

General information for oral presentations



- Your presentation support must be saved as PowerPoint or PDF file on a USB key.
- **We invite you to load your presentation before the beginning of your session, during the break before your session on the computer of your conference room.**
- To avoid any technical bug and too long installation time, it is mandatory to **use only the computer provided in the conference room.** It will not be possible to use your personal computer.
- A remote control with laser pointer will be at your disposal.

Keynote presentations



- You will have **25 minutes** for your presentation.
- It will be followed by 5 minutes of discussion.

Invited and regular presentations



- You will have **15 minutes** for your presentation.
- It will be followed by 5 minutes of discussion.

Poster presentations



- Your poster should **be printed in A0 format** (84.1 cm x 118.9 cm) in **portrait orientation**.
- It is not possible to print your poster on site.
- The posters will be displayed on grids and fixed with pins, which will be given to you upon your arrival.
- Thank you for **hanging your poster** as soon as you arrive at the conference, Monday, June 20. Thus, everyone will be able to watch it during the conference breaks.
- **Two poster sessions** are planned: Tuesday, June 21, 18:00–19:00 and Thursday, June 23, 18:00–19:00. During the poster sessions we invite you to **stay close to your poster** to enable participants to discuss with you.
- Please **pick up your poster** on the last day of the conference, Friday, June 24. Remaining posters will not be returned.

SCIENTIFIC SESSIONS OF THE CONFERENCE

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	Topic 7: Columnar-to-equiaxed transition (CET)	p. 48	-
	Topic 8: Modeling	p. 49	p. 58
	Topic 9: Eutectic growth, peritectic growth	p. 51	p. 59
	Topic 10: Experimental and characterization methods	P. 53	P. 59
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	Topic 12: Rapid solidification	p. 55	p. 60
	Topic 13: Welding, remelting, cladding	P. 56	P. 60

Scientific program: overview

MONDAY 20 JUNE		
<i>Welcome and registration 18:30 - 21:00</i>		
<i>Cocktail dinner 18:30 - 21:30</i>		
TUESDAY 21 JUNE		
AMPHITHEATER Introduction, welcome 8:30 - 9:00 Henri Nguyen Thi (plenary lecture) 9:00 - 10:00		
<i>Coffee Break 10:00 - 10:30</i>		
ROOM 1	ROOM 2	AMPHITHEATER
T1 - Nucleation 1 10:30 - 12:10	T3 - Dendrites 1 10:30 - 12:10	T2 - Casting 1 10:30 - 12:10
<i>Lunch 12:10 - 14:00</i>		
T1 - Nucleation 2 14:00 - 15:50	T3 - Dendrites 2 14:00 - 15:50	T2 - Casting 2 14:00 - 15:50
<i>Coffee Break 15:50 - 16:30</i>		
T1 - Nucleation 3 16:30 - 17:50		T2 - Casting 3 16:30 - 17:50
Poster Session 18:00 - 19:00		
<i>Local producers' market 18:00 - 19:30</i>		
<i>Dinner 19:30 - 21:30</i>		
WEDNESDAY 22 JUNE		
AMPHITHEATER Peter Voorhees (plenary lecture) 9:00 - 10:00		
<i>Coffee Break 10:00 - 10:30</i>		
ROOM 1	ROOM 2	AMPHITHEATER
T4 - Alloys 10:30 - 12:30	T5 - Additive 1 10:30 - 12:30	T6 - Flow 10:30 - 12:30
<i>Lunch 12:30 - 14:00</i>		
T8 - Modeling 1 14:00 - 15:50	T5 - Additive 2 14:00 - 15:30	T7 - CET 14:00 - 15:50
<i>Transfert from Le Bischenberg to Obernai in bus (10 min) 16:00</i>		
<i>Social program: City tour of Obernai (included for all) 16:20 - 17:20</i>		
<i>Free time</i>	Or	<i>Wine tasting 17:45 - 19:15 (optional participation)</i>
<i>Dinner at La Halle aux Blés (included for all) 19:30 - 21:30</i>		

