane Kennett, George Krauss, Kip Findley

F7 July-12 12:40
* From bands to blobs: how final annealing changes super duplex stainless steel
Hugo Van Landeghem, Damien Tresallet, Mohammed Ali Lakhdari, Benoït Appolaire, Emmanuel Rigal, Florent Krajcarz, Yves Du Terrail Couvat, Catherine Tassin, Jean-Denis Mithieux, Muriel Véron
SIMaP, France

F7 July-12 13:00
* Impact Toughness of Third Generation Advanced High Strength Steels after Pre-straining and Tempering
Jianfeng Wang, Lu Qi, Charles Enloe, Jason Coryell, Lianbo Luo, Xuejun Jin
General Motors China Science Lab, China

F7 July-12 13:20
* Revealing the condition of austenite decomposition during partitioning in Q&P steels
Wei Xu
Northeastern University, China

Lunch break 13:40 – 14:40

Session: F8, Venue: Room 4

Advanced Materials for Bioengineering Applications 1

Session Chairs: Takao Hanawa; Anisoara Cimpean

F8 July-12 14:00 Keynote
*** Mechanical Performance of Titanium Alloys for Biomedical Applications with adding Light Weight Interstitial Elements**
Mitsuo Niinomi
Tohoku University, Japan

F8 July-12 14:30 Keynote
*** Design and Processing of Biocompatible Ti Alloys for Medical Implants**
Jürgen Eckert
Montanuniversität Leoben, Austria

F8 July-12 15:00 Keynote
*** Titanium alloys in the human body: from those implanted today towards the design of the new functional alloys of tomorrow**
Thierry Gloriant, Philippe Castany, Doina-Margareta Gordin
Institute of Chemical Sciences of Rennes, France

F8 July-12 15:30
* Effect of interface damage on loosening behaviour of acetabular cup subjected to cyclic loading
Yuichi Otsuka, Kengo Kagaya, Yuki Hakozaki, Yukio Miyashita, Yoshiharu Mutoh
Nagaoka University of Technology, Japan

F8 July-12 15:50
Biomedical Ti alloys with high oxygen content and various amount of beta-stabilizing elements
Josef Stráský, Dalibor Preisler, Kristina Bartha, Michal Landa, Michaela Janovská, Milos Janecek
Charles University, Czech Republic

Session F8: Advanced Materials for Bioengineering Applications 1
Coffee / Tea break 16:10 to 16:40

F8 July-12 16:40
* Laser-based Microfabrication for Medical Applications
Roger Narayan
Joint Department of Biomedical Engineering, USA

F8 July-12 17:00
* Thin films of amorphous binary alloys developed by magnetron co-sputtering for the production of degradable coronary stents
Frédéric Chaubet, Fatiha Fallali, Nathalie Annonay
Laboratory for Vascular Translational Science, France

F8 July-12 17:20
Cold spraying of biomimetic apatite: from the powder synthesis to the coating characterization
Ambra Paterlini, Sergi Dosta, Irene Garcia Cano, Christian Rey, David Grossin, Ghislaine Bertrand
CRIMAT, Toulouse INP, France

F8 July-12 17:40
Laser Nano-texturing on Metal Surface for Selective Regulation of Vascular Cell Behaviour
Hojeong Jeon, Jun Indong, Hyunjung Kim
Korea Institute of Science and Technology, South Korea

F8 July-12 18:00
* Surface hydrophilization of PEEK for the improvement of biocompatibility
Kensuke Kuroda, Masazumi Okido
Nagoya University, Japan

F8 July-12 18:20
*Metastable β-Ti alloys with low Young's modulus for biomedical applications
Carlos Roberto Grandini, Pedro Kuroda, Mariana Lourenço, Giovana Cardoso, Bárbara Pedroso, Israel Rodrigues, Karolyne Sousa, Tatiani Donato
São Paulo State University, Brazil

Session: F9, Venue: Room 4

Advanced Materials for Bioengineering Applications 2

Session Chairs: Thierry Gloriant; Guangyin Yuan

F9 July-13 8:00 Keynote
*** Next Generation Metallic Implant Materials and Surfaces**
Takao Hanawa
Tokyo Medical and Dental University, Japan

F9 July-13 8:30 Keynote
*** Advanced Nanocoatings with Extreme Properties for Health**
Linda Bonilla, Diego Mantovani
Laval University, Canada

F9 July-13 9:00
* TiO2 nanotube surfaces as modulators of the macrophage inflammatory activity
Anisoara Cimpean, Patricia Neacsu, Anca Mazare, Raluca Ion, Madalina Georgiana Necula, Valentina Mitran, Patrik Schmuki
University of Bucharest, Romania

F9 July-13 9:20
* Biomolecules organization at the molecular scale and its impact on bacteria growth and cell recognition
Arnaud Ponche, Ousmane Ba, Anthony Duncan, Mathilde Hindié, Olivier Gallet, Judith Böhmler, Lydie Ploux, Karine Anselme
Institut de Science des Matériaux de Mulhouse, France

F9 July-13 9:40
Effects of heating rate and temperature on microstructure, texture and R-value of type 430 ferritic stainless steel
Matias Jaskari, Antti Järvenpää, Pentti Karjalainen
University of Oulu, Finland

Session F9: Advanced Materials for Bioengineering Applications 2
Coffee / Tea break 10:00 to 10:30

F9 July-13 10:30
* Effects of Zr addition on properties of Au-Nb-Zr alloys for MRI artefact-free biomedical applications
Kenichi Hamada, Emi Uyama, Eiichi Honda
Tokushima University Graduate School, Japan

F9 July-13 10:50
* Porous iron-manganese-hydroxyapatite composites for biodegradable orthopaedic applications
Lia Stanciu, Michael Heiden
Purdue University, USA

F9 July-13 11:10
* Long-term surveillance of Mg-Nd-Zn-Zr stent in rabbit common carotid artery: understanding the degradation and transport mechanism
Guangyin Yuan
Shanghai Jiao Tong University, China

F9 July-13 11:30
* Biomaterial surface charges and their influence on cell behaviour and signalling
Barbara Nebe, Susanne Staehlke, Matthias Schnabelrauch, Birgit Finke, Karine Anselme, Caroline Moerke, Martina Gruening, Henrike Rebl
Rostock University Medical Centre, Germany

F9 July-13 11:50
* Surface modifications strategies of zirconia-based bioceramics for improved interactions with biological tissues
Laurent Gremillard, Jérôme Chevalier, Carlos Caravaca, Yann Chevolot, Emmanuelle Laurenceau, Sophie Guillou, Maximilien Desbord
Université de Lyon, France

F9 July-13 12:10
* Fundamentals of hydroxyapatite-electret-based biointerface engineering
Kimihiro Yamashita
Tokyo Medical and Dental University, Japan

F9 July-13 12:30
A study of atomic layer deposited Al2O3 films on NiTi shape memory alloys for biomedical applications
Hsin-Chih Lin, Yin-Yi Han, Li-Chun Wang, Yen-Lun Chang, Kai-Chang Yang
National Taiwan University, Taiwan

F9 July-13 12:50
Adhesion of osteoblast-like cells on electrodeposited calcium phosphate coatings
Taraneh Mokabber
University of Groningen, Netherlands

Session G

Session: G1, Venue: Room A/B

Metallic Glasses & Metallic Amorphous Materials 1

Session Chairs: Junji Saida; Mariana Calin

G1 July-09 10:00 Keynote
***Features and Industrialization State of Bulk Metallic Glasses**
Akihisa Inoue
International Institute of Green Materials, Japan

G1 July-09 10:30
* Preparation of amorphous alloy coating films with magnetostriction by thermal spraying
Kenji Amiya, Kano Tatsuya, Komaki Masahiro
Tohoku University, Japan

G1 July-09 10:50
* Evaluation of a Characteristic Temperature in the Relaxation of Metallic Glass Forming Liquids
Masaru Aniya, Masahiro Ikeda
Kumamoto University, Japan

G1 July-09 11:10
* The role of chemical composition and structural relaxation in the anelastic deformation of metallic glasses
Michael Atzmon, Tianjiao Lei, Luis Rangel Dacosta, Ming Liu, Wei Wang, Alan Greer
University of Michigan, USA

G1 July-09 11:30
* Using femtosecond pulsed laser irradiation to magnetically pattern the surface of non-ferromagnetic amorphous steel
Dolors Baró, Huiyan Zhang, Yuping Feng, Suriñach Santiago, Daniel Nieto, Eva García-Lecina, Gerard O'Connor, Eva Pellicer, Jordi Sort
Universitat Autònoma de Barcelona, Spain

G1 July-09 11:50
* Homogeneous Deformation of Nanoscale Metallic Glasses
Jin Woo Kim, So Yeon Kim, Mo Li, Eun Soo Park
Seoul National University, South Korea

G1 July-09 12:10
*Structural characterization and mechanical properties of thermally rejuvenated Zr-based metallic glasses
Junji Saida, W. Guo, R. Yamada
Tohoku University, Japan

Lunch break 12:30 - 13:20

Session: G2, Venue: Room A/B

Metallic Glasses & Metallic Amorphous Materials 2

Session Chairs: Hidemi Kato; Gang Wang

G2 July-09 13:20
* Metallic glasses: From fundamental research to application exploration
Gang Wang
Shanghai University, China

G2 July-09 13:40
* How high pressure torsion affects the relaxation of bulk metallic glasses
Florian Spieckermann, Baran Sarac, Niraj Chawake, Sergey Ketov, Erhard Schafler, Michael Kerber, Bednarcik Jozef, Torben Fischer, Ivan Kaban, Juergen Eckert
University of Leoben, Austria

G2 July-09 14:00
* Deformation localization in metallic glasses revealed by in situ TEM deformation
Christoph Gammer, Andrew Minor, Jürgen Eckert
Erich Schmid Institute of Materials Science, Austria

G2 July-09 14:20
* Recent Advances in Spark Plasma Sintering of Bulk Amorphous Alloys
Sandip Harimkar, Tanaji Paul
Oklahoma State University, USA

G2 July-09 14:40
* Thermal behavior of uranium-based metallic glasses
Huogen Huang, Haibo Ke, Pei Zhang
Institute of Materials, China Academy of Engineering Physics, China

E2 July-09 15:00
* Kirkendall effect in metallic glasses
Sergey Ketov, Iurii Ivanov, Dmitri Luzguine-Luzgin, Challapalli Suryanarayana, Andrey Chuvilin, Jurgen Eckert
Erich Schmid Institute of Materials Science, Austria

G2 July-09 15:20
* Role of crystal-liquid interfacial free energy on the formation of Ti-Zr-Ni quasicrystals and Cu-Zr bulk metallic glasses
Geun Woo Lee
Korea Research Institute of Standards and Science, Korea

G2 July-09 15:40
* Imprinting Metallic Glass Analyser Grating for X-ray Talbot Interferometer
Masanari Datekyu, Wataru Yashiro, Hidemi Kato
Tohoku University, Japan

Session G2: Metallic Glasses & Metallic Amorphous Materials 2
Coffee / Tea break 16:00 to 16:30

G2 July-09 16:30
*3D Printing of Bulk Metallic Glasses and Composites by Selective Laser Melting
Lin Liu
Huazhong University of Science and Technology, China

G2 July-09 16:50
* Biocompatible Ti-based metallic glasses: glass formation, thermal stability, corrosion resistance and apatite-forming ability
Mariana Calin, Somayeh Abdi, Flaviu Gostin, Jürgen Eckert, Annett Gebert
IFW Dresden, Germany

G2 July-09 17:10
Making glasses ductile at room temperature by engineering the flexibility and heterogeneity in their amorphous structure
Evan Ma
Johns Hopkins University, USA

G2 July-09 17:30
* Ductility and Anelasticity in Metallic Glasses
Takeshi Egami, Yang Tong, Wojciech Dmowski
University of Tennessee, USA

G2 July-09 17:50
* Fe-based metallic glassy mono-dispersed particles prepared by container-free solidification process and their applications
Noriharu Yodoshi, Rui Yamada, Akira Kawasaki
Tohoku University, Japan

G2 July-09 18:10
* Rapidly quenched amorphous and nanocrystalline bilayer ribbons for magnetic sensors
Ivan Skorvanek, Branislav Kunca, Frantisek Andrejka, Jozef Marcin, Peter Svec
Institute of Experimental Physics SAS, Slovak Republic

G2 July-09 18:30
* Atomic-Scale Imprinting into Amorphous Metal
Udo Schwarz
Yale University, USA

G2 July-09 18:50
* Analysis of crystal nucleus in glass-forming liquids using molecular dynamics simulations
Masato Wakeda, Shigenobu Ogata
National Institute for Materials Science, Japan

G2 July-09 19:10
* The wear behavior of amorphous steel coating and stainless steel coating
Jianqiang Wang, Hui Guo, Suode Zhang
Institute of Metal Research, Chinese Academy of Sciences, China

G2 July-09 19:30
Insight into the deformation and failure of Zr55Cu30Ni5Al10 metallic glass
Marine Bayard, Marc Blétry, Eva Héripré, Loïc Perrière, Nicolas Thurieau, Habibou Maitournam
IMSIA, France

G2 July-09 19:50
* Formation of Amorphous and Nanocrystalline Zr-Cu-Ni-Al Based Dual Phase Alloys and Their Plastic Deformation
Tohru Yamasaki, Hiroki Adachi, Koichi Tsuchiya, Hidemi Kato
University of Hyogo, Japan

G2 July-09 20:10
* Structural evolution and crystallization behaviour of sputter-deposited amorphous germanium films
Ryusuke Nakamura, Masayuki Okugawa, Numakura Hiroshi, Ishimaru Manabu, Yasuda Hidehiro
Osaka Prefecture University, Japan

Session: G3, Venue: Room A/B

Materials Under Extreme Conditions 1

Session Chairs: Sven Vogel; Masashi Hasegawa

G3 July-10 8:00 Keynote
*** Energy-resolved neutron imaging for in-situ characterization of materials under extreme conditions**
Anton S Tremsin Sven C. Vogel, Adrian S. Losko, Takenao Shinohara, Kenichi Oikawa, Winfried Kockelmann, Daniel E. Pooley, Aaron Craft, Didier Perrodin, Gregory A. Bizarri, Edith D. Bourret, Søren Schmidt
University of California at Berkeley, USA

G3 July-10 8:30
* Unravelling the interaction of high-energy ions with solid targets by sputtering experiments
Igor Alencar
Universidade Federal do Rio Grande do Sul, Brazil

G3 July-10 8:50
* Shock-Driven Deformation and Phase Transitions in Titanium Observed Using In Situ X-ray Diffraction from an X-ray Free Electron Laser
Cindy Bolme, Gleason Arianna, Ramos Kyle, Brown Don, Cerreta Ellen, Morrow Ben, Lazicki Amy, Swift Damian, Ali Suzanne, Nagler Bob, Galtier Eric, Granados Eduardo
Los Alamos National Laboratory, USA

G3 July-10 9:10
* 400fs and 80ps-pulse laser in selected materials : first in-situ and post-mortem analysis Severine Boyer, Burr Alain, Jacomet Suzanne, Boustie Michel, Berthe Laurent, Baton Sophie, Brambrink Erik, Videau Laurent, Chevalier Jean-Marc, Schneider Matthieu, Phipps Claude, Masson Frederic, Bonnal Christophe
MINES ParisTech PSL, France

G3 July-10 9:30
* Probing the alpha - epsilon phase transition in shocked iron through dynamic x-ray diffraction
Brittany Branch, Jensen Brian
Los Alamos National Laboratory, USA

G3 July-10 9:50
Microstructure and mechanical properties of high dose self-ion irradiated nanostructured ferritic alloys produced by various processing methods
Eda Aydogan, Anderoglu Osman, Maloy Stuart, Shao Lin, Odette Robert, Hoelzer David, Lewandowski John, Anderson Iver
Los Alamos National Laboratory, USA

Session G3: Materials Under Extreme Conditions 1
Coffee / Tea break 10:10 to 10:40

G3 July-10 10:40
Simulating the wear resistance of ductile materials using Smooth Particle Hydrodynamics
Alban De Vaucorbeil, Hutchinson Christopher
Monash University, Australia

G3 July-10 11:00
* On Raman scattering in extreme environments
Patrick Simon
CNSR-Conditions Extremes et Materiaux: Haute Temperature et Irradiation, France

G3 July-10 11:20
* High pressure synthesis, crystal structure and compression behaviour of novel early transition-metal nitrides
Masashi Hasegawa, Niwa Ken, Soda Kazuo, Kikegawa Takumi
Nagoya University, Japan

G3 July-10 11:40
Development of Ultra-high temperature ceramics: from monoliths to composites
Aurelie Jankowiak, Justin Jean-François, Guérineau Vincent
Onera - The French Aerospace Lab, France

G3 July-10 12:00
* Pressure-induced phase transitions in bismuth layered alloys
Ayako Ohmura
Niigata University, Japan

Lunch break 12:20 - 13:20

Session: G4, Venue: Room A/B

Materials Under Extreme Conditions 2

Session Chairs: Anton Tremsin; Shengho Hu

G4 July-10 13:20
* High-pressure synthesis of transition mental chalcogenides and its properties
Ayako Yamamoto, Kikuchi Yuhei
Shibaura Institute of Technology, Japan

G4 July-10 13:40
* Phase diagrams of metals and alloys under pressure
Guy Makov
Ben Gurion University, Israel

G4 July-10 14:00
* Investigation of ion irradiation defects microstructure and cavity swelling evolution in austenitic steels representative of PWR internals
Joel Malaplate, Michaut Bertrand, Renault-Laborne Alexandra, Jourdan Thomas, Dalle France, Sefta Faiza, Décamps Brigitte
Service de Recherches Métallurgiques Appliquées, France

G4 July-10 14:20
* Stress-Strain Response of Irradiated Metallic Materials via Spherical Nanoindentation
Nathan Mara, Weaver Jordan, Pathak Siddhartha, Hosemann Peter, Patel Dipen, Kalidindi Surya
University of Minnesota, USA

G4 July-10 14:40
High pressure synthesis and characterization of new group-14 pernitrides
Ken Niwa Hirokazu Ogasawara, Tomoya Inagaki, Masashi Hasegawa
Nagoya University, Japan

G4 July-10 15:00
Coupled theoretical and experimental determination of specific radiation defect contributions to the electrical resistivity of metallic materials
Rebecca Alexander, C. S. Becquart, C. Domain, T. Lukinov, Z. Kotsina, M. Axiotis , G. Apostolopoulos, P. Olsson
Unité Matériaux et Transformations, France

G4 July-10 15:20
* Self-consistent polycrystalline modelling of in-reactor deformation of recrystallized Zircaloy-4 tubes and comparison with Fast Fourier Transform computations
Fabien Onimus, Brenner Renald, Gelebart Lionel
CEA, Université Paris-Saclay, France

G4 July-10 15:40
* In situ phase contrast imaging of spall and cracking in vitreous carbon, polymethylmethacrylate and magnesium alloys
Kyle Ramos, Pierce Timothy, Montgomery David, Liu Cheng, Bolme Cindy, Banesh Divya, Saavedra Ramon, Zubelewicz Alek, Rougier Esteban, Iverson Adam, Carlson Carl
Los Alamos National Laboratory, USA

Session G4: Materials Under Extreme Conditions 2
Coffee / Tea break 16:00 to 16:30

G4 July-10 16:30
* High Temperature Nanoindentation up to 800°C for characterizing high temperature properties of materials
Nicholas Randall, Conte Marcello, Berthout Guilaume
Anton Paar TriTec, Switzerland

G4 July-10 16:50
Corrosion of 316L(N) austenitic steel in sodium containing dissolved oxygen
Matthieu Rivollier, Courouau Jean-Louis, Giorgi Marie-Laurence
Laboratoire de Génie des Procédés et Matériaux, France

G4 July-10 17:10
* High-pressure synthesis of novel hydrides
Hiroyuki Saitoh, Takagi Shigeyuki, Sato Toyoto, Iijima Yuki, Orimo Shin-Ichi
National Institutes for Quantum and Radiological Science and Technology, Japan

G4 July-10 17:30
* Plasticity of deep Earth's materials at extreme conditions
Carmen Sanchez-Valle, Kupenko Ilya, Achorner Melissa, Pluckthun Christian, Liermann Hans-Peter, Merkel Sebastien
University of Muenster, Germany

G4 July-10 17:50
* Spark Plasma Sintering of High-energy Ball-milled ZrB2 and HfB2 Powders with 20 Vol% SiC
Naidu Seetala, Prevo Cyerra, Matson Lawrence, Key Thomas, Park Ilseok
Grambling State University, USA

G4 July-10 18:10
* In-situ x-ray observation of synthesizing process for transition-metal pnictides under high pressure and high temperature
Chihiro Sekine, Nakajima Ryosuke, Sirimart Jirattagan, Mori Hidemasa, Mona Yuttana
Muroran Institute of Technology, Japan

G4 July-10 18:30
*Atomic scale simulations provide insights on swelling induced by irradiations
Alain Chartier, Laurent Van Brutzel
CEA, France

G4 July-10 18:50
Morphological instability and growth transition of an ice crystal under dynamic compression Yun-Hee Lee, Yong-Jae Kim, Sooheyong Lee, Yong Chan Cho, Geun Woo Lee
Korea Research Institute of Standards and Science, Korea

Session: G5, Venue: Room A/B

Materials Under Extreme Conditions 3

Session Chairs: Hiroyuli Saitoh; Ayako Yamamoto

G5 July-11 8:00
* High-pressure synthesis of novel energy conversion catalytic materials
Ikuya Yamada
Osaka Prefecture University, Japan

G5 July-11 8:20
* Texture evolution of ferritic/martensitic oxides dispersed strengthened steel during cold forming
Elena Vakhitova, Denis Sornin, Manuel François
Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, France

G5 July-11 8:40
* Synthesis of cubic and hexagonal boron nitride single crystals under high pressure and their impurity control
Takashi Taniguchi
National Institute for Materials Science, Japan

G5 July-11 9:00
* Mechanical properties engineering in boron carbide by spark plasma sintering
Oleg Vasylkiv, Demirskyi Dmytro, Badica Petre, Borodianska Hanna, Suzuki Tohru, Sakka Yoshio
National Institute for Materials Science, Japan

G5 July-11 9:20
* High temperature neutron diffraction and neutron resonance imaging to increase yield of scintillator crystal growth
Sven Vogel, Anton S. Tremsin, Drew Onken, Didier Perrodin, Adrian S. Losko, Gregg Bizarri, Edith Bourret-Courchesne
Los Alamos National Laboratory, USA

G5 July-11 9:40
* Electron Correlated Systems at High Pressure
Yang Ding
Centre for High Pressure Science & Technology Advanced Research, China

Session G5: Materials Under Extreme Conditions 3
Coffee / Tea break 10:00 to 10:30

Lunch break 12:20 - 13:20

Session: G6, Venue: Room Louis Armand East

Materials & Technologies for Fusion 1

Session Chairs: Francesco Romanelli; Takeo Muroga

G6 July-11 13:20 Keynote
***Fusion reactors- In-vessel structural materials and related technologies**
Anton Moeslang, Eberhard Diegele, Jean Henry, Mario Merola, Gerald Pintsuk, Jens Reiser
Karlsruher Institut für Technologie, Germany

G6 July-11 13:50
* Production of Dispersion Strengthened Copper Alloys by Mechanical Alloying and Hot Isostatic Pressing for Application to Divertors of Fusion Reactors
Takeo Muroga, Yoshimitsu Hishinuma, Hiroyuki Noto, Bo Huang
National Institute for Fusion Science, Japan

G6 July-11 14:10
* Hydrogen isotope retention and release in fusion first wall materials
Christian Linsmeier, Timo Dittmar, Michael Eichler, Petra Hansen, Hans Rudolf Koslowski, Yulia Martynova, Marcin Rasinski
Forschungszentrum Jülich GmbH, Germany

G6 July-11 14:30
* Computer Simulation of Radiation Damage in Bulk Tungsten
Richard Kurtz, Wahyu Setyawan, Giridhar Nandipati
Pacific Northwest National Laboratory, USA

G6 July-11 14:50
Using alloying to reduce the defect mobility in W
Byeongchan Lee, Shin Younggak
Kyung Hee University, Korea

G6 July-11 15:10
* Enhanced Impact Toughness and High-Temperature Strength of Reduced-Activation Ferritic-Martensitic Steel By Thermo-Mechanical Treatments
Young-Bum Chun, Dongwon Lee, Yi-Hyun Park
Korea Atomic Energy Research Institute, Korea

G6 July-10 15:30
* Coating research and development for fusion reactor fuel systems
Takumi Chikada
Shizuoka University, Japan

G6 July-11 15:50
* Material challenges for first wall and divertor components in nuclear fusion devices
Gerald Pintsuk
Forschungszentrum Jülich GmbH, Germany

Session G6: Materials & Technologies for Fusion 1
Coffee / Tea break 16:10 to 16:40

G6 July-11 16:40
Model-compatible description of the temperature-dependent strength contributions in ferritic and austenitic nanocluster ODS steels
Sascha Seils, Daniel Schliephake, Torben Boll, Alexander Kauffmann, Martin Heilmaier
Karlsruhe Institute of Technology, Germany

G6 July-11 17:00
* Austenitisation and tempering temperatures effects on EUROFER 97 steel
Claudio Testani, Andrea Di Schino, Laura Alleva, Luciano Pilloni
CALEF, Italy

G6 July-11 17:20
* Tungsten-Copper Composites as Advanced Heat Sink Materials for Plasma-Facing Components-Performance of Mock-ups under High Heat Flux Loading
Alexander v. Müller, Bernd Böswirth, Henri Greuner, Rudolf Neu, Eliseo Visca, Jeong-Ha You
Max-Planck-Institut für Plasmaphysik, Germany

G6 July-11 17:40
* Diamond based Field Effect Transistors for application in high radiation flux environments
Gianluca Verona Rinati
University of Rome "Tor Vergata", Italy

G6 July-11 18:00
SHS synthesis, SPS densification and mechanical properties of nanometric tungsten alloys for fusion
Dominique Vrel
Laboratoire des Sciences des Procédés et des Matériaux, France

G6 July-11 18:20
*Materials for DEMO and Reactor Applications - Boundary Condition and New Concepts
Jan Willem Coenen, Andrey Litnovsky, Anne Houben, Johann Riesch, Rudolf Neu, Christian Linsmeier
Forschungszentrum Juelich GmbH, Germany

Session: G7, Venue: Room A/B

Welding & Joining of Advanced Materials 1

Session Chairs: Maria Elisa Tata; Tracy Nelson

G7 July-12 8:00 Keynote
*** Friction welding-a new era in chain manufacturing**
Norbert Enzinger, Pedro Effertz, Kemal Mucic, Franz Fuchs
Institute of Materials Science, Joining and Forming, Austria

G7 July-12 8:30
*Internal oxidation phenomena during HFI welding of pipeline steels
Michael Spiegel, Phillipe Schaffnit, Holger Brauer
Salzgitter Mannesmann Forschung GmbH, Germany

G7 July-12 8:50
* Weldability of Superalloys
Joel Andersson
University West, Sweden

G7 July-12 9:10
* Effect of Chemical Composition on Graphitization during Welding of Cast Iron
Kota Kadoi, Tadafumi Hashimoto, Kenji Shinozaki
Osaka University, Japan

G7 July-12 9:30
* Laser beam welding of IN792 DS superalloy
Giuseppe Barbieri, Stefano Bifaretti, Roberto Montanari, Vincenzo Bonaiuto, Maria Richetta, Sabino Pipolo, Alessandra Varone
University of Rome Tor Vergata, Italy

G7 July-12 9:50
* Dissimilar friction welding of Ti-6Al-4V alloy to Inconel 718 alloy using insert metals Tomo Ogura, Tomoya Imai, Keisuke Miyoshi, Kazuyoshi Saida
Osaka University, Japan

Session G7: Welding & Joining of Advanced Materials 1
Coffee / Tea break 10:10 to 10:40

G7 July-12 10:40
* Processing and Characterization of Advanced Joined Components
Monica Ferraris
Politecnico di Torino Italy

G7 July-12 11:00
* Experimental and numerical multi-scale investigation on the efficiency of FSW for dissimilar aluminum alloys
Eric Feulvarch, Robe Hugo, Texier Damien, Bocher Philippe
Laboratoire de Tribologie et Dynamique des Systèmes, France

G7 July-12 11:20
* Numerical simulation of GMAW process from the heat source properties to the weld pool formation
Yosuke Ogino, Asai Satoru, Hirata Yoshinori
Osaka University, Japan

G7 July-12 11:40
* Visualization of materials flow in friction stir welding
Masahiro Fukumoto
Daichi Sugimoto, Japan

G7 July-12 12:00
* Polymer Interphases in Adhesively Bonded Joints- Origin, Properties and Methods for Characterization
Paul Ludwig Geiss, Schumann Melanie
University of Kaiserslautern, Germany

Lunch break 12:20 - 13:20

Session: G8, Venue: Room A/B

Welding & Joining of Advanced Materials 2

Session Chairs: Norbert Enzinger; Haiyan Zhao

G8 July-12 13:20
* Challenges in Modelling of High Deformation Joining Processes
Tracy Nelson, Sorensen Carl, Miles Mike
Brigham Young University, USA

G8 July-12 13:40
* Use of Zener Approximation for Heat Transfer Analyses of Quasi One-Dimensional Welding Problems
Jerry Gould
EWI, USA

G8 July-12 14:00
* Quality assessment of friction stir welded joints via ultrasonic-guided-wave-techniques
Ramsey Hamade, Fakih Mohammad, Harb Mohammad, Mustapha Samir
American University of Beirut, Lebanon

G8 July-12 14:20
* Possibilities with use of Electron Beam Welding of Very High Strength Steel
Per Hansson, Areskoug Magnus
SSAB Special Steels, Sweden

G8 July-12 14:40
* Effects of surface treatment for A5052 aluminum alloy on adhesiveness between A5052 aluminum alloy and engineering plastics
Makoto Hino, Kuwano Ryoichi, Norihito Nagata, Kazuya Nagata, Teruto Kanadani
Hiroshima Institute of Technology, Japan

G8 July-12 15:00
* Fabrication of metal matrix composites by friction stir welding combined with various solid state coating methods
Sung-Tae Hong, Chun Doo-Man, Das Hrishikesh
University of Ulsan, Korea

G8 July-12 15:20
Development of projection welding technology for thin steel sheets
Seiji Furusako, Shinji Kodama, Masanori Yasuyama, Yasunobu Miyazaki
Steel & Sumitomo Metal Corporation, Japan

G8 July-12 15:40
* Component related tests for assessing the integrity of welded higher-strength fine-grained structural steels
Thomas Kannengiesser, Kromm Arne, Schroepfer Dirk, Rhode Michael
BAM Bundesanstalt für Materialforschung u. Prüfung, Germany

Welding & Joining of Advanced Materials 2
Coffee / Tea break 16:00 to 16:30

G8 July-12 16:30
* Three and Two Dimensional Smart Processing by Stereolithographic Additive Manufacturing and Thermal Nanoparticles Spraying
Soshu Kirihara
Osaka University, Japan

G8 July-12 16:50
* Dissimilar aluminium? Galvanized steel magnetic pulse welding
Marie-Noelle Avettand-Fenoel, Khalil Chady, Taillard Roland, Racineux Guillaume
Unité Matériaux et Transformations, France

