Welcome to the 9th EPM conference

Dear Delegates,

It is a great pleasure and honor for me as a chairperson to welcome all of you to the 9th International Symposium on Electromagnetic Processing of Materials in Awaji Island, Hyogo, Japan.

The series of EPM conferences was initiated in 1994 by Prof. S. Asai (Japan) and Prof. M. Garnier (France). It traditionally takes place every three years alternating between Europa and Asia (Nagoya 1994, Paris 1997, Nagoya 2000, Lyon 2003, Sendai 2006, Dresden 2009, Beijing 2012, Cannes 2015). It has been 12 years since EPM2006 was held in Sendai, Japan. On behalf of the local organizing committee, we are very pleased to have this conference in the “Kansai” region, which is a cultural center and the historical heart of Japan.

Electromagnetic Processing of Materials (EPM) has been widely applied for improving properties of materials and it has been expected to be extended to various materials processing because of unique advantages of electromagnetic interactions. The research field of EPM covers liquid metal processing, casting and solidification of metallic alloys, induction heating, fabrication of inorganic / organic crystals, plasma processing, recycling and separation. This conference is open for any kind of materials processing involving electric and / or magnetic fields. As you can realize in the program of EPM2018, the cutting-edge of EPM researches will be presented during the technical sessions. We are believing that the symposium will create wonderful atmospheres for all delegates to discuss recent researches, to exchange ideas and to make new global relationships. We also hope the symposium becomes an occasion to discover Asia and Japan.

On behalf of the EPM2018 Organizing Committee,

Hideyuki YASUDA
Chair of EPM2018

Organized by

The Iron and Steel Institute of Japan (ISIJ)

Co-organized by

The 19th Committees, Japan Society for the Promotion of Science

Supported by

Hyogo International Association

The Japan World Exposition 1970 Commemorative Fund

Tsutomu Nakauchi Foundation

ISIJ Kansai Regional Office

Hyuga Memorial Grant for International Conference

Japan Superconductor Technology, Inc. (JASTEC)

Fluxtrol

Cooperated by

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Japan Foundry Engineering Society
Japan Society of Energy and Resources
Societe Francaise de Metallurgie et de Materiaux, France
The Ceramic Society of Japan
The Chemical Society of Japan
The Electrochemical Society of Japan
The Institute of Electrical Engineers of Japan
The Japan Institute of Light Metals
The Japan Institute of Metals and Materials
The Japan Iron and Steel Federation
The Japan Research and Development Center for Metals
The Japan Society for Technology of Plasticity
The Japan Society for the Promotion of Science 19th Committee on Steelmaking
The Japan Society of Applied Physics
The Japan Society of Mechanical Engineers
The Magnetics Society of Japan
The Magneto-Science Society of Japan
The Mining and Materials Processing Institute of Japan

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Noriyuki Hirota	National Institute for Materials Science
Kazuhiko Iwai	Hokkaido University
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Yuanshen Yang	CAS, China
Kader Zaidat	SIMaP/CNRS, Grenoble INP, UGA, France
Yunbo Zhong	Shanghai University, China

Plenary Lectures

Plenary 1

"Improvement of the Properties of Light Metal Matrix Micro/ Nanocomposite Materials : Myth or Reality?"

Prof. Yves Fautrelle
Grenoble Polytechnic Institute, SIMaP Laboratory

Monday, October 15 9:50-10:30

Plenary 2

"Progress in Research on Solidification of Alloys under a Strong Magnetic Field"

Prof. Zhongming Ren
Shanghai University

Monday, October 15 10:30-11:10

Plenary 3

"Overview of Electromagnetic Forces to Control Flow During Continuous Casting of Steel"

Prof. Brian Thomas
Colorado School of Mines

Tuesday, October 16 9:00-9:40

Plenary 4

"Application of Static Magnetic Field to Casting of Steel"

Dr. Yuji Miki
JFE Steel Corporation

Tuesday, October 16 9:40-10:20

Plenary 5

"Influence of Electromagnetic Stirring Mode on Solidification Behaviour of Special Steel Strands"

Prof. Engang Wang
Northeastern University

Wednesday, October 17 9:00-9:40

Plenary 6

"Oscillating Electromagnetic Force Effect on Concentration Distribution near Liquid Solid Interface"

Prof. Kazuhiko Iwai
Hokkaido University

Wednesday, October 17 9:40-10:20

General Information

Conference Date

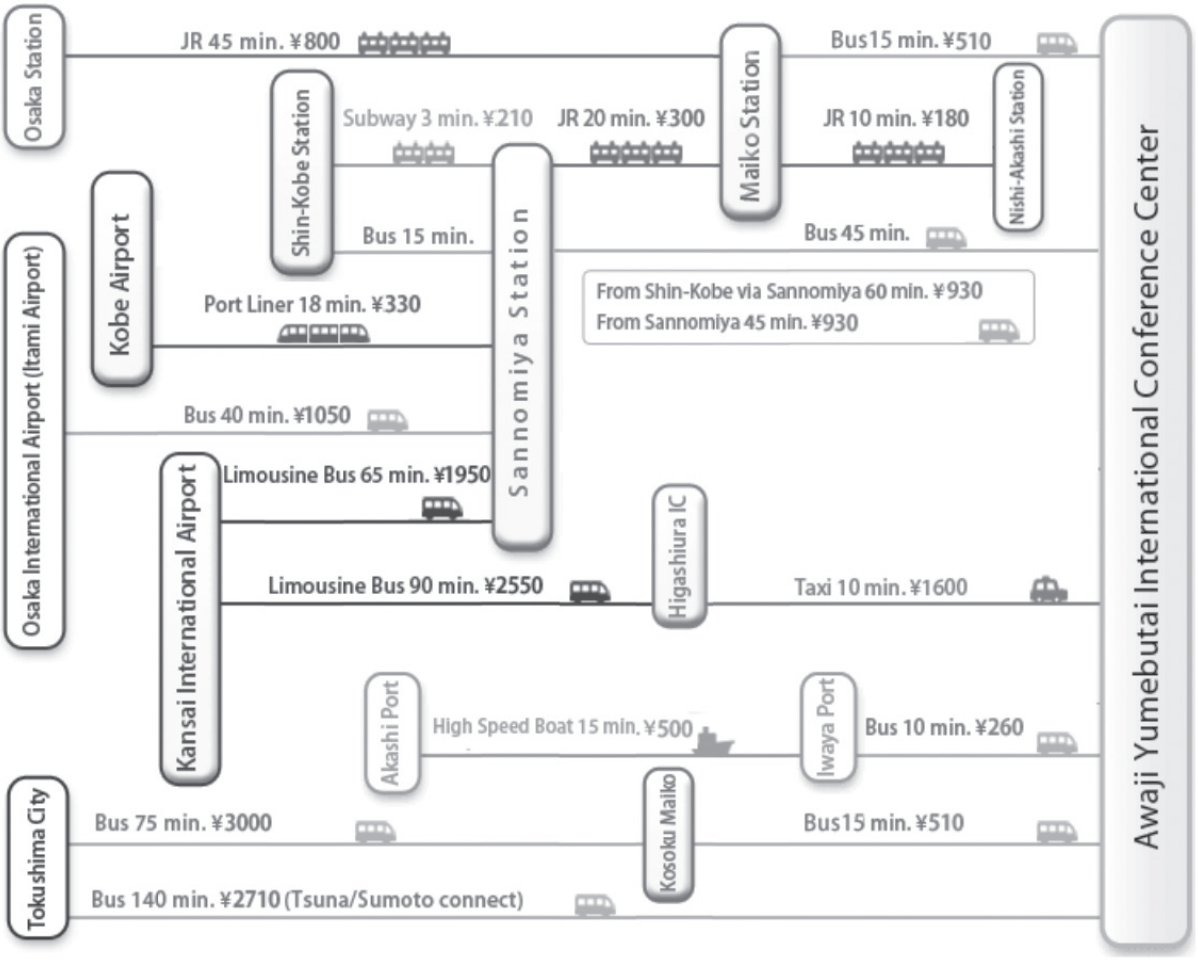
October 14 (Sun.) - October 18 (Thu.), 2018

Conference Venue

Awaji Yumebutai International Conference Center
1 Yumebutai, Awaji City, Hyogo 656-2306, Japan
TEL: +81-799-74-1020 FAX: +81-799-74-1021
Website: http://www.yumebutai.org/english/access/access.html

Access to the Venue

By Public Transportation



On-site Registration

Registration desk is located on the 2nd floor of the conference venue.

Registration hours are as follows:
October 14 (Sun.) 17:00-19:30
October 15 (Mon.) 8:30-17:30
October 16 (Tue.) 8:30-18:00
October 17 (Wed.) 8:30-17:00

Internet access

Wireless Internet access is available in session room and foyer.

Photography

Photography / Recording sessions by participants are strictly prohibited. Please note that the organizer will be taking photos in the venue for the purpose to use in conference report / website / other media.

Lunch

Lunch ticket will be distributed to the participants. The coupon is valid Monday October 15 through Wednesday October 17. No refund is made even in case that you do not use it. The coupon is acceptable at the restaurants shops below:

The Westin Awaji Island
2F
- Fun Dining "COCCOLARE" Checked by.
- Lobby Lounge "LUCCIOLA"
- Patisserie&Bakery "COPATA"
- Westin Hotel Shop

3F
- Japanese Restaurant "AWAMI"

Observation Terrace, Restaurants & Shops
1F
- AwajiBeef Hamburg&steak "HAPPY HAMBURG”
- Shop “Naruto Chidori”

2F
- Japanese Restaurant "KITORA"
- Chinese Restaurant "KITORA"
- Cafe&Shop "TOM'S STUDIO"

Coffee Break

Coffee will be served in the foyer on 2nd and 3rd floor during the following time;
October 15 (Mon.) 15:10-15:40
October 16 (Tue.) 10:20-10:40, 16:20-16:40
October 17 (Wed.) 10:20-10:40, 16:20-18:00 (during poster session)

Official Language

English is the official language of the conference and will be used for all printed materials, presentations, and discussions.

Welcome Reception

Date: October 14 (Sun.)
Time: 18:00-20:00
Location: Event Hall, B1st floor of conference venue
All participants are invited. Light meal and beverages (alcohol & soft drinks) will be served.
Do not forget to wear the name badge during the welcome reception.
Please enjoy it with tasty food and Japanese cultural attraction.

Banquet

Date: October 17 (Wed.)
Time: 19:00-21:00
Location: Stella, B1F, The Westin Awaji Island
Style: Buffet style
Banquet ticket is included in registration fee. Participants are required to wear the name badge at the banquet site. The Best Paper Awards will be presented during the banquet.

Excursion

Date: October 18 (Thu.)
Time: 9:30-15:30
Fee: Included in the registration fee

Itinerary:
<9:15 Assembly Time >
1F Entrance Lobby, The Westin Awaji Island

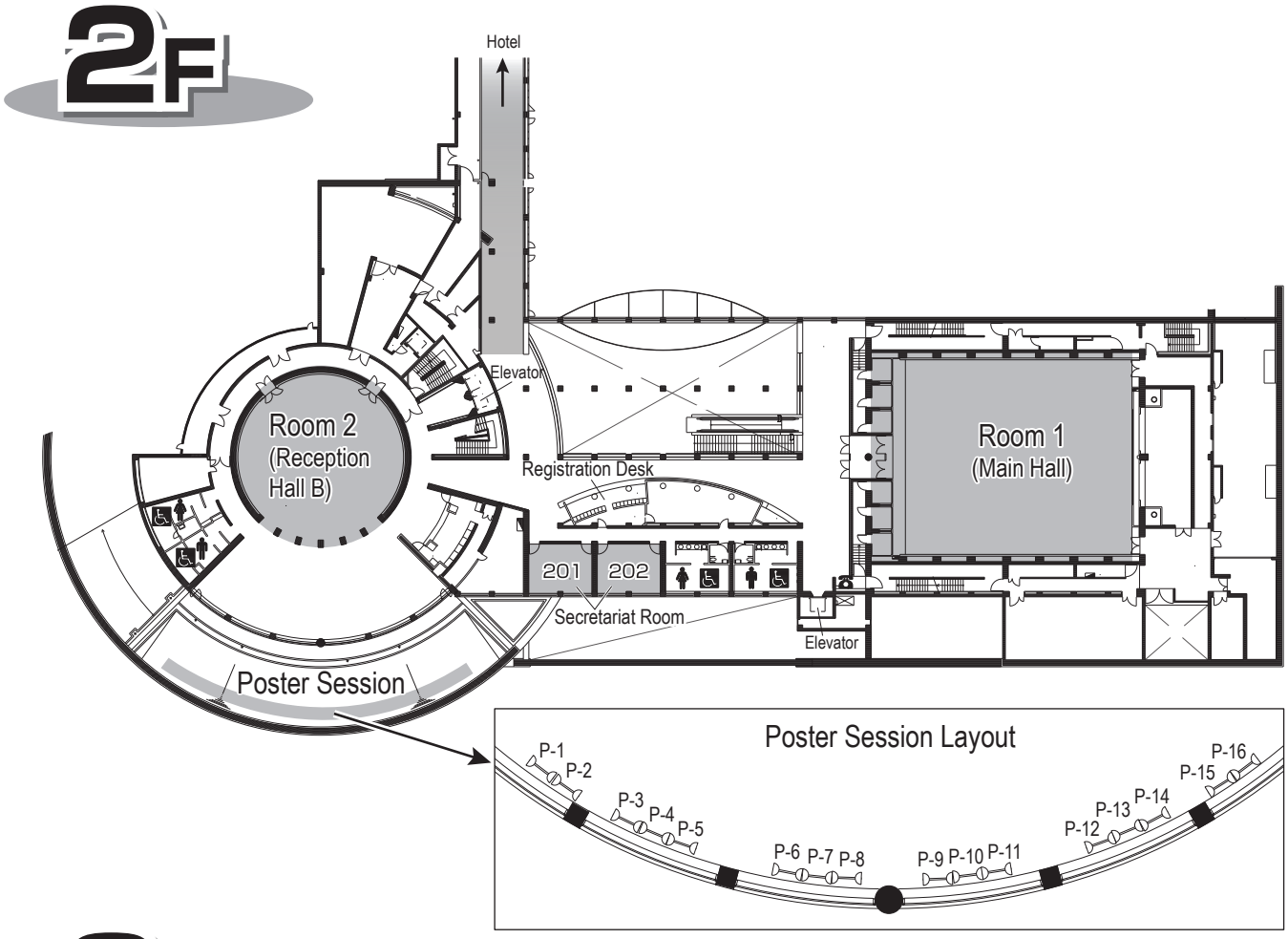
<9:30 Dep.>
The Westin Awaji Island --- Hokudan Earthquake Memorial Park (11:00) ---
Uzu-shio Cruise (12:50) --- Conference Venue

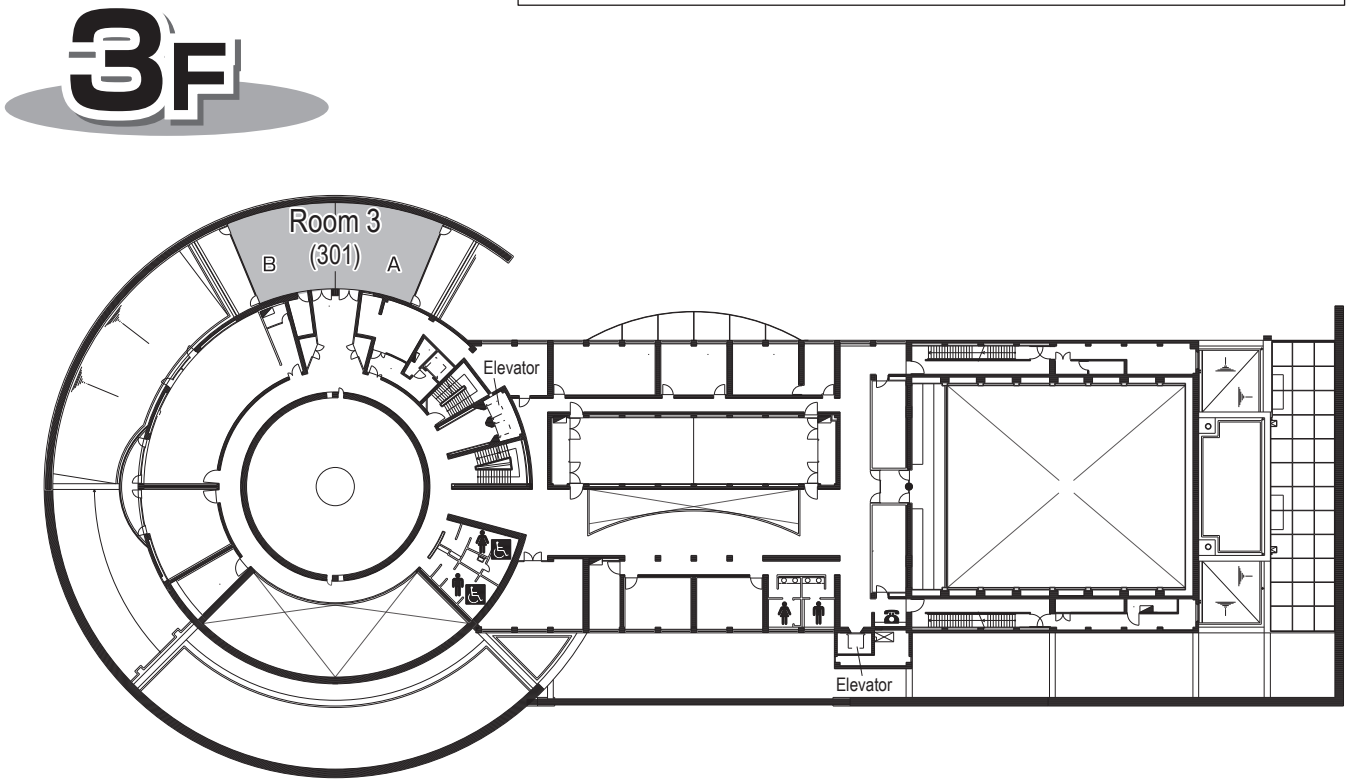
<14:40 Dep.>
The Westin Awaji Island --- Sannomiya Station (15:15 arr.) --- Shin-Kobe Station (15:30 arr.)