G8 July-12 17:10
Effect of friction stir welding on the stacking-fault energy, mechanical twinning and strain hardening of C-bearing twinning-induced plasticity steels
Seung-Joon Lee, Yufeng Sun, Hidetoshi Fujii
Osaka University, Japan

G8 July-12 17:30
Effect of gap between steel sheet and electrode on resistance spot welding
Sho Matsui, Wakabayashi Chisato, Kodama Shinji
Nippon Steel & Sumitomo Metal Corporation, Japan

G8 July-12 17:50
* Yb: YAG laser welding of aeronautical alloys
Joel Alexis, Beguin Jean-Denis, Balcaen Yannick
Ecole Nationale d'Ingénieurs de Tarbes, France

G8 July-12 18:10
Welding of Bainitic Steels for Railway Applications
Marta Muniz-Mangas, Palmiere Eric, Fretwell-Smith Sandra, Smith Lindsey
University of Sheffield, UK

Session: G9, Venue: Room A/B

Welding & Joining of Advanced Materials 3

Session Chairs: Marie-Noelle Avettand Fenoel ; Vincenzo Bonaiuto

G9 July-13 8:00
* Explosion welding: process evolution and parameters optimization
Maria Elisa Tata, Costanza Girolamo, Cioccari Diego
University of Rome Tor Vergata, Italy

G9 July-13 8:20
Austenite grain growth simulation in welding heat-affected zone
Naoto Fujiyama, Seki Akira
Nippon Steel & Sumitomo Metal Corporation, Ltd, Japan

G9 July-13 8:40
* Numerical simulation of residual stresses due to multipass welding in high strength steel plates and validation against experimental measurements
Denis Carron, Ramard Constant, Pilvin Philippe, Florent Bridier
Institut de Recherche Dupuy de Lôme, France

G9 July-13 9:00
* Stabilization of Fusion Micro-welding of Glass by Picosecond Pulsed Laser
Yasuhiro Okamoto, Ogino Yuta, Shinonaga Togo, Okada Akira
Okayama University, Japan

G9 July-13 9:20
* Microstructure and Mechanical Properties of Laser-welded Medium Manganese Steel joints Cao Yang, Zhao Lin, Zhong Meilin, Yun Peng, Tian Zhiling
China Iron & Steel Research Institute Group, China

G9 July-13 9:40
The study on welding technology of 9Ni steel
Zhaoxia Qu, Xia Liqian, Wang Xiaojie
Baoshan Iron & Steel CO. LTD., China

Session G9: Welding & Joining of Advanced Materials 3
Coffee / Tea break 10:00 to 10:30

G9 July-13 10:30
* Dissimilar Metal Welding (DMW) of High Temperature Piping Applications
Rene Radis, Staubli Markus, Buetikofer Roland
General Electric GmbH, Switzerland

G9 July-13 10:50
* Microstructure stability during creep of friction stir welded AA2024-T3 alloy
Michael Regev, Spigarelli Stefano,
ORT Braude College, Israel

G9 July-13 11:10
* Thermo-mechanical physical simulation of friction melt bonding for dissimilar Al/steel joints
Thaneshan Sapanathan, Jimenez-Mena Norberto, Sabirov Ilchat, Monclús Miguel, Molina-Aldareguia Jon, Simar Aude
Université Catholique de Louvain, Belgium

G9 July-13 11:30
* Development of bonding region in ultrasonic bonding of aluminum alloy
Tomohiro Sasaki, Chiyozawa Takuya, Arimoto Keisuke
Niigata University, Japan

G9 July-13 11:50
* Extended application of hardness prediction system for temper bead welding of A533B steel to various low-alloy steels
Lina Yu, Saida Kazuyoshi, Nishimoto Kazutoshi
Osaka University, Japan

G9 July-13 12:10
* Creep Property of Boron added 9Cr Heat Resistant Steels after Welding
Tetsuya Matsunaga, Souissi Maaouia, Sahara Ryoji, Hongo Hiromichi, Tabuchi Masaaki, Zhang Wei, Mills Michael
National Institute for Materials Science, Japan

G9 July-13 12:30
* Evaluation on Residual Stresses in Thick Titanium Welded Alloys
Haiyan Zhao, Xie Pu of Mechanical Engineering,
Tsinghua University, China

G9 July-13 12:50
* Evolution of bonding interface between similar or dissimilar metals during solid-state bonding at low temperatures
Shoichi Nambu, Pongmorakot Kittipan, Koseki Toshihiko
The University of Tokyo, Japan

G9 July-13 13:10
*Characterisation of the strain distributions produced during welding using in situ synchrotron X-ray diffraction
Howard Stone, Nick Jones, Lewis Owen, Sebastien Rouquette, Joe Kelleher, David Dye, Leigh Connor
Cambridge University, UK

Session H

Session: H1, Venue: Room C/D

High Entropy Alloys 1

Session Chairs: An-Chou Yeh; Hideyuki Murakami

H1 July-09 10:00 Keynote
*** Exploring Opportunity of High Entropy Alloys: Microstructure Control, High Temperature Oxidation Resistance, Stacking Fault Energy**
Koichi Tsuchiya, Jian Qiang, Jein Lee, Hideyuki Murakami
National Institute for Materials Science, Japan

H1 July-09 10:30
* Research and development of precipitation strengthened high entropy alloy for elevated temperature application
An-Chou Yeh, Te-Kang Tsao, Hideyuki Murakami, Koji Kakehi, Jien-Wei Yeh
National Tsing Hua University, Taiwan

H1 July-09 10:50
* Designing Low-Cost, High Strength, Ductile, High Entropy, Stainless Steels
Ian Baker
Dartmouth College, USA

H1 July-09 11:10
* Modifying transformation pathways in High Entropy Alloys or Complex Concentrated Alloys via thermo-mechanical processing
Rajarshi Banerjee
University of North Texas, USA

H1 July-09 11:30
*A diffusion couple approach for phase stability and solid solution strengthening in high entropy alloys
Enrico Bruder, Tom Keil, Karsten Durst
Technical University Darmstadt, Germany

H1 July-09 11:50
*Fabrication of high entropy alloy coatings by laser cladding
Chih-Chao Yang, Yu-Hsien Chou, Joseph Lik Hang Chau
Industrial Technology Research Institute, Taiwan

H1 July-09 12:10
* Phase Stability of FeCrCoNi-based High Entropy Alloys: Experimental and Theoretical Study
Cieslak Jakub, Janusz Tobola, Katarzyna Berent, Katarzyna Matusiak, Adrianna Kania, Monique Calvo-Dahlborg, Ulf Dahlborg
AGH University of Science and Technology, Poland

H1 July-09 12:30
* Al, Cu and Zr addition to High Entropy Alloys: the Effect on Recrystallization Temperature
Elena Colombini
University of Modena and Reggio Emilia, Italy

H1 July-09 12:50
* Evaluation of refractory high entropy alloys for aeroengines applications
Anne Denquin, Zhao Huvelin, Agnès Bachelier-Locq, Antoine Lacour-Gogny-Goubert, Ivan Guillot
Office National d'Etudes et de Recherches Aérospatiales, France

H1 July-09 13:10
Investigation into the thermal stability and their mechanical properties of cast refractory high entropy alloys
Shai Essel, Natalya Larianovsky, Alexander Katz-Demyanetz, Alexander Katsman, Menachem Bamberger
Israel Institute of Metals, Israel

Lunch break 13:30 - 14:30

Session: H2, Venue: Room C/D

High Entropy Alloys 2

Session Chairs: Jean-Philippe Couzinie; Uwe Gratzel

H2 July-09 14:30 Keynote
***Multicomponent and High-Entropy Alloys**
Brian Cantor
University of Bradford

H2 July-09 15:00
*Use of novel welding technologies for high-entropy alloys joining
Sergey Zherebtsov, Nikita Stepanov, Dmitry Shaysultanov, Igor Vysotskiy, Vladimir Sanin, Nikolay Kashaev
Belgorod State University, Russia

H2 July-09 15:20
* Autonomous Phase Stabilization of High Entropy Alloy under Dynamic Forcing Conditions
Hyun Seok Oh, Jin Yeon Kim, Chae Woo Ryu, Eun Soo Park, Hye Jung Chang, Koichi Tsuchiya, Andreas Meyer, Cem Tasan, Dierk Rabbe
Seoul National University, Korea

H2 July-09 15:40
* Performance of high entropy alloys in high temperature environments
Hideyuki Murakami
National Institute for Materials Science, Japan

Session H2: High Entropy Alloys 2
Coffee / Tea break 16:00 to 16:30

H2 July-09 16:30
* Effect of Lattice Distortion and Elastic Moduli Variation on Solid Solution Strengthening in a Series of Refractory High Entropy Alloys
Hans Chen, Alexander Kauffmann, Stephan Laube, In-Chul Choi, Ruth Schwaiger, Yongyi Huang, Klaudia Lichtenberg, K. Sharvan Kumar, Franz Müller, Bronislava Gorr, Hans-Jürgen Christ, Martin Heilmaier
Karlsruhe Institute of Technology, Germany

H2 July-09 16:50
* Transformation pathways influencing microstructural evolution in a high entropy alloy with potential applications at elevated temperatures
Hamish Fraser, J.k. Jensen, J.m. Sosa, B.a. Welk, G.b. Viswanathan, S. Kuhr, R. Shi, Y. Wang
The Ohio State University, USA

H2 July-09 17:10
* Mechanical properties of solid solutions in the Au-Cu-Ni-Pd-Pt system
Jens Freudenberger, Felix Thiel, Kornelius Nielsch
Leibniz Institute for Solid State and Materials Research - IFW Dresden, Germany

H2 July-09 17:30
Microstructural evolution in CoCrNi processed by high pressure torsion
Niraj Chawake, Florian Spieckermann, K. G. Prashanth, Pradipta Ghosh, Tapabrata Maity, Sergey Ketov, Jurgen Eckert
Erich Schmid Institute of Materials Science, Austria

H2 July-09 17:50
* CALPHAD modeling of high entropy alloys: gaps and opportunities for alloy development
Stéphane Gorsse, Daniel Miracle, Oleg Senkov, Raj Banerjee
CNRS Bordeaux, France

H2 July-09 18:10
* Microstructure and texture of cold rolled and recrystallized CoCrNi medium-entropy alloy
Dan Sathiaraj Gunasekaran, Werner Skrotzki, R Jose Immanuel, Paul Chekhonin, Aurimas Pukenas, Rolf Schaarschuch, S K Panigrahi, J Arout Chelvane, S S Satheesh Kumar
TU Dresden, Germany

H2 July-09 18:30
* Development of high resistance non-equiatomic HEAs from CoCrFeMnNi family
Anna Fraczkiewicz, Michal Mroz, Claude Varillon, Matthieu Lenci, Andras Borbely
Ecole des MINES de St-Etienne, France

H2 July-09 18:50
*From systematic characterisation to the next generation of high performance materials
Baptiste Gault, Paraskevas Kontis, Jonathan Cormier, Dierk Raabe
Max-Planck-Institut für Eisenforschung GmbH, Germany

H2 July-09 19:10
Hydrogen storage in TiZrNbHfTa high entropy alloy
Jorge Montero, Claudia Zlotea, Jean-Philippe Couzinié, Loic Perrière, Julie Bourgon, Martin Sahlberg
Institut de Chimie et des Matériaux Paris-Est, France

Session: H3, Venue: Room C/D

High Entropy Alloys 3

Session Chairs: B. S. Murty; Eun Soo Park

H3 July-10 8:00 Keynote
***Self-diffusion and microstructure analysis of high-entropy alloys**
Gerhard Wilde
University of Münster, Germany

H3 July-10 8:30
* Formation of high entropy composites through severe plastic deformation
Anton Hohenwarter, Benjamin Schuh
University of Leoben, Austria

H3 July-10 8:50
* Low density, high entropy alloys
Carl Koch
North Carolina State University, USA

H3 July-10 9:10
* Refractory high entropy alloys matrix composites
Hyunjoo Choi, Aeran Roh, Hanuel Kim
Kookmin University, Korea

H3 July-10 9:30
*The effect of compositional modifications on the formation of the sigma phase in CrMnFeCoNi type High Entropy Alloys
Nick Jones, Katerina Christofidou, Ed Pickering, Maximilian Bloomfield, Paul Mignanelli, Thomas Mcauliffe, Howard Stone
Cambridge University, UK

H3 July-10 9:50
* Use of high-throughput Calphad calculations for the development of high entropy alloys
Jean-Marc Joubert, Thomas Rieger, Guillaume Bracq, Mathilde Laurent-Brocq, Jean-Philippe Couzinié, Ivan Guillot
Institut de Chimie et des Matériaux Paris-Est, France

Session H3: High Entropy Alloys 3
Coffee / Tea break 10:10 to 10:40

H3 July-10 10:40
* Refractory metals based High Entropy Alloys (HEA) of 2nd and 3rd generation: concept, microstructural evolution, phase formation, behavior at high temperatures
Alexander Katz-Demyanetz, Eyal Eshed, Natalya Larianovsky, Shai Essel, Igor Gorbachev, Vladimir Popov, Menachem Bamberger
Israel Institute of Metals, Israel

H3 July-10 11:00
* Comparison of the mechanical properties of the CrMnFeCoNi high-entropy alloy and the CrCoNi medium-entropy alloy
Guillaume Laplanche, Aleksander Kostka, Easo George
Ruhr-University Bochum, Germany

H3 July-10 11:20
* Thermal Stability and Creep Behaviour of High Entropy Alloys
Ravi Sankar Kottada, Praveen Sathiyamoorthi
Indian Institute of Technology Madras, India

H3 July-10 11:40
*Chemically architectured high entropy alloys: towards a new strengthening mechanism
Mathilde Laurent-Brocq, Pierre-André Goujon, Judith Monnier, Loïc Perrière, Benjamin Villeroy
Institut de Chimie et des Matériaux Paris-Est, France

H3 July-10 12:00
Assessing the magnitude of static and dynamic displacements in CrMnFeCoNi
Lewis Owen, Helen Playford, Howard Stone, Nicholas Jones
Cambridge University, UK

H3 July-10 12:20
*Interstitially alloyed high-entropy alloys with improved mechanical properties
Zhiming Li, Dierk Raabe
Max-Planck-Institut für Eisenforschung, Germany

H3 July-10 12:40
Hydrogen enhances strength and ductility of an equiatomic high-entropy alloy
Hong Luo, Zhiming Li, Dirk Ponge, Dierk Raabe
Max-Planck Institut für Eisenforschung, Germany

H3 July-10 13:00
*Positron Annihilation Spectroscopy of Early Stages of Radiation Damage in Single-Phase Equiatomic Alloys
Ilja Makkonen, Janne Heikinheimo, Filip Tuomisto, Haizhou Xue, William Weber, Yanwen Zhang
Aalto University, Finland

Lunch break 13:20 - 14:20

Session: H4, Venue: Room C/D

High Entropy Alloys 4

Session Chairs: Bernhard Sonderegger; Martin Heilmaier

H4 July-10 14:30
*Critically- and Polychromatically-Percolated AlxCoCrFeNi and AlxCoCrCuFeNi High-Entropy Alloys Demonstrated by Molecular Dynamics Simulations
Akira Takeuchi, Kunio Yubuta, Takeshi Wada, Kenji Amiya
Tohoku University, Japan

H4 July-10 14:50
* Refractory metal complex, concentrated alloys (RCCAs): challenges and opportunities
Dan Miracle, Oleg Senkov, Vishal Soni, Raj Banerjee, Stéphane Gorsse
Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

H4 July-10 15:10
*Microstructure of High Entropy Alloys with Liquid Phase Separation
Takeshi Nagase
Osaka University, Japan

H4 July-10 15:30
*Criteria for selecting alloys for powder-bed additive manufacturing
Son Pham
Imperial College London, UK

H4 July-10 15:50
*Strategies for design, modelling and optimisation of high entropy alloys
Pedro Rivera-Diaz-Del-Castillo , Isaac Toda, Edern Menou, Gérard Ramstein, Franck Tancret
Lancaster University, UK

Session H4: High Entropy Alloys 4
Coffee / Tea break 16:10 to 16:40

H4 July-10 16:40
*Functional Properties of High Entropy Materials
Anirudha Karati, Tripta Parida, Raghavendra Kulkarni, V.S. Hariharan, P. Karthiga, P. Kirthiga, V. Srinivas, U.V. Varadaraju, B.S. Murty
Indian Institute of Technology Madras, India

H4 July-10 17:00
*Microstructure and Properties of Al-Mo-Nb-Ta-Ti-Zr Refractory High-Entropy Alloys
Oleg Senkov, Jacob Jensen, Adam Pilchak, Daniel Miracle, Hamish Fraser
Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

H4 July-10 17:20
* Transformation-induced plasticity in HEA: FCC to BCC transformation
Seok Su Sohn, Yong Hee Jo, Won-Mi Choi, Dong Geun Kim, Hyoung Seop Kim, Byeong-Joo Lee, Sunghak Lee
POSTECH, Korea

H4 July-10 17:40
Microstructure and mechanical properties of powder CoCrNiTi base medium entropy alloy
Igor Moravcik, Ivo Dlouhý, Erich Neubauer, Michael Kitzmantel, Zuzana Kovacova
Brno University of Technology, Czech Republic

H4 July-10 18:00
*Strengthening of a CoCrFeNiMn-type high entropy alloy by regular arrays of nanoprecipitates
Nikita Stepanov, Dmitry Shaysultanov, Margarita Klimova, Sergey Zherebtsov, Vladimir Sanin
Belgorod National Research University, Russia

H4 July-10 18:20
* The influence of multiple 3d transition elements on mechanical/fatigue properties of Fe-Mn-Cr-Ni-Si alloys
Takahiro Sawaguchi, Takamori Susumu, Nobuo Nagashima, Ilya Nikulin
National Institute for Materials Science, Japan

H4 July-10 18:40
The cyclic plasticity behavior of interstitial TWIP-TRIP-HEA
Xu Zhang, Zhiming Li, Dierk Raabe
Southwest Jiaotong University, China

Session: H5, Venue: Room C/D

Nanomaterials for Structural & Energy Applications 1

Session Chairs: Mino Yamauchi; Patrick da Costa

H5 July-11 8:00 Keynote
*** On the fabrication of nanostructures with electrons and ions**
Jeff De Hosson
University of Groningen, Netherlands

H5 July-11 8:30
* Mechanical properties and dislocation nucleation in nanocrystals with blunt edges
Jonathan Amodeo, Lizoul Khalid
Materiaux: Ingénierie et Science, France

H5 July-11 8:50
* Real-Time Observation of Dynamic Solid State Electrochemical Processes by in-situ TEM
Xuedong Bai
Institute of Physics, Chinese Academy of Sciences, China

H5 July-11 9:10
*Fabrication of electrodeposited bulk nanocrystalline Ni-W and Fe-Ni alloys with high strength and large tensile ductility
Yorinobu Takigawa, Matsui Isao, Uesugi Tokuteru, Higashi Kenji
Osaka Prefecture University, Japan

H5 July-11 9:30
* Effect of phase transformation and hot compaction on the magnetic properties of Mn-Al based permanent magnetic materials
Chul-Jin Choi, Jihoon Park, Hui-Dong Qiang, Ping-Zhan Si
Korea Institute of Materials Science, Korea

H5 July-11 9:50
* Nickel Supported Modified Ceria Zirconia Lanthanum/Praseodymium/Yttrium Oxydes Catalysts for syngas production through Dry Methane Reforming
Hongrui Liu, Katarzyna Swirk, Maria Elena Galvez, Patrick Da Costa
UPMC Sorbonne Universités Paris, France

Session H5: Nanomaterials for Structural & Energy Applications 1
Coffee / Tea break 10:10 to 10:40

H5 July-11 10:40
*Low temperature graphene growth using novel catalysts
Masaki Tanemura, Araby Mona, Vishwakarma Riteshkumar, Sharma Subash, Wakamatsu Yuji, Takahashi Kazunari, Kalita Golap, Rosmi Mohamad, Kitazawa Masashi
Nagoya Institute of Technology, Japan

H5 July-11 11:00
* Insights into deformation behavior of pearlitic steel
Pradipta Ghosh, Kormout Karoline, Lienert Ulrich, Keckes Jozef, Pippan Reinhard
Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Austria

H5 July-11 11:20
* Colloidal synthesis and spectroscopic characterization of luminescent Cd-free chalcopyrite semiconductor nanocrystals
Yasushi Hamanaka, Kuzuya Toshihiro
Nagoya Institute of Technology, Japan

H5 July-11 11:40
* Selective-Area Growth and Transport Characterization of Vertical MnAs/InAs Heterojunction Nanowires
Shinjiro Hara, Matthias T. Elm, Peter J. Klar
Hokkaido University, Japan

H5 July-11 12:00
* Nanostructured Materials for Nuclear Energy Applications
Celine Hin
Virginia Tech, USA

H5 July-11 12:20
* Controlled synthesis of carbon nanomaterials and nanocomposites employing in-liquid plasma
Hiroki Kondo, Hori Masaru, Hiramatsu Mineo
Nagoya University, Japan

H5 July-11 12:40
* Microscopic Seebeck-coefficient evaluation for thermoelectric nanomaterials
Hiroya Ikeda, Suzuki Yuhei, Salleh Faiz
Shizuoka University, Japan

H5 July-11 13:00
*Surface Roughness Control of ITO Films by VHF Superposed DC Magnetron Plasma Hirotaka Toyoda, Suzuki Haruka
Nagoya University, Japan

Lunch break 13:20 - 14:20

Session: H6, Venue: Room C/D

Nanomaterials for Structural & Energy Applications 2

Session Chairs: Claude Estournes; Yuichi Setsuhara

H6 July-11 14:20 Keynote
*** Grain orientation mapping in nanostructured metals produced by plastic deformation** Xiaoxu Huang, He Qiongyao, Feng Zongqiang, Hong Chuanshi, Wu Guilin, Schmidt Søren
Technical University of Denmark, Denmark

H6 July-11 14:50
* Thin Film Growth of Iron-Based Superconductors
Hiroshi Ikuta
Nagoya University, Japan

H6 July-11 15:10
* Inverse Stranski-Krastanov Growth of Single Crystalline Films: A New Mode of Heteroepitaxy for Large Lattice Mismatched System
Naho Itagaki, Shiratani Masaharu
Kyushu University, Japan

H6 July-11 15:30
Superhydrophobic and highly oleophilic polystyrene fibers (PS) showing a delayed freezing time and effective oil adsorption
Reza Jafari, Champeau Marc, Farzaneh Masoud, Momen Gelareh
University of Quebec at Chicoutimi, Canada

H6 July-11 15:50
*Formation and Characterization of Si/Ge Quantum Dots for Optoelectronic Application Seiichi Miyazaki, Makihara Katsunori, Ikeda Mitsuhisa, Ohta Akio
Nagoya University, Japan

Session H6: Nanomaterials for Structural & Energy Applications 2
Coffee / Tea break 16:10 to 16:40

H6 July-11 16:40 Keynote
***Data mining for Electromechanical and Phase Change Properties of over 1000 Two-Dimensional Materials**
Evan Reed
Stanford University, USA

H6 July-11 17:10
* First principles calculations of the stability and physical properties of thermoelectric materials: application to Heuslers and antimonides
Philippe Jund
Institut Charles Gerhardt- Institut de Chimie de la Matière Condensée et des Matériaux, France

H6 July-11 17:30
* Optimizing Ceramic Composites for Ultra-High Permittivity and Electrocaloric Effect
Jean-Michel Kiat, Bogicevic Christine, Anoufa Mickael
CentraleSupelec, France

H6 July-11 17:50
*Structural and Morphological Modification of Si-Based Nanosheets Synthesized by Thermal Treatment with Chloride Compounds
Hirokazu Tatsuoka
Shizuoka University, Japan

H6 July-11 18:10
* Structural and thermodynamical study of AlNO:Er to understand luminescence concentration quenching
Valerie Brien, Katsikini M., Pavloudis Th., Kieseoglou J.
CNRS, France

H6 July-11 18:30
*Interfacial Modification of the Lead Halide Perovskites Solar Cells
Meicheng Li, Dong Wei, Peng Cui, Jun Ji, Shangyi Dou, Hao Huang, Yingfeng Li, Lihua Chu, Bing Jiang, Sajid, A. M. Elseman
North China Electric Power University, China

Session: H7, Venue: Room C/D

Nanomaterials for Structural & Energy Applications 3

Session Chairs: Brigitte Pecquenard; Celin Hin

H7 July-12 8:00 Keynote
*** Synthesis of carbon nanowall electrode for clean energy application**
Mineo Hiramatsu, Takeda Keigo, Kondo Hiroki, Hori Masaru
Meijo University, Japan

H7 July-12 8:30
* Interface formation under severe shear strain in hybrid materials suitable for electrical applications
Rimma Lapovok, De Andrade Mendes Filho Anibal
Deakin University, Australia

H7 July-12 8:50
Fabrication and characterization of BNNS dispersed ceramic matrix nanocomposites
Bin Lee, Kim Bum Sung, Hong Soon Hyung
Korea Institute of Industrial Technology, Korea

H7 July-12 9:10
* Pitting corrosion behaviour of nanocrystalline metal thin film prepared by Magnetron Sputtering -- a recent work report
Li Liu
Institute of Metal Research, Chinese Academy of Sciences, China

H7 July-12 9:30
*Production of copper nanoparticles using gas-liquid interface plasma
Takayuki Ohta, Hori Masaru
Meijo University, Japan

H7 July-12 9:50
*New materials for all-solid-state thin film Li and Li-ion batteries
Brigitte Pecquenard, Le Cras Frédéric
Institut de Chimie de la Matière Condensée, France

Session H7: Nanomaterials for Structural & Energy Applications 3
Coffee / Tea break 10:10 to 10:40

H7 July-12 10:40
* Continuous terahertz wave generation based exciton optical nonlinearity
Osamu Kojima
Kobe University, Japan

H7 July-12 11:00
*New Heterogeneous Photocatalysts Constructed with Semiconductors, Nanoparticles, and Metal Complexes toward CO2 Reduction and Water Oxidation
Kazuhiko Maeda
Tokyo Institute of Technology, Japan

H7 July-12 11:20
* Three-dimensional structural and defect analysis by nanobeam X-ray diffraction for semiconductor materials
Akira Sakai
Osaka University, Japan

H7 July-12 11:40
*Fabrication of Carbon Nanotube Fibrous Assembly by Gas Discharge Breakdown
Hideki Sato, Funaki Seiji, Mizushima Yuuki
Mie University, Japan

H7 July-12 12:00
*Comparisons of properties of GaN-based nanocrystals grown on metal-foil and multicrystalline Si substrates
Yuichi Sato, Fujiwara Atomu, Trung Nguyen Duc, Saito Sora
Akita University, Japan

H7 July-12 12:20
*Tuning the properties of TiO2 nanowires by heat treatment in various atmospheres
Alena Folger, Christina Scheu
Max-Planck-Insitut für Eisenforschung GmbH, Germany

H7 July-12 12:40
*Integrated micro-thermoelectric coolers by template assisted electrochemical deposition Gabi Schierning, Kornelius Nielsch
Leibniz IFW Dresden, Germany

H7 July-12 13:00
*Dynamical control of antiferromagnetic domain state by magnetoelectric effect
Yu Shiratsuchi, Nguyen Thi Van Anh, Kotani Yoshinori, Toyoki Kentaro, Nakamura Tetsuya, Nakatani Ryoichi
Osaka University, Japan

Lunch break 13:20 - 14:20

Session: H8, Venue: Room C/D

Nanomaterials for Structural & Energy Applications 4

Session Chairs: Priya Vashista; Chul-Jin Choi

H8 July-12 14:20 Keynote
*** Spark Plasma Sintering of ceramics: from controlling the microstructures to the development of complex shapes**
Claude Estournes, Maniere Charles, Durand Lise, Weibel Alicia, Elissalde Catherine, Mauvy Fabrice
Centre Interuniversitaire de Recherche et d'ingenierie des Matériaux, France

H8 July-12 14:50
*Broadband visible emission from InGaN/nano-AlN for phosphor-free white LED
Masakazu Sugiyama
Research Centre for Advanced Science and Technology, Japan

H8 July-12 15:10
*Plasma-Enhanced Reactive Sputter Deposition Processes for Low-Temperature Formation of High-Mobility IGZO Thin-Film Transistors
Yuichi Setsuhara, Takenaka Kosuke, Endo Masashi, Uchida Giichiro, Ebe Akinori
Osaka University, Japan

H8 July-12 15:30
* High Voltage, High Capacity, Room Temperature Na-Based Hybrid Flow Batteries for Grid-Scale Energy Storage
Leon Shaw, Liu Caihong, Shamie Jack, Sprenkle Vincent
Illinois Institute of Technology, USA

H8 July-12 15:50
*Cross correlation analysis of fluctuation of interactions between nanoparticles and low pressure reactive plasmas
Masaharu Shiratani, Koga Kazunori
Kyushu University, Japan

Session H8: Nanomaterials for Structural & Energy Applications 4
Coffee / Tea break 16:10 to 16:40

H8 July-12 16:40
* Nanoparticle Synthesis by Thermal Plasma for Lithium Ion Battery Application
Takayuki Watanabe, Yoshida Shuhei, Nonaka Tadashi, Hayashida Ririko, Sone Hirotaka, Tanaka Manabu
Kyushu University, Japan

H8 July-12 17:0 0
* Reactive Nanosystems and Computational Synthesis
Priya Vashishta
University of Southern California, USA

H8 July-12 17:20
*Structure Controlled Inorganic Nanoparticles for Efficient Energy & Material Conversion Miho Yamauchi
Kyushu University, Japan

H8 July-12 17:40
*Maximization of morphological strengthening effect in duplex microstructure
Ikumu Watanabe, Nakamura Gaku, Yuge Kohei
National Institute for Materials Science, Japan

H8 July-12 18:00
* Transition metals doped titanate nanostructures for applications in photoinduced processes
Fernando Rizzo, Antonio Mario Costa
PUC-Rio, Brazil

H8 July-12 18:20
*GeSn-based thin film thermoelectric generators
Masashi Kurosawa, Sakashita Mitsuo, Nakatsuka Osamu, Zaima Shigeaki
Nagoya University, Japan

H8 July-12 18:40
*Nanostructure fabrication processes in supercritical fluids
Eiichi Kondoh
University of Yamanashi, Japan

H8 July-12 19:00
* Electron Diffusion Length and Charge Separation Efficiency in Nanostructured Ternary Metal Vanadate Photoelectrodes
Siti Nur'ain Binti Haji Yassin, Nur Afifah Haniyyah Binti Halidi, Sim Soong Leong, Liu Yeru, James Robert Jennings
Universiti Brunei Darussalam, Brunei

H8 July-12 19:20
*Physical and chemical (re)processing of recycled end-of-life Nd-Fe-B magnets; towards creating novel (nanostructured) permanent magnets
Kristina Zuzek Rozman , Awais Ikram, Xuan Xu, Farhan Mehmood, T. Tomse, R. Sheridan, A. Walton, Muhammad Awais, Spomenka Kobe, Saso Sturm
Jožef Stefan Institute, Slovenia

Session: H9, Venue: Room C/D

Prof. L. S. Toth Honorary Symposium

Session Chairs: Werner Skrotzki; Claude Esling

H9 July-13 8:00 Keynote
*** What did we learn about the deformation behaviour of polycrystals by texture modelling during the last 30 years?**
Laszlo Toth
Unversité de Lorraine, France