*Arrival time will be changed due to traffic conditions.
*Places to visit, maximum attendee of the tour, etc are subject to change with or without notice.
*Lunch box will be provided.
*For those who have reserved excursion, excursion ticket will be handed at registration desk.

Floor Map

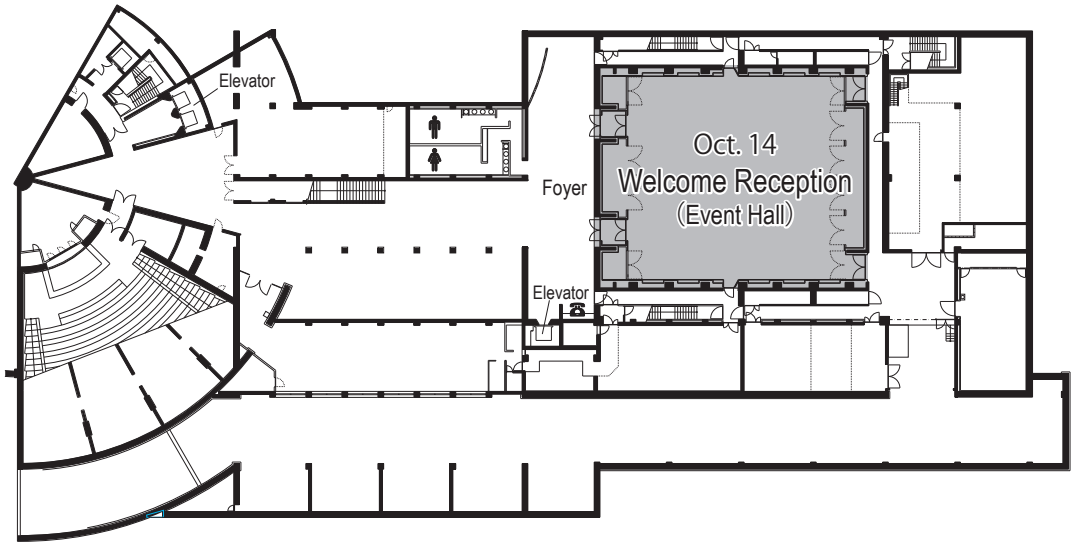
Awaji Yumebutai International Conference Center





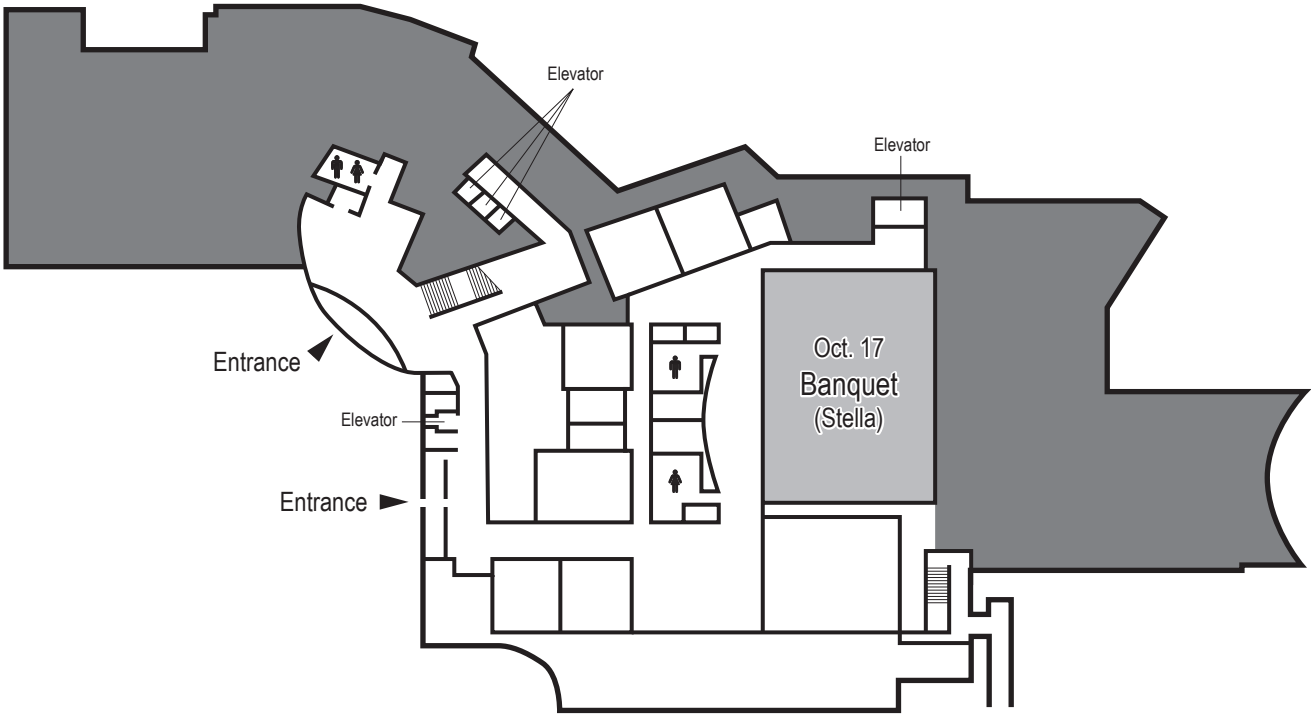
Awaji Yumebutai International Conference Center

B1F



The Westin Awaji Island

1F



Instructions for Speakers

1. Time Allotment

Plenary Lecture: 40 minutes (Presentation time: 35min, Q&A: 5min)
Keynote Lecture: 30 minutes (Presentation time: 25min, Q&A: 5min)
Oral Presentation: 20 minutes (Presentation time: 15min, Q&A: 5min)

Careful time keeping is important for the smooth running of the session.
Please make sure not to overrun your allotted time.

Caution

• Plenary Lecture

After a lapse of	Number of bell	Meaning
33 min.	Once	Warning
35 min.	Once	Q&A Starts
40 min.	Once	Quit the discussion

• Keynote Lecture

After a lapse of	Number of bell	Meaning
23 min.	Once	Warning
25 min.	Once	Q&A Starts
30 min.	Once	Quit the discussion

• Oral Presentation

After a lapse of	Number of bell	Meaning
13 min.	Once	Warning
15 min.	Once	Q&A Starts
20 min.	Once	Quit the discussion

2. Equipment

Each presentation room is equipped with
1) LCD Projector with a min D-sub 15 pin display cable
2) Microphone
3) Laser Pointer

Please bring your own laptop PC with your connecter (connection is D-sub cable) and AC adapter for presentation and your presentation data by a USB memory stick as a backup. Before the presentation, please make sure that you are familiar with the audiovisual equipment in the session room. A technical staff will be available to help you.
We recommend you make your slides with aspect ratio of 4:3.

3. Speaker's Seat

Please arrive at your session room by 15 minutes before the session starts. The chairpersons of your session will confirm the attendance and have a meeting before the session. To avoid technical problems, please have your computer checked for the projector connection before the technical session starts.
Speakers are requested to be seated at the Speaker's Seat in the front row during their session.

Instructions for Poster Presentations

1. Schedule

Date & Time

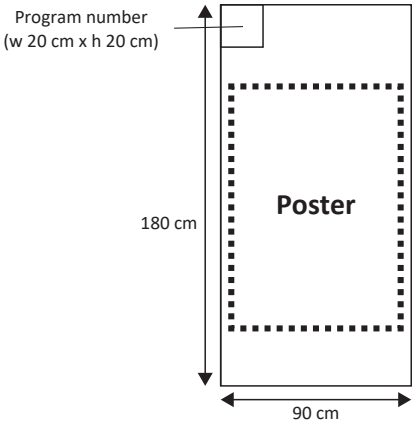
Set up: 16:30-17:30 on Sunday, October 14th
Poster Session (Core time): 16:20-18:00 on Wednesday, October 17th
Odd: 16:20-17:10, Even: 17:10-18:00
Removal: 18:00-18:20 on Wednesday, October 17th

Room

Reception Hall B Foyer, Awaji Yumebutai International Conference Center

2. Preparation

- The poster dimensions are:
  max width: 90 cm – max height: 180 cm
- The preferable poster size is A0 in portrait format
  (i.e. width 84.1 cm x height 118.4 cm).
  Please note that these dimensions may not be exceeded under any circumstances.



3. Presentation

- Presenters are required to attend the sessions to answer questions in front of your poster during the Poster Session.
- Poster Award will be offered to the outstanding posters.
- The awardees will be announced during the banquet.

4. Set up and Removal

- Presenters will be responsible for mounting your presentations on the poster board. Please find the program number of your presentation on your respective board. Pushpins will be available at your poster board. No other adhesive method is permitted on the boards.
- Posters should be removed and brought back by each presenter. The Secretariat will not take any responsibility for the material on display after removal time.

Instructions for Chairpersons

In order to operate the session smoothly, chairpersons are requested to confirm the followings.

<Before the Session>

Chairpersons are requested to be seated at the chairperson's seat by 15 minutes before the session starts.

<During the Session>

1. Each oral session is chaired by two chairpersons. Chairpersons are expected to introduce the presenters and moderate discussions during the session.

2. The chairperson shall announce its cancellation and the next presentation will start on schedule, in case a speaker does not appear by the time of his/her presentation. Please do not move up the next presentation nor switch the order of the presentation even if the speaker comes within the session.

3. Please inform the audience of the following items when the session starts.
   -Chairperson's name and organization
   -Cellular phone should be turned off
   -Either video or audio recording of the sessions, including taking photographs, is prohibited
   -The time allotment for each contributed paper
   -People who ask questions or make comments should introduce themselves before their questions or comments.

   Please introduce the name and organization of the speaker and the title of the paper before each presentation.

4. The time allotment for each presentation is as follows
   Plenary Lecture: 40 minutes (Presentation time: 35min, Q&A: 5min)
   Keynote Lecture: 30 minutes (Presentation time: 25min, Q&A: 5min)
   Oral Presentation: 20 minutes (Presentation time: 15min, Q&A: 5min)

5. Time management is an important task of a chairperson.
   The chairperson should play the role of time keeper using a clock and a bell which are set on the chairperson's desk.

Caution
• The chairpersons are required to ring a bell for presentations as follows.

• Plenary Lecture

After a lapse of	Number of bell	Meaning
33 min.	Once	Warning
35 min.	Once	Q&A Starts
40 min.	Once	Quit the discussion

• Keynote Lecture

After a lapse of	Number of bell	Meaning
23 min.	Once	Warning
25 min.	Once	Q&A Starts
30 min.	Once	Quit the discussion

• Oral Presentation

After a lapse of	Number of bell	Meaning
13 min.	Once	Warning
15 min.	Once	Q&A Starts
20 min.	Once	Quit the discussion

*Please note that it will take a few minutes to project the presentation slides of the next speaker. Chairpersons are requested to shorten the allotted time above of each speaker and instruct speakers to finish the presentation if necessary.

6. Chairpersons ask the questioner on the floor to use a microphone when he/she is talking.

7. At the end of the session, the chairperson might be asked to make a few administrative announcements if necessary.

8. Please call for the conference staff if you have any questions.

Program at a Glance

Time	Sunday, October 14, 2018	Monday, October 15, 2018			Tuesday, October 16, 2018			Wednesday, October 17, 2018			Thursday, October 18, 2018
		Room 1 Main Hall	Room 2 Reception Hall B	Room 3 301	Room 1 Main Hall	Room 2 Reception Hall B	Room 3 301	Room 1 Main Hall	Room 2 Reception Hall B	Room 3 301	
9:00		Registration			9:00-9:40 **Plenary 3** Prof. Brian Thomas			9:00-9:40 **Plenary 5** Prof. Engang Wang			Excursion
		9:30-9:50 **Opening Address**			9:40-10:20 **Plenary 4** Dr. Yuji Miki			9:40-10:20 **Plenary 6** Prof. Kazuhiko Iwai			
10:00		9:50-10:30 **Plenary 1** Prof. Yves Fautrelle			10:20-10:40 **Coffee Break**			10:20-10:40 **Coffee Break**			
		10:30-11:10 **Plenary 2** Prof. Zhongming Ren			10:40-12:10 **Electromagnetic Melting 2**	10:40-12:20 **Microwaves 1**	10:40-12:10 **Advanced Materials Processing 1**	10:40-12:10 **Solidification, Crystal Growth 4**	10:40-12:10 **Induction Heating 1**	10:40-11:10 **Low Electrical Conductivity Liquid Processing 1**	
11:00			11:10-11:20 **Photo**							11:10-12:00 **Recycling 1**	
12:00		11:20-13:10 **Lunch**			12:20-14:10 **Lunch**			12:10-14:00 **Lunch**			
13:00		13:10-15:10 **EM Shaping, Forming, Levitation 1**	13:10-14:40 **Solidification, Crystal Growth 1**	13:10-15:10 **Electromagnetic Melting 1**							
14:00					14:10-16:20 **Solidification, Crystal Growth 2**	14:10-15:20 **Fundamental of EPM 1**	14:10-14:50 **Advanced Materials Processing 2**	14:00-15:50 **Solidification, Crystal Growth 5**	14:00-15:20 **EM Treatment 1**	14:00-15:50 **Fundamental of EPM 3**	
15:00		15:10-15:40 **Coffee Break**					14:50-16:10 **EM Processes 2**		15:20-16:20 **Advanced Materials Processing 3**		
		15:40-17:20 **Measurement Technique 1**	15:40-17:20 **Melt Flow Control 1**	15:40-17:50 **EM Processes 1**							
16:00					16:20-16:40 **Coffee Break**						
17:00	16:30-17:30 **Poster Set-up** 17:00- **Registration**	17:20-18:00 **EM Shaping, Forming, Levitation 2**			16:40-18:30 **Solidification, Crystal Growth 3**	16:40-18:30 **Fundamental of EPM 2**		16:20-18:00 **Poster Session**			
18:00	18:00- **Welcome Reception**							18:00-18:20 **Poster Removal**			
								18:20-19:00 **Break**			
19:00								19:00- **Banquet**			

Program

Monday October 15

9:30-9:50 **Opening Address** @ Room 1 (Main Hall)

<Room 1 (Main Hall)> Plenary Lecture 1, 2

9:50-11:10 ***Chair:*** H. Yasuda

9:50-10:30 **Plenary 1**
Improvement of the Properties of Light Metal Matrix Micro/Nanocomposite Materials : Myth or Reality?
M. Garrido, L. Davoust, R. Daudin, L. Salvo, Y. Fautrelle
Grenoble Polytechnic Institute, SIMaP Laboratory

10:30-11:10 **Plenary 2**
Progress in Research on Solidification of Alloys under a Strong Magnetic Field
Z. Ren, X. Li, J. Wang
Shanghai University

11:10-11:20 **Photo** @ Room 1 (Main Hall)

11:20-13:10 **Lunch**

<Room 1 (Main Hall)> EM Shaping, Forming, Levitation 1

13:10-15:00 ***Chairs:*** J. Kolesnikovs / T. Miyake

13:10-13:40 **Keynote**
Electromagnetic Sensor Just Below CC Mold by Using Magnetic Transformation of Steel
H. Harada[1], M. Nagashima[1], T. Konno[1], M. Yamana[1], T. Toh[2]
[1]Nippon Steel & Sumitomo Metal Corporation, [2]Nippon Steel & Sumikin Technology Co.Ltd

13:40-14:00 **Real-time Control of the Mould Flow in a Model of Continuous Casting in Frame of the TOMOCON Project**
T. Wondrak[1], U. Hampel[1], M. Ratajczak[1], I. Glavinic[1], F. Stefani[1], S. Eckert[1], D. van der Plas[2], P. Pennerstorfer[3], I. Muttakin[4], M. Soleimani[4], S. Abouelazayem[5], J. Hlava[5], A. Blishchik[6], S. Kenjeres[6]
[1]Helmholtz-Zentrum Dresden - Rossendorf, [2]Tata Steel, [3]Primetals Technologies Austria, [4]University of Bath, [5]Technical University of Liberec, [6]Delft University of Technology