H9 July-13 8:30
*Avrami's based laws controlling crystallization in bulk polymers
Severine Boyer
Paris Tech, France

H9 July-13 8:50
*Magnetic Barkhausen Noise Characterization of the Recrystallization of a Non-oriented Electrical Steel after Cold Rolling at Different Angles to the Hot Rolling Direction
Youliang He, Mehdi Mehdi, Erik Hilinski, Afsaneh Edrisy
Canmet MATERIALS, Canada

H9 July-13 9:10
Texture development during asymmetric rolling in plain low carbon steel
Satyaveer Singh Dhinwal, Laszlo S Toth, Peter Damian Hodgson
Laboratory of Excellence on Design of Alloy Metals for Low-Mass Structures, France

H9 July-13 9:30
Influence of austenite decomposition path on texture development in AISI430 ferritic stainless steel
Robert Knutsen
University of Cape Town, South Africa

H9 July-13 9:50
*Development of local inhomogeneous strain and microstructure during cold rolling in Al-Mg alloys by using 3D marker tracking method
Masakazu Kobayashi, Masato Nakayama, Tomoya Aoba, Hiromi Miura
Toyohashi University of Technology, Japan

Session H9: Prof. L. S. Toth Honorary Symposium
Coffee / Tea break 10:10 to 10:40

H9 July-13 10:40 Keynote
*** Simultaneous Prediction of Bendability and Deep Drawability Based on Orientation Distribution Function for Polycrystalline Cubic Metal Sheets**
Hirofumi Inoue
Osaka Prefecture University, Japan

H9 July-13 11:10
*Self-consistent modelling of Cube texture during dynamic recrystallisation of a Ni-30Fe model alloy
Ahmed Saleh, Parvez Mannan, Carlos Tomé, Elena Pereloma
University of Wollongong, Australia

H9 July-13 11:30
*The variant problem revisited: A hidden regression model
Helmut Schaeben, Richard Arnold, Florian Bachmann, Peter Jupp
TU Bergakademie Freiberg, Germany

H9 July-13 11:50
* Micro-mechanisms of deformation and texture evolution in ultrafine grain and nanocrystalline FCC materials
Satyam Suwas
Indian Institute of Science Bangalore, India

H9 July-13 12:10
*The Strain-Energy-Release-Maximization Theory for Evolution of Recrystallization Textures
Dong Nyung Lee
Seoul National University, Korea

H9 July-13 12:30
*Unique effect of carbon addition on development of deformation and recrystallization textures in heavily cold rolled Fe-3%Si alloys
Masanori Takenaka, Yasuyuki Hayakawa, Nobuhiro Tsuji
JFE Steel Corporation, Japan

H9 July-13 12:50
* Textures of high-entropy alloy CrMnFeCoNi
Werner Skrotzki, Aurimas Pukenas, Sathiaraj G Dan
Dresden University of Technology, Germany

H9 July-13 13:10
* Texture evolution of cold drawn face centred cubic single crystals
Tomasz Tokarski, Grzegorz Cios, Dorota Moszczynska, Jaroslaw Mizera
AGH University of Science and Technology, Poland

H9 July-13 13:30
*FCC twinning stress: a dual role of stacking-fault energy
Maciej Szczerba, Marek Szczerba
Institute of Metallurgy and Materials Science PAS, Poland

H9 July-13 13:50
* Correlation of Segregation Energies of Ni and Fe with other Thermodynamic Element Data
Wilfried Wunderlich
Tokai University, Japan

Session I

Session: I1, Venue: Salle Bastille

Ultra-fine Grained Materials 1

Session Chairs: Xavier Sauvage; Sergey Dobatkin

I1 July-09 10:00 Keynote
*** Application of TMP to Harmonic Structure Designed Materials**
Kei Ameyama, Mie Ota Kawabata, Dirras Guy
Ritsumeikan University, Japan

I1 July-09 10:30
* Decomposition of nanocrystalline supersaturated Cu-Co alloys and its impact on the mechanical properties
Andrea Bachmaier, Rathmayr Georg, Pippan Reinhard
Erich Schmid Institute, Austria

I1 July-09 10:50
* Superplastic GBS constitutive equation incorporating average grain misorientation dependence
Fernando Carreño, Orozco-Caballero Alberto
Consejo Superior de Investigaciones Científicas, Spain

I1 July-09 11:10
Strengthening Mechanisms in bimodally grained PM tool steel produced by Mechanical Milling and Spark Plasma Sintering
Faraz Deirmina, Massimo Pellizzari
University of Trento, Italy

I1 July-09 11:30
* Grain Refinement in a Mg-Al-Zn-Mn Alloy Processed by Rotary Swaging
Sergey Dobatkin, Natalia Martynenko, Elena Lukyanova, Vladimir Serebryany, Mikhail Gorshenkov, Mikhail Morozov, Vladimir Yusupov, Yuri Estrin
National University of Science and Technology "MISIS", Russia

I1 July-09 11:50
* Consolidation of magnesium and magnesium alloy machine chips using high-pressure torsion
De Castro Moara, Carvalho Amanda, Pereira Pedro Henrique, Isaac Neta Augusta, Roberto Figueiredo, Terence G. Langdon
Universidade Federal de Minas Gerais, Brazil

I1 July-09 12:10
* Behavior of fatigue cracks generated from a small artificial defect of copper processed by equal channel angular pressing
Masahiro Goto, Iwamura Takashi, Yamamoto Takaei, Han Seung-Zeon, Kitamura Junichi, Yakushiji Terutoshi
Oita University, Japan

Lunch break 12:30 - 13:30

Session: I2, Venue: Salle Bastille

Ultra-fine Grained Materials 2

Session Chairs: Mayumi Suzuki; Hiroyuki Miki

I2 July-09 13:30 Keynote
*** Micro-Scale Mechanical Behaviour of Ultrafine-Grained Materials Processed by High-Pressure Torsion**
Megumi Kawasaki, Jang Jae-Il, Langdon Terence
Oregon State University, USA

I2 July-09 14:00
* A novel short process of accumulative continuous extrusion forming (ACEF) for preparing ultrafine-grained aluminum alloys with second phase particles
Ren-Guo Guan, Tie Di, Wang Xiang, Wang Yu-Xiang, Jin Hong-Mei, Wang Yu
Northeastern University, China

I2 July-09 14:20
* New approaches for the energy-efficient densification of oxide ceramics: field-assisted and water-enhanced sintering
Olivier Guillon
Forschungszentrum Jülich, Germany

I2 July-09 14:40
* Architectured metallic materials by Accumulative Roll Bonding: New opportunities for light-weight designs
Heinz-Werner Hoeppel, Kümmel Frank, Göken Mathias
Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

I2 July-09 15:00
* Analysis of Hall-Petch slope in an Al-0.3%Cu alloy
Tianlin Huang, Shuai Linfei, Wu Guilin, Huang Xiaoxu, Hansen Niels
Chonqginq University, China

I2 July-09 15:20
* A new insight into the strain induced cementite dissolution in pearlitic steels: role of grain boundary carbon segregations
Yulia Ivanisenko, Sauvage Xavier, Kilmametov Askar, Beach John, Straumal Boris
Karlsruhe Institute of Technology, Germany

I2 July-09 15:40
* On the Microstructural Characteristics of UFG Microalloyed Steel Influencing the Mechanical Behavior under Dynamic Loading
Janusz Majta, Bloniarz Remigiusz, Kwiecien Marcin, Muszka Krzysztof *AGH University of Science and Technology, Poland*

Session I2: Ultra-fine Grained Materials 2
Coffee / Tea break 16:00 to 16:30

I2 July-09 16:30
*Unique Analysis of Nano-Particles for Grain Refinement Applications
Payam Emadi, Eli Vandersluis, Bernoulli Andilab, Comondore Ravindran
Ryerson University, Canada

I2 July-09 16:50
* Ultrafine grained plates? Processing, mechanical properties, anisotropy
Malgorzata Lewandowska, Ciemiorek Marta, Olejnik Lech
Warsaw University of Technology, Poland

I2 July-09 17:10
* Severe plastic deformation of metals by high pressure sliding using a three-axis ECAP machine
Roxane Massion, Zhao Yajun, Fundenberger Jean-Jacques, Toth Laszlo
Laboratoire dÉtude des Microstructures et de Mécanique des Matériaux, France

I2 July-09 17:30
* On the use of nanomechanical testing to microstructure evolution induced by thermomechanical treatments
Guillaume Kermouche
Laboratoire Georges Friedel, France

I2 July-09 17:50
* Dynamic recrystallization during warm Accumulative Asymmetric Roll Bonding (AARB) of the AA1050 aluminium
Andrea Kliauga, Sordi Vitor, Renan Godoi, Bolmaro Raul
Universidade Federal de São Calros, Brazil

I2 July-09 18:10
Induction reversion-refined microstructures and strength properties of AISI 301LN steel under tensile, fatigue and rolling deformation
Antti Jarvenpaa, Jaskari Matias, Karjalainen Pentti
University of Oulu, Finland

I2 July-09 18:30
*An overview of the properties and potentialities of nanocrystalline materials generated by SMAT
Delphine Retraint, Emmanuelle Rouhaud
University of Technology of Troyes, France

Session: I3, Venue: Salle Bastille

Ultra-fine Grained Materials 3

Session Chairs: Malgorzata Lewandowska; Christian Motz

I3 July-10 8:00 Keynote
***Influence of grain boundary segregations on grain refinement and on precipitation in Al alloys processed by SPD**
Xavier Sauvage
Groupe de Physique des Matériaux, France

I3 July-10 8:30
* Influence of high-pressure torsion on microstructural properties in Cu Be alloy system
Ivan Lomakin, Sauvage Xavier
Saint-Petersburg State University, Russia

I3 July-10 8:50
Oxygen-mediated deformation and grain refinement in nanocrystalline alloys
Zaoli Zhang, Pippan Reinhard, Zhang Zaoli
Erich Schmid Institute of Materials Science, Austria

I3 July-10 9:10
* Consolidation behavior of metal powders by Compression Shearing Method at Room Temperature
Hiroyuki Miki, Nagai Shun, Takeda Sho, Miyazaki Takamichi, Nakayama Noboru, Kosukegawa Hiroyuki, Takagi Toshiyuki, Takeishi Hiroyuku
Tohoku University, Japan

I3 July-10 9:30
* Thermal and mechanical stability of pulse-electrodeposited nano-crystalline Nickel Christian Motz, Rathmann Dominic, Marx Michael
Saarland University, Germany

I3 July-10 9:50
* Influence of grain size and thermomechanical conditions on the activation energy for super plastic flow in Ti-6Al-4V alloy
Juan Muñoz-Andrade
Universidad Autónoma Metropolitana Unidad Azcapotzalco, Mexico

Session I3: Ultra-fine Grained Materials 3
Coffee / Tea break 10:10 to 10:40

I3 July-10 10:40
* Formation of Type II Superconductivity in Bulk Nanostructured Ta Processed by High-Pressure Torsion
Terukazu Nishizaki, Edalati Kaveh, Horita Zenji, Akune Tadahiro, Sakamoto Nobuyoshi, Nojima Tsutomu, Iguchi Satoshi, Sasaki Takahiko
Kyushu Sangyo University, Japan

I3 July-10 11:00
* Low temperature fracture of ultrafine-grained iron
Zbigniew Pakiela, Gizynski Maciej, Romelczyk-Baishya Barbara, Kulczyk Mariusz
Warsaw University of Technology, Poland

I3 July-10 11:20
* Mechanically induced motion of triple junctions and grain boundaries-from an understanding towards a selective processing of desired nanostructures
Oliver Renk, Kapp Marlene, Ghosh Pradipta, Pippan Reinhard
Erich-Schmid-Institute of Materials Science, Austria

I3 July-10 11:40
Structure and Service Properties of Austenitic Stainless Steels after Equal Channel Angular Pressing
Olga Rybalchenko, Tokar Alexey, Belyakov Andrey, Terent'ev Vladimir, Prosvirnin Dmitry, Kliauga Andrea, Birbilis Nick, Dobatkin Sergey, Estrin Yuri
Laboratory of Hybrid Nanostructured Materials, Russia

I3 July-10 12:00
* Increased defect densities in hydrogenated Palladium after SPD and their impact on strength Daria Setman Setman Daria (1), Ress Wolfgang, Schafler Erhard, Sprengel Wolfgang, Chen Yuzeng, Zehetbauer Michael
Physics of Nanostructured Materials, Austria

Lunch break 12:20 - 13:20

Session: I4, Venue: Salle Bastille

Ultra-fine Grained Materials 4

Session Chairs: Megumi Kawasaki; Xiaoxu Huang

I4 July-10 13:20 Keynote
*** Developing superplasticity in high-entropy alloys processed by severe plastic deformation**
Terence G. Langdon, Shahmir Hamed, Kawasaki Megumi
University of Southampton, UK

I4 July-10 13:50
* In-situ observations of phase transformations occurring in shape memory alloys subjected to severe plastic deformation
Thomas Waitz, Kerber Michael, Gammer Christoph, Schafler Erhard
University of Vienna, Austria

I4 July-10 14:10
* Phase transitions in a titanium aluminide imposed by severe plastic deformation
Rian Dippenaar, Xi Li, Megumi Kawasaki, Klaus-Dieter Liss
University of Wollongong, Australia

I4 July-10 14:30
* Improving the ductility of nanostructured materials by bimodal lamellar structures
Guilin Wu, Zhang Ling, Huang Tianlin, Huang Xiaoxu
Chongqing University, China

I4 July-10 14:50
* A phase transformation in pure titanium during high-pressure torsion with subsequent annealing treatment
Jie Xu, Chen Wanji, Liu Detong, Shan Debin, Guo Bin, Langdon Terence
Harbin Institute of Technology, China

Session I4: Ultra-fine Grained Materials 4
Coffee / Tea break 16:10 to 16:40

I4 July-10 16:40 Keynote
*** Heterogeneous nano-structures and specific mechanical properties of heavily cold-rolled stainless steels**
Hiromi Miura, Kobayashi Masakazu, Watanabe Chihiro, Aoyagi Yoshiteru, Oba Yojiro *Toyohashi University of Technology, Japan*

I4 July-10 17:10
* Aging behavior of ultra-fine grained Al alloys and their mechanical properties
Seungwon Lee, Matusda Kenji, Horita Zenji, Hirosawa Shoichi, Terada Daisuke
University of Toyama, Japan

I4 July-10 17:30
*High strength - high conductivity copper-based composite wires prepared by spark plasma sintering and room-temperature wire drawing
Christophe Laurent, Tardieu Simon, Mesguich David, Lonjon Antoine, Lecouturier Florence, Ferreira Nelson, Chevallier Geoffroy, Estournès Claude
Centre Interuniversitaire de Recherche et d'ingenierie des Matériaux, France

I4 July-10 17:50
* Surface treatment of ultra-fine grained copper by nitrogen implantation
Ghenwa Zaher, Sauvage Xavier, Jouen Samuel, Lomakin Ivan, Enikeev Nariman
Groupe de Physique des Matériaux, France

I4 July-10 18:10
*Influence of a bimodal grain size distribution on the mechanical behavior of austenitic stainless steels
Clement Keller, Flipon Baptiste, Barbe Fabrice, Garcia De La Cruz Lucia, Hug Eric
Groupe de Physique des Matériaux, France

I4 July-10 18:30
* Influence of stacking fault energy and solid solution strengthening on structure evolution and mechanical properties of Cu-X alloys after severe plastic deformation
Karsten Durst
TU Darmstadt, Germany

I4 July-10 18:50
Hardness Distribution in Heterogeneous Nano-Structure Developed in Heavily Cold Rolled Stainless Steel
Chihiro Watanabe, Aoyagi Yoshiteru, Todaka Yoshikazu, Kobayashi Masakazu, Miura Hiromi
Kanazawa University, Japan

Session: I5, Venue: Salle Bastille

Mg Alloys 1

Session Chairs: Yoshihito Kawamura; Teresa Prez-Prado

I5 July-11 8:00 Keynote
*** Alloy and Process Development of Magnesium-based Materials for Emerging Applications**
Karl Kainer
Helmholtz-Zentrum Geesthacht, Germany

I5 July-11 8:30
The improvement of durability of magnesium biodegradable alloy by using bio-inspired coating
Annalisa Acquesta, Anna Carangelo, Tullio Monetta
University of Napoli Federico II, Italy

I5 July-11 8:50
* Activities of Non-basal Slips in Deformation of Magnesium alloy Single and Poly Crystals
Shinji Ando, Hiroaki Rikihisa, Masayuki Tsushida, Hiromoto Kitahara
Kumamoto University, Japan

I5 July-11 9:10
* Loading path dependent directional distortional hardening of AZ31 Mg alloy: experiments and constitutive modelling
Shi Baodong, Peng Yan, Pan Fusheng
Yanshan University, China

I5 July-11 9:30
* Synchrotron experiments to probe twinning in Mg alloys
Matthew Barnett
Deakin University, Australia

I5 July-11 9:50
* Corrosion Mechanisms of new Wrought Mg-Al based alloys Alloying with Mn, Zn and Sn
Guy Ben Hamu
Shamoon College of Engineering, Israel

Session I5: Mg Alloys 1
Coffee / Tea break 10:10 to 10:40

I5 July-09 10:40
* Hot forming optimization of ZK30 magnesium alloy by means of torsion tests
Manuel Carsi, Fernando Carreño, Oscar Ruano
CENIM-CSIC, Spain

I5 July-11 11:00
* Ultrasonic spot welding of multi-materials for light weighting applications
Daolun Chen
Ryerson University, Canada

I5 July-11 11:20
* The effect of initial texture on deformation and fracture behaviors of Mg alloys during Erichsen test
Shi-Hoon Choi, Min-Seong Kim, Jaiveer Singh
Sunchon National University, South Korea

I5 July-11 11:40
* A review of progress in absorbable wire technology
Adam Griebel, Jeremy Schaffer
Fort Wayne Metals, USA

I5 July-11 12:00
* Influence of precipitation on twinning in a Mg-Al-Zn alloy
Paloma Hidalgo-Manrique, Joseph Robson
University of Manchester, UK

Lunch break 12:20 - 13:20

Session: I6, Venue: Salle Bastille

Mg Alloys 2

Session Chairs: Norbert Hort; Kwang Seon Shin

I6 July-11 13:20 Keynote
*** Evolution of LPSO structure to mille-feuille structure**
Yoshihito Kawamura
Kumamoto University, Japan

I6 July-11 13:50
* Magnesium based composites processed using nanoparticles
Norbert Hort, Hajo Dieringa
Helmholtz-Zentrum Geesthacht, Germany

I6 July-11 14:10
***** Microstructural characterization of Mg-TM (TM=Ni or Cu) -Y alloys and their mechanical property
Takaomi Itoi, Yoshiki Tomura
Chiba University, Japan

I6 July-11 14:30
* Formation and hydrogenation properties of LPSO Mg-Zn-Gd alloy
Kazuhiro Ishikawa, Wakayama Ko
Kanazawa University, Japan

I6 July-11 14:50
* Effect of Al content on Corrosion Behavior of Mg-14 mass%Li alloy
Taiki Morishige, Yutaro Obata, Takayuki Goto, Tomoki Fukagawa, Eiji Nakamura, Toshihide Takenaka
Kansai University, Japan

I6 July-11 15:10
* Magnesium Twin-Roll casting technology for flat and long products - State of the Art and Future
Rudolf Kawalla
TU Bergakademie Freiberg, Germany

I6 July-11 15:30
* Supply Chain Quality Management of Magnesium Components: Concept, Examples and Recommendations
Claudia Kawalla, Michael Höck, Mariusz Ligarski
TU Bergakademie Freiberg, Germany

I6 July-11 15:50
*Deformation mechanisms in Mg-layered composites
Irene Beyerlein
University of California, Santa Barbara, USA

Session I6: Mg Alloys 2
Coffee / Tea break 16:10 to 16:40

I6 July-11 16:40
* Magnesium - as an alternative material for bio-implants
Rajashekhara Shabadi
UMET-University of Lille, France

I6 July-11 17:00
* Ball Indentation Behavior of Mg Alloy Single Crystals
Hiromoto Kitahara, Momoka Watanabe, Yohei Takamatsu, Masayuki Tsushida, Shinji Ando
Kumamoto University, Japan

I6 July-11 17:20
*Hydrogen storage and hydrolysis properties of core-shell structured Mg based nano composites prepared using arc plasma method
Jianxin Zou, Xiaoqin Zeng, Wenjiang Ding
Shanghai Jiao Tong University, China

I6 July-11 17:40
* Deformation behaviour of rapidly solidified AM60 magnesium based alloy
Anna Kula, Tomasz Tokarski, Marek Niewczas
AGH University of Science and Technology, Poland

I6 July-11 18:00
* Microstructure and texture of MX20 after conventional rolling and rolling from twin rolled cast strip
Gerrit Kurz, Tom Petersen, Roland Hoppe, Jan Bohlen, Dietmar Letzig
Magnesium Innovation Centre, Germany

I6 July-11 18:20
*Measurement of Thermal Expansion Coefficient of MgZnY Alloys with Synchronized Long-period Stacking Ordered Phase
Shigeru Kimura, Nobuhiro Yasuda
Japan Synchrotron Radiation Research Institute, Japan

I6 July-11 18:40
In situ X-ray micro and nano tomography high temperature tensile tests on AZ31 alloy
Pierre Lhuissier, Richi Kumar, Julie Villanova, Mario Scheel, Elodie Boller, Jean-Jacques Blandin, Salvo Luc
University of Grenoble Alpes, France

Session: I7, Venue: Salle Bastille

Mg Alloys 3

Session Chairs: Shinji Ando; Shi Hoon Choi

I7 July-12 8:00
*Oxidation-resistant magnesium alloys
Mingxing Zhang, Qiyang Tan
The University of Queensland, Australia

I7 July-12 8:30
* Interaction Mechanism of Solute-enriched Layers in Mg-based LPSO Structures
Daisuke Matsunaka, Yoji Shibutani
Shinshu University, Japan

I7 July-12 8:50
* A formation process of 18R-type LPSO from hcp in a Mg alloy
Masafumi Matsushita, Takafumi Nagata, Jozef Bednarcik, Norimasa Nishiyama, Kawano Shoya, Satoshi Iikubo, Hiroshi Ohtani, Michiaki Yamasaki, Tetsuo Irifune, Yoshihito Kawamura
Ehime University, Japan

I7 July-12 9:10
*New Mg alloys for biodegradable, load-bearing implants
Bernhard Mingler, Krzysztof Bryla, Jelena Horky, Maciej Krystian, Laszlo Sajti
AIT Austrian Institute of Technology GmbH, Austria

I7 July-12 9:30
Impact of Initial State during Wire Rolling: Investigating Microstructure and Mechanical Properties of AZ80 Magnesium Alloy
Marie Moses, Johannes Luft, Madlen Ullmann, Ulrich Prahl, Rudolf Kawalla
TU Bergakademie Freiberg, Germany

I7 July-12 9:50
* Simulation of thermal phenomena in reversing strip rolling process
Alexander Nam, Uwe Prüfert, Maciej Pietrzyk, Rudolf Kawalla, Ulrich Prahl
TU Bergakademie Freiberg, Germany

Session I7: Mg Alloys 3
Coffee / Tea break 10:10 to 10:40

I7 July-12 10:40
*Hierarchical transformation path of LPSO formation as described by cluster motion in MgYZn alloy systems examined by SR-SWAXS
Hiroshi Okuda, Kohei Kintsu, Michiaki Yamasaki, Yoshihito Kawamura
Kyoto University, Japan

I7 July-12 11:00
*Macroscopic Deformation Mechanisms of AZ31 Magnesium Alloy Studied by Neutron Diffraction Texture Measurement and VPSC Simulation
Yusuke Onuki, Akinori Hoshikawa, Shigeo Sato, Toru Ishigaki
Ibaraki University, Japan

I7 July-12 11:20
* Evolution and interaction of interfaces related to deformation twins in magnesium
Andriy Ostapovets
Institute of Physics of Materials, AS CR, Czech Republic

I7 July-12 11:40
*Numerical analysis of horizontal twin-roll casting for Mg-AZ31
Jong Jin Park
Hongik University, South Korea

I7 July-12 12:00
*Why can´t Mg alloys be strengthened by precipitation?
Carmen Maria Cepeda-Jimenez, Maria Teresa Perez-Prado
Institute IMDEA Materials, Spain

Lunch break 12:20 - 13:20

Session: I8, Venue: Salle Bastille

Mg Alloys 4

Session Chairs: C. Ravi Ravindran; Oscar Ruano

I8 July-12 13:20 Keynote
*** Low Cost Magnesium Alloy Sheets with High Formability and High Strength**
Kwang Seon Shin
Seoul National University, Korea

I8 July-12 13:50
*Effect of recrystallization nucleation sites on texture weakening in magnesium alloys
Mark Rainforth, Dikai Guan
The University of Sheffield, UK

I8 July-12 14:10
Ductility and stability in metallic materials
Oscar Ruano, Fernando Carreño, Manuel Carsi
CENIM-CSIC, Spain

I8 July-12 14:30
* Effect of Sn Content on heat resistance of Mg-3%Al-1%Si alloy for casting
Seiji Saikawa, Manabu Mizutani, Nozomu Kawabe
University of Toyama, Japan

I8 July-12 14:50
* Magnesium as biodegradable implant materials: how does the interface react to load?
Regine Willumeit-Roemer, Julian Moosmann, Berit Zeller-Plumhoff, Florian Wieland, Diana Krüger, Björn Wiese, Ann Wennerberg, Niccolò Peruzzi, Silvia Galli, Felix Beckmann, Jörg Hammel
Helmholtz Zentrum Geesthacht, Germany

I8 July-12 15:10
* Development of Magnesium Sheet via Twin Roll Casting for Automotive Application
Dietmar Letzig
Magnesium Innovation Centre, Germany

I8 July-12 15:30
* Deformation-induced redistribution of solute atoms in an Mg-Zn-Y alloy
Xiaohong Shao, Qiang Chen, Zhen-Zhen Peng, Kazuhiro Kitamura, Xiu-Liang Ma
Shenyang National Laboratory for Materials Science, China

I8 July-12 15:50
Effect of Grain Size on Mechanical Properties of Mg-0.3at.%Y Dilute Alloy
Ruixiao Zheng, Ichiro Kawarada, Gong Wu, Akinobu Shibata, Hidetoshi Somekawa, Shigenobu Ogata, Nobuhiro Tsuji
Kyoto University, Japan

Session I8: Mg Alloys
Coffee / Tea break 16:10 to 16:40

I8 July-12 16:40
* Forming behaviour at elevated temperature of a laser heat treated AZ31 magnesium alloy sheet
Donato Sorgente, Gianfranco Palumbo, Alessandro Fortunato, Alessandro Ascari, Ali Arslan Kaya
Università degli Studi della Basilicata, Italy

I8 July-12 17:00
* Effects of Yttrium Contents on Creep Strength in Mg-Y-Zn Ternary Solid Solution Alloys
Mayumi Suzuki, Naruki Tsuchida, Fumiki Kondo
Toyama Prefectural University, Japan

I8 July-12 17:20
Tensile creep behavior and microstructural analysis of a die-cast Mg4Al4RE alloy modified by Ca-substitution of half RE
Meng Jian, Qiang Yang, Baishun Li, Kai Guan, Shuhui Lv, Fanzhi Meng
Changchun Institute of Applied Chemistry, China

I8 July-12 17:40
* Electron Microscopy Study on Precipitation Mechanism of Mg-Zn-Gd alloys
Kiguchi Takanori, Sato Kazuhisa, Konno Toyohiko
Tohoku University, Japan

I8 July-12 18:00
* Surface coatings to control the degradation behaviour of Mg alloys
Lili Tan, Ke Yang
Institute of Metal Research, Chinese Academy of Science, China

I8 July-12 18:20
* Microstructure development and related forming behavior of the ZEW200 Mg alloy processed by differential speed rolling and equal channel angular pressing
Jose Victoria-Hernandez, Joungsik Suh, Gerrit Kurz, Dietmar Letzig
Helmholtz Zentrum Geesthacht, Germany

I8 July-12 18:40
*Controlling mechanical Properties of Magnesium Alloy Mg-6.8Y-2.5Zn-0.5Al by Thermomechanical Rolling
Ulrich Prahl, C Neh, M Ullmann, R Kawalla
TU Freiberg, Germany

I8 July-12 19:00
Ultrasonic rheocasting for refinement of Mg alloys reinforced with LPSO phase
Shulin Lu, Xiong Yang, Liangyan Hao, Shusen Wu
Huazhong University of Science and Technology, China

I8 July-12 19:20
***** Electrochemical-based characterisation of the corrosion fatigue behaviour of creep-resistant magnesium alloys DieMag422 and AE42
Martin Klein, Walther Frank
TU Dortmund University, Germany

I8 July-12 19:40
Effect of In-situ reinforcement on the hot compressive deformation behavior of TiC-TiB2+AZ91 magnesium matrix composite on the base of processing map
Biranchi Sahoo, S K Panigrahi
Indian Institute of Technology Madras, India

Session J

Session: J1, Venue: Salle Etoile

Modelling & Simulation 1

Session Chairs: Roland Loge; Rie Umetsu

J1 July-09 10:00 Keynote
*** State parameter-based modeling of the strain rate and temperature dependent yield stress**
Johannes Kreyca, Bernhard Viernstein, Ernst Kozeschnik
TU-Wien, Austria

J1 July-09 10:30
* The strain rate intensity factor and generation of fine grain layer near frictional interfaces Sergey Alexandrov
Beihang University, China

J1 July-09 10:50
* Role of mechanics on diffusive phase transformations investigated by phase field models Benoit Appolaire, Degeiter Matthieu, Lebbad Hocine, Le Bouar Yann, Finel Alphonse, Perrut Mikael
Université de Lorraine, France

J1 July-09 11:10
*Dislocation-Solute Interactions: Implications for Solute Embrittlement and Dynamic Strain Aging
Ryan B. Sills, Ethan N. Epperly
Sandia National Laboratories, USA

J1 July-09 11:30
* The diffusion path modelling in ternary phase diagrams
Bartek Wierzba
Rzeszow Uniwersity of Technology, Poland

J1 July-09 11:50
* Debye-Einstein models for heat capacities of crystalline solids - Classical Least Squares versus Bayesian approach
Ernst Gamsjager, Wiessner Manfred
Montanuniversität Leoben, Austria

J1 July-09 12:10
* Liquid metal dealloying: phase-field modeling of the formation process and coarsening behavior
Pierre-Antoine Geslin, Wada Takeshi, Kato Hidemi
Tohoku University, Japan

J1 July-09 12:30
Modelling of the influence of prior deformation in austenite on the martensite formation in a low-alloyed carbon steel
Jessica Gyhlesten Back, Lindgren Lars-Erik
University College of Dalarna, Sweden

J1 July-09 12:50
* Identification of the thermal conductivity of Silica Aerogel from molecular dynamics simulations
Patrice Chantrenne, Morthomas Julien, Goncalves William, Perez Michel, Foray Geneviève, Martin Christophe L.
Laboratoire MATEIS, France

J1 July-09 13:10
* First-principles modelling of anisotropic anodic dissolution of metals and alloys in corrosive environments
Xing-Qiu Chen
Shenyang National Laboratory for Materials Science, Chinese Academy of Sciences, China

Lunch break 13:30 - 14:30

Session: J2, Venue: Salle Etoile

Modelling & Simulation 2

Session Chairs: Michael Perez; Chantrenne Patrice

J2 July-09 14:30
* Plasticity and damage in metallic alloys: correlative in-situ experimental and numerical study
Sylvain Dancette, Sophie Cazottes, Le Bourlot Christophe
Matériaux, Ingénierie et Sciences Villeurbanne, France

J2 July-09 14:50
* Optimization of the scanning path in selective laser melting with focus on final deformations
Jesper Hattel, Mohanty Sankhya
Technical University of Denmark, Denmark

J2 July-09 15:10
* Phase Field of Modeling of Pore Annihilation in Nickel-base Superalloys during Hot Isostatic Pressing
Yann Le Bouar, Ruffini Antoine, Finel Alphonse
Laboratoire d'étude des Microstructures, France

J2 July-09 15:30
* A new model based interpretation of Thermal Desorption Spectroscopy (TDS) and Electrochemical Permeation (EP) of hydrogen charged samples
Andreas Drexler, Ecker Werner, Manke Gregor, Kokotin Valentin, Winzer Nick, Mraczek Klemens
Materials Center Leoben Forschung GmbH, Austria

J2 July-09 15:50
* Investigating the effect of segregation on materials properties with atomistic simulations
Roberto Gomes de Aguiar Veiga
Universidade Federal do ABC, Brazil

Session J2: Modelling & Simulation 2
Coffee / Tea break 16:10 to 16:40

J2 July-09 16:40
* On the impacts of the characterization and modelling of phase change on the design of industrial applications
Erwin Franquet
University of Pau, France

J2 July-09 17:00
* Stretching of polymers; Structure development and constitutive model
Noelle Billon
Centre de Mise en Forme des Matériaux, ParisTech, France

J2 July-09 17:20
* A 3D numerical framework for the full field modelling of recrystallization
Marc Bernacki, Maire Ludovic, Fausty Julien, Bozzolo Nathalie, Pino Muñoz Daniel, Moussa Charbel, Toulorge Thomas
MINES ParisTech, France

J2 July-09 17:40
* Towards wall functions for the prediction of solute segregation in plane front directional solidification
Valery Botton, M. Chatelain, M. Albaric, D. Pelletier, D. Henry, S. Millet, J.P. Garandet
Laboratoire de Mecanique des Fluides et dÁcoustique, France

J2 July-09 18:00
Laser Induced Forward Transfer, applications and modelling
Miguel Morales, Sara Lauzurica, David Munoz-Martin, Andrés Marquez, Juan José Moreno, David Canteli, Carlos Molpeceres
Universidad Politécnica de Madrid, Spain

J2 July-09 18:20
Large scale atomistic simulations of the interaction of screw dislocations with coherent twin boundaries in FCC metals
Maxime Dupraz, Rao Satish, Upadhyay Manas, Curtin William, Van Swygenhoven Helena
Swiss Light Source, PSI, Switzerland

J2 July-09 18:40
Numerical modelling of gas-liquid flow field of a dual atomizer in gas atomization process
Yang Liu
Beijing Institute of Aeronautical Materials, China

Session: J3, Venue: Salle Etoile

Modelling & Simulation 3

Session Chairs: Akimoto Tachibana; Sergey Alexandrov

J3 July-10 8:00 Keynote
*** A Theoretical Analysis of the Rheological Parameters Associated With DDRX**
Frank Montheillet, Piot David
University of Lyon, France

J3 July-10 8:30
* Phase Field Model of Oxidation
Peter Voorhees, Sherman Quentin
Northwestern University, USA

J3 July-10 8:50
Precipitation kinetics of AA 6082. An experimental und numerical investigation
Jan Herrnring, Kashaev Nikolai, Klusemann Benjamin
Helmholtz-Zentrum Geesthacht, Germany

J3 July-10 9:10
* Phase stability and chemical composition of nanoprecipitates: A first principles study for the example of kappa carbides
Tilmann Hickel, Dey Poulumi, Dutta Biswanath, Friák Martin, Neugebauer Jörg
Max-Planck-Institut für Eisenforschung, Germany

J3 July-10 9:30
* The interplay between amorphous and crystalline regions on mechanical response of semicrystalline polymers
Sara Jabbari Farouji, Rottler Joerg, Perez Michel, Lame Olivier, Barrat Jean-Louis
Institut für Physik Mainz, Germany

J3 July-10 9:50
* On the Challenges and Prospects of the Superplastic Forming Process
Firas Jarrar, Sorgente Donato, Aksenov Sergey, Enikeev Farid
Khalifa University of Science and Technology, United Arab Emirates

Session J3: Modelling & Simulation 3
Coffee / Tea break 10:10 to 10:40

J3 July-10 10:40
* Monte Carlo modelling of recrystallization and grain growth in hexagonal titanium
Mariusz Jedrychowski, Bacroix Brigitte, Salman Oguz-Umut, Tarasiuk Jacek, Wronski Sebastian
AGH University of Science and Technology, Poland

J3 July-10 11:00
* Ordering and properties of pure and binary two dimensional honeycomb films
Ken Elder
Oakland University, USA

J3 July-10 11:20
* Computational modeling for fracture criteria of environmental barrier coating structure for SiC/SiC composite
Yoshitaka Umeno, Kawai Emi
The University of Tokyo, Japan

J3 July-10 11:40
* Evaluation of Sintering models from Experiments for Zirconia
Byung-Nam Kim
National Institute for Materials Science, Japan

J3 July-10 12:00
* Dewetting in intermetallic silicide thin films: experiments and model based on isotope enriched multilayers and atom probe tomography
Dominique Mangelinck, Luo Ting, Südkamp Tobias, Bracht Hartmut, Girardeaux Christophe
Institut des Matériaux, de Microélectronique et des Nanosciences de Provence, France

J3 July-10 12:20
Effects of solute concentration on the stacking fault energy in copper alloys at finite temperatures
Linghong Liu, Shao Qinqin, Chen Jianghua
Central South University of Forestry and Technology, China

J3 July-10 12:40
An integrated model for predicting hierarchical microstructure evolution of steel during hot rolling
Chunhui Luo, David Martin, Juha Pyykkönen
Swerea KIMAB AB, Sweden

Lunch break 13:00 - 14:20

Session: J4, Venue: Salle Etoile

Modelling & Simulation 4

Session Chairs: Frank Montheillet; Xuedong Bai

J4 July-10 14:30
*Understanding glassy structures through first-principles molecular dynamics
Carlo Massobrio
Institut de Physique et Chimie des Matériaux de Strasbourg, France

J4 July-10 14:50
* On the conductivity maximum in oxygen ion conductors
Manfred Martin, Koettgen Julius, Grieshammer Steffen, Hein Philipp, Grope Benjamin
Institute of Physical Chemistry Aachen, Germany

J4 July-10 15:10
Interaction of dislocations with Nb precipitates in hcp Zr alloys
Emile Maras, Marinica Mihai-Cosmin, Clouet Emmanuel
CEA, DEN, Service de Recherches de Métallurgie Physique, France

J4 July-10 15:30
* Numerical modeling of the microstructural evolution during cyclic phase transformations in ternary Fe-C-Mn alloys
Chengwu Zheng, Chen Wenxiong, Li Dianzhong
Shenyang National Lab. for Materials Science, Institute of Metal Research CAS, China

J4 July-10 15:50
* Effect of Preheating on FSW Process by Numerical Simulation
Fumikazu Miyasaka, Mitsufuji Kenta
Osaka University, Japan

Session J4: Modelling & Simulation 4
Coffee / Tea break 16:10 to 16:40

J4 July-10 16:40
* Phase-field modelling of microstructure evolution in two- and three-phase materials
Nele Moelans, Ravash Hamed, Yadav Vishal
KU Leuven, Belgium

J4 July-10 17:00
* Evaluation of Cold Crack Susceptibility in Multi-pass Welds of Reduced Activation Ferritic/martensitic Steel F82H using Numerical Simulation of Hydrogen Distribution
Hiroaki Mori, Kawauchi Kento, Kato Taichiro, Hirose Takanori, Tanigawa Hiroyasu
Osaka University, Japan

J4 July-10 17:20
Strategy for the finite element modelling of diffusion and transient hydrogen trapping processes in metallic materials
Sofiane Benannoune, Charles Yann, Jonathan Mougenot, Gaspérini Monique
Université Paris 13, France

J4 July-10 17:40
Molecular Dynamics Simulation of Metal-SAM Hybrid Interfaces
Ho-Seok Nam, Yun Kayoung, Cha Pilryung
Kookmin University, Korea

J4 July-10 18:00
***** Modelling in Industrial Reality: Hot Rolling of Steels
Kirill Khlopkov
Thyssenkrupp Steel Europe AG, Germany

J4 July-10 18:20
Through-process Modelling for the Cold Spray Process
Danielle Cote
Worcester Polytechnic Institute, USA

Session: J5, Venue: Salle Etoile

Modelling & Simulation 5

Session Chairs: Ernst Kozeschnik; Mark Rainforth

J5 July-11 8:00 Keynote
*** Renewed Quantum Simulation of Nano-Size Materials: 100 Years of Mystery Solved!**
Akitomo Tachibana
Kyoto University, Japan

J5 July-11 8:30
***** An anti-trapping current for use in phase-field simulation with arbitrary material thermodynamics
Andrew Mullis
University of Leeds, UK

J5 July-11 8:50
* KineCluE: an efficient code for the computation of diffusion properties from the atom jump frequencies
Schuler Thomas, Messina Luca, Maylise Nastar
CEA, DEN-Service de Recherches de Métallurgie Physique, France

J5 July-11 9:10
* Thermodynamic modelling and simulation of multi-component systems: From high-entropy alloys to irradiated materials under neutron irradiation
Nguyen-Manh Duc, Wrobel Jan, Dudarev Sergei
Culham Centre for Fusion Energy, United Kingdom Atomic Energy Authority, UK

J5 July-11 9:30
* Energy of small angle tilt boundary in Al
Shigeto Nishitani
Kwansei Gakuin University, Japan

J5 July-11 9:50
Molecular Simulation for Water and Carboxylic Acids on Cu(111)
Norio Nunomura, Yamashita Jun, Sunada Satoshi, Hatakeyama Masahiko
University of Toyama, Japan

Session J5: Modelling & Simulation 5
Coffee / Tea break 10:10 to 10:40

J5 July-09 10:40
* First-principles study of energetics of deformation twinning in pure Mg
Shigenobu Ogata, Ishii Akio, Li Ju
Osaka University, Japan

J5 July-11 11:00
* Relationship between material parameters and microstructure of martensite in low-carbon steels: a simulation study
Yuhki Tsukada, Murai Yoshihiro, Koyama Toshiyuki
Nagoya University, Japan

J5 July-11 11:20
* Simulation of hot strip rolling and laminar cooling for HSLA steels using physical model and VirtRoll computer system
Lukasz Rauch, Bzowski Krzysztof, Pello Uranga, Gutierrez Isabel, Pietrzyk Maciej
AGH University of Science and Technology, Poland

J5 July-11 11:40
* Metaheuristic Ab-initio Optimum Search for Doping Effects in Nanocarbons
Kenji Tsuruta, Mitani Keiichi, Asad Md. Abdullah, Nishina Yuta, Gotoh Kazuma, Ishikawa Atsushi
Okayama University, Japan

J5 July-11 12:00
* Multi-physics simulation of advanced high strength steels
Franz Roters, Wong Su Leen, Diehl Martin, Shanthraj Pratheek
Max-Planck-Institut für Eisenforschung, Germany

J5 July-11 12:20
* Applications of Multiscale Materials Modelling
Siegfried Schmauder
Institute for Materials Testing, Materials Science and Strength of Materials, Germany

J5 July-11 12:40
* Local elastic properties inside Mg-based synchronized long-period-stacking-ordered phase: Ab initio local stress calculation
Yoshinori Shiihara, Kohyama Masanori
Toyota Technological Institute, Japan

J5 July-11 13:00
* 3D direct simulation of growth and development during solidification using high performance computing and a modified level-set method
Luisa Silva, Digonnet Hugues
École Centrale de Nantes, France

Lunch break 13:20 - 14:20

Session: J6, Venue: Salle Etoile

Modelling & Simulation 6

Session Chairs: Xingqui Chen; Yoshiteru Ayoagi

J6 July-11 14:30
***** Kinetics of precipitation in Fe-Cr-C alloys under irradiation
Frederic Soisson, Herschberg Rafael, Fu Chu-Chun, Nastar Maylise
CEA Saclay, France

J6 July-11 14:50
*How Phase Coarsening Affects Mechanical Properties of Alloys
Kegang Wang
Mechanical and Aerospace Engineering Department, Florida Institute of Technology, USA

J6 July-11 15:10
* Biaxial load path change response of stainless steel: in-situ cruciform experiments and multi-scale modeling
Manas Upadhyay, Panzner Tobias, Van Petegem Steven, Patra Anirban, Wen Wei, Tomé Carlos, Lebensohn Ricardo, Van Swygenhoven Helena
Paul Scherrer Institute, Switzerland

J6 July-11 15:30
* Texture simulation of a severely cold rolled low carbon steel using polycrystal modeling Shigehiro Takajo, Sven Vogel, Carlos Tomé, Irene Beyerlein
Los Alamos National Laboratory, USA

J6 July-11 15:50
A novel approach for magnetic interatomic potentials
Isaac Toda-Caraballo, Wróbel Jan, Nguyen-Manh Duc
National Centre for Metallurgical Research, Spain

Session J6: Modelling & Simulation 6
Coffee / Tea break 16:10 to 16:40

J6 July-11 16:40
* Mathematical modeling of blast furnace operation for the reduction of CO_2 emissions
Jeong-Whan Han
Inha University, Korea

J6 July-11 17:00
Machine Learning assisted Heisenberg model for systems with ill-defined pairwise magnetic interactions
Osamu Waseda, Hegde Omkar, Hickel Tilmann
Max-Planck-Institute for Iron Research Germany

J6 July-11 17:20
*Crystal plasticity simulation considering microstructures of austenitic stainless steel on macroscopic yield function
Yoshiteru Aoyagi, Atsushi Sagara, Chihiro Watanabe, Masakazu Kobayashi, Yoshikazu Todaka, Hiromi Miura
Tohoku University, Japan

J6 July-11 17:40
* Structure and Dynamics of undercooled liquids near the glass transition
Alain Pasturel
University of Grenoble Alps, France

J6 July-11 18:00
*Implementation and use of laser-ultrasonic system in a deformation and quenching dilatometer
Bernhard Reitinger, Edgar Scherleitner, Markus Gruber, Peter Burgholzer
RECENDT GmbH, Austria

Session: J7, Venue: Salle Etoile

Biomimetic Materials, Nanostructured Biomaterials, Medical Devices and Regenerative medicine 1

Session Chairs: Christele Combes; Sophie Gangloff

J7 July-12 8:00 Keynote
*** Materials to control biological cells function: a focus on the role of the nucleus in the cell response to cell-scale topography**
Karine Anselme
Institut de Science des Matériaux de Mulhouse, France

J7 July-12 8:30
* In vitro and in vivo evaluation of a simvastatin loaded poly-dopamine/poly-cyclodextrin stent
Nicolas Blanchemain, Hertault Adrien, Chai Feng, Maton Mickaël, Lyskawa Joel, Sobocinki Jonathan, Haulon Stephan, Martel Bernard
Médicaments et biomatériaux à libération contrôlée: mécanismes et optimization, France

J7 July-12 8:50
* Ion Beam Synthesis of multifunctional metallic nanoparticles embedded in dielectrics
Caroline Bonafos, Makasheva Kremena, Navarro Enrique, Pugliara Alessandro, Bayle Maxime, Mlayah Adnen, Paillard Vincent, Carles Robert
Centre d'élaboration de matériaux et d'études structurales, France

J7 July-12 9:10
* Synthesis and characterization of biomimetic carbonated calcium-deficient hydroxyapatite deposited on carbon fibre cloth
Sylvie Bonnamy, Olivier Florian, Picard Quentin, Delpeux Sandrine, Fayon Franck, Chancolon Jerome, Warmont Fabienne, Rochet Nathalie, Richard Caroline
CNRS, Université Orléans, France

J7 July-12 9:30
* Gene delivery by means of novel non-viral vectors and technologies
Gabriele Candiani
Politecnico di Milano, Italy

J7 July-12 9:50
*Tribocorrosion behaviour of bulk nanostructured 316L stainless steel in simulated body fluid
Gajanan Chaudhari, Mitta Divya
Indian Institute of technology Roorkee, India

Session J7: Biomimetic Materials 1
Coffee / Tea break 10:10 to 10:40

J7 July-12 10:40
* Silver-loaded composite bone cement as antibacterial drug delivery system: from microparticles preparation to a composite with optimized properties
Christele Combes, Jacquart Sylvaine, Rey Christian, Bosc Françoise, Girod Fullana Sophie, Brouillet Fabien, Roques Christine
CIRIMAT – INPT, France

J7 July-12 11:00
* Molecular Modelling to Design/Characterize Hyperbranched Polymer Nanoparticles Employed as Delivery Systems or Therapeutic Agents in Nanomedicine
Marco Deriu, Grasso Gianvito, Danani Andrea
Istituto Dalle Molle di Studi sullÍntelligenza Artificiale, Switzerland

J7 July-12 11:20
Online glucose measurement in DMEM for in-vitro cell culture
Andreas Foitzik, Matuschek Nelson, Liebscher Thilo, Foitzik Andreas H., Santo Loredana
Technical University of Applied Science Wildau, Germany

J7 July-12 11:40
* Hydroxyapatite and ZnO coatings on Fe and FeMnSiPd alloys
Jordina Fornell, Feng Yuping, Pellicer Eva, Suriñach Santiago, Baró Dolors, Sort Jordi
Universitat Autònoma de Barcelona, Spain

J7 July-12 12:00
* Radioactive nanomaterials for brachytherapy applications
Marc-Andre Fortin
Université Laval and Centre de Recherche du Centre Hospitalier Universitaire de Québec, Canada

J7 July-12 12:20
* Biologically inspired smart materials for bone regeneration: A guide to mechanobiology Sophie Gangloff, Rammal Hassan, Kerdjoudj Halima
Biomatériaux et Inflammation en site Osseux, France

J7 July-12 12:40
* Novel avenue of biodegradable metals application in urology
Hendra Hermawan, Champagne Sebastien, Vedani Maurizio
Laval University, Canada

J7 July-12 13:00
* Effects of processing voltage on cellular response of titanium anodized in phosphoric acid electrolyte
Naofumi Ohtsu, Kuji Taisuke, Hirano Mitsuhiro, Yamaguchi Kaho
Kitami Institute of Technology, Japan

Lunch break 13:20 - 14:20

Session: J8, Venue: Salle Etoile

Biomimetic Materials, Nanostructured Biomaterials, Medical Devices and Regenerative medicine 2

Session Chairs: Takayoshi Nakano; Ke Yang

J8 July-12 14:20 Keynote
*** Biomaterials technology indispensable to realize regenerative medicine**
Yasuhiko Tabata
Laboratory of Biomaterials, Japan

J8 July-12 14:50
* Different ways to shape a bioceramic architecture and their resulting applications
Jean-Christophe Hornez, Bouchart Franck, Leriche Anne, Meurice Edwige, Chamary Shaan, Dehurtevent Marion, Robberecht Lieven
Université de Valenciennes, France

J8 July-12 15:10
* Fabrication and tissue response to calcium phosphate granules cement
Kunio Ishikawa, Fukuda Naoyuki, Tsuchiya Akira, Hayashi Koichiro
Kyushu University, Japan

J8 July-12 15:30
* Osteogenic drug loading into a biomimetic Layer-by-Layer platform
Guy Ladam
Normandie University, France

J8 July-12 15:50
* Strategies developed to induce, direct and potentiate bone healing
Gael Rochefort
EA2496 Chirurgie Dentaire, France

Session J8: Biomimetic Materials 2
Coffee / Tea break 16:10 to 16:40

J8 July-12 16:40
* Fatigue strength of beta-type Ti-12Cr alloy under solutionized condition for biomedical applications
Masaaki Nakai, Niinomi Mitsuo, Liu Huihong
Kindai University, Japan

J8 July-12 17:00
Bio-functional Design for Metallic Biomaterials: Cu-bearing Metallic Biomaterials
Ling Ren
Institute of Metal Research, Chinese Academy of Sciences, China

J8 July-12 17:20
* Antimicrobial and immunomodulatory coatings for medical devices
Philippe Lavalle, Cynthia Calligaro
INSERM Biomaterials and Bioengineering, France

J8 July-12 17:40
* Control of Cell Adhesion on Titanium Dioxide by Light Irradiation
Masato Ueda, Yamaguchi Rika, Fujita Chika, Ikeda Masahiko
Kansai University, Japan

J8 July-12 18:00
* Protein-based hybrid magnetic nanoplatforms for theranostic applications
Damien Mertz
Institut de Physique et Chimie des Matériaux de Strasbourg, France

Session: J9, Venue: Salle Etoile

Biomimetic Materials, Nanostructured Biomaterials, Medical Devices and Regenerative medicine 3

Session Chairs: Ganbriele Canadiani; Kunio Ishikawa

J9 July-13 8:00 Keynote
*** Analysis and control of anisotropic bone extracellular matrix for development of bone replacement devices**
Takayoshi Nakano
Osaka University, Japan

J9 July-13 8:30
* Biofunctionalization of Ceramic Implant Surfaces to Improve Their Bone Ingrowth Behaviour
Matthias Schnabelrauch, Dubs Manuela, Kautz Armin, Weisser Juergen, Bergemann Claudia, Rebl Henrike, Nebe J. Barbara, Witt Carolin, Oberbach Thomas
INNOVENT e. V., Germany

J9 July-13 8:50
* Microstructure and mechanical properties of a low magnetic Zr-Mo alloy for biomedical applications
Naoyuki Nomura, Sun Xiaohao, Zhou Weiwei, Kikuchi Keiko, Kawasaki Akira, Doi Hisashi, Tsutsumi Yusuke, Hanawa Takao
Tohoku University, Japan

J9 July-13 9:10
Novel strategy for material biofunctionalization based on glycan-grafting
Mathilde Hindie, Ba Ousmane, Duncan Anthony, Anselme Karine, Gallet Olivier, Ponche Arnaud
Laboratoire ERRMECe, France

J9 July-13 9:30
* Development of a vascularized collagen hydrogel as a model to study the vascular permeability of nanoparticles
Masaya Yamamoto, Kosaba Takumi, Kano Mitsunobu, Morimoto Nobuyuki
Tohoku University, Japan

J9 July-13 9:50
* Bio-functionalization of Metallic Biomaterials
Ling Ren, Ke Yang
Institute of Metal Research, Chinese Academy of Sciences, China

Session J9: Biomimetic Materials 3
Coffee / Tea break 10:10 to 10:40

J9 July-13 10:40
* 2D and 3D organic-inorganic biomaterial processing by innovative laser technologies
Felix Sima, Gallet Olivier, Anselme Karine, Mihailescu Ion, Sugioka Koji
National Institute for Laser, Plasma and Radiation, Romania

J9 July-13 11:00
* Optimising performance of nanomaterials for biomedicine using molecular simulations
Irene Yarovsky, Todorova Nevena, Charchar Patrick, Penna Matthew
RMIT University, Australia

J9 July-13 11:20
* A Novel Composite Hydrogel With Tunable Mechanical Properties at Multi-scale
Bin Tang, Ma Fb, Ge Ym, Liu N, Pang Xc
Southern University of Science and Technology, China

J9 July-13 11:40
* Fabrication of the beta-titanium alloy rods from a mixture of pure metallic element powders via selected laser melting
Mitsuharu Todai, Nagase Takeshi, Hori Takao, Motoki Hiroyuki, Sun Shihai, Hagihara Koji, Nakano Takayoshi
Institute of Niihama National College of Technology, Japan

J9 July-13 12:00
A New Self-healing High Nitrogen Nickel-free Stainless Steels for Biomedical Applications
Qingchuan Wang, Ke Yang
Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China

Session K

Session: K1, Venue: Auditorium

EUCOSS2018: Cold Spray Symposium Session 1: Process

Session Chairs: Stephen Yue; Klass Rozema; V. Champagne

K1 July-09, 10:05 Plenary Lecture
*** Systematic Parameter Selection for Kinetic Spraying**
Thomas Klassen
Helmholtz-Zentrum Geesthacht and Helmut-Schmidt-Universität, Germany

K1 July-09, 10:45
*Detection of Critical Factors Influencing the Progress in Cold Spray Technology Through Bibliometrics Analysis
Khor Khiam Aik
Nanyang Technological University (Singapore)

K1 July-09, 11:00
*****Ceramic and Polymer Coatings by Cold Spray Technique
Kazuhiro Ogawa
Tohoku University, Japan

K1 July-09, 11:15
*2018 News for SST Cold Spray Technology and Applications
Julio Villafuerte
CenterLine Windsor Ltd, Canada

K1 July-09, 11:30
***** Development and Performance of AA7050 and AA2024 Al Alloy powders for Cold Spray Repair and Additive manufacturing for Aircraft Industry Applications
M. Brezovan
SAFINA, A.S., Czech Republic

K1 July-09, 11:45
* In-situ Studies of Particle Impact Bonding; Toward a Unified Description of Critical Velocity
M. Hassani-Gangaraj
Department of Materials Science and Engineering, MIT, USA

K1 July-09, 12:00
* Mesoscale Modeling of Single Particle Impact induced Microstructural Evolution during Cold Spray of Aluminium Powders
Sumit Suresh, Benjamin Bedard, Alexis Ernst, Tyler Flanagan, Seok-Woo Lee, Mark Aindow, Harold Brody, Victor Champaine, Avinash Dongare
University of Connecticut, USA

K1 July-09, 12:15
* Serial production applications and application development with focus on cold spraying at obz innovation
F. Trenkle
OBZ Innovation GmbH, Germany

Lunch break 12:30 - 14:00

Session: K2, Venue: Auditorium

EUCOSS2018: Cold Spray Symposium Session 2: Properties

Session Chairs: Thomas Klassen; G. Maurer

K2 July-09, 14:00 Keynote
* **Effect of Surface Preparation on Cold Spray Bonding Mechanisms and Additive Manufacturing Applications**
Bertrand Jodoin
University of Ottawa, Canada

K2 July-09, 14:30
*Dry surface preparation using Supercritical Cryogenic Nitrogen jet improves the adhesion strength of Cold gas Sprayed coatings (SCNCS)
Abdel Tazibt, Guillaume Ezoo
Laboratoire Jets Fluides Complexes et Matériaux Avancés, France

K2 July-09, 14:45
* Multiscale adhesion strength evaluation of cold spray deposit
Yuji Ichikawa, Francesco Delloro, Michel Jeandin, Kasuhiro Ogawa
Fracture and Reliability Research Institute, Tohoku University, Japan

K2 July-09, 15:00
* Cold spray as a method to develop additive manufacturing 3D components targeting high wear applications
Gobinda Saha
University of New Brunswick, Canada

K2 July-09, 15:15
* Response of cold sprayed Ti6Al4V coatings to solid particle erosion and micro-scratch wear processes
Miguel Angel Garrido Maneiro
Universidad Rey Juan Carlos, Spain

K2 July-09, 15:30
* Corrosion Properties of Cold-Sprayed Inconel 625 Coatings
Heli Koivuluoto
Tampere University of Technology, Finland

K2 July-09, 15:45
* Evolution of elastic properties of cold sprayed metal coatings at elevated temperatures
Jan Cizek, Michaela Janovska, Hanus Seiner, Petr Sedlak, Michal Landa,
Tomas Chraska
Institute of Plasma Physics, Czech Academy of Sciences, Czech Republic

K2 July-09, 16:00
* Influence of cold spray parameters on Al alloy coating properties for AM and repair applications
Jan Kondas, Mario Guagliano
Impact Innovations GmbH, Germany

K2 July-09, 16:15
* Fatigue behavior of cold sprayed materials for structural repair and additive manufacturing applications
Mario Guagliano
Politecnico di Milano, Italy

Session K2: EUCOSS2018
Coffee / Tea break 16:30 to 17:00

Session: K2, Venue: Auditorium

EUCOSS2018: Cold Spray Symposium Session 3: Applications

Session Chairs: Heli Koivuluoto; M. Ducos; J. Villafuerte

K2 July-09, 17:00 Keynote
*** Advancements in Cold Spray Technology**
Victor K. Champagne, Jr.
Army Research Laboratory, Aberdeen, MD, USA

K2 July-09, 17:30
* Industrialization of the Cold Spray process for the manufacturing of busbars within Schneider Electric
Arnaud Gautier
Schneider Electric, France

K2 July-09, 17:45
* Cold spray of mixed metal powders on carbon fiber reinforced polymers
Stephen Yue, Hanqing Chen, André Liberati, Phuong Vo
McGill University, Canada

K2 July-09, 18:00
* Cold Spraying of High-Grade Alloys for Jet Engine Applications
Georg Mauer
Forschungszentrum-Jülich GmbH, Germany

K2 July-09, 18:15
* Application of the cold spray manufacturing for structural materials in the use of high magnetic fields production
Olivier Jay
Laboratoire National des Champs Magnétiques Intenses Grenoble, France

K2 July-09, 18:30
* New developments in High & Low Pressure Cold Spray and industrial applications of Cold Spray
Sergi Dosta, J. Sanchez, I.G. Cano
Universitat de Barcelona, Spain

Session: K3, Venue: Auditorium

Materials Performance 3

Session Chairs: Jilt Siestma; Masahiko Demura

K3 July-10 8:00 Keynote
***Standardization of Fracture Assessment Procedure for Steel-Framed Structures under Seismic Loading**
Fumiyoshi Minami
Osaka University, Japan

K3 July-10 8:30
*Mechanical and microstructure characterization of a new Ni-base superalloy after different heat treatments
Giuliano Angella, Serafini Andrea, Brunella Maria, Malara Carlo
Consiglio Nazionale delle Ricerche - Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia, Italy

K3 July-10 8:50
*Stable Nanocrystalline Metals: Achieving Ultra-low Wear and Making Diamond-like Carbon from Thin Air
Nicolas Argibay, Chandross Michael, Lu Ping, Adams David, Dugger Michael, Babuska Tomas, Furnish Timothy, Curry John, Kustas Andrew, Boyce Brad, Clark Blythe
Sandia National Laboratories, USA

K3 July-10 9:10
* Optimum Biaxial Tensile Test Specimen Design for Metal Forming Applications
Dilip Banerjee, Iadicola Mark, Rust Evan
National Institute of Standards and Technology, USA

K3 July-10 9:30
*Flow stress and the micromechanics of silicate glasses, 50 years after Marsh
Etienne Barthel, Teisseire Jérémie, Kermouche Guillaume
Sciences et Ingénierie de la Matière Molle, France

K3 July-10 9:50
* Influence of frequency, temperature, and dynamic strain ageing effects on fatigue of ductile cast iron EN-GJS-600 determined by temperature and load increase tests
Tilmann Beck, Jost Benjamin, Klein Marcus, Eifler Dietmar
Technical University of Kaiserslautern, Germany