14:00-14:20 **Application of Modulated Calorimetry to the Liquid Metals Using Electromagnetic Levitation and Static Magnetic Field**
O. Budenkova[1], M. Milgravis[2], Ch. Garnier[1], A. Gagnoud[1], Y. Delannoy[1], S. Semenov[1], P. Chometon[1], S. Rivoirard[1], M. Alamir[1], J. Etay[1]
[1]Univ. Grenoble Alpes, [2]University of Latvia

14:20-14:40 **Experimental Study on the Behaviour of the Submerged Jet in a Cold Liquid Metal Model for Continuous Casting of Round Blooms under the Influence of Rotating Magnetic Fields**
D. Schurmann, B. Willers, S. Eckert
Helmholtz-Zentrum Dresden-Rossendorf e.V. (HZDR)

14:40-15:00 **Electromagnetic Flow Rate Measurement in Molten Tin Circulating in a Closed-loop Test System**
Z. Lyu, Ch. Karcher, Y. Kolesnikov, Th. Boeck
Technische Universität Ilmenau

15:10-15:40 **Coffee Break**

<Room 1 (Main Hall)> Measurement Technique 1

15:40-17:20 ***Chairs:*** G. Racineux / A. Matsui

15:40-16:00 **Visualisation of the Large Scale Circulation in Rayleigh-Bénard Convection Using Contactless Inductive Flow Tomography**
T. Wondrak, F. Stefani, V. Galindo, S. Eckert
Helmholtz-Zentrum Dresden - Rossendorf

16:00-16:20 **Transient Eddy Current Flow Metering: A Calibration-free Velocity Measurement Technique for Liquid Metals**
N. Krauter, F. Stefani
Helmholtz Zentrum Dresden Rossendorf

16:20-16:40 **Lorentz Force Velocimetry Using a Bulk HTS Magnet System**
O. Vakaliuk, B. Halbedel
Technische Universität Ilmenau

16:40-17:00 **A Precise Magnetic Flux Leakage Method for the Defects Detection within the Steel Thin Sheet**
B. Wang, X. Wang
University of Chinese Academy of Science

17:00-17:20 **Thermophysical Properties Measurement of Highly Undercooled Ni-Based Alloy Melts by Electromagnetic Levitation Method**
H.P. Wang, K. Zhou, J. Chang, B. Wei
Northwestern Polytechnical University

<Room 1 (Main Hall)> EM Shaping, Forming, Levitation 2

17:20-18:00 ***Chairs:*** G. Racineux / A. Matsui

17:20-17:40 **Application of Magnetic Pulse and Electrohydraulic Processes to Forming and Crimping**
G. Racineux[1], C. Sow[2], G. Bazin[3], S. Marya[1]
[1]Ecole Centrale de Nantes, [2]IRT Jules Verne, [3]STELIA Aerospace

17:40-18:00 **Electromagnetic Processing for Elaboration of Dissimilar Joints. Case Studies with Aluminium**
S. Marya[1], M.-N. Avettand-Fènoël[2], C. Khalil[1], G. Racineux[1]
[1]Ecole Centrale de Nantes, [2]Université Lille

<Room 2 (Reception Hall)> Solidification, Crystal Growth 1

13:10-14:40 ***Chairs:*** G. Gerbeth / K. Yamamoto

13:10-13:40 **Keynote**
Experimental Investigation on the Buoyancy-induced Flow in a Model of the Czochralski Crystal Growth Process
J. Pal[1], S. Franke[2], S. Eckert[2], G. Gerbeth[2]
[1]HZDR Innovation GmbH, [2]Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

13:40-14:00 **Thermophysical Properties of Liquid Ti–Si Alloys Measured by EML**
K. Zhou, P. Lü, H. Wang, B. Wei
Northwestern Polytechnical University

14:00-14:20 **Effect of a Transverse Static Magnetic Field on the Temperature Gradient during Directional Solidification**
Z. Shen, Y. Zhong, L. Dong, L. Fan, T. Zheng, H. Wang, W. Ren, C. Li, W. Xuan, Z. Ren
Shanghai University

14:20-14:40 **Effect of Travelling Magnetic Field Inductor Characteristics on the Liquid Metal Flow in a Rectangular Cell**
E. Shvydkiy[1], I. Kolesnichenko[2], R. Khalilov[2], A. Pavlinov[2], G. Losev[2]
[1]Ural Federal University, [2]ICMM UB RAS

15:10-15:40 **Coffee Break**

<Room 2 (Reception Hall)> Melt Flow Control 1

15:40-17:20 ***Chairs:*** K. Ueno / Y. Delannoy

15:40-16:00 **Experimental Study of Liquid Metal Flows under Volute Traveling Magnetic Fields**
K. Ueno[1], T. Kamada[2]
[1]Iwate University, [2]Tohoku University

16:00-16:20 **Convective End Effects in Annular Linear Induction Pumps**
Y. Delannoy[1], E. Martin-Lopez[2], F. Benoit[2]
[1]Univ. Grenoble Alpes, [2]CEA CADARACHE

16:20-16:40 **Online Flow Control with Mold Flow Measurements and Simultaneous EM Braking and Stirring**
M. Sedén, N. Jacobson
ABB AB

16:40-17:00 **Linear Stability of Parallel Flow of Liquid Metal in a Rectangular Duct Driven by a Constant Pressure Gradient under the Influence of a Uniform Magnetic Field**
T. Tagawa
Tokyo Metropolitan University

17:00-17:20 **Performance Maps of a High Flowrate EM Pump Experimental and Numerical Analysis**
S. Vitry[1], E. Martin-Lopez[1], F. Benoit[1], L. Cachon[1], L. Goldsteins[2]
[1]CEA Cadarache, [2]University of Latvia

<Room 3 (301)> Electromagnetic Melting 1

13:10-15:10 ***Chairs:*** H. Funagane / H. Su

13:10-13:30 **Electron Beam Melting toward Inclusion-free Titanium Alloys**
H. Funagane
Nippon Steel and Sumitomo Metal Corporation

13:30-13:50 **Electroslag Process for Better Titanium Deposition Morphology**
E. Platacis[1], I. Kaldre[1], E. Blumbergs[1], V. Serga[2]
[1]University of Latvia, [2]Riga Technical University

13:50-14:10 **Rapid Solidification of Ni-Zr Peritectic Alloy under Electromagnetic Levitation Condition**
P. Lü, H.P. Wang, B. Wei
Northwestern Polytechnical University

14:10-14:30 **The Effect of Electromagnetic Field on Microstructure of Ni-Based Single Crystal Superalloys**
H. Su, C. Liu, J. Zhang, L. Liu, H. Fu
Northwestern Polytechnical University

14:30-14:50 **Pulse Electromagnetic Force Microstructural Control at Continuous Billet Casting 7xxx Al-alloys**
M.A. Slazhniev, K.H. Kim, H.S. Sim, S.W. Kim, W.J. Kim
Dong San Tech. Co., ltd.

14:50-15:10 **MHD-physical Modification Effect on Microstructure Control of the 7xxx High-strength Al-alloys**
S.W. Kim, M.A. Slazhniev, K.H. Kim, H.S. Sim, W.J. Kim
Dong San Tech. Co., ltd.