Session K3: Materials Performance 3
Coffee / Tea break 10:10 to 10:40

K3 July-10 10:40
Fabrication and Validation by Micromilling for Bioreactor Prototyping
Andrea Bohme, Schütze Felix, Sauer Sabine, Foitzik Andreas H.
Technical University of Applied Science Wildau, Germany

K3 July-10 11:00
*Analysis of complex-load shape signals on environmentally-assisted cracking during low-cycle in PWR environment of a 304L stainless steel
Gilbert Henaff, Poulain Thibault, De Baglion Laurent, Mendez Jose
Institut Pprime, France

K3 July-10 11:20
* Combined effects of a mechanical pressure and a microwave heating on the sintering of MgAl2O4 ceramic
Christelle Harnois, Marinel Sylvain, Macaigne Rodolphe, Riquet Guillaume
Laboratoire de Cristallographie et Sciences des Matériaux, France

K3 July-10 11:40
*Fatigue and Fracture of Welds in Tubular Offshore Support Structures
Robert Caligiuri
Exponent, Inc., USA

K3 July-10 12:00
*Microstructure and damage mechanisms in thermomechanically treated Si-solution-strengthened spheroidal graphite cast iron
Sylvie Castagne, Sujakhu Surendra
KU Leuven, Belgium

Lunch break 12:20 - 13:20

Session: K4, Venue: Auditorium

Materials Performance 4

Session Chairs: Jerome Chevalier; Rustam Kaibyshev

K4 July-10 13:20 Keynote
***Ductile-brittle transition in steels with tempered martensite lath structure**
Rustam Kaibyshev, Dudova Nadezhda, Mishnev Roman, Dudko Valeriy
Belgorod State National Research University, Russia

K4 July-10 13:50
* An optimisation route for modelling mechanical behaviour of Quenching & Partitioning steels
Carola Celada-Casero, Kok Piet, Sietsma Jilt, Maria J. Santofimia
Delft University of Technology, Netherlands

K4 July-10 14:10
*Deformation twinning behavior in high Ni-austenitic materials
Joakim Nordström, Johan Moverare, Guocai Chai
Sandvik Materials Technology, Sweden

K4 July-10 14:30
*A Thermokinetic Model of Friction in MoS2
Michael Chandross, Hinkle Adam, Babuska Tomas, Curry John, Dugger Michael, Krick Brandon, Argibay Nicolas
Sandia National Laboratory, USA

K4 July-10 14:50
*Parameters affecting energy absorption in metal foams
Girolamo Costanza, Maria Elisa Tata
University of Rome Tor Vergata, Italy

K4 July-10 15:10
* Numerical analysis of temperature rise during dynamic loading for dissimilar steel joint specimen
Yasuhito Takashima, Fumiyoshi Minami
Osaka University, Japan

K4 July-10 15:30
*Geometrical features of dislocation walls developed during cyclic deformation in copper single crystals with multiple slip orientations
Toshiyuki Fujii, Kajita Takahiro, Kimura Takumi, Miyazawa Tomotaka, Arai Shigeo
Tokyo Institute of Technology, Japan

K4 July-10 15:50
*Notched creep damage assessment based on EBSD observation for austenitic stainless steel
Kazunari Fujiyama, Higashide Shuhei, Nomoto Kazuki
Meijo University, Japan

Session K4: Materials Performance 4
Coffee / Tea break 16:10 to 16:40

K4 July-10 16:40
Effect of contact material on the fretting fatigue behaviour of Ti-6Al-4V
Sundara Raman Subramanian Ganesh, Singh Randhir
Indian Institute of Technology Madras, India

K4 July-10 17:00
*Hydrogen transport during plastic deformation of metallic materials: experiments and finite element simulations
Monique Gasperini, Charles Yann, Ayadi Sabrine, Ardon Kevin, Nguyen Tuan Hung
Université Paris 13, Sorbonne Paris Cité, France

K4 July-10 17:20
*Influence of Divergency and Initiation Site on Kinetics of Cellular Growth and Coarsening in Aged U-Nb Alloys
Robert Hackenberg, Emigh Megan, Papin Pallas, Kelly Ann, Forsyth Robert, Tucker Tim, Clarke Kester
Los Alamos National Laboratory, USA

K4 July-10 17:40
*Subcritical crack growth at copper/silica interface
Muriel Braccini, Kwan Matthew, Ramantah Ganpati
University of Grenoble Alpes, France

K4 July-10 18:00
*Laser shock, a smart tool for studying the mechanical response and adhesion of indicative materials
Michel Boustie, Perrier Amelie, Touchard Fabienne, Chocinski-Arnault Laurence, Gehring Florian, Guinard Stéphane, Senani Sophie
Institut Pprime, France

K4 July-10 18:20
* A Predictive Model of Residual Stress and Distortion of Metal Parts Processed by Selective Laser Melting
Yuebin Guo, Fang Xiaoying, Li C.
Manufacturing, Shandong University of Technology, China

Session: K5, Venue: Auditorium

Materials Performance 5

Session Chairs: Giorlamo Constanza; Fumiyoshi Minami

K5 July-11 8:00 Keynote
***History-independent cyclic response of polycrystalline Cu with highly oriented nanoscale twins**
Lei Lu
Institute of Metal Research, Chinese Academy of Sciences, China

K5 July-11 8:30
* Microstructural features controlling toughness in medium manganese steels subjected to quenching and partitioning processes
Javier Hidalgo, Celada-Casero Carola, Maria J. Santofimia
Technical University of Delft, Netherlands

K5 July-11 8:50
Microstructure and properties of Cu-Cr-Zr-Ag alloy
Lijun Peng Xujun Mi, Haofeng Xie,Yang Yu, Guojie Huang, Zhen Yang, Xue Feng, Xiangqian Yin
State Key laboratory of Nonferrous Metals and Processes, China

K5 July-11 9:10
An Experimental Method to Evaluate the Effect of Welding Residual Stress on Corrosion Fatigue Properties of Structural Steel in Synthetic Seawater
Yuko Ishibashi, Kayamori Yoichi
Nippon Steel & Sumitomo Metal Corporation, Japan

K5 July-11 9:30
*Microstructure and mechanical properties of a Cu-Pd-Ag alloy wire with aging treatment Chihiro Iwamoto, Fumio Watanabe, Risei Koitabashi
Ibaraki University, Japan

K5 July-11 9:50
* Review of depletion lifetime of geomembranes with raw resin and surface type through engineering performance test results under simulated field installation condition
Han-Yong Jeon
Inha University, Korea

Session K5: Materials Performance 5
Coffee / Tea break 10:10 to 10:40

K5 July-11 10:40
* An exploration of anomalies and variables that impact the performance and strength of joints created during brazing production processes
Brian Joyce
Metallurgical Solutions Inc, USA

K5 July-11 11:00
Middle Shelf during Ductile to Brittle Transition on Ferrite + Pearlite Structure Steel Sheet
Hiroyuki Kawata, Umezawa Osamu
Nippon Steel & Sumitomo Metal Corporation, Japan

K5 July-11 11:20
* Hydrogen trapping sites and hydrogen embrittlement of iron and steels
Kenichi Takai
Sophia University, Japan

K5 July-11 11:40
*Effect of Temperature on Deformation Behavior of Closed cell ZnAl27 Hybrid Foam Synthesized through Stir Casting Technique
Afzal Khan
National Institute of Technology Srinagar, India

K5 July-11 12:00
*Electric current-induced phenomena of metal alloy during plastic deformation
Moon-Jo Kim, Jeong Hye-Jin, Park Ju-Won, Lee Myoung-Gye, Hong Sung-Tae, Han Heung Nam
Liquid processing & Casting Technology R&D Group, Korea Institute of Industrial Technology, Korea

Lunch break 12:20 - 13:20

Session: K6, Venue: Auditorium

Materials Performance 6

Session Chairs: Lionel Montagne; Alessandra Varona

K6 July-11 13:20 Keynote
*** Low-Temperature Sintering Joining through Reduction of Metal Oxides**
Akio Hirose, Asama Koji, Motoyama Keita, Sano Tomokazu, Matsuda Tomoki
Osaka University, Japan

K6 July-11 13:50
Influence of strain distribution on crack initiation and growth behavior in high strength steels under low-cycle fatigue
Koga Norimitsu, Kaseya Akihiro, Sakamaki Yuta, Umezawa Osamu, Nakata Hiroshi, Toyoda Shunsuke
Yokohama National University, Japan

K6 July-11 14:10
Evaluation of Microstructural Characteristics in Low-Cycle Fatigued Austenitic Stainless Steel using X-ray Line Profile Analysis
Masayoshi Kumagai, Kuroda Masatoshi, Akita Koichi, Kamaya Masayuki, Ohya Shin-Ichi
Tokyo City University, Japan

K6 July-11 14:30
*Failure analysis of a superduplex cast stainless steel valve exposed to high Chlorine content waters: effect of microstructure on corrosion performance of the material
Alex Lanzutti, Andreatta Francesco, Magnan Michele, Fedrizzi Lorenzo
University of Udine, Italy

K6 July-11 14:50
* Self-healing ultrathin glass coatings for high temperature applications
Lionel Montagne, Francois Mear, Thibault Carlier, Jean-François Blach, Sébastien Saitzek, Rachel Desfeux
University of Lille, France

K6 July-11 15:10
*In-situ EBSD analysis of hydrogen-affected fracture in ultra-fine grained austenite
Arnaud Macadre, Tsuchiyama Toshihiro, Takaki Setsuo
International Institute for Carbon-Neutral Energy Research, Japan

K6 July-10 15:30
Wear mechanism of bainitic steel grade in curved rail tracks
Raphael Maestracci, Addad Ahmed, Avettand-Fenoel Marie-Noëlle, Balloy David, Bouquerel Jérémie, Fau Frédéric, Secordel Pascal
University of Lille, France

K6 July-11 15:50
*Nd:YAG-based ceramic composites: approach of the reactive sintering, microstructural features and optical properties
Alexandre Maitre
Science des Procédés Céramiques et de Traitements de Surface, France

Session K6: Materials Performance 6
Coffee / Tea break 16:10 to 16:40

K6 July-11 16:40
*Oxide Dispersion Strengthening of Metals by Means of Internal Oxidation
Juergen Merker, Shyk Yuliya
University of Applied Sciences Jena, Germany

K6 July-11 17:00
Estimation of impact toughness transition temperature of as-quenched steels
Sakari Pallaspuro, Antti Kaijalainen, Mehtonen Saara, Kömi Jukka, Zhang Zhiliang, Porter David
University of Oulu, Finland

K6 July-11 17:20
*The Power of Metallography
Michael Panzenbock, Rashkova Boryana, Mendez-Martin Francisca, Freitag Caroline, Clemens Helmut
Montanuniversität Leoben, Austria

K6 July-11 17:40
Deformation structures in a duplex stainless steel
Karin Yvell, Göran Engberg
Dalarna University, Sweden

K6 July-11 18:00
Simulation Study on Shear Crack of Steel Plate
Suoquan Zhang, Jiao Sihai, Ding Jianhua, Jiang Hongsheng
Research Institute, Baosteel, China

Session: K7, Venue: Auditorium

Materials Performance 7

Session Chairs: Roberto Montanari; Feng Ye

K7 July-12 8:00 Keynote
*** New aspects on clustering in liquid LBE alloy**
Alessandra Varone, Montanari Roberto, Kaciulis Saulius, Mezzi Alessio, Amati Matteo, Luca Gregoratti, Benedetti Alessio
University of Rome Tor Vergata, Italy

K7 July-12 8:30
* Coating Toughness estimation through a laser shock testing in Ni-Cr-B-Si-C coatings
Gilles Rolland, Cossange Christian, Andrieu Antoine, Blat-Yriex Martine, Sallamand Pierre, Duband Mélanie
Electricité de France Recherche et Développement, France

K7 July-12 8:50
Characterization of hot deformation behavior in a 13% chromium steel
Nima Safara Nosar, Engberg Göran
Dalarna University, Sweden

K7 July-12 9:10
Critical conditions of cold cracking in high strength steel weld based on the local stress distribution and hydrogen accumulation
Yuya Sato, Murakami Yoshiaki, Igi Satoshi, Ishikawa Nobuyuki
JFE Steel Corporation, Japan

K7 July-12 9:30
*Microstructure heterogenization in 100Cr6 bearings during Rolling Contact Fatigue and White Etching Crack Formation
Alexander Schwedt, Smelova Viktorija, Diederichs Annika, Özel Mehmet, Janitzky Thomas, Mayer Joachim, Wang Ling, Broeckmann Christoph, Holweger Walter
RWTH Aachen University, Germany

K7 July-12 9:50
*Quantitative analysis of dislocation networks in metals
Jilt Sietsma, Arechabaleta Zaloa, Van Liempt Peter
Delft University of Technology, Netherlands

Session K7: Materials Performance 7
Coffee / Tea break 10:10 to 10:40

K7 July-12 10:40
* SteBLife. The enhanced short-time evaluation procedure for materials fatigue data generation
Peter Starke, Wu Haoran, Boller Christian
Saarland University, Germany

K7 July-12 11:00
Strength and Axial Behavior of Cellular Lightweight Concrete-Filled Steel Rectangular Tube Columns under Axial Compression
Jaksada Thumrongvut, Tiwjantuk Pavarate
Rajamangala University of Technology Isan, Thailand

K7 July-12 11:20
*Ni-W alloys processe by powder metallurgy: microstructures and mechanical properties
David Tingaud, Sadat Tarik, Faurie Damien, Dirras Guy
Laboratoire des Sciences des Procédés et des Matériaux, France

K7 July-12 11:40
*Application of high-resolution X-ray tomography to hydrogen embrittlement in aluminium
Hiroyuki Toda, Kyosuke Hirayama, Kazuyuki Shimizu, Kentaro Uesugi
Kyushu University, Japan

K7 July-12 12:00
*Effect of microstructural features of Al substrate on the growth LDHs
Maria Richetta
Università di Roma Tor Vergata, Italy

Lunch break 12:20 - 13:20

Session: K8, Venue: Auditorium

Materials Performance 8

Session Chairs: Lei Lu; Afzal Khan

K8 July-12 13:20
*Investigation of cracks and failure in a high strength low alloy steel during solidification
Abdelhalim Loucif, Shahriari Davood, Chadha Kanwal, Zhang Chunping, Tremblay Rami, Lapierre-Boire Louis-Philippe, Jahazi Mohammad
École de Technologie Supérieure, Canada

K8 July-12 13:50
*Standing contact fatigue testing of carbide free bainitic steels and tool steels
Esa Vuorinen, Agirre Zubizarreta Josu, Ikoubel Kenza, Leiro Alejandro
Luleå University of Technology, Sweden

K8 July-12 14:10
*Twinning-dominated plasticity in body-cantered cubic tungsten nanowires
Jiangwei Wang
Zhejiang University, China

K8 July-12 14:30
The study of porosity closure during hot compression of steels by applying synchrotron X-ray laminography and FEM analysis
Keisuke Watanabe, Nakasaki Morihiko, Aramaki Masatoshi, Furukimi Osamu
SANYO SPECIAL STEEL Co.,Ltd, Japan

K8 July-12 14:50
*Damage-healing behaviors of TWIP steel induced by electropulsing treatment
Huajie Yang, Ma Yunrui, Ben Dandan, Yang Chenglin, Zhang Zhefeng
Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

K8 July-12 15:10
Change in Yield Strength of Nb-bearing Ultra-low Carbon Steels by Temper-rolling
Lingling Yang, Nakagaito Tatsuya, Funakawa Yoshimasa, Kojima Katsumi
JFE Steel Corporation, Japan

K8 July-12 15:30
*Electrochemical cold drawing of FeSi6.5 steel
Feng Ye, Zhao Dong, Gutman E., Unigovski Ya, Shneck R.
University of Science and Technology Beijing, China

K8 July-12 15:50
*Improving metal corrosion resistance by Atomic Layer Deposition
Lorenzo Fedrizzi, Elia Marin, Alex Lanzutti
University of Udine, Italy

Session K8: Materials Performance 8
Coffee / Tea break 16:10 to 16:40

K8 July-12 16:40
* Sample size effects on fracture toughness, cracking and stress corrosion cracking of Zr-base Bulk Metallic Glass
David Geissler, Horst Wendrock, Petre Flaviu Gostin, Jens Freudenberger, Martina Zimmermann, Annett Gebert
Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Germany

K8 July-12 17:00
*Anneal hardening and high temperature strain rate sensitivity of nanostructured metals and their relation to intergranular dislocation accommodation
Oliver Renk, Maier-Kiener Verena, Kiener Daniel, Pippan Reinhard
Erich-Schmid-Institute of Materials Science, Austria

K8 July-12 17:20
*The role of carbon in the formation of white etching cracks
Michael Herbig, Li Yujiao, Ankit Kumar, Lutz Morsdorf, Yu Qin, Mayweg David, Sietsma Jilt, Petrov Roumen, Raabe Dierk
Max-Planck-Institut für Eisenforschung GmbH, Germany

Non-Student Cold Spray Poster Session

Session: Cold Spray Non-Student Posters

Venue: Auditorium

Date and Time: July-09, 17:00 to 19:00

Chair: Michel Jandin

P01
Microstructure and Mechanical Behavior in Gas-Atomized Al 6061 Powders and Cold-Sprayed Splats
Benjamin Bedard, Tyler Flanagan, Alexis Ernst, Jie Chen1, Sumit Suresh, Avinash Dongare, Harold Brody, Aaron Nardi, Victor Champagne, Seok-Woo Lee, Mark Aindow
University of Connecticut, USA

P02
*On the microstructural characteristics of cold-sprayed Inconel 718 in as-sprayed and heat treated conditions
A. Bhowmik
Nanyang Technological University, Singapore

P03
*Investigation of the splat cold spray deposition behaviour onto as-polished composite coatings
X. Chu
McGill University, Canada

P04
*Cold spray of hydroxyapatite: toward a better understanding of the coating formation and consolidation
Alberto Ion Puiu
University of Limoges, France

P05
*Oscillating contact wear in cold sprayed Ti6Al4V coatings for aeronautical repairs
P. Poza
Universidad Rey Juan Carlos, Spain

P06
*Influence of Stacking Fault Energy (Sfe) On The Microstructure And Mechanical Properties Of Cold Sprayed Aluminum Bronze Coatings
G. Sundararajan
Indian Institute of Technology Madras, India

P07
*Additive manufacturing of a carbon nanotubes reinforced Al6Si matrix composite with the nacre-like nano laminated architecture via cold spraying
X. Xie
Laboratoire d'Études et de Recherches sur les Matériaux, France

P08
*Effects of Surface Oxidation of the Feedstock Materials on the Cold Sprayed Al Coating Quality and Properties
M. Yandouzi
University of Ottawa, Canada

P09
*Cold Spray Deposition of Super-alloys for Additive Manufacturing
R. Bernardie

P10
Corrosion behaviour of an equiatomic CoCrFeMnNi high-entropy alloy compared with 304 stainless steel in sulfuric acid solution
Hong Luo, Zhiming Li, Dirk Ponge, Dierk Raabe
Max-Planck Institut für Eisenforschung, Germany

P11
On the microstructural design of damage resistant High Entropy Alloys: E_ects of local stress gradients
Indranil Basu, Vaclav Ocelik, Je_ De Hosson
University of Groningen, Netherlands

P12
* A Laser Shock Approach to Cold Spray
Francesco Delloro
MINES Paris Tech, France

P13
* New developments in High & Low Pressure Cold Spray and industrial applications of Cold Spray
Klass Rozema
Dycomet Europe B, Netherlands

Non-Student Poster Session

Session: Non-Student Posters A

Venue: Foyer S1

Date and Time: July-10, 17:00 to 19:00

Chairs: Caroline Richard; R. Shabadi

P101
Relationship between microstructure and mechanical strength of dental semiprecious alloy subjected to solution treatment
Toshikazu Akahori, Mizuno Tsubasa, Niinomi Mitsuo, Fukui Hisao
Meijo University, Japan

P102
Hydrogen-assisted microstructure and fracture mechanisms in ultrafine-grained CrNi austenitic stainless steels with different stacking fault energies
Sergey Astafurov, Astafurova Elena, Moskvina Valentina, Maier Galina, Melnikov Eugene, Zakharov Gennady, Ratochka Iliya
Institute of Strength Physics and Materials Science SB RAS, Russia

P104
*Influence of Manganese and Hot Rolling Parameters on Microstructure Evolution in low C-Nb-Ti Steels
Kevin Banks, Maubane Rorisang, Tuling Alison, Netshilema Muthoiwa
University of Pretoria, South Africa

P105
Portable System for the Measure of Efficiency in Arc Welding Processes
Giuseppe Barbieri
ENEA, Research Centre of Casaccia, Italy

P107
A phenomenological approach for the mechanical behaviour of Zr55Cu30Ni5Al10 metallic glass
Marine Bayard, Blétry Marc, Héripré Eva, Perrière Loïc, Maitournam Habibou, Thurieau Nicolas
Unité de Mécanique, France

P108
A Flexible Pizeoelectric Nanogenerator using a PVP-Modified PLZT Sol-Gel Film
Myunghwan Byun
Keimyung University, South Korea

P109
*Study of the non-homogeneous deformation in Small Punch Test of a 316L SLM steel
Fernando Carreno, Sánchez-Ávila David, Martínez Elkin, Portolés Luis, Barea Rafael
Consejo Superior de Investigaciones Científicas, Spain

P110
Evaluation of ceramic membranes coated with CuO and ZrO2 for its application in CO oxidation
Andres Chico-Proano, Sosa Maria, Navas Carlos, Uribe Rafael
Escuela Politécnica Nacional, Ecuador

P111
Microstructure Effect on Hydrogen Induced Cracking of Linepipe Steel
Kyungmox Cho, Joon Ho Sung, Ikmin Park, Kwangho Kim
GFHIM, Pusan National University, South Korea

P112
Effect of Reinforcements Shape Parameter on Sliding Wear Property of Titanium Matrix Composites by Investment Casting
Bong-Jae Choi
Inha Technical College, South Korea

P113
Phase precipitation in UNS S32760 F55 Super Duplex Stainless Steel (SDSS) alloy during thermomechanical processing
Danut Cojocaru Vasile, Raducanu Doina, Angelescu Mariana Lucia, Serban Nicolae, Vintila Adrian Nicolae, Cojocaru Elisabeta Mirela, Cinca Ion
Polytechnic University of Bucharest, Romania

P114
*Titanium aluminides and titnucarbide obtained by titanium scraps
Elena Colombini
University of Modena and Reggio Emilia, Italy

P115
Cast iron metalworks in European urban furniture dating back to the XIX and the early XX centuries
Alba Clara de Ruggiero, Calzolari Laura, Soffritti Chiara, Varone Alessandra
University of Rome Tor Vergata, Italy

P116
Study on the Statistical Errors in X-ray Stress Measurement with Two-Dimensional Detector
Shouichi Ejiri, Ohba Hiroaki, Sasaki Toshihiko
Iwate Medical University, Japan

P117
Influence of Rolling Force on Corrosion Resistance of Interstitial-free Auto Sheet Steel
Baiyou Fang, Lu Lin, He Zebang
Baosteel-NSC Automotive Steel Sheets Co., Ltd, China

P118
Temperature dependent mechanical behaviour of ODS steels
Alessandra Fava, De Sanctis Massimo, Lovicu Gianfranco, Montanari Roberto, Richetta Maria, Testani Claudio, Varone Alessandra
University of Rome Tor Vergata, Italy

P119
Investigation of Casting Diameter, Surface Defects and Low Temperature Thermal Cycles on Ductility in Bulk Metallic Glasses with Usual and High Super Cooled Liquid Viscosities
Kazutaka Fujita, Kisaki Chihiro, Fujishige Makoto, Yamazaki Yoshikatu, Amiya Kenji, Yamasaki Tohru, Kato Hidemi
National Institute of Technology, Ube College, Japan

P120
Tensile and compressive response of equal channel angular processed Al-Sc-V-Er-Zr-Si alloy
Malik Jahanzaib, Shunmugasamy Vasanth Chakravarthy, Mansoor Bilal, Nasim Wahaz, Karaman Ibrahim, Erdeniz Dinc, Dunand David, Seidman David
Texas A&M University, USA

P121
*Mechanical properties of Al-based auxetic lattice structures fabricated by 3-D printing combined with investment casting
Fusheng Han, Yingying Xue, Xinfu Wang
Institute of Solid State Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences China

P122
Role of secondary phases on creep resistance of Mg-3Ca alloys
Ntbn Koundinya, Ravi Sankar Kottada
Indian Institute of Technology Madras, India

P123
Preparation and Electrochemical Performance of the Ba0.25Sr 0.45La 0.3Co 0.8Fe0.2O3 Cathode Material for Solid Oxide Fuel Cell
Iming Hung, Wang Yi-Hung, Fu Kuan-Chi, Lin Jing-Chie, Lee Sheng-Wei
Yuan Ze University, Taiwan

P124
Effect of surface nitriding on the biocompatibility and mechanical properties of Ti27Nb alloy
Raluca Nicoleta Ion, Gordin Doina-Margareta, Bedouin Yvan, Mitran Valentina, Neacsu Patricia, Vasilescu Cora, Drob Silviu Iulian, Gloriant Thierry, Cimpean Anisoara
University of Bucharest, Romania

P125
*Prediction of Partitioning Kinetics of alloying elements in a medium Mn steel during Q&P treatments using Dictra
Idurre Kaltzakorta, Zurine Amondarain, Maribel Arribas
Tecnalia R&I-Industry and Trasport Division-Foundry and Steelmaking Area, Spain

P126
*Effects of surface structure and hydrogen on the fatigue strength of electroless Nickel-Phosphorus plated Al-2%Cu alloy
Teruto Kanadani, Nagata Norihito, Horikawa Keitaro, Nakagawa Keiyu, Hino Makoto
Okayama University of Science, Japan

P127
*Water electrolysis using PFSA electrolyte membranes
Jedeok Kim
NIMS, Japan

P128
*Growth of vanadium dioxide nanostructures on layer-controlled graphene nanosheet
Ki-Chul Kim
Mokwon University, South Korea

P129

Zinc Oxide Nanorod Array Embedded in Cuprous Oxide Thin Film as a Photoelectrochemical Electrode for Efficient Hydrogen Production
Hyojin Kim, Min Byeongkuk
Chungnam National University, South Korea

P130

Effect of Gas Content and Treatment Temperature on the Surface Characteristics of Hardened Layers of Low Temperature Plasma Nitrided 316L Austenitic Stainless Steel
Insup Lee
Dongeui University, South Korea

P131

Improvement of the Surface Properties of Low Temperature Plasma Nitrided Martensitic Precipitation-Hardening Stainless Steel by Aging Treatment
Insup Lee
Dongeui University, South Korea

P132

*Microstructure observation of Er2O3-Y2O3 thin film after thermal cycling
Masaki Tanaka, Seungwon Lee, Kenji Matsuda, Yoshimitsu Hishinuma, Teruya Tanaka, Takeo Muroga, Susumu Ikeno
University of Toyama, Japan

P133

Workability and Corrosion Characteristics of Cold Rolled Ti-10Mo, Ti-4Fe and Ti-6Co Binary Alloys Kwangmin Lee
Chonnam National University, South Korea

P134

Microstructure and Properties of an Al-Zn-Mg-Cu Alloy plate
Xiwu Li, Xiong Bai-Qing, Zhang Yong-An, Li Zhi-Hui
General Research Institute for Nonferrous Metals, China

P135

Microstructural and Properties of TixZr1-xN/Ti coatings on D2 steel deposited by unbalanced magnetron sputtering
Yu-Wei Lin, Huang Jia-Hong, Yu Ge-Ping
National Tsing Hua University, Taiwan

P136

Performance of Water-soluble Sulfate Bonded Sand Core cured by conventional and microwave heating process
Fuchu Liu, Wenming Jiang, Zitian Fan
Huazhong University of Science & Technology, China

P137

*Accurate prediction of steel transformation temperatures using thermodynamic modelling and design of experiments (DOE)
Abdelhalim Loucif, Touazine Heithem, Jahazi Mohammad
École de Technologie Supérieure, Canada

P138
Effect of thermal exposure temperature and recrystallization behaviour on texture and anisotropy of 2A97 Al-Li alloy
Yue Ma, Wang Dong, Su Yu
Beihang University, China

P139
Influence of grain size and second phase particles on the process of the void initiation
Daria Magomedova, Murashkin Maksim, Valiev Ruslan
Saint Petersburg State University, Russia

P140
On flow behavior of an Al-Mg alloy at different stages of strain hardening
Anna Mogucheva, Yuzbekova Diana, Zhemchuzhnikova Daria, Lebyodkin Mikhail, Lebedkina Tatiana, Kaibyshev Rustam
Belgorod State University, Russia

P141
A Study on Reliability of Pillar-shaped Intermetallic Compounds Dispersed Lead-free Solder Joint
Yusuke Nakata, Kurasawa Motoki, Hashimoto Tomihito, Kenji Miki, Ikuo Shohji
Gunma University, Japan

P142
*Mechanical Property of Magnesium Alloy Surface with Dense Oxide
Akira Watazu
National Institute of Advanced Industrial Science and Technology, Japan

P143
Control of dispersoids in 7475 aluminum alloy
Yiran Zhou, Kang Lei, Duan Ceheng, Zhao Gang, Tian Ni
Northeastern University, China

P144
Novel low carbon bainitic steels with minor additions of Mo, Cr, Nb and V
Andrii Kostryzhev, Singh Navjeet, Killmore Chris, Pereloma Elena
University of Wollongong, Australia

P145
Studies of fatigue mesoscopic mechanical properties and damage evolution of a ferrite-pearlite steel using DSI technique
Duyi Ye
Zhejiang University, China

P146
Investigation of the effect of homogenization practice of 6063 alloy billets on beta to alpha transformation and of the effect of cooling rate on precipitation kinetics
Katsivarda Marianna, Vazdirvanidis Athanasios, Pantazopoulos George, Kolioubas Nick, Sofia Papadopoulou, Rikos Andreas, Spiropoulou Eugenia, Papaefthymiou Spyros
Hellenic Research Centre for Metals S.A. & National Technical University of Athens, Greece

P147

*Multiscale modelling of the accumulative roll bonding process: Simulations and experiments
Arun Prakash, Walther Franz, Höppel Heinz Werner, Bitzek Erik
Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

P148

*Effect of Processing Parameters on Tensile and Shear Fracture Behavior of Additively Manufactured 17-4 PH Stainless Steel
Irina Pushkareva, Coulson Simon, Mcisaac Jeffrey, Kang Jidong
CanmetMATERIALS, Canada

P149

*Study of dislocation loops nucleation in the hexagonal materials by molecular static
Jean-Marc Raulot, Philippe Marie-Jeanne
Laboratory of Excellence on Design of Alloy Metals for low-mAss Structures, France

P150

*High strength high ductility low alloyed steel
Artem Arlazarov, Hell Jean-Christophe, Oberbillig Carla, Kegel Frédéric
ArcelorMittal Global Research and Development, France

P151

Friction Stir Processing of commercial pure titanium and Ti-6Al-4V alloys
Verdera David, Llovo Carlos, Carreño Fernando, Ruano Oscar, Pilar Rey Rodriguez
AIMEN Laser Applications Centre, Spain

P152

*Intragranular bubble impact on nuclear fuel thermomechanical properties
Fabienne Ribeiro, Colbert Mehdi, Arayro Jack, Tréglia Guy
Institut de Radioprotection et de Sûreté Nucléaire, France