15:10-15:40 **Coffee Break**

<Room 3 (301)> EM Processes 1

15:40-17:50 ***Chairs:*** A.L. Daltin / T. Kozuka

15:40-16:10 **Keynote**
Nucleation and Crystal Growth in Magnetoelectrodeposition
A.L. Daltin, M. Benaissa, J.P. Chopart
URCA

16:10-16:30 **Determination of the Properties of Ionic Vacancy by Magnetic Field**
R. Aogaki[1,10], A. Sugiyama[2,3,10], M. Miura[4], Y. Oshikiri[5], M. Miura[6], R. Morimoto[7], I. Mogi[8], S. Takagi[9], Y. Yamauchi[10]
[1]Polytechnic Univ., [2]Yoshino Denka Kogyo, Inc., [3]Waseda Univ., [4]Hokkaido Polytechnic College, [5]Yamagata College of Industry and Technology, [6]Polytechnic Center Kimitsu, [7]Saitama Industrial Technology Center, [8]Tohoku Univ., [9]Koriyama Technical Academy, [10]National Institute for Materials Science

16:30-16:50 **Effects of Vertical MHD Flows and Cell Rotation on Surface Chirality in Magnetoelectrodeposition**
I. Mogi[1], R. Morimoto[2], R. Aogaki[3], K. Takahashi[1]
[1]Tohoku University, [2]SAITEC, [3]Polytechnical University

16:50-17:10 **Electrodeposition of Doped ZnO under a Constant Magnetic Field**
M. Stübner, J.P. Chopart, A.L. Daltin
URCA

17:10-17:30 **Optimization Conditions for the Electro-deposition of Thin ZnTe Film and Effect of Magnetic Field**
T. Kozuka, K. Sameshima, Y. Heguri
Kumamoto University

17:30-17:50 **Contribution of the Electro-Vortex Flow in Transport of Ions in an Electrolyte**
E. Karimi-Sibaki, A. Kharicha, M. Wu, J. Bohacek, A. Ludwig
Montanuniversitaet of Leoben

Tuesday October 16

<Room 1 (Main Hall)> Plenary Lecture 3, 4

9:00-10:20 ***Chair:*** H. Harada

9:00-9:40 **Plenary 3**
Overview of Electromagnetic Forces to Control Flow During Continuous Casting of Steel
B. G. Thomas, S. M Cho
Colorado School of Mines

9:40-10:20 **Plenary 4**
Application of Static Magnetic Field to Casting of Steel
Y. Miki, K. Furumai, T. Odagaki
JFE Steel Corp.

10:20-10:40 **Coffee Break**

<Room 1 (Main Hall)> Electromagnetic Melting 2

10:40-12:10 ***Chairs:*** V. Bojarevics / H. Yasuda

10:40-11:10 **Keynote**
Electromagnetic Particle Separation in the Cold Crucible Melting with Novel Type Bottom Pouring Nozzle
V. Bojarevics, K. Pericleous
University of Greenwich

11:10-11:30 **Numerical Simulation of Surface Deformations in a Three-fluid Process Stirred by Low Frequency Magnetic Field**
R. Bourrou[1,2], A. Gagnoud[1], O. Budenkova[1], P. Charvin[2], C. Lafon[2]
[1]SIMaP, [2]CEA

11:30-11:50 **Vitrification in Cold Crucible Induction Melter: From Numerical Simulations to Industrial Operation**
E. Sauvage, P. Brun, A. Bonnetier
CEA Marcoule

11:50-12:10 **Simulation of Solidification Structure in the Magnetically Controlled Electroslag Remelting Process**
Y. B. Zhong, H. Wang, Q. Li, W.Q. Li, W.L. Ren, Z.S. Lei, Z.M. Ren
Shanghai University

<Room 2 (Reception Hall)> Microwaves 1

10:40-12:20 ***Chairs:*** K. Kashimura / E. Baake

10:40-11:00 **The Electrical Permittivity of Metal Compounds for High Temperature Processing at 2.45GHz**
K. Kashimura
Chubu University

11:00-11:20 **Microwave Processing of Metallic Materials**
N. Yoshikawa
Tohoku University

11:20-11:40 **Coupling of Magnetite Particles with Microwaves at Temperatures Lower than the Curie Point**
A. Amini, K. Ohno, T. Maeda, K. Kunitomo
Kyushu University

11:40-12:00 **In-situ Spectroscopic Analysis of the Microwave Carbothermal Reduction of Iron Oxides**
J. Fukushima, H. Takizawa
Tohoku Univ.

12:00-12:20 **Fusion Solidification Treatment Technology of Combustion Ash by Microwave Heating**
T. Fuji[1], K. Kashimura[1], H. Tanaka[2]
[1]Chubu University, [2]Chugoku High Pressure Concrete Industry Co., Ltd.

<Room 3 (301)> Advanced Materials Processing 1

10:40-12:10 ***Chairs:*** A. Bojarevičs / S. Shimasaki

10:40-11:10 **Keynote**
Permanent Magnet and AC System for Surface Wave Excitation to Enhance Mass Transfer
A. Bojarevičs, M. Milgrāvis, T. Beinerts, A. Dirba, V. Geža
University of Latvia

11:10-11:30 **Numerical Study of Surface Waves Generated by Low Frequency EM Field for Silicon Refinement**
V. Geza, J. Vencels, G. Zageris, S. Pavlovs
University of Latvia

11:30-11:50 **Control of Crystal Orientation and Morphology of $Tb_{0.3}Dy_{0.7}Fe_{1.9}$ during Directional Solidification by High Magnetic Fields**
T. Liu, D. Meng, X.Y. Guo, Q. Wang
Northeastern University

11:50-12:10 **Tailoring the Microstructure and Properties of High-entropy Alloys Using High Magnetic Field**
J. Wang[1], J. Li[1], E. Beaugnon[2]
[1]Northwestern Polytechnical University, [2]Univ. Grenoble Alps

12:20-14:10 **Lunch**

<Room 1 (Main Hall)> Solidification, Crystal Growth 2

14:10-16:20 ***Chairs:*** N. Okada / J. Wang

14:10-14:40 **Keynote**
Development of EMBr/EMS Multifunction Mold
N. Okada, M. Kawamoto, S. Ohga
Nippon Steel & Sumitomo Metal Corporation

14:40-15:00 **Magneto Fluid Dynamics Analysis of Continuous Casting Practices under Magnetic Fields through Numerical Modelling**
P. Nazem Jalali[1,2], E. Abiona[3], P. E. Ramirez Lopez[1], H. Yang[3], P. Jönsson[2]
[1]Swerea MEFOS AB, [2]KTH University, [3]ABB AB

15:00-15:20 **Experimental Modelling of Continuous Casting of Steel in Slab Moulds Using Low Melting Liquid Metals**
K. Timmel, T. Wondrak, S. Eckert
HZDR

15:20-15:40 **Numerical Simulation of Turbulent Steel CEM® Mold under High Mass Flow Condition**
J.Y. Hwang[1], M.J. Cho[1], B.G. Thomas[2], S.M. Cho[2]
[1]POSCO, [2]Colorado School of Mines

15:40-16:00 **Analysis of the Influence of Vertical EMBr on Steel/Slag Interface in Continuous Casting**
L. Xu[1], E.G. Wang[1], C. Karcher[2], A.Y. Deng[1], X.J. Xu[1]
[1]Northeastern University, [2]Technische Universität Ilmenau

16:00-16:20 **Two Paradigms on Study Slab Continuous Casting Process with Mold Electromagnetic Stirring**
Z. Lei[1], B. Li[1], Y. Zhou[2], X. Wu[1], Y. Zhong[1], Z. Ren[1]
[1]Shanghai University, [2]Baosteel

16:20-16:40 **Coffee Break**

<Room 1 (Main Hall)> Solidification, Crystal Growth 3

16:40-18:30 ***Chairs:*** L. Nastac / K. Iwai

16:40-17:10 **Keynote**
Resonant Pulsed Electromagnetic Stirring of Melt for Effective Grain Fragmentation
D. Köppen[1,2], E. Baake[1], G. Gerstein[1], G. Mrówka-Nowotnik[3], G. Jarczyk[4]
[1]Leibniz University Hannover, [2]Kazan State Power Engineering University, [3]Rzeszów University of Technology, [4]Engineering Consulting

17:10-17:30 **Permanent Magnet Dipole Stirrer for Aluminium Furnaces**
T. Beinerts, A. Bojarevičs, R. Baranovskis, M. Milgrāvis, I. Kaldre
University of Latvia

17:30-17:50 **An Experimental and Modeling Study of Al-based Nanocomposites Fabricated by Ultrasonic Cavitation and Solidification Processing**
L. Nastac, X. Yang
The University of Alabama

17:50-18:10 **Effect of Time–modulated Magnetic Fields on the Solidification Structure and Extrusion Properties of Wrought Aluminum Alloys**
D. Räbiger[1], C. Resewski[1,2], S. Müller[2], B. Willers[1], W. Reimers[2], S. Eckert[1]
[1]Helmholtz-Zentrum Dresden-Rossendorf, [2]Technical University Berlin

18:10-18:30 **Inclusion Removal from Molten Steel Using Electromagnetic Vibrating Force**
A. Maruyama, K. Iwai
Hokkaido University

<Room 2 (Reception Hall)> Fundamental of EPM 1

14:10-15:20 ***Chairs:*** A. Kharicha / I. Mogi

14:10-14:40 **Keynote**
Electro-vortical MHD Interface Instabilities
A. Kharicha, E. Karimi-Sibaki, M. Wu, A. Ludwig
Montanuniversitaet Leoben

14:40-15:00 **Relevance of Low-Rm MHD for Surface Viscosimetry of Liquid Metals**
K. Patouillet[1,2], L. Davoust[1], O. Doche[1], V. Ebrahimian[2]
[1]SIMaP/EPM, [2]Montupet