P153

Martensite-Aided Plasticity of Ultrafine-Grained Ti-13Nb-13Zr
Tae Kyung Lee, Chan Hee Park, Chong Soo Lee
Pusan National University, Korea

P154

*Coherent X-Ray diffraction defects observation: application to plasticity of monocrystalline InSb micro-pillars
Tarik Sadat, Jacques Vincent, Godard Pierre, Le Bolloc'h David, Renault Pierre-Olivier, Kedjar Bouzid, Verezhak Mariana, Carbone D, Diaz Ana, Van Petegem Steven, Thilly Ludovic
Université de Poitiers, France

P155

Formation of Ni-free oxide layer on NiTi alloy by a combination of chemical and thermal treatments
Kota Sakamoto, Hayashi Fumio, Ohtsu Naofumi
Kitami Institute of Technology, Japan

P156

*Effect of annealing upon retention of He and H in irradiated SiC
M. Ionescu
Australian Nuclear Science and Technology Organisation, Australia

P157

*The ordering mechanisms during precipitation in AlMgSiCu alloys twenty years after their discovery

Cyril Cayron
Ecole Polytechnique Fédérale de Lausanne, Switzerland

P158

Electronic and Structural Heterogeneity in High Entropy Alloys

Takeshi Egami
University of Tennessee and Oak Ridge National Laboratory, USA

P159

The influence of Ni content on the corrosion resistance of Cu-Ni-Sn-C-P sintered alloys in poor quality fuel

Sunada Satoshi, Mizukoshi Yusuke, Sakagami Riku, Takezoe Shinichi, Ishii Yoshinari, Nunomura Norio, Hatakeyama Masahiko
University of Toyama, Japan

P160

Control of center-segregation in twin-roll cast high-alloyed Al alloy strips

Min-Seok Kim, Yun-Soo Lee, Su-Hyeon Kim, Hyoung-Wook Kim
Korea Institute of Materials Science (KIMS), Korea

P161

Prediction of the hydrogen-induced damage to ultra-high strength steel concepts

Tobias Schaffner, Hartmaier Alexander, Kokotin Valentin
Thyssenkrupp Steel Europe AG, Germany

P162

Investigations on Internal Oxidation of Copper

Yuliya Shyk, Merker Juergen
University of Applied Science Jena, Germany

P163

A study on the forming characteristics of aluminum 5182 sheets under electric current using finite element analysis

Sangwoo So, Hwang Hyun-Tae, Lee Hyun-Woo, Jin Hong Kyo, Hong Sung-Tae
Automotive Parts Institute & Center, South Korea

P164

Hydrogen release from oxidized titanium hydride

Gambini Marco, Montanari Roberto, Richetta Maria, Tommaso Stilo, Varone Alessandra, Vellini Michela
University of Rome Tor Vergata, Italy

P165

Effect of Precipitates on Thermal Stability of Magnesium Alloy Prepared by Equal Channel Angular Pressing

Jitka Straska, Minárik Peter, Veselý Jozef, Zemková Mária, Krajnák Tomá, Kubásek Jirí–
Charles University, Czech Republic

P166

*Effects of Stress Direction and Kink Density on Creep Strength in a Directionally Solidified Long Period Stacking Ordered Type Magnesium Alloy
Mayumi Suzuki, Takahashi Yuki, Watanabe Ryota, Hagihara Koji
Toyama Prefectural University, Japan

P167

An innovative industrial thermo-mechanical process for 7050 Al alloy with improved mechanical properties
Giovanni Matteo Tedde, Di Schino Andrea, Montanari Roberto, Richetta Maria, Santo Loredana, Testani Claudio, Varone Alessandra
University of Rome Tor Vergata, Italy

P168

*Effect of one-step and two-step aging treatments on microstructure and properties of an Al-9.0Zn-2.0Mg-2.0Cu alloy
Kai Wen, Xiong Bai-Qing, Zhang Yong-An, Li Zhi-Hui, Li Xi-Wu, Huang Shu-Hui, Yan Li-Zhen, Yan Hong-Wei, Liu Hong-Wei–
General Research Institute for Nonferrous Metals, China

P169

Effect of original microstructure on Microstructure and mechanical properties of high strength steel WHF1500H during hot forming
Zhou Wenqiang, Libo Pan
Wuhan branch of Baosteel Research Institute, China

P170

Mechanical Behaviour and Fatigue Lifetime Prediction of Rubber Material
Chang Su Woo, Park Hyun Sung
Korea Institute of Machinery & Materials, South Korea

P171

Annealing on anisotropy and mechanical properties of an Al-Mg-Si alloy
Li-Zhen Yan, Zhang Yong-An, Xiong Bai-Qing, Li Zhi-Hui, Li Xi-Wu, Liu Hong-Wei, Huang Shu-Hui, Yan Hong-Wei, Wen Kai
General Research Institute for Nonferrous Metals, China

P173

*Warm deformation behavior and strain-softening mechanism of FeSi6.5 alloy
Feng Ye, Shi Xiangju, Liang Yongfeng, Wen Shibo, Zhang Bao
University of Science and Technology Beijing, China

P174

Investigation of the influence of ZrO2 addition in pure Al2O3 coatings thermally sprayed obtained by thermal flame spraying
Rassim Younes, Bradai Mohand Amokrane, Sadeddine Abdelhamid, Mouadji Youcef, Benabbas Abderrahim
University of Bejaia, Algeria

P175

*Effect of platinum group elements on microstructures and properties of nickel-base single crystal superalloys

Yizhou Zhou, Xiofeng Sun
Institute of Metal Research, Chinese Academy of Sciences, China

P176

*Influence of annealing conditions on the austenite size at the end of soaking

Matthieu Salib, Irene De Diego-Calderón, Ferreira De Melo Caio, Mendonca E Silva Luiz, Artem Arlazarov
ArcelorMittal Global Research and Development, France

P177

In-situ EBSD observations of moving austenite-ferrite interfaces during intercritical annealing

Sybrand Van Der Zwaag
Delft University of Technology, Netherlands

P178

*Crystallography of phase transformations in solids and its applications

Mingxing Zhang
The University of Queensland, Australia

P179

* Bulk and grain boundary diffusion in high entropy alloys

Sergiy Divinski
University of Münster, Germany

P180

*Phase Stability and Mechanical Properties of Metastable beta-Ti-X-Sn-Zr (x=Cr, Nb or Fe) Alloys

Yonosuke Murayama, Hiroto Shioiri
Niigata Institute of Technology, Japan

P181

*Crystallization and Fusion Behavior of Glass with $Ln_2Si_2O_7$-Mullite Eutectic Composition

Shunkichi Ueno, Naoto Kanno
Nihon University, Japan

P182

* Convexity transition of Equal Plastic Work Contours for anisotropic wrought Mg alloy with non-proportional loading

Yang Chong, Shi Baodong , Peng Yan, Pan Fusheng
Yanshan University, China

P183

* Grain boundary migration in accumulative roll bonded aluminium laminates

Dana Zöllner, Paul Chekhonin, Werner Skrotzki
Dresden University of Technology, Germany

P184

* Simulation of intercritical treatment of Advance High Strength Steels
Patrice Chantrenne, Michel Perez, Mélanie Ollat
INSA MATEIS, France

P185

Development of Ultra-high Strength and High Toughness Steel for Mooring Chain
Xin Li, Dajiang Yu, Xijun Jiang, Zongze Huang
Institute of Metal Research, Chinese Academy of Sciences, China

P186

* Powder-in-Tube-Processing of New Thermoelectric Materials GaFe and FeGa
Wilfried Wunderlich
Tokai University, Japan

P187

Formation of uniform microstructure by multidirectional compression at elevated temperature in Ti alloys
Shiro Torizuka, Ito Atsushi, Hatanaka Yuusei
University of Hyogo

P188

Exploring the parameter space of grain boundaries with statistical methods
Rebecca Janisch, Dette Holger, Gösmann Josua, Greiff Christian
Interdisciplinary Centre for Advanced Materials Simulation, Germany

P189

*A unified theory of microstructural changes during rolling contact fatigue
Fu Hanwei, Pedro Rivera-Diaz-Del-Castillo
Lancaster University, UK

P190

Atomistic modelling of hydrogen and vacancy segregation to simple grain boundaries in Al and Ni
Döme Tanguy, Connétable Damien, Shen Xiangjian
Institut Lumière Matière, France

P191

* The activation energy for plastic flow at high temperature in titanium carbide single crystals
Juan Daniel Muñoz-Andrade
Universidad Autónoma Metropolitana, Mexico

P192

*Evolution of Young's modulus of cold-deformed pure aluminium in a tension test
Isaac Isarn, Jordi Jorba, Antoni Roca, Núria Llorca-Isern
Universitat de Barcelona, Spain

P193

Observation of dislocation structures after fatigue test in Fe-1mass%Si
Hirosi Shuto, Y Takahashi, A Onodera, T Miyazawa, T Fujii and S Arai
Nippon Steel & Sumitomo Metal Corp., Japan

P195
Oxidative plasma treatment of fluorocarbon surfaces for blood-contacting applications
Vanessa Montano-Machado, Linda Bonilla, Diego Mantovani
Laval University, Canada

P196
* Sluggish phase transition in CoCrFeMnNi high entropy alloy: collective structural modulation
E-Wen Huang, Nien-Ti Tsou, Wen-Jay Lee, Kuang-Peng Chen, An-Cheng Yang, Nan-Yow Chen, An-Chou Yeh
National Chiao Tung University, Taiwan

P197
Influence of low refractory metals additions on the microstructure and mechnical properties of Cr-Ni alloy at various temperatures
Igor Razumovskiy, Dmitry Chernyakov
Conpozit Ltd , Korolev, Russia

P198
*Elasticity of interfaces: a multi-method approach
David Holec, Koutná Nikola, Vianská Monika, Friák Martin, Mayrhofer Paul, Sob Mojmír
Montanuniversität Leoben, Austria

P199
*Solute clustering and precipitation of Al alloys for elevated temperatures
Jiehua Li
Montanuniversität Leoben, Austria

P200
Dislocation mechanism based crystal plasticity modeling and simulation for gradient nano-grained copper
Xu Zhang
Southwest Jiaotong University, China

P201
*Mathematical modeling and computer simulation of steel quenching
Dario Iljkic, S. Hanza Smokvina, M. Jokic, L. Stic, A. Boric, Bozo Smoljan
Polytechnic of Pula, Croatia

P203
A semitopological mean-field model of discontinuous dynamic recrystallization: Towards a correct and rapid prediction of grain-size distribution
David Piot, Guillaume Smagghe, Frank Montheillet, Gilles Perrin, Aurore Montouchet, Guillaume Kermouche
University of Lyon, France

P204
Development of High Strength and High Elongation AlMg Wrought Alloys by compound alloying with Mg+Al2Ca (word file attached)
Bong H. Kim, Seong-Ho Ha, Young-Ok Yoon, Hyun-Kyu Lim and Shae K. Kim
Korea Institute of Industrial Technology, Korea

P205
*Micro-plasticity and internal boundaries in martensite and dual-phase steel
Johan Hoefnagels, Chaowei Du, Marc Geers, Francesco Maresca
Eindhoven University of Technology, Netherlands

P206
Effect of Si addition on Deformation Behavior of Mg-8.0Al-0.3Mn-xSi alloys during Isothermal Compression
Sedong Lee, Seoyeong Kim, Ahruem Beck, Duckhyun Kim, Daehwan Kim, Lim Sugun
Gyeongsang National University, Korea

P207
A new material design framework using machine learning
Yang An-Cheng, Wen-Jay Lee, Nan-Yow Chen, Kuan-Peng Chen
National Applied Research Laboratories, Taiwan

P208
*Wear behavior of Cenosphere dispersed Titanium Composite Foam Developed by Powder Metallurgy Route
D. Dutta Majumdar, D. P. Mondal, M. Ghosh, A. Roychoudhury
Indian Institute of Technology Kharagpur, India

P209
*Grain boundary-free growth of single crystal monolayer hexagonal boron nitride on liquid substrate
Soo Min Kim, Ki Kang Kim
Korea Institute of Science and Technology, Korea

P210
*Measurement of the thermal properties of the liquid metals by modulated calorimetry on the electromagnetically levitating samples
Olga Budenkova, Dubald Lucas, Milgravis Mikus, Garnier Christian, Gagnoud Annie, Alamir Mazen, Delannoy Yves, Etay Jacqueline
Science et Ingénierie des Matériaux et Procédés, France

P212
Theoretical and experimental investigations of local overheating in TiAl powder particles during spark plasma sintering
Christophe Collard, Trzaska Zofia, Durand Lise, Chaix Jean-Marc, Monchoux Jean-Philippe
Centre d'élaboration de Matériaux et d'études Structurales, France

P213
* Influence of electromagnetic stirring on directional solidification of Alloys
Kader Zaidat, Hachani Lahkdar, Fautrelle Yves
University of Grenoble Alpes, France

P214
* Modelling of movements of solid grains under magneto-thermo-hydro-electric effect during solidification of Al-Cu alloys
Couvat Yves Du Terrail, Budenkova Olga, Gagnoud Annie
Laboratoire SIMaP, France

P215
*Investigating grain boundary migration in FCC polycrystals by means of multiscale experiments in association with simulations
Queyreau Sylvain, Patrick Franciosi, Beucia Bermane, El Omari Zakaria, Siv Easeng
Laboratoire des Sciences des Procédés et des Matériaux, France

P216
The influence of heterogeneous microstructures on mechanical properties of friction stir welded joints of T6-treated Al-Zn-Mg alloy 7A52
Yang Jia, Yonggui Qin, Kehong Wang, Jizi Liu
Nanjin University of Science and Technology, China

P217
* Au-Ni and Rh electroplated coatings evaluation for ITER Ion Cyclotron Resonance Heating Radio-Frequency Sliding Contacts
Zhaoxi Chen, Julien Hillairet, Viviane Turq, Yuntao Song, Raphaël Laloo, Qingxi Yang, Karl Vulliez, Gilles Lombard, Jean-Michel Bernard, Caroline Hernandez, Patrick Mollard, Robert Volpe, Fabien Ferlay
Centre Interuniversitaire de Recherche et d'Ingénierie des Matériaux (CIRIMAT), France

P218
Individual grains behaviour during superelastic tensile test of a SMA using Diffraction Contrast Tomography and 3DXRD synchrotron techniques
Berveiller Sophie, Elhachi Younes, Wright Jon, Ludwig Wolfgang, Benoit Mallard
Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux, France

P219
On the role of acicular ferrite in the development of rutile-based FCWS for HSLA steel welds
Simone Vezzu, Scappin Michele
Lincoln Electric Europe, Italy

P220
*Spark-plasma-sintering magnetic field assisted compaction of magnetic nanopowders Frederic Schoenstein, Mercone Silvana, Mrad Khouloud, Thi Thanh Nong Huyen, Villeroy Benjamin, Nowak Sophie, Leridon Brigitte, Piquemal Jean Yves, Jouini Noureddine
Laboratoire des Sciences des Procédés et des Matériaux, France

P221
* Paradigm shifts in the treatment of ophthalmic conditions with new polymeric materials
Heather Sheardown
McMaster Univeristy, Canada

P222
*Solution strengthening in High Entropy Alloys: Modeling and Validation
Céline Varvenne, Rao Satish, Francesco Maresca, Nöhring Wolfram, William Curtin
Centre Interdisciplinaire de Nanoscience de Marseille, France

P223
Effect of Sn, Zn and Bi addition on corrosion characteristics of magnesium alloys sintered by spark plasma sintering
Sunada Satoshi, Matsui Yoshitaka, Takeuchi Syogo, Iwaoka Taku, Sato Koichi, Hatakeyama Masahiko
Graduate School of Science and Engineering for Research University of Toyama, Japan

Student Poster Session

Session: Student Posters B

Venue: Foyer S1

Date and Time: July-12, 17:00 to 19:00

Session Chairs: Caroline Richard; Michel Jeandin

SP 501
Deformation and annealing textures in newly developed Ti-Nb-Ta alloy for biomedical implants
Srijan Acharya, Gupta Praveen, Chatterjee Kaushik, Suwas Satyam
Departement of Materials Engineering, India

SP 502
Effect of aluminum concentration on damping capacity during annealing in AZ-series magnesium alloy
Jaehyeon Ahn, Juho Kwak, Changyong Kang, Minseong Ko, Kwonhoo Kim
Pukyong National University, Korea

SP 503
On the Magnetic Domain Correlation with Grain Orientation in Grain Oriented Electrical Steel
Nadoum Ali, Soran Birosca, M. Cichuta, F. Robinson
UK

SP 504
Temperature dependence of mechanical properties in dual phase Ti-6Al-4V
Anne Bhargavi Rani, Tanaka Masaki
Kyushu University, Japan

SP 505
Effect of tool geometry in ultrasonic bonding of multilayered foils
Keisuke Arimoto, Sasaki Tomohiro, Doi Yuhei
Niigata University, Japan

SP 506
Structural, electronic and mechanical properties of perovskite oxides LaMO3 (M = Mn, Ni) compounds in the high and low symmetric phases by First principle calculation
Bouiadjra Oussama Bachir, Raulot Jean-Marc, Merad Ghouti, Esling Claude
Unité de Recherche Matériaux et Energies Renouvelables, Algeria

SP 507
Multi-scale and Multi-technic Microstructure Identification and Local Mechanical Properties of a Linear Friction Weld of Ti-6Al-2Sn-4Zr-2Mo (Ti6242)
Dorick Ballat-Durand, Bouvier Salima, Risbet Marion
Laboratoire Roberval - Unité de recherche en mécanique, France

SP 508
The effect of severe plastic deformation on the precipitation behaviour of alpha-phase in metastable beta titanium alloys
Kristina Bartha, Stráský Josef, Terynková Anna, Minárik Peter, Harcuba Petr, Veselý Jozef, Dopita Milan, Semenova Irina, Janecek Milos
Charles University, Czech Republic

SP 509
Habit planes in martensitic steels explained by variants couplings
Annick Baur, Cayron Cyril, Logé Roland
Ecole polytechnique fédérale de Lausanne, Switzerland

SP 510
Laser welding of titanium alloys with an Yb: YAG Disk source
Jean-Denis Beguin
Laboratoire de production de l'école nationale d'ingénieurs de Tarbes, France

SP 511
Development of a mathematical model to predict the nucleation sites of dynamic recovery in the nanostructured FCC materials
Srinivas Behera, Panigrahi S K
Indian Institute of Technology Madras, India

SP 512
Age hardening behavior of ultrafine grained AA6063/SiC composite with varying reinforcement size
Omkar Bembalge, Panigrahi Sushanta Kumar
Indian Institute of Technology Madras, India

SP 513
Effect of welding speeds on corrosion-fatigue performance of dissimilar aluminum alloys friction stir welded joints
Remi Bertrand, Richard Léo, Zedan Yasser, Feulvarch Eric, Bocher Philippe
Laboratoire d'Optimisation des Procédés de Fabrication Avancés, Canada

SP 514
Optimization of the Solid-Liquid Inter Diffusion process of Cu-Sn solder for electronics packaging
Yousra Bettahi, Richard Caroline, Dosseul Franck
Laboratoire de Mécanique et de Rhéologie, France

SP 516
Microstructure, mechanical properties and corrosion behavior of extruded Mg-Zn-RE alloys
Devdas Bhat Panemangalore, Shabadi Rajashekhara, Gupta Manoj, Ambat Rajan, Ji Gang, Addad Ahmed, Lesven Ludovic
Université Lille, France

SP 517
Hot Deformation and Dynamic Recrystallization in Titanium Aluminide
Nitish Bibhanshu, Suwas Satyam
Indian Institute Of Science, India

SP 518
Synthesis and Characterization of Nanostructured Mechanical Cu-Fe-Co Alloy
Alisiya Biserova Tahchieva, Llorca-Isern Núria, López Jiménez Isabel
Universitat de Barcelona, Spain

SP 519
Accurate prediction of the heating process during heat treatment of large size forged ingots using numerical thermal analysis
Arkhazloo Nima Bohlooli, Bazdidi-Tehrani Farzad, Morin Jean-Benoît, Jahazi Mohammad

École de Technologie Supérieure, Canada

SP 520
Optimization of electroless NiB deposition without stabilizer, based on surface roughness and plating rate
Luiza Bonin, Cordeiro De Castro Cristiana, Vitry Véronique, Hantson Anne-Lise, Delaunois Fabienne
University of Mons, Belgium

SP 521
Laser cladding of Ni based powder on a cupro-alu-nickel glassmold: Influence of the process parameters on bonding quality and geometry of the coating
Fazati Bourahima, Baudin Thierry, Helbert Anne-Laure, Ji Vincent, Rege Michel, Aboud Christian, Brisset François
Institut de Chimie Moléculaire et des Matériaux d'Orsay, France

SP 522
Microstructuring of technical surfaces by applying single particles with an adapted cold spray process
Paul Breuninger, Antonyuk Sergiy
University of Kaiserslautern, Germany

SP 523
3D FEM simulation of the effect of cooling rate and chemical composition on macrosegregation patterns in a high strength steel ingot study
Gary Brionne, Loucif Abdelhalim, Zhang Chunping, Lapierre-Boire Louis-Philippe, Jahazi Mohammad
Ecole de Technologie Supérieure, Canada

SP 525
Residual stress distributions in quenched seamless steel tubes assessed by multi-phase transformation model - Simulation and verification
Silvia Brunbauer, Ecker Werner, Winter Gerald, Antretter Thomas
Materials Center Leoben Forschung Gmbh, Austria

SP 526
Biocompatible poly (lactic acid) and poly (butylene succinate-co-adipate) based three-dimensional biomaterials for applications in osteo-articular engineering
Najat Bteich, Béatrice Labat, Jean-Pierre Vannier, Elias Al Tawil, Brigitte Deschrevel, Stéphane Marais, Guy Ladam
Université de Rouen, France

SP 527
Fluorescent Ag nanoclusters for sensing applications
Luca Burratti, Casalboni Mauro, De Matteis Fabio, Mochi Federico, Francini Roberto, Prosposito Paolo
University of Rome Tor Vergata, Italy

SP 528
H-carbide precipitation behaviour in a C-containing alpha-solidifying TiAl alloy
Michael Burtscher, Kirchheimer Katharina, Weißensteiner Irmgard, Bernhard Christian, Lederhaas Bernd, Klein Thomas, Mayer Svea, Clemens Helmut
Montanuniversität Leoben, Austria

SP 529
Corrosion of Hydroxyapatite Coated Mg Matrix In Situ Composites
Quang Nguyen Cao, Pham Ngoc Dinh, Dinh Van Hai, Hiromoto Sachiko, Kobayashi Equo
Tokyo Institute of Technology, Japan

SP 530
Kinetics of point defect absorption by sinks: effect of point defect properties and surrounding microstructure
Denise Carpentier, Jourdan Thomas, Le Bouar Yann, Marinica Mihai-Cosmin
Commissariat à l\'énergie Atomique et aux énergies Alternatives, France

SP 531
Cyclic and isothermal oxidation behavior of a spark plasma sintered Ti-48Al-2W-0.1B alloy
Sylvain Ceccacci, Monchoux Jean-Philippe, Bacos Marie-Pierre, Davoine Cécile
ONERA - The French Aerospace Lab, France

SP 532
Characterization of fracture toughness for different zones of resistance spot welded dual phase steel using micro-cantilever testing
Ali Chabok, Van Der Aa Ellen, De Hosson Jeff , Pei Yutao
University of Groningen, Netherlands

SP 533
Modelling of deformation texture evolution during cold rolling in duplex stainless steels
Darshan Chalapathi, Kanjarla Anand
Indian Institute of Technology Madras, India

SP 535
The Influence of Surface Preparation on the Wetting & Spreading of Molten Filler Metal During Transient Liquid Phase Bonding of Inconel 718/BNi-2 Using Quantitative Thermal Analysis
Joel Chapman, Corbin Stephen, D'angelo Francesco
Dalhousie University, Canada

SP 536
Microstructure evolution and corrosion resistance variation of Ni-Cu-P amorphous coating during low temperature heat treatment process
Jie Chen, Zou Yong, Matsuda Kenji, Lee Seungwon
Shandong University, China

SP 537
Phase-field study on the transformation of lath martensite in steel
Mingyu Cho, Cha Pilryung
Kookmin university, South Korea
SP 538
Simulation of Sapphire single crystal growth with current density analysis
Seunghoon Choi, Pilryung Cha, Hyungjoon Kim, Junhwan Kim, Sunghwan Moon
South Korea

SP 539
Effects of Post-Drawing Surface Heat Treatments on the Strength and Torsional Ductility of High Strength Steel Wire
Christina Ciganik, Speer John, Findley Kip, Van Raemdonck Walther
Advanced Steel Processing and Products Research Center, USA

SP 540
Increasing the electrical conductivity of LDHs by intercalation of ionic liquids
Erica Ciotta, Pizzoferrato Roberto, Di Vona Maria Luisa, Ferrari Ivan Vito, Richetta Maria, Varone Alessandra
University of Rome Tor Vergeta, Italy

SP 541
Electromagnetic shielding of a thin Al/steel/Al composite produced by cold roll bonding
Paul Clérico, Mininger Xavier, Prevond Laurent, Helbert Anne-Laure, Baudin Thierry
Institut de Chimie Moléculaire et des Matériaux d'Orsay, France

SP 542
Porosity Developments within 9Cr-1Mo Steel Exposed to CO2
Lawrence Coghlan, Jepson Mark, Higginson Rebecca, Shin Aya, Pearson Jonathan
Loughborough University, UK

SP 543
A Study of High Temperature Impact Performance of Ti2AlC and Ti3SiC2 MAX-Phase Ceramics
Stephen Counsell, Birosca Soran, Bowen Chris, Fourlaris George
College of Engineering Swansea, UK

SP 544
The influence of dispersed nanosized particles on rolling microstructure and texture evolution
Chengyi Dan, Chen Zhe, Ji Gang, Zhong Shengyi, Brisset François, Wang Haowei, Ji Vincent
University of Paris-Sud, France

SP 545
The preparation of nanocomposite Iron Oxide-Silver particles by ball-milling
Sofya Danilova, Solsona Pau, Graves John, Pellicer Eva, Sort Jordi, Cobley Andrew
Coventry University, UK

SP 546
Mechanical stabilisation of martensite to austenite in a medium Mn steel
Yang Dapeng, Wu Di, Yi Hongliang
Northeastern University, China

SP 547
Deformation properties of austenitic stainless steels with different stacking fault energies
Molnar David, Engberg Göran, Vitos Levente
Royal Institute of Technology, Sweden

SP 549
Thermodynamic optimization of the Mg-Al-C system
Guillaume Deffrennes, Gardiola Bruno, Pierre Benigni, Erwann Jeanneau, Alexander Pisch, Lomello Marc, Schmid-Fetzer Rainer, Andrieux Jerome, Dezellus Olivier
Laboratoire des Multimatériaux et Interfaces (France

SP 550
Investigation of Mechanical properties of Cobalt based metallic glasses by Nanoindentation
Karuna Dhale, Pant Prita
Centre for research in Nanotechnology and Science, India

SP 551
Texture formation behaviour in AZ91 Magnesium Alloy by the Plane Strain Compression Deformation at High Temperature
Han Donggean, Minsoo Park, Kwonhoo Kim
Pukyong National University, South Korea

SP 552
Residual Stress Distribution and Fatigue Crack Growth in Friction Surfacing Coated Ti-6Al-4V Sheets
Gleb Dovzhenko, Hanke Stefanie, Staron Peter, Maawad Emad, Horstmann Manfred, Schreyer Andreas
Helmholtz-Zentrum Geesthacht, Germany

SP 553
Correlation of Heat Treatment Parameters, Microstructure and Mechanical Properties of 3rd Generation Advanced High Strength Steels
Sandra Ebner, Suppan Clemens, Schnitzer Ronald, Hofer Christina
Montanuniversität Leoben, Austria

SP 554
Developments of resistance spot weldability of a hot stamped ultra high strength automotive steel
Parisa Eftekharimilani Eftekharimilani P., Van Der Aa E.m., Hermans M.j.m., Richardson I.m.
Delft University of Technology, Netherlands

SP 555
Local characterization of grain boundary pinning due to precipitation in a microalloyed martensitic steel microstructure and correlation with the prior austenitic microstructure determined by EBSD and reconstruction methods
Lena Eisenhut, Fell Jonas, Motz Christian
Materials Science and Methods, Germany

SP 556
Hot working characteristics of biocompatible TiZrNbHf high entropy alloy
Irene Emmanuelawati, Laws Kevin, Miskovic David, De Jong Robert, Ferry Michael
University of New South Wales, Australia

SP 557
Improved syringe extruder for processing biological materials
Andreas Engels, Schlegel Volker, Bonaiuto Vincenzo, Zinn Steffen, Foitzik Andreas
Technical University Wildau, Germany

SP 558
Room temperature deformation behaviour of gamma-TiAl based sheets studied by means of in situ synchrotron X-ray diffraction
Petra Erdely, Maawad Emad, Staron Peter, Schell Norbert, Clemens Helmut, Mayer Svea
Montanuniversität Leoben, Austria

SP 559
Superhydrophobic and corrosion protective coating on aluminium
Ana Escobar, Llorca-Isern Núria, Rius Oriol
Universitat de Barcelona, Spain

SP 560
Design of creep-resistant austenitic alloy with high Al-content
Antoine Facco, Guillet Alain, Magne Damien, Danoix Raphaële, Le Baillif Paul, Roussel Manuel, Couvrat Mathieu, Pareige Cristelle
University of Rouen, France

SP 561
Observation of the autonomous filling of creep cavities by dynamic precipitation in Fe-W alloys with synchrotron X-ray nano-tomography
Haixing Fang, Szymanski Nikodem, Versteylen Casper, Bruck Ekkes, Cloetens Peter, Van Der Zwaag Sybrand, Van Dijk Niels
Delft University of Technology, Netherlands

SP 562
The role of transformation path on the intervariant boundary plane character distribution in a pure titanium alloy
Ehsan Farabi, Rohrer Gregory, Hodgson Peter, Beladi Hossein
Deakin University, Australia

SP 563
Microstructural evolution and wear behavior involving the k-carbides precipitation of a Fe-25Mn-6.6Al-1.3C austenitic steel
Yifan Feng, Song Renbo, Pei Zhongzhe, Li Lun
University of Science and Technology Beijing, China

SP 564
Effect of Mn and Cr micro segregation on microstructure after quenching and partitioning
Farnoosh Forouzan, Borasi Luciano, Vuorinen Esa, Mücklich Frank
Luleå University of Technology, Sweden

SP 565
Apparent Poisson's ratio for Fe-Ga single crystal under magnetic field
Masaki Fujita, Ikeuchi Takehiro, Koyama Akihiro, Imafuku Muneyuki
Tokyo City University, Japan

SP 566
Investigation of the local austenite stability related to hydrogen environment embrittlement of austenitic stainless steels
Robert Fussik, Gero Egels, Werner Theisen, Sebastian Weber
University of Wuppertal, Germany

SP 567
Combination of tracer and chemical diffusion experiments in CoCrFeMnNi FCC high entropy alloys
Daniel Gaertner, Abrahams Katrin, Esin Vladimir, Steinbach Ingo, Wilde Gerhard, Divinski Sergiy
Institute of Materials Physics, WWU Münster, Germany

SP 568
The fatigue behavior of steels processed via quenching and partitioning (Q&P)
Pablo Garcia-Chao, Molina-Aldareguia Jon, Sabirov Ilchat, Lara Antoni, Rodriguez-Calvillo Pablo, Cabrera Jose
Institute IMDEA Materials, Spain

SP 569
A physical sponge of chitosan and polycyclodextrin for anti-bacterial drug release device
Alice Gauzit, Palomino-Durand Carla, Lopez Marco , Maton Mickael, Cazaeux Frederic, Feng Chai, Foligne Benoit, Neut Christel, Martel Bernard, Blanchemain Nicolas
Médicaments et biomatériaux à libération contrôlée: mécanismes et optimisation, France

SP 570
Navigating Legacy Data for the Fatigue and Fracture of Wires/Cables in Biomedical Applications
Janet Gbur, Lewandowski John
Case Western Reserve University, USA

SP 571
In-situ synchrotron analysis of twinning stresses in an aged Mg-4.5Zn alloy
Mahmoud Reza Ghandehari Ferdowsi, Wang Jun, Kada Sitarama R., Wang Zhiyang, Lynch Peter A., Barnett Matthew R.
Deakin University, Australia

SP 572
Analyte tracking for novel bio-applications
Franziska Gloes, Boehme Andrea, Liebscher Thilo, Richetta Maria, Foitzik Andreas H.
Technical University of Applied Science Wildau, Germany

SP 573
Nucleation and Growth of MnO on Fe-Mn (1 wt.%) Binary Alloy
Li Gong, Ruscassier Nathalie, Ayouz Mehdi, Giorgi Marie-Laurence
Laboratoire de Génie des Procédés et Matériaux, France

SP 574
Emissivity measurements on gamma-TiAl alloys produced by advanced metallurgical processing
Iñigo González De Arrieta, Joachim Gussone, Telmo Echániz, Raquel Fuente, Irene Urcelay, Guillermo Requena, Gabriel López
University of the Basque Country, Spain

SP 575
Thermal emissivity characterization of V-based alloys for fusion reactors
Iñigo González De Arrieta, Raquel Fuente, Telmo Echániz, Irene Urcelay-Olabarria, Wei Ran, Haiying Fu, Jimin Chen, Pengfei Zheng, Manuel J. Tello, Gabriel A. Lopez
Universidad del País Vasco, Spain

SP 576
Effect of tempering on hardness of Q & T steel plate
Aimee Goodall, Ju Yulin, Strangwood Martin, Davis Claire
The University of Birmingham, UK

SP 577
TEM observation of Ni2Si precipitate in Cu-Ni-Si alloy
Hironori Goto, Lee Seungwon, Matsuda Kenji, Ikeno Susumu, Kiso Natsuki, Motoyoshi Takeshi
Graduate School of Science and Engineering for Education, Japan

SP 578
Monitoring of cytotoxic induced cellular displacements by utilizing Electronic Speckle Pattern Interferometry
Josefine Gottschalk, Lietzau Kai-Henning, Foitzik Andreas H., Richetta Maria
Technical University of Applied Science Wildau, Germany

SP 579
Characterization of Powder Metallurgy High-Entropy Alloys prepared by Spark Plasma Sintering
Larissa Gouvea de Almeida, Igor Moravcík, Jan Cízek, Petra Krajáková, Vít Jan, Ivo Dlouhý
Brno University of Technology, Czech Republic

SP 580
Experimental and numerical analysis of the role of grain boundary sliding in the viscoplastic behaviour of ultrafine-grained Al5083
Anchal Goyal, Doquet Véronique, Pouya Amade
Laboratoire de Mécanique des Solides, France

SP 581
Porosity closure in aluminum thick plates for aerospace : investigation by in situ high temperature compression tests with X-ray microtomography
Pauline Gravier, Lhuissier Pierre, Mas Fanny, Barthelemy Alexandre, Boller Elodie, Salvo Luc
Science et Ingénierie des Matériaux et Procédés, France

SP 582
Effect of Si Content on the Fatigue Fracture Behavior of wrought Al-xSi-0.7Mg Alloy
Wang Guangdong, Ni Tian, Chong Li, Gang Zhao, Liang Zuo
Northeastern University, China

SP 583
The compositional dependence of the microstructure and properties of Ni single crystal superalloys
Yu Hao, Van Der Zwaag Sybrand, Xu Wei
Delft University of Technology, Netherlands

SP 584
An in-situ observation of slip deformation in a compressed Ti-Mo-Al single crystal
Ryotaro Hara, Tahara Masaki, Inamura Tomonari, Hideki Hosoda
Tokyo Institute of Technology, Japan

SP 585
Understanding the transient liquid phase bonding process of a gamma-TiAl alloy using in situ high-energy X-ray diffraction
Katja Hauschildt, Stark Andreas, Schell Norbert, Müller Martin, Pyczak Florian
Helmholtz-Zentrum Geesthacht, Germany

SP 586
Correlation Study of Chemistry on Precipitate Size and Distribution and the Resulting Effects on Texture Evolution in Non-Oriented Electrical Steel
Diween Hawezy
Swansea University Materials Research Centre, UK

SP 587
Hydrogen-enhanced decohesion in Ni-based alloys from DFT calculations
Shuang He, Ecker Werner, Pippan Reinhard, Razumovskiy Vsevolod
Materials Center Leoben Forschung GmbH, Austria

SP 588
Synthesis And Characterization Of Carbon Nanospheres Using Interface Trapping Method
Yash Pathak, Bhatt Sandip, Bharatiya Bhavesh, Shukla Atindra
Dharmsinh Desai University, India

SP 589
Effect of Y and Sc addition during aging precipitation process of Mg alloys
Tomoya Hiragi, Lee Seungwon, Ikeno Susumu, Matsuda Kenji
Graduate School of Science and Engineering for Education, Japan

SP 590
Crystallographic features of the multiferroic material Bi1-xCaxFeO3 around x = 0.15
Takumi Hiroyama, Yoshida Haruka, Inoue Yasuhide, Horibe Yoichi, Koyama Yasumasa
Waseda University, Japan

SP 591
A Medium Manganese Steel Designed for Water Quenching and Partitioning
Zeran Hou, Zhao Xianming, Yi Hongliang
The State Key Laboratory of Rolling and Automation, China

SP 592
Microstructure Evolution and Change in Mechanical Properties of Medium Mn Steels during Thermomechanical Processing
Feifei Hou, Ito Atsushi, Bai Yu, Tsuji Nobuhiro
Kyoto University, Japan

SP 593
Corrosion behavior of the 90/10 copper-nickel alloy tube under the alternating dry and hydrostatic pressure condition
Shengbo Hu, Li Liu
Institute of Metal Research, Chinese Academy of Science, China

SP 594
Modelling stress corrosion cracking initiation of cold-worked austenitic stainless steels
Qi Huang, Duhamel Cécilie, Charles Yann, Gasperini Monique, Crépin Jérôme
Université Mines Paris, France

SP 595
Analysis of interaction between C/N atom and moving edge dislocation in iron by Molecular Dynamics
Katsutoshi Hyodo, Araki Satoshi, Munetoh Shinji, Tsuchiyama Toshihiro, Setsuo Takaki
Kyushu University, Japan

SP 596
Fabrication of Cu-Al-Ni Shape Memory Alloy by Selective Laser Melting Process
Ken Imai, Ikeshoji Toshi-Taka, Nakamura Kazuya, Nishida Motonori, Sugitani Yuji, Kyogoku Hideki
Academia, Japan

SP 597
Effect of heat treatmemt in (ferrite+austenite) range on Mechanical Properties of austempered Spheroidal Graphite Cast Iron
Tatsuo Inoue, Torizuka Shiro
University of Hyogo, Japan

SP 598
VC-precipitation kinetics by Small Angle Neutron Scattering in Nano-Steels and its interaction with austenite to ferrite phase transformation kinetics
Chrysoula Ioannidou, Arechabaleta Zaloa, Rijkenberg Arjan, Dalgliesh Robert, Van Well Ad, Offerman Erik
Delft University of Technology, Netherlands

SP 599
Analyses of texture and deformation mechanism in fine-grained austenitic stainless steels by electron back scatter diffraction
Kyoichi Ishida, Matsuo Taku, Imafuku Muneyuki
Tokyo City University, Japan

SP 600
Characterization of microstrutural evolution of ODS alloys after aging treatment at 450°C and 500°C
Amal Issaoui, Ribis Joel, Malaplate Joel
CEA Saclay, France

SP 601
The effect of vibration condition for Magnesium dry gravity sorting by vibrating particulate bed
Shingo Itoh, Tsujita Keigo, Morishige Taiki, Takenaka Toshihide
Kansai University, Japan

SP 602
Microstructure and mechanical properties of welded joints of several high tensile strength steel
Takahiro Izumi, Kobayashi Tatsuya, Shohji Ikuo, Miyanaga Hiroaki
Gunma University, Japan

SP 604
Effect of electron irradiation, temperature and hydrogen partial pressure on the formation of voids in aluminum: a combined in-situ TEM and modelling study
Camille Jacquelin, Meslin Estelle, Fu Chu-Chun, Nastar Maylise
Service de recherches de métallurgie physique, France

SP 605
Property improvement of Hadfield steel clad sheets fabricated by roll bonding with hot-press-forming steel
Min Chul Jo, Park Jaeyeong, Jo Min Cheol, Sohn Seok Su, Song Taejin, Kim Hyoung Seop, Lee Sunghak
Pohang University of Science and Technology, South Korea

SP 606
Effect of carbides on hydrogen embrittlement in tempered martensitic steels
Hyun Joo Seo, Young Jin Kwon, Junmo Lee, Chong Soo Lee
POSTECH, Korea

SP 607
Characterization and modelling of precipitation during tempering in low alloyed quenched and tempered steels
Yulin Ju, Strangwood Martin, Davis Claire
University of Birmingham, UK

SP 608
The effect of crystal orientation on damping capacity in rolled AZ31 magnesium alloy
Kwak Juho, Hansang Kwon, Junghoon Lee, Kwonhoo Kim
Pukyong National University, South Korea

SP 609
The influence of alloy composition and heat-treatments on the shape memory properties in a Cu-Sn-X alloy
Daisuke Kaneko, Takeda Mahoto, Nakajima Takanari, Muramatsu Naokuni
Yokohama National University, Japan

SP 610
Improving the control of static recrystallization, precipitation and recrystallized texture in V-bearing low carbon steel using correlative and in-situ microscopy
Ishwar Kapoor, Clark Samuel, Lan Yongjun, Rijkenberg Arjan, Li Zushu, Vit Janik
Warwick Manufacturing Group, UK

SP 611
Hydrogen-related fracture behaviours in a ferritic steel
Okada Kazuho, Shibata Akinobu, Tsuji Nobuhiro
Kyoto University, Japan

SP 612
Fatigue behaviour of equimolar TiZrHfNbTa refractory HEA in four-point bending loading
Vasuki Kentheswaran, Guennec Benjamin, Perrière Loïc, Couzinié Jean-Philippe, Guillot Ivan, Dirras Guy
Laboratoire des Sciences des Procédés et des Matériaux, France

SP 613
Simvastatin loaded chitosan/cyclodextrin polymer nanofibers-covered stent for restenosis prevention
Dyhia Kersani, Mougin Justine, Lopez Marco, Degoutin Stéphanie, Tabary Nicolas, Cazaux Frédéric, Janus Ludovic, Hue Benoît, Maton Mickael, Chai Feng, Sobocinski Jonathan, Blanchemain Nicolas, Martel Bernard
University of Lille, France

SP 614
A first-principles study of the Al (001)/Fe(100) interface
Zeeshan Khalid, Friis Jesper, Ninive Per Harald, Marthinsen Knut, Strandlie Are
NTNU, Norway

SP 615
Orientation dependence on fatigue fracture behavior of pure Mg single crystals
Yuta Kido, Lu Guojun, Tsushida Masayuki, Kitahara Hiromoto, Ando Shinji
Kumamoto University, Japan

SP 616
Characterisation of the dynamic recrystallisation in Ni-base superalloy for a two-phase microstructure
Christiane Kienl, Mandal Paranjayee, Lalvani Himanshu, Argyrakis Christos, Rae Cathy
Cambridge University, UK

SP 617
Creep behavior of ferritic steels under hydrogen environment
Han-Jin Kim, Suh Jin-Yoo, Lee Joonho
Korea Institute of Science and Technology, South Korea

SP 618
Hydrogen embrittlement behavior of CoCrFeMnNi alloy at low temperatures
Daehwan Kim Young Sang Na, Hyoung Seop Kim, Chong Soo Lee
POSTECH, Korea

SP 620
Material flow in lap joint of dissimilar metallic foils by friction stir diffusion bonding with micro indentation.
Takashi Kodama, Fukushige Hiroki, Igari Kohei, Nakayama Kazuki, Takayama Yoshimasa
Utsunomiya University, Japan

SP 621
The ordering beta phase transformation in gamma TiAl based alloys studied by synchrotron and neutron diffraction
Victoria Kononikhina, Stark Andreas, Gan Weimin, Pyczak Florian, Schreyer Andreas
Helmholz-Zentrum Geesthacht, Germany

SP 622
Prediction of magnetostrictive properties of Fe-Ga alloy based on internal energy model with magnetomechanical effect
Akihiro Koyama, Fujita Masaki, Ikeuchi Takehito, Imafuku Muneyuki
Tokyo City University, Japan

SP 623
Mechanical properties of Fe-C-Mn-Si alloys and their dependence on the degree of microstructural and micro-chemical banding
Monika Krugla, Offerman Erik, Seda Petra, Sietsma Jilt, Hanlon Dave
Delft University of Technology, Netherlands

SP 624
Microstructure evolution and texture formation behavior in M1 magnesium alloy during high temperature deformation
Kyujung Lee, Hansang Kwon, Junho Choi, Kwonhoo Kim
Pukyong National University, South Korea

SP 625
Reversal of the precipitation sequence in Al-Mg-Si alloys
Yuxiang Lai, Chen Jianghua
Hunan University, China

SP 626
Shape memory effect and variant selection in red gold alloys
Margaux Larcher, Cayron Cyril, Logé Roland
Ecole Polytechnique Fédérale de Lausanne, Switzerland

SP 627
Thermal analysis for the prediction of grain refinement: an experimental investigation on a AlSiMg foundry alloy
Lucia Lattanzi, Fortini Annalisa, Giovagnoli Maverick, Merlin Mattia, Pirletti Stefano, Morè Spreafico Stefano, Garagnani Gian Luca
Università degli Studi di Ferrara, Italy

SP 628
Engineering hierarchical microstructures in HSLA steel
Carina Ledermuller, Primig Sophie
UNSW Sydney, Australia

SP 629
Deformation Twinning and Change in Mechanical Properties of Cu-15at%Al in Multi-pass Cold Rolling
Sangmin Lee, Yong-Deok Im, Ryo Matsumoto, Hiroshi Utsunomiya
Osaka University, Japan

SP 630
Hot ductility and fracture behaviour of duplex stainless steel
Xianchao Li, Xu Wanqiang, Lin Ping, Miskovic David, Jong Robert, Ferry Michael
University of New South Wales, Australia

SP 633
Grain-coarsening resistance at 1200^{o}C by TiC precipitation in delta-ferrite in an Al-bearing steel
Lianqian Liu, Wang G.d., Yi H.l.
The State Key Laboratory of Rolling and Automation, China

SP 634
High corrosion resistance associated with high-strength and good ductility in an Al-Mg-Si-Cu alloy manufactured by an optimized rolling-ageing process
Limei Liu
Center for High-Resolution Electron Microscopy, China

SP 635
Microstructure and Crystallography of a Phase formed through Electric Current Pulse (ECP) treatment in cold-rolled Cu-40Zn Alloy
Meishuai Liu, Zhang Yudong, Wang Xinli, Liu Maoli, Zhao Xiang, Zuo Liang, Esling Claude
Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), Northeastern University, Shenyang 110819, China

SP 636
Effect of micro-alloyed neodymium on microstructure and texture evolution in magnesium-zinc alloys during hot deformation
Yang Liu, Su Jing, Javaid Amjad, Skszek Tim, Yue Stephen
McGill University, Canada

SP 637
Sample analysis for novel medical-applications
Susanne Lobstein, Zinn Steffen, Liebscher Thilo, Minieri Marilena, Foitzik Andreas H.
Technical University of Applied Science Wildau, Germany

SP 638
Evolution of microstructure and lattice strains during annealing of rolled AlCoCrFeNi2.1 Eutectic High-Entropy Alloy
Adrianna Lozinko, Guo Sheng, Zhang Yubin
Chalmers University of Technology, Sweden

SP 639
Template-free synthesis of nanoporous nickel and alloys as binder-free current collectors for batteries
Liqiang Lu, Andela Paul, De Hosson Jeff, Pei Yutao
University of Groningen, Netherlands

SP 640
Interface characterization of a TiB2/7075Al nanocomposite with unprecedented tensile ductility by transmission electron microscopy
Yu Ma, Ji Gang, Chen Zhe, Addad Ahmed, Vincent Ji
Université Paris-Sud, France

SP 641
Influence of Cu or Fe on the microstructures and elevated temperature properties of network AlNp reinforced Al composites
Xia Ma, Xiaojun Zhao, Tong Gao, Houwen Chen, Xiangfa Liu
Shandong University, China

SP 642
The Influence of Processing Parameters on Roll Compaction of Titanium Powder
Clare Maclsaac, Julian O'Flynn, Stephen Corbin
Dalhousie University, Canada

SP 643
Micro-Nanostructured Silicone Rubber Surfaces Using Compression Molding
Khosrow Maghsoudi, Momen Gelareh, Jafari Reza, Farzaneh Masoud, Carreira Tony
University of Quebec at Chicoutimi, Canada

SP 644
Study on bainite/martensite transformation in reheated weld metals
Gaojun Mao, Cayron Cyril, Chen Jainhong, Logé Roland, Cao Rui
Lanzhou University of Technology, China

SP 645
Proving the preclusion of data manipulation using parallel data acquisition in chromatography
David Thomas Marehn, Wilhelm Detlef, Pospisil Heike, Pizzoferrato Roberto
University of Applied Sciences Wildau & AnaTox GmbH & Co. KG, Germany

SP 646
Microstructure and mechanical properties of Ni-Cu alloys fabricated by wire arc additive manufacturing
Olexandra Marenych, Pan Zeng, Li Huijun, Van Duin Stephen
University of Wollongong, Australia

SP 647
Two-step aging behavior of solution treated A356 system alloy
Iijima Masahiko, Tomoya Ozasa, Susumu Ikeno, Kenji Matuda, Seiji Saikawa
University of Toyama, Japan

SP 648
Relationship between microstructure and magnetic properties of nano-scale particles formed in Cu-Ni-(FeCo) alloys
Shintaro Matai, Sakakura Hibiki, Takeda Mahoto
Graduate School of Materials Engineering, Japan

SP 650
Effect of Cooling Rate on Intermetallic Compounds Formation in Sn-Ag-Cu-In Solder
Kenji Miki, Kobayashi Tatsuya, Shohji Ikuo, Nakata Yusuke
Gunma University, Japan

SP 651
The change of microstructures and tensile properties of intercritically annealed medium Mn steel according to cold rolling reduction ratio before annealing
Tae Kim, Park Tak Min, Baik Kyeong-Ho, Dutta Aniruddha, Ponge Dirk, Raabe Dierk
Chungnam National University, South Korea

SP 652
High temperature creep behavior of face-centered cubic high entropy alloys
Min-Gu Jo, Suh Jin-Yoo, Jung Woo-Sang, Han Heung Nam
Seoul National University, South Korea

SP 653
Effect of Gas Tungsten Arc Welding Parameters on Hydrogen Absorption in a Duplex Stainless Steel
Bahram Mirzaei, Goroh Itoh, Alireza Khodabandeh
Iran

SP 654
Room Temperature Photoluminescence from (ZnO)0.79(InN)0.21 films fabricated by RF magnetron sputtering
Nanoka Miyahara, Shi Liu, Iwasaki Kazuya, Seo Hyunwoong, Koga Kazunori, Shiratani Masaharu, Itagaki Naho
Kyushu University, Japan

SP 655
Effect of voltage on Mg-Li-Al alloy anodic oxide film
Naoya Miyakita, Natsuki Tanigaki, Taiki Morishige, Toshihide Takenaka, Goto Takayuki, Fukagawa Tomoki
Kansai University, Japan

SP 656
One photon 3D polymerization via direct laser writing
Federico Mochi, De Matteis Fabio, Prosposito Paolo, Burratti Luca, Francini Roberto, Casalboni Mauro
University of Rome Tor Vergata, Italy

SP 657
Microsegregation and microstructural characterisation of an as-cast cobalt-base superalloy
James Moffat, Stone Howard
Cambridge University, UK

SP 658
Layer-by-layer coating of a polyester non woven with chitosan and poly-cyclodextrin as antibacterial and anti-inflamatory wound dressing
Alejandra Mogrovejo-Valdivia, Maton Mickaël, Tabary Nicolas, Chai Feng, Neut Christel, Blanchemain Nicolas, Martel Bernard
University od Lille, France

SP 659
Adhesion of osteoblast-like cells on electrodeposited calcium phosphate coatings
Taraneh Mokabber, Van Rijn Patrick, Vakis Antonis, Pei Yutao
University of Groningen, Netherlands

SP 660
Effect of Plastic Deformation on Microstructure and Electrochemical Properties of Duplex Stainless Steel
Riya Mondal, Kain Vivekanand, Palla Sivaprasad, Chai Guocai, Kangas Pasi, Samajdar Indradev
Indian Institute of Technology Bombay, India

SP 661
Laser Beam Melting of Al2O3-ZrO2 and Al2O3 oxide ceramics
Liliana Moniz, Colin Christophe, Bartout Jean-Dominique, Berger Marie-Hélène
Centre des Matériaux, France

SP 663
The Influence of Base Metal Selection on the Transient Liquid Phase Bonding (TLPB) of Nickel-base Alloys Using Differential Scanning Calorimetry
Eric Moreau
Dalhousie University, Canada

SP 664
Effects of Mo addition on deformation behavior of metastable beta-type Ti-Mn single crystals
Ryota Morioka, Cho Ken, Yasuda Hiroyuki Y.
Osaka University, Japan

SP 665
Plastic deformation simulation of sintered ferrous material in cold-forging process
Yuki Morokuma, Nishida Shinichi, Kamakoshi Yuichiro, Kanbe Koshi, Kobayashi Tatsuya, Shohji Ikuo
Gunma University, Japan

SP 666
Effect of ECAP-processing temperature on microstructure and mechanical properties of low-alloyed Cu -Cr - Zr alloy
Anna Morozova, Olkhovikova Yana, Belyakov Andrey, Kaibyshev Rustam
Belgorod State University, Russia

SP 669
Microstructure observation of TiN / Ti-O-N bi-layer coatings
Yusuke Muraoka, Lee Seungwon, Matsuda Kenji, Nose Masateru, Ikeno Susumu–
Graduate School of Science and Engineering for Education, Japan

SP 670
Influence of Oxygen on Phase Constitution and Heat Treatment in Ti-V Alloys
Hitomi Nagasawa, Ikeda Masahiko, Ueda Masato
Kansai University, Japan

SP 671
Microstructural evolution and deformation behavior of cold-rolled Fe-Mn-Al-C low-density steel
Zhou Naipeng, Song Renbo, Li Xuan, Niu Wenjie
University of Science and Technology Beijing, China

SP 672
Fabrication and property evaluation of Mg based composite including magnetic-caloric effect particles
Naoto Nakamura, Seungwon Lee, Nishimura Katsuhiko, Ikeno Susumu, Matsuda Kenji
Graduate School of Science and Engineering for Education, Japan

SP 673
Titanium alloys anodic oxidation: effect of experimental parameters on surface colouring
Giuseppe Napoli, Zitelli Chiara, Di Schino Andrea
University of Perugia, Italy

SP 674
Strengthening of the WE43 magnesium alloy by rotary swaging
Natalia Martynenko, Lukyanova Elena, Gorshenkov Mikhail, Morozov Mikhail, Yusupov Vladimir, Birbilis Nick, Dobatkin Sergey, Estrin Yuri
National University of Science and Technology "MISIS", Russia

SP 675
Electrically Assisted Bright Annealing of 316L Stainless Steel
Thi Anh Nguyet, Luu Viet Tien, Hong Sung-Tae, Dinh Thi Kieu Anh, So Hyunwoo
University of Ulsan, South Korea

SP 676
Experimental study of dust generation during trimming of CFRP structures with PCD tool
Ngoc Nguyen Dinh, Zitoune Redouane, Bouvet Christophe, Leroux Sabine
Institut Clément Ader, France

SP 677
Mitigating Hazards Posed by Flexible Electronic Circuits: Liquid Metal Embrittlement by Exposure of Engineering Alloys to Eutectic Gallium Indium
Justin Norkett, Victoria Miller
North Carolina State University, USA

SP 678
Recrystallisation and recovery of a Co-free high entropy alloy from CrFeMnNi family
Julia Olszewska, Fraczkiewicz Anna, Mithieux Jean-Denis
École des Mines de Saint-Étienne, France

SP 679
Physical property of Al-based Mechanoluminescent composite fabricated by 3DPC
Yusuke Ota, Lee Seungwon, Ikeno Susumu, Matsuda Kenji
Graduate School of Science and Engineering for Education, Japan

SP 680
Modeling High Temperature Deformation Behaviour of Inconel 718PlusTM: Consideration of Precipitation Effects
Utkudeniz Ozturk, Jessica Calvo, Jose Maria Cabrera
BarcelonaTech, Spain

SP 681
Development of chitosan/poly-cyclodextrin hydrogels and sponges for bone tissue engineering application
Carla Palomino, Gauzit-Amiel Alice, Lopez Marco, Cazaux Fréderic, Martel Bernard, Blanchemain Nicolas, Chai Feng
University of Lille, France

SP 682
A new low-density press hardening steel with excellent combination of strength and ductility
Jiachen Pang, Lu Qi, Wang Jianfeng, Wang Guodong, Yi Hongliang
General Motors Global Research and Development, China

SP 683
A Facile Method to Extract the Yield Stress from Nanoindentation in Aluminum Alloys
Giovanni Maizza, Renato Pero, Fredinando de Marco, Roberto Montanari, Takahito Ohmura
University of Rome "Tor Vergata", Italy

SP 684
Fluorescent and Magnetic Stellate Large Pore Mesoporous Silica Nanocomposites for Bimodal Bioimaging
Francis Perton, Tasso Mariana, Mertz Damien, Begin-Colin Sylvie
Institut de Physique et Chimie des Matériaux de Strasbourg, France

SP 685
Determination of the Ductile to Brittle Transition Temperature of Chromium Based Alloys
Petra Pfizenmaier, Anke Silvia Ulrich, Mathias Galetz, Uwe Glatzel
University Bayreuth, Germany

SP 686
Effect of quenching and partitioning processing on microstructure and mechanical properties of a low-alloyed steel
Bernd Pfleger, Marina Gruber, Gerald Ressel, Peter Gruber, Mathew Galler, Stefan Marsoner, Reinhold Ebner
Materials Center Leoben Forschung GmbH, Austria

SP 687
Solidification and microstructural control in selective electron beam melting of Co-29Cr-10Ni-7W alloy
Minh Anh Luan Phan, Darren Fraser, Zhan Chen, Stefan Gulizia
Department of Mechanical Engineering, New Zealand

SP 688
Simulation and characterization of strain induced cracking during hot processing by thermo-mechanical testing of a micro-alloyed steel
Rosa Maria Pineda Huitron, Vuorinen Esa, Jentner Robin, Ramirez Lopez Pavel
Luleå University of Technology, Sweden

SP 689
Experimental investigations on synthesis and oxidation testing of MAX-phase materials in the X-Ti-Al-C system (X= Si, Mo, Nb, W)
Kseniia Piven, Chengjie Lu, Gilles Hug, Aurélie Jankowiak
ONERA, France

SP 690
Microstructural Origin of ductility in As-Cast AA7075 Aluminium alloy
Aditya Prakash, Tak Tawqeer, Lodh Arijit, Murty S.v.s., Guruprasad P. J., Samajdar Indradev
Indian Institute of Technology Bombay, India

SP 691
Cold swaging and recrystallization annealing of Ti-Nb-Ta-Zr-O alloy- Microstructure, texture and microhardness evolution
Dalibor Preisler, Stráský Josef, Harcuba Petr, Halmesová Kristýna, Janecek Milos
Charles University, Czech Republic

SP 692
Alloying and deformation behaviour of nanocrystalline multicomponent equiatomic refractory alloys synthesized through mechanical alloying
Lavanya Raman, Murty S.v.s. Narayana, Kottada Ravi Sankar, Murty B. S.
Research scholar, India

SP 693
Recrystallization and grain growth phenomena in stainless steels for different thermo-mechanical processes
G. Napoli, C. Rocchi, S. Grimozzi, A. Di Schino
University of Perugia, Italy

SP 694
Supersolidus liquid phase sintering of powder injection molded nickel-based super alloys using differential scanning calorimetry
Addison Rayner, Corbin Stephen, Georges Thomas, Scalzo Orlando
Dalhousie University, Canada

SP 695
Non-conventional synthesis and sintering of the high dielectric permittivity CaCu3Ti4O12 ceramic
Guillaume Riquet, Marinel Sylvain, Bréard Yohann, Harnois Christelle
Laboratoire de cristallographie et sciences des matériaux, France

SP 696
Superhydrophobic coating bioinspired on Rice leaf to enhance functional properties
Oriol Rius-Ayra, Llorca-Isern Núria, Escobar Ana M.
Universitat de Barcelona, Spain

SP 697
Quasi-static and dynamic characterization of the anisotropic viscoplastic behaviour of a titanium alloy for leading edge of aircraft engine fan blade
Miguel Ruiz de Sotto, Doquet Véronique, Longère Patrice, Papasidero Jessica
Safran Aircraft Engines, France

SP 698
Deformation behavior of 15Cr-15Mn-4Ni austenitic stainless steels alloyed with 0.2 wt% of carbon and/or nitrogen
Nithi Saenarjhan, Kang Jee-Hyun, Kim Sung-Joon
Graduate Institute of Ferrous Technology, South Korea

SP 699
Effect of In-situ reinforcement on the hot compressive deformation behavior of TiC-TiB2+AZ91 magnesium matrix composite on the base of processing map
Biranchi Narayan, Panigrahi S K
Indian Institute of Technology Madras, India

SP 700
Spontaneous microstructural evolution and magnetic properties of nano-scale particles comprising ferromagnetic element atoms in Cu-Ni-Fe and Cu-Ni-Co alloys
Hibiki Sakakura, Matai Shintaro, Takeda Mahoto
Graduate School of Materials Engineering, Japan

SP 701
Effects of heat treatment on unique layered microstructure and tensile properties of TiAl fabricated by electron beam melting
Masahiro Sakata, Oh Jong Yeong, Cho Ken, Yasuda Hiroyuki Y., Todai Mitsuharu, Nakano Takayoshi, Ikeda Ayako, Ueda Minoru, Takeyama Masao
Osaka University, Japan

SP 702
Wear behavior of two different cemented carbide grades in turning 316 L stainless steel
Sara Saketi, Olsson Mikael, Bexell Ulf
Dalarna University, Sweden