15:00-15:20 **On the Melt Flow Peculiarities in Non-ideal Rotating Magnetic Field**
A. Azulay, B. Mikhailovich, A. Levy, A. Yakhot
Ben-Gurion University of the Negev

16:20-16:40 **Coffee Break**

<Room 2 (Reception Hall)> Fundamental of EPM 2

16:40-18:30 ***Chairs:*** G. Berthiau / T. Tagawa

16:40-17:10 **Keynote**
Numerical and Experimental Study of Liquid Metal Stirring by Rotating Permanent Magnets
V. Dzelme[1], A. Jakovics[1], J. Vencels[1], D. Köppen[2], E. Baake[2]
[1]University of Latvia, [2]Leibniz University of Hannover

17:10-17:30 **3D Numerical Modeling for Inductive Processes**
A. Gagnoud, Y. Du Terrail-Couvat, O. Budenkova
Univ. Grenoble Alpes

17:30-17:50 **Numerical Modelling of Liquid Metal Electromagnetic Pump with Rotating Permanent Magnets**
V. Dzelme, A. Jakovics, I. Bucenieks
University of Latvia

17:50-18:10 **Numerical Model of Dropping Evolution Behaviors during the Magnetically Controlled ESR Process**
H. Wang, Y.B. Zhong, Q. Li, W.Q. Li, W.L. Ren, Z.S. Lei, Z.M. Ren
Shanghai University

18:10-18:30 **Fast 3D Simulation of Various Applications of Induction Heating**
H.K. Bui, A. Ba, G. Berthiau, D. Trichet
University of Nantes

<Room 3 (301)> Advanced Materials Processing 2

14:10-14:50 ***Chairs:*** T. Liu / S. Tsurekawa

14:10-14:30 **Tuning Size of Hollowed Co_2P Nanoparticles through Application of High Magnetic Field**
X. Wang, C. Wu, K. Wang, W. Pei, Q. Wang
Northeastern University

14:30-14:50 **Diffusion in Copper/Cobalt System under High Magnetic Field**
Z. Zhang[1,2], X. Zhao[1], S. Tsurekawa[2]
[1]Northeastern University, [2]Kumamoto University

<Room 3 (301)> EM Processes 2

14:50-16:10 ***Chairs:*** T. Liu / S. Tsurekawa

14:50-15:10 **Magnetic Orientation Of *h*-BN and its Anisotropic Susceptibility**
I. Yamamoto, K. Nakada, K. Baba, T. Okabe, M. Tatara, Y. Chiba
Yokohama National University

15:10-15:30 **Removal of Scales from Boiler Feed Water in Thermal Power Plants Using Superconducting Magnetic Separation**
N. Hirota[1], H. Okada[1], F. Mishima[2], S. Nishijima[2], Y. Akiyama[3], H. Matsuura[4], S. Namba[4], T. Sekine[5]
[1]National Institute for Materials Science, [2]Fukui University of Technology, [3]Osaka Univ., [4]Shikoku Research Institute Inc., [5]Ebara Industrial Cleaning Co. Ltd.

15:30-15:50 **Electromechanical Milling - Conception and Design of the Excitation System**
B. Halbedel
Technische Universität Ilmenau

15:50-16:10 **Static Magnetic Field has Impact on Solidification Structure via Additive Manufacturing**
J. Wang, Z. Ren
Shanghai University

Wednesday October 17

<Room 1 (Main Hall)> Plenary Lecture 5, 6

9:00-10:20 ***Chair:*** N. Hirota

9:00-9:40 **Plenary 5**
Influence of Electromagnetic Stirring Mode on Solidification Behaviour of Special Steel Strands
E. Wang, Y. Xu, F. Wang
Northeastern University

9:40-10:20 **Plenary 6**
Oscillating Electromagnetic Force Effect on Concentration Distribution near Liquid Solid Interface
K. Iwai[1], T. Yokota[1], A. Maruyama[1], T. Yamada[2]
[1]Hokkaido University, [2]Nagoya Municipal Industrial Research Institute

10:20-10:40 **Coffee Break**

<Room 1 (Main Hall)> Solidification, Crystal Growth 4

10:40-12:10 ***Chairs:*** K. Zaidat / H. Harada

10:40-11:10 **Keynote**
Experimental Investigation of the Effect of Travelling Magnetic Field on the CET in Sn-10*wt.*%Pb Alloy
K. Zaidat[1], I. Sari[2], A. Boumaaza[2], A. Abdelhakem[2], L. Hachani[2], Y. Fautrelle[1]
[1]Laboratoire SIMaP-EPM, [2]Laboratoire Physique des matériaux

11:10-11:30 **Synchrotron X-ray Studies of the Evolution of Solidification Microstructures Under Pulse Magnetic Field**
J. Mi, W. Du
University of Hull

11:30-11:50 ***In-situ* Observation of Dendritic Growth under the Influence of Electromagnetically Driven Flow**
N. Shevchenko, O. Keplinger, S. Eckert
Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

11:50-12:10 **Investigation of Si Content on the Grain Refinement of Al-Si Alloy under Pulsed Magnetic Field**
J.C. Jie, S.P. Yue, Z.L. Zheng, Z.K. Guo, T.J. Li
Dalian University of Technology

<Room 2 (Reception Hall)> Induction Heating 1

10:40-12:10 ***Chairs:*** B. Nacke / J. Fukushima

10:40-11:10 **Keynote**
Potentials of Single Stage Induction Heating for Press Hardening of Steel Blanks
B. Nacke, A. Dietrich
Leibniz University Hannover

11:10-11:30 **Induction Preheating For The Submerged Arc Welded Steel Tube Production**
C. Cincunegui, P. Marino
Tenaris R&D Center

11:30-11:50 **Simulating the Magnetic Field/Transfer Phenomenon of the Tundish with Channel Type Inducting Heating**
B. Yang, A. Y. Deng, E. G. Wang
Northeastern University

11:50-12:10 **Recent Progress of Induction Heating Technology in Baosteel**
C. Y. Wu, X. L. Jin, Y. M. Zhou
Baoshan Iron&Steel Co. Ltd.

<Room 3 (301)> Low Electrical Conductivity Liquid Processing 1

10:40-11:10 ***Chairs:*** N. Yoshikawa / S. Rivoirard

10:40-11:10 **Keynote**
Fundamental Studies on Induction Heating and Stirring of Non-Metallic Molten Fluid
N. Yoshikawa, K. Watanabe, T. Igarashi, S. Komarov
Tohoku University

<Room 3 (301)> Recycling 1

11:10-12:00 ***Chairs:*** N. Yoshikawa / S. Rivoirard

11:10-11:40 **Keynote**
Recycling and Valorisation of Rare Earth-based Magnets
J.B. Denis[1,2], F. Mandil[1,2], S. Rivoirard[1,2]
[1]Univ. Grenoble Alpes, [2]CNRS

11:40-12:00 **Separation of Steelmaking Slag with Mechanical Stirring by Fluctuated Magnetic Field**
Y. Takaki, M. Sasaki, K. Ishida, Y. Nishina, J. Yotsuji, J. Tateno
JFE Steel Corporation

12:10-14:00 **Lunch**

<Room 1 (Main Hall)> Solidification, Crystal Growth 5

14:00-15:50 ***Chairs:*** J. Park / S. Shimasaki

14:00-14:30 **Keynote**
Continuous Casting of Hypereutectic Aluminum-Silicon Alloy Billets Using Electromagnetic Stirring Technique
J. Park[1], M. G. Kim[1], J. H. Kim[1], J. Shin[2], K. Lee[3]
[1]Research Institute of Industrial Science and Technology, [2]Korea Automotive Technology Institute, [3]Inha University

14:30-14:50 **Direct Chill Casting with Reversing Rotational Electromagnetic Field**
S. Shimasaki[1], A. Minagawa[2]
[1]National Institute of Technology, Kagawa College, [2]UACJ Corporation

14:50-15:10 **Microstructure and Properties of Al-Si Alloys under Intermediate Frequency Electromagnetic Field**
Y. Zhang[1], Y. Fu[2], G. Guo[3], J. Jie[1], T. Li[1]
[1]Dalian University of Technology, [2]Bohai University,
[3]State Key Laboratory of Metal Material for Marine Equipment and Application

15:10-15:30 **Effect of High Static Magnetic Field on the Microstructure and Compression Properties of Al-Cu Alloy**
T.X. Zheng[1], B.F. Zhou[1], J. Wang[1], S.S. Shuai[1], Y.B. Zhong[1], Z.M. Ren[1], E. Beaugnon[2], F. Debray[2]
[1]Shanghai University, [2]LNCMI, CNRS/UJF/INSA/UPS