SP 703
Effect of the Number of Roughing Passes on the Dynamic Transformation of Austenite During Simulated Plate Rolling
Rodrigues Samuel, Aranas Jr. Clodualdo, Siciliano Fulvio, Yue Steve, Jonas John
McGill University, Canada

SP 704
XPS investigation of the decarburization process in a SAE 9254 Spring Steel
Jessica Santana, Santos Sydney, Antunes Renato
Universidade Federal do ABC, Brazil

SP 705
The training effect for TiPd high temperature shape memory
Hirotaka Sato, Kim Hee Young, Shimojo Masayuki, Yamabe-Mitarai Yoko
Shibaura Institute of Technology, Japan

SP 706
Investigation of Charges on Droplets in Misty Plasmas
Ryoma Sawata, Makoto Moriyama, Keiji Nakamura, Daisuke Ogawa
Chubu University , Japan

SP 707
Validation of material parameters of collagen compositions for the application as a bioink
Volker Schlegel, Engels Andreas, Bifaretti Stefano, Foitzik Andreas H.
Technical University of Applied Science Wildau, Germany

SP 708
Development of a smartphone based reader for the quantitative analysis of Lateral Flow Assays
Sylvio Schneider, Selig Martina, Keil Verena, Lehmann Matthias, Foitzik Andreas H., Casalboni Mauro, Richetta Maria
Technical University of Applied Science Wildau, Germany

SP 709
Electron beam welding of wear-resistant steels
Christian Schneider, Wolfgang Ernst, Rudolf Vallant, Norbert Enzinger
Institute of Materials Science, Joining and Forming, Austria

SP 710
Cleaning optimization of galvanized steel surfaces in preparation for paint application
Liezl Schoeman
University of Pretoria, South Africa

SP 711
Relationship between microstructure and exfoliation corrosion in Mg-14mass%Li-3mass%Al cold-rolled alloy
Yuki Sekiguchi, Morishige Taiki, Takenaka Toshihide, Goto Takayuki, Hukagawa Tomoki
Kansai University, Japan

SP 712
Structural stability of Hafnia-based material at ultra-high temperature
Louise Sevin, Julian-Jankowiak Aurélie, Justin Jean-François, Langlade Cecile, Bertrand Pierre, Pelletier Nicolas
ONERA - The French Aerospace Lab, France

SP 713
Improvement of mechanical property in an oriented graphite flakes/Al composite processed by vacuum hot pressing and incorporating nano-sized SiC particles
Zhengyan Shen, Silvain Jean-François, Morvan Adrien, Chamroune Nabil, Ji Gang
Institute of Condensed Matter Chemistry of Bordeaux, France

SP 715
Solid Solution Hardening and Precipitation Hardening of near alpha-Titanium Alloys
Kei Shimagami, Ito Tsutomu, Yumoto Atsushi, Yamabe-Mitarai Yoko
National Institute for Materials Science, Japan

SP 716
Controlling Dislocation Nucleation in Au Nanowire via Surface Modification
Jungho Shin, Cornelius Thomas, Labat Stéphane, Richard Marie-Ingrid, Thomas Olivier, Richter Gunther, Sanli Umut, Gianola Daniel
University of Pennsylvani, USA

SP 717
Investigation of crack initiation in glass substrate by residual stress analysis
Amon Shinohara, Kobayashi Tatsuya, Shohji Ikuo, Umemura Yuk
Gunma University, Japan

SP 718
Local atomic arrangement near a Ni atom in an FCC Al-Cr-Fe-Co-Ni high entropy alloy
Ryosuke Shioda, Yamamoto Tokujiro, Ebisu Yoshihiro, Kimura Koji, Hayashi Kouichi, Happo Naohisa, Hosokawa Shinya, Tajiri Hiroo, Ozaki Toru
Utsunomiya University, Japan

SP 719
Ultrafine grained structure formed through static recrystallization of warm multi-directionally deformed structure in SUS316L steels
Furukane Shun, Torizuka Shiro, Adachi Hiroki
University of Hyogo, Japan

SP 720
Mechanical properties of welded aluminum-steel blanks
Zahra Silvayeh, Vallant Rudolf, Sommitsch Christof, Götzinger Bruno, Karner Werner, Hartmann Matthias
Graz University of Technology, Austria

SP 721
The effect of chemistry and thermo-mechanical processing on microstructure and hardness of microalloyed steels
Navjeet Singh, Kostryzhev Andrii, Killmore Chris, Pereloma Elena
University of Wollongong, Australia

SP 722
Harmonic-structured materials: from unravelling structure-property relationship in nickel to paving the road for industrial fabrication
Elis Sjögren, Sina Hossein, Orlov Dmytro, Ota Kawabata Mie, Ameyama Kei
Lund University, Sweden

SP 724
Improvement of strain hardening and yield strength in duplex lightweight steels by Cu addition
Hyejin Song, Sang-Heon Kim, Seok Su Sohn, Minseo Koo, Nack J. Kim, Sunghak Lee
Pohang University of Science and Technology, South Korea

SP 725
On the evolution of microstructure and texture in single phase CoCuFeMnNi high entropy alloy subjected to high pressure torsion
Reshma Sonkusare, Biswas Krishanu, Brokmeier Heinz-Gunter, Gurao Nilesh
Indian Institute of Technology Kanpur, India

SP 726
On the relationships between process parameters, microstructure and properties of selectively laser-melted Ti-6V-4V
Angeline Stef Poulon-Quintin, Jonathan Stef, Goune Mohamed
Institut de chimie de la matière condensée de Bordeaux, France

SP 727
Characterisation of long term aging in Esshete 1250 weldments
Oscar Stephenson, Higginson Rebecca, Hogg Simon, Knight Jacob, Spindler Sarah
Loughborough University, UK

SP 728
Partitioning kinetics of alloying elements in a medium Mn steel during Q&P treatments using phase field modelling
Ayenampudi Sudhindra, Casero Carola Alonso De Celada, Mecozzi Pina, Sietsma Jilt, Maria J. Santofimia
Delft University of Technology, Netherlands

SP 729
Irradiation induced defects evolution in a metallic glass
Kang Sun, Wang Gang, Wang Qing
China

SP 730
Deformation process of ZrCu based bulk metallic glasses composites
Haichao Sun, Ning Zhiliang, Wang Gang, Liang Weizhong, Xue Xiang, Sun Jianfei
Harbin Institute of Technology, China

SP 731
Features of successive state transitions in the highly-correlated electronic system Sr0.56(Nd1-xSmx)0.44MnO3
Michiko Suzuki, Shimasaki Rina, Yamagata Misato, Inoue Yasuhide, Koyama Yasumasa
Waseda University, Japan

SP 732
The relationship between Mg content and extra-hardening in ultrafine grained Al-Mg alloy by SPD
Yuto Suzuki, Shiono Yuichi, Morishige Taiki, Takenaka Toshihide
Kansai University, Japan

SP 733
Selective Laser Melting of Inconel 718 under High Power and High Scanning Speed Conditions
Yusuke Tachibana, Ikeshoji Toshi-Taka, Nakamura Kazuya, Yonehara Makiko, Kyogoku Hideki
Academia, Japan

SP 734
Investigating Transient Liquid Phase Bonding of Commercially Pure Titanium using Pure Cu as a Filler Metal
Colin Tadgell, Corbin Stephen
Dalhousie University, Canada

SP 735
Enhancement of H embrittlement resistance of Fe-Mn-C twinning-induced plasticity steel by partial recrystallization technique
Min Tak Park, Kim Min Tae, Baik Kyeong-Ho, Han Jeongho
Chungnam National University, South Korea

SP 736
Formation of ultrafine single variant martensite and its mechanical properties
Torizuka Shiro, Yuu Takahara, Adachi Hiroki
University of Hyogo, Japan

SP 737
Effect of prior structure to intercritical annealing on rapid formation of ferrite+austenite structure and mechanical properties in 0.1%C-2%Si-5%Mn steels
Adachi Takanobu, Torizuka Shiro, Adachi Hiroki
University of Hyogo, Japan

SP 738
Mechanical properties and microstructure of CrSiCN coatings prepared by r.f.-reactive sputtering
Kanta Takemoto, Takise Ryohei, Lee Seungwon, Matsuda Kenji, Ikeno Susumu, Nose Masateru
Graduate School of Science and Engineering for Education, Japan

SP 739
Influence of tempering cycle on microstructure evolution of a high strength steel
Hesamodin Seyyed Talebi, Ghasemi Nanesa Hadi, Jahazi Mohammad
École de technologie supérieure, Canada

SP 740
An original moving mesh method for the simulation of crystallization and purification processes of photovoltaic silicon
Virgile Tavernier, Millet Séverine, Botton Valéry, Henry Daniel, Albaric Mickael
Laboratoire de Mecanique des Fluides et dÁcoustique, France

SP 741
Ultra-fine grained Ti-15Mo alloy prepared by powder metallurgy
Anna Terynkova, Bartha Kristina, Kozlík Jirí, Chráska Tomás, Stráský Josef
Charles University, Czech Republic

SP 742
Optimizing the Laser Cladding Process on 200 µm Thin Substrates
Gabriel Tobias, Scherm Florian, Gorywoda Marek, Glatzel Uwe
University Bayreuth, Germany

SP 743
Texture and mechanical properties of IF steel / polyethylene / IF steel laminates
Hoshino Tomoaki, Inoue Hirofumi
Osaka Prefecture University, Japan

SP 744
Effect of Electric Density on Stress Relief Annealing Process for Automotive Springs
Tran Van Loi, Hong Sung-Tae, Luu Viet Tien, Ji Ye Hong, Jin Sung-Woo, Han Heung Nam, Yum Young-Jin
University of Ulsan, South Korea

SP 745
Hydrogen Transport in Multiphase Steels
Andrej Turk, Rivera-Diaz-Del-Castillo Pedro, Galindo-Nava Enrique
University of Cambridge, UK

SP 746
Development of Heat Treatable Cr-based Alloys for High Temperature Structural Applications
Anke Silvia Ulrich, Petra Pfizenmaier, Ali Soleimani-Dorcheh, Uwe Glatzel, Mathias Galetz
DECHEMA-Forschungsinstitut, Germany

SP 747
Study of mechanical properties at the macro- and micro-scale in AHSS processed by ultra-fast heating
Miguel Angel Valdés-Tabernero, Vercruysse Florian, Petrov Roumen, Sabirov Ilchat , Monclús Miguel, Molina-Aldareguia Jon
Institute IMDEA Materials Madrid, Spain

SP 748
Optimisation of annealing treatment of stabilised austenitic stainless steels using statistical insights
Adrien Vaugoude, De Carlan Yann, Legris Alexandre–
CEA Saclay, France

SP 749
Simple Fabrication of Superhydrophobic Surfaces using Atmospheric-Pressure Plasma
Elham Vazirinasab, Jafari Reza, Momen Gelareh
University of Quebec at Chicoutimi, Canada

SP 750
Evolution of texture during hot rolling of a new magnesium alloy
Krishna Kamlesh Verma, Kumar Subodh, Suwas Satyam
Indian Institute of Science, Bangalore, India

SP 751
Amorphous-Crystalline phase transition of tantalum coating as a function of sputtering powers
Jun Wang Wang Jun, Jianliang Li
School of Materials Science and Engineering, China

SP 752
Micro-indentation Behavior in Pure Mg, Zn and Ti Single Crystals
Momoka Watanabe, Tanaka Hiroki, Tsushida Masayuki, Kitahara Hiromoto, Ando Shinji
Kumamoto University, Japan

SP 754
Unexpected by human; predicted by machine: Discovery of low-modulus Ti alloys by Machine Learning
Chun Te Wu, Wu Chien-Yu, Chang Hsiao-Tze, Huang Sih-Ying, Yen Hung-Wei
National Taiwan University, Taiwan

SP 755
Cementite precipitation during the annealing of third generation Advanced High Strength Steels (AHSS)
Yuxiang Wu, Sun Wenwen, Styles Mark, Arlazarov Artem, Hutchinson Christopher
Monash University, Australia

SP 756
Influence of Cu Addition on Microstructure and Mechanical Properties of Fe-0.08C-1Mn-2.5Ni Steel
Xiaohui Xi, Chen Liqing, Zhao Yang, Wang Zhaodong
Northeastern University, China

SP 757
Mechanical behaviour and microstructure evolution of a quenching and partitioning steel during drop weight impact tests
Peikang Xia, Sabirov Ilchat, Molina-Aldareguia Jon, Verleysen Patricia, Petrov Roumen
IMDEA Materials Institute, Spain

SP 758
Strain hardening and tensile ductility in carbon nanotube/aluminum (CNT/Al) composites
Run Xu, Fan Genlian, Ji Gang, Tan Zhanqiu, Xiong Ding-Bang, Guo Qiang, Li Zhiqiang, Zhang Di
Shanghai Jiao Tong University, China

SP 759
Crystallographic features of orbital-ordered states in Ca1-xPrxMnO3 around x =0.25
Yuki Yamamura, Endo Tomoki, Kojima Kentaro, Inoue Yasuhide, Koyama Yasumasa
Waseda University, Japan

SP 760
Effects of Sr levels on microstructure and mechanical properties of Mg-Ni-Y alloy
Xiong Yang, Wu Shusen, Lü Shulin, Hao Liangyan, Fang Xiaogang
Huazhong University of Science and Technology, China

SP 761
Tensile and fatigue properties of miniature size specimen of Sn-3.5Ag-0.5Cu-0.07Ni-0.01Ge lead-free solder
Masaki Yokoi, Kobayashi Tatusya, Ikuo Shohji
Gunma University, Japan

SP 762
Surface Defect Formation in Steel Continuous Casting
Matthew Zappulla, Thomas Brian
Colorado School of Mines, USA

SP 763
Identification of the molecular bases of arthropod natural glues
Andrey Zaytsev, Arqué Mathilde, Becerra-Gonzalez Oliver, Weidenhaupt Marianne, Bruckert Franz, Agniel Rémy, Gallet Olivier, Picot Cédric, Vendrely Charlotte
Equipe de recherche sur les relations matrice extracellulaire-cellules, France

SP 764
Fabricating Ti-1.0%Fe with Ultrafine Grained Microstructures by Thermomechanical Processes
Yuan Zhang, Deng Guanyu, Chong Yan, Bai Yu, Shibata Akinobu, Tsuji Nobuhiro
Department of Materials Science and Engineering, Japan

SP 765
Change of intergranular corrosion behavior along the thickness in a friction-stir-welded 7N01-T5 aluminum alloy
Zhiqiang Zhang
Northeastern University, China

SP 766
Effect of Portevin Le-Chatelier bands on necking in Al-Mg alloys
Daria Zhemchuzhnikova, Lebyodkin Mikhail, Lebedkina Tatiana, Yuzbekova Diana, Mogucheva Anna, Kaibyshev Rustam
Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux, France

SP 767
Continuous dynamic recrystallization during hot deformation of high stacking fault energy metals
Simonet Fotso Jules Franz Thierry, Montheillet Frank, David Piot, David Canelo Yubero, Cecilia Poletti
Graz University of Technology, Austria

SP769
Micro-alloyed steels for forgings
Sabrina Mengaroni, Massimo Calderini, Giuseppe Napoli, Chiara Zitelli, Andrea Di Schino
University of Perugia, Italy

SP770
Direct laser additive manufacturing of ceramics by powder deposition
Julie Odinot, Julian-Jankowiak Aurélie, Petit Johan, Choron Damien, Boisselier Didier, Thomas Marc
ONERA - The French Aerospace Lab, France

SP 772
Effect of oxygen contents on the strain rate sensitivity of commercially pure titanium
Min-su Lee, Yong-Taek Hyun, Tea-Sung Jun
Korea

SP 773
Strain rate dependent deformation behaviour of pure magnesium at room temperature
Gukin Han, Hyung-Ki Park, Hyo Kyu Kim, Tea-Sung Jun
Incheon National University, Korea

SP 774
Electric-field effect on the magnetic properties of nanoporous Co-Pt patterned microstructures
Cristina Navarro, Fornell Jordina, Isarain-Chavez Eloy, Quintana Alberto, Nogués Josep, Pellicer Eva, Sort Jordi
Universitat Autònoma de Barcelona, Spain

SP775
In situ neutron diffraction of additive manufactured Ti6Al4V under tensile stress
Yaron Ganor, Maria Strantza, Donald Brown, Bjorn Claussen, Sven Vogel, Assaf Pesach, Roni Shneck, Eitan Tiferet, Ori Yeheskel
Ben Gurion University, Israel

SP776
Characterization of condensed oxygen form for new active material of lithium ion batteries
Si Yeol Lee, Yong Joon Park
Kyonggi University, Korea

SP777
Morphological characterisation of laser engineered surface structures (LESS) on copper
Lucie Baudin, Cédric Garion, Monika Sitko, Paolo Chiggiato, Alexander Lunt, Elisa Garcia-Tabares Valdivieso, Michel Jeandin, Francois Willot, Francesco Delloro, Mohamed Sennour, David Bajek, Amin Abdolvand, Stefan Wackerow
MINES ParisTech, PSL Research University, France

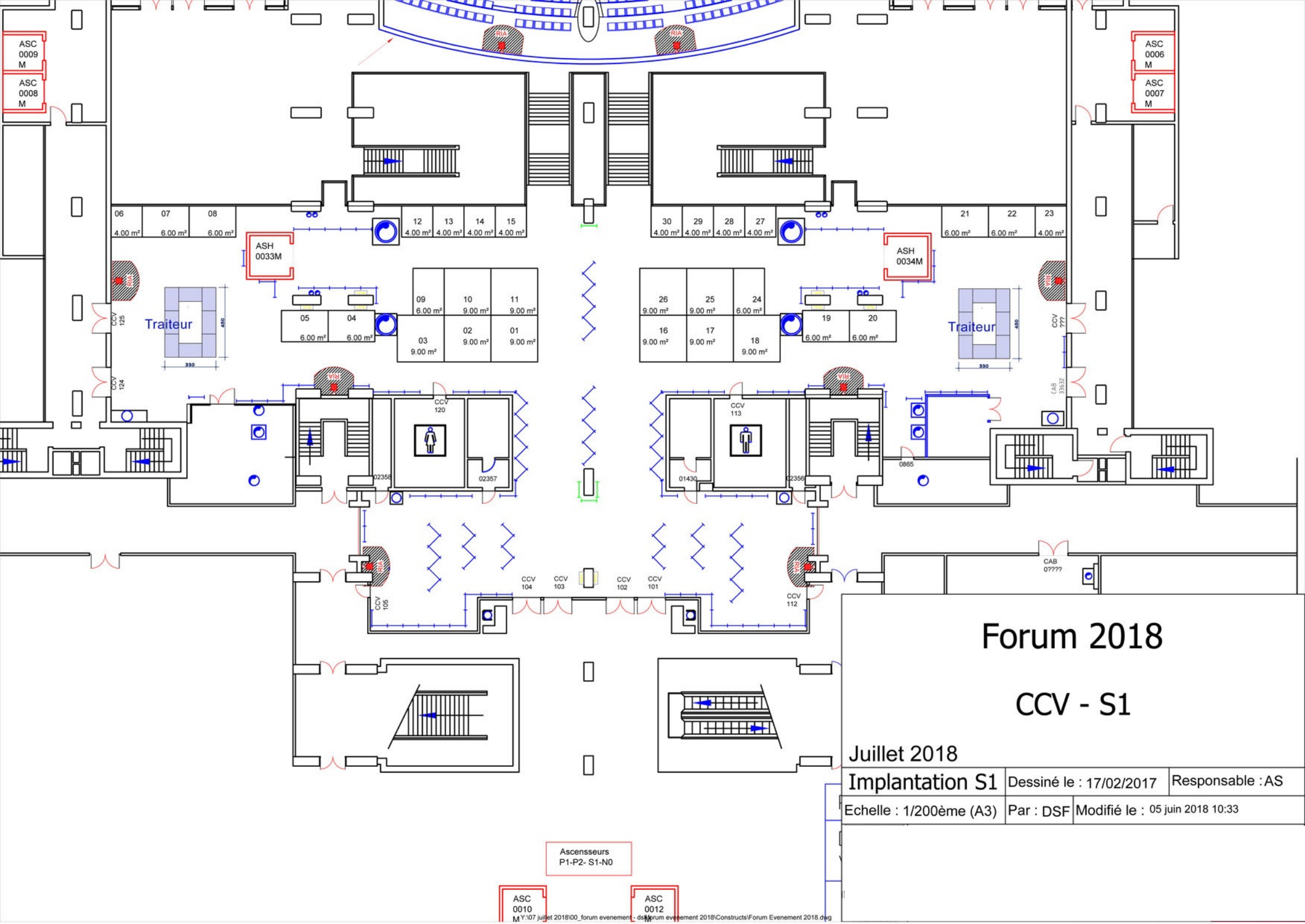
SP778
Recrystallisation and recovery of a Co-free high entropy alloy from CrFeMnNi family
Julia Olszewska, Anna Fraczkiewicz, Jean-Denis Mithieux
École des Mines de Saint-Étienne, France

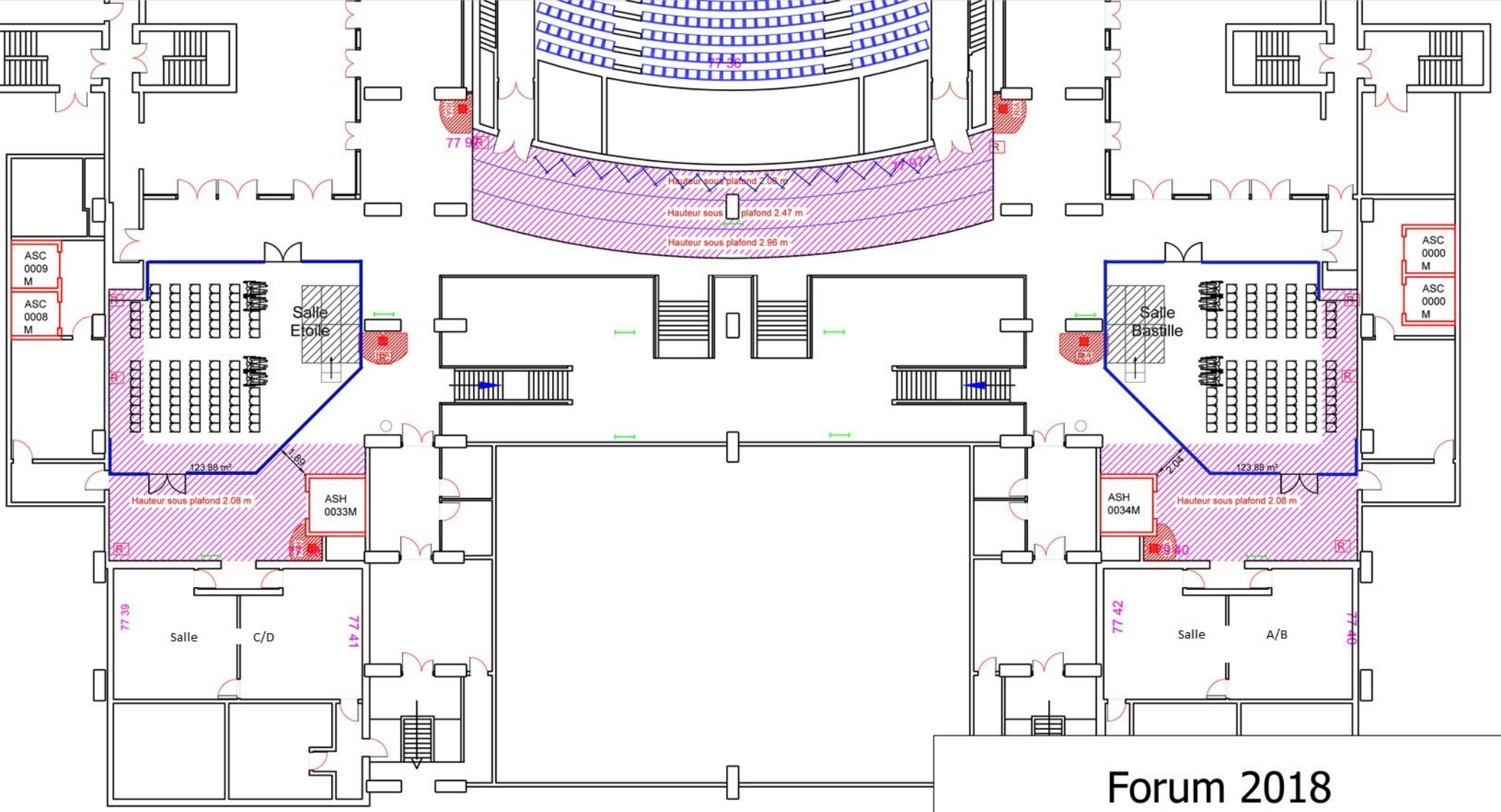
SP779
Stabilization of composite cathode using surface modification for all solid state lithium batteries
Hwan Wook Kwak
Kyounggi University, Korea

SP780
Effects of b4c addition on microstructure and mechanical properties of a metastable beta titanium alloy
Vitor Rielli, Rodrigo Contieri
University of Campinas, Brazil

Author Index

Chairpersons Index


ASC 0009 M
ASC 0008 M
ASC 0006 M
ASC 0007 M
ASH 0033M
ASH 0034M
Traiteur
Traiteur
CCV 125
CCV 124
CCV 120
CCV 113
CCV 104
CCV 103
CCV 102
CCV 101
CCV 105
CCV 112
CCV ???
CAB 0????
CAB 33632
0865
02358
02357
01430
02356
Ascensseurs P1-P2- S1-N0
ASC 0010 M
ASC 0012 M
Forum 2018
CCV - S1
Juillet 2018
Implantation S1
Dessiné le : 17/02/2017
Responsable : AS
Echelle : 1/200ème (A3)
Par : DSF
Modifié le : 05 juin 2018 10:33
Y:\07 juillet 2018\00_forum evenement - dsf\forum evenement 2018\Constructs\Forum Evenement 2018.dwg



Tracé des Cloisons Modulaires

Forum 2018

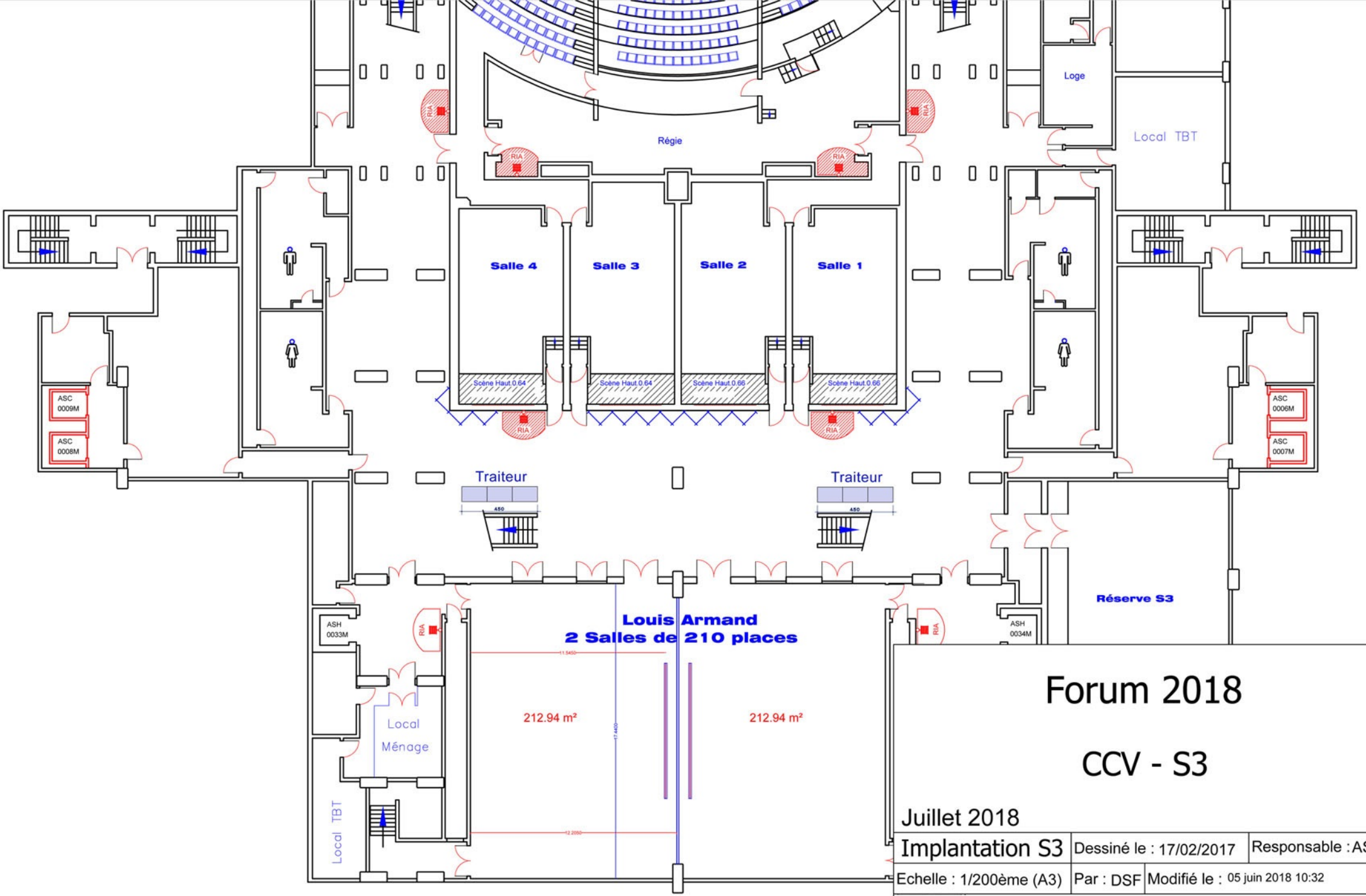
CCV - S2

Juillet 2018

Implantation S2	Dessiné le : 17/02/2017	Responsable : AS
Echelle : 1/200ème (A3)	Par : DSF	Modifié le : 05 juin 2018 10:32

2 3

Y:\07 juillet 2018\00_forum evenement - dsf\forum evenement 2018\Constructs\Forum Evenement 2018.dwg



Forum 2018

CCV - S3

Juillet 2018

Implantation S3	Dessiné le : 17/02/2017	Responsable : AS
Echelle : 1/200ème (A3)	Par : DSF	Modifié le : 05 juin 2018 10:32

Y:\07 juillet 2018\00_forum evenement - dsf\forum evenement 2018\Constructs\Forum Evenement 2018.dwg

Acknowledgement

THERMEC 2018 Conference Program was made possible with the contributions from

Sessions Coordinators
International Committee Members

And

M. Ionescu
C. Richard
R. Shabadi
M. Jeandin
T. Chandra
K.Sahoo Shabadi
R. Chandra

EDITORS of THERMEC'2018 Proceedings

M. Jeandin
R. Shabadi
C. Richard
M. Ionescu
T. Chandra

EDITORIAL ASSISTANCE: ABSTRACT BOOK/ MANUSCRIPTS

K.Sahoo Shabadi
N. Shekhar
UST Global- A. Shekhar
Core Logistics
Sukhvindar Chandra
Naveen Chandra

NOTES

NOTES

NOTES

THERMEC'2018 - SPONSORS

Conference Secretariat
Mines ParisTech-Materials Research Center
BP-87, 91003 Evry
France
thermec2018-secretary@mat.mines-paristech.fr