15:30-15:50 **Contactless Electromagnetic Method for Aluminium Degassing**
I. Kaldre, A. Bojarevics, T. Beinerts, R. Baranovskis, R. Nikoluskins, M. Milgrāvis, M. Kalvāns
University of Latvia

<Room 2 (Reception Hall)> EM Treatment 1

14:00-15:20 ***Chairs:*** J. Barglik / N. Yoshikawa

14:00-14:20 **Effect of Magnetically Water on Hardenability of SCM440 Steels**
N. Mahathaninwong, S. Wisutmethangoon, T. Chucheep, S. Janudom
Prince of Songkla University

14:20-14:40 **Induction Contour Hardening of Gear Wheels Made of Steel 300M**
J. Barglik
Silesian University of Technology

14:40-15:00 **Nuclear Waste Treatment by Induction Heating and Stirring of a Metal/Glass Bath: The PIVIC Process**
P. Charvin, F. Lemont, A. Russello
CEA

15:00-15:20 **Induction Heat Treatment of Large Diameter Pipes and Coils**
V. Demidovich[1], V. Andrushkevich[2], Yu. Perevalov[2]
[1]St.Petersburg Electrotechnical University (LETI),
[2]Russian Technologies of Induction Heating (RTIH) Ltd.

<Room 2 (Reception Hall)> Advanced Materials Processing 3

15:20-16:20 ***Chairs:*** Y.B. Zhong / T. Ando

15:20-15:40 **Design of an One-sided Transverse Flux Induction Coil by Using a Numerical Optimization Algorithm**
M. Schulze[1], B. Nacke[1,2], A. Nikanorov[1,2]
[1]Leibniz University Hannover, [2]St. Petersburg Electrotechnical University

15:40-16:00 **Effect of Rare Earth Y on Properties of Cu Cr Zr Alloy**
Y.B. Zhong, D.S. Zhu
Shanghai University

16:00-16:20 **Potential of Open Source Simulation Tools for Induction Heating**
V. Geza[1], M. Scepanskis[2], R. Vilums[2], A. Eimuss[2]
[1]University of Latvia, [2]CENOS LLC

<Room 3 (301)> Fundamental of EPM 3

14:00-15:50 ***Chairs:*** S. Eckert / Y. Miki

14:00-14:30 **Keynote**
Flow Structures in Liquid Metal Rayleigh-Benard Convection under the Influence of DC Magnetic Fields
T. Vogt[1], F. Schindler[1], F. Stefani[1], T. Zürner[2], J. Schumacher[2], Y. Tasaka[3], T. Yanagisawa[4], S. Eckert[1]
[1]Helmholtz-Zentrum Dresden – Rossendorf (HZDR), [2]Technical University Ilmenau,
[3]Hokkaido University, [4]Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

14:30-14:50 **Wetting Behaviour of Liquid Metals on Polycrystalline Alumina Substrates under High Magnetic Fields**
Y. Xiao, T. Liu, Z. Lu, Q. Wang
Northeastern University

14:50-15:10 **Simulation of Electrically Induced Vortical Flows**
V. Dzelme[1], A. Jakovics[1], A. Chudnovsky[2], E. Baake[3]
[1]University of Latvia, [2]BIS Global Ltd., [3]Leibniz University of Hannover

15:10-15:30 **Levitation Capability Improvement for Electromagnetic Levitation of Bulk Metallic Materials Using Optimized Structure Coil**
X. Cai, H. P. Wang, P. Lü, B. Wei
Northwestern Polytechnical University

15:30-15:50 **Experimental and Numerical Investigation on Particle-induced Liquid Metal Flow Using Lorentz Force Velocimetry**
Ch. Karcher, Z. Lyu, Th. Boeck, N. Tran, U. Lüdtke
Technische Universität Ilmenau

<Reception Hall B Foyer> Poster Session

16:20-18:00

16:20-17:10 **Poster 1**
Hierarchical Optimization Approaches in Designing Surface Hardening Induction Systems
M. Baldan[1], A. Nikanorov[1,2], B. Nacke[1,2]
[1]Leibniz University Hannover, [2]St. Petersburg Electrotechnical University

17:10-18:00 **Poster 2**
Three-dimensional Numerical Computation of Gas-liquid Two-phase Flow under Pseudo Microgravity Environment Using a Superconducting Electromagnet
S. Kikuchi, T. Tagawa
Tokyo Metropolitan University

16:20-17:10 **Poster 3**
Numerical Investigation of a Double Frequency Approach for Longitudinal HF Welding of Cladded Pipes
W. Ebel[1], M. Kroll[2], E. Baake[1], A. Nikanorov[1]
[1]Leibniz Universität Hannover, [2]Technische Universität Chemnitz

17:10-18:00 **Poster 4**
Design Improvements for Increasing Lifetime of Single-shot Coils Applied at Rotating Workpieces
S. Schubotz[1], B. Nacke[2]
[1]EFD Induction GmbH, [2]Leibniz Universität Hannover

16:20-17:10 **Poster 5**
Effect of Electromagnetic Field on Microstructure and Properties of Cu-Cr-Co-Si Alloy
X. Sun, J. Jie, T. Li
Dalian University of Technology

17:10-18:00 **Poster 6**
Nondestructive Testing of the Interfaces of Two Electrically Conducting Fluids
X.J. Xu[1], C. Karcher[2], J. M. Otterbach[2], E.G. Wang[1]
[1]Northeastern University, [2]Technische Universität Ilmenau

16:20-17:10 **Poster 7**
Investigation of Refining Mechanism in Pure Al under Pulsed Magnetic Field
S.P. Yue, Z.L. Zheng, J.C. Jie, Z.K. Guo, T.J. Li
Dalian University of Technology

17:10-18:00 **Poster 8**
Microstructure Evolution of Cu-15Ni-8Sn Alloy Prepared by Vertical Semi-continuous Casting with EMS
Z. Guo[1], J. Jie[1], S. Yue[1], T. Li[1], Q. Guo[2]
[1]Dalian University of Technology,
[2]State Key Laboratory of Metal Material for Marine Equipment and Application

16:20-17:10 **Poster 9**
Influence of Magnetic Field on Surface Self-diffusion and Grain Boundary Energy in Pure Iron
C. Sakaguchi, T. Yamamuro, S. Tsurekawa
Kumamoto University

17:10-18:00 **Poster 10**
High-Density β-$FeSi_2$ Crystals with 3D Alignment Fabricated by an Oscillating Magnetic Field
K. Ono, A. Hashimoto, K. Kurokawa, N. Nakatsuka, K. Morishita, H. Yasuda
Kyoto University

16:20-17:10 **Poster 11**
Mono-dispersed Droplets Formation from Capillary Jet of Liquid Metal by Applying an Electric Field
Y. Hamaguchi[1], K. Matsumoto[1,2], S. Shimasaki[1], S. Taniguchi[3]
[1]National Institute of Technology, Kagawa College, [2]Tsukuba University, [3]Tohoku University

17:10-18:00 **Poster 12**
Structure Formation of Magnetic Particles under Magnetic Fields toward Anisotropic Materials
T. Ando[1], D. Katayama[1], N. Hirota[2], O. Koike[3], R. Tatsumi[4], M. Yamato[5]
[1]Nihon University, [2]National Institute for Materials Science, [3]Products Innovation Association, [4]The University of Tokyo, [5]Tokyo Metropolitan University

16:20-17:10 **Poster 13**
Structural Transformation of Bilayer Ferro-foams Caused by Homogeneous Static Magnetic Field
W. Chen, H.-Q. Dong, S.-B. Wang, Z.-S. Lei, J.-H. Guo
Shanghai University

17:10-18:00 **Poster 14**
Multi-frequency Inductive System for Magnesium Level Detection in a Titanium Reduction Reactor
N. Krauter[1], F. Stefani[1], T. Gundrum[1], T. Wondrak[1], P. Frick[2], R. Khalilov[2]
[1]Helmholtz Zentrum Dresden Rossendorf, [2]Institute of Continuous Media Mechanics

16:20-17:10 **Poster 15**
MHD-equipment and Technologies of Semi-continuous Billet Casting of High-strength Al-alloys
M.A. Slazhniev, K.H. Kim, H.S. Sim, S.W. Kim, W.J. Kim
Dong San Tech. Co., ltd.

17:10-18:00 **Poster 16**
On the Macro Distribution of Fe and Cu Phases in Fe-50mass% Cu Alloys Solidified in a Static Magnetic Field
M. Li, T. Tamura
The National Institute of Advanced Industrial Science and Technology (AIST)

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