THURSDAY 23 JUNE

AMPHITHEATER Tomohiro Takaki (plenary lecture) 9:00 - 10:00

Coffee Break 10:00 - 10:30

ROOM 1

ROOM 2

AMPHITHEATER

**T8 - Modeling 2
10:30 - 12:30**

**T9 - Eutectics GF 1
10:30 - 12:30**

**T10 - Experiments
10:30 - 12:10**

Lunch 12:30 - 14:00

**T8 - Modeling 3
14:00 - 15:50**

**T9 - Eutectics GF 2
14:00 - 15:50**

**T11 - Macroseggregation 1
14:00 - 15:50**

Coffee Break 15:50 - 16:30

**T12 - Rapid
16:30 - 17:50**

**T9 - Eutectics 3
16:30 - 17:50**

**T11 - Macroseggregation 2
16:30 - 17:50**

Poster Session 18:00 - 19:00

Gala dinner 19:30 - 22:00

FRIDAY 24 JUNE

AMPHITHEATER Ulrike Hecht (plenary lecture) 9:00 - 10:00

Coffee Break 10:00 - 10:30

ROOM 1

AMPHITHEATER

**T13 - Welding
10:30 - 12:30**

**T9 – Eutectics 4
10:30 - 12:30**

Lunch 12:30 - 14:00

**Closing remarks, goodbye
14:00 - 14:30**

Scientific program: detailed

MONDAY 20 JUNE			
Welcome and registration 18:30 - 21:00			
Cocktail dinner 18:30 - 21:30			
TUESDAY 21 JUNE			
8:30	AMPHITHEATER Introduction, welcome 8:30 - 9:00 Henri Nguyen Thi (plenary lecture) 9:00 - 10:00		
9:00			
10:00	Coffee Break – 10:00 - 10:30		
	ROOM 1	ROOM 2	AMPHITHEATER
	T1 - Nucleation 1	T3 - Dendrites 1	T2 - Casting 1
10:30	N. Jakse	M. Becker	E. Neunteufl
10:50	Y. Cui	A.K. Boukellal	Y. Natsume *
11:10	I. Cazic	G. Zimmerman	A. Vakhrushev
11:30	C. Fang	L. Abou Khalil	H. Zhang
11:50	F. Gao	N. Bergeon	E. Hazemann
12:30	Lunch 12:10 – 14:00		
	T1 - Nucleation 2	T3 - Dendrites 2	T2 - Casting 2
14:00	C. Gourlay (keynote)	N. Shevchenko (keynote)	D. Eskin (keynote)
14:30	E. Liotti	A. Viardin	C. Tonry
14:50	K. Xiang	A. Jafarizadeh K.	J. Lazaro-Nebreda
15:10	S. Huang	A. Kao	P. Zaffarani
15:30	I. Spacil	S. Steinbach	T. Houdard
15:50	Coffee Break 15:50 – 16:30		
	T1 - Nucleation 3		T2 - Casting 3
16:30	J. Kennedy		B. Santillana
16:50	T. Niersbach		B. Šarler
17:10	S. Wang		U. Godwal
17:30	J. Spinelli		S. Bhagavath*
18:00	Poster Session 18:00 - 19:00		
Local producers' market 18:00 - 19:30			
19:30	Dinner 19:30 - 21:30		
21:00			

WEDNESDAY 22 JUNE			
9:00	AMPHITHEATER Peter Voorhees (plenary lecture) 9:00 - 10:00		
10:00	Coffee Break 10:00 - 10:30		
	ROOM 1	ROOM 2	AMPHITHEATER
	T4 - Alloys	T5 - Additive 1	T6 - Flow
10:30	E. Neunteufl	T. Camus	S. Karagadde
10:50	H. Henein	Q. Bizot	A. Kumar *
11:10	T. Aziz	D. Dreelan	G. Bracker
11:30	K.M. Sree Manu	J. Jakumeit	Z. Veres
11:50	A. Zaky	Y. Zhang	T. Werner
12:10	G. Salloum-Abou-Jaoude	J.-W. Cho	E. Liotti
12:30	Lunch 12:30 – 14:00		
	T8 - Modeling 1	T5 - Additive 2	T7 - CET
14:00	G. Boussinot (keynote)	A. Chadwick (keynote)	C. Beckermann (keynote)
14:30	Z. Li	A.R. Al Azad	A. Abdallah
14:50	S. Jha	I. Ushakov	Q. Du
15:10	T. Takaki	M. Reiersen	M. Wu
15:30	A. Viardin	M. Ganguly	H. Zhang

Transfer from Le Bischenberg to Obernai in bus (10 min) 16:00	
Social program: City tour of Obernai (included for all) 16:20 - 17:20	
Free time	Or Wine tasting 17:45 - 19:15 (optional participation)
Dinner at La Halle aux Blés (included for all) 19:30 - 21:30	

THURSDAY 23 JUNE			
9:00	AMPHITHEATER Tomohiro Takaki (plenary lecture) 9:00 - 10:00		
10:00	Coffee Break 10:00 – 10:30		
	ROOM 1	ROOM 2	AMPHITHEATER
	T8 - Modeling 2	T9 - Eutectics GF 1	T10 - Experiments
10:30	<i>L. Rátkai</i>	<i>S. Akamatsu</i>	<i>M. Wegener</i>
10:50	T. Dobravec	S. Bottin-Rousseau	T. Narumi *
11:10	T. Braik	M. Plapp	G. Reinhart
11:30	J. Eiken	M. Şerefoğlu	
11:50	S. Karagadde	O. Senninger	J. Mi
12:10	A. Kao	J. Lacaze	
12:30	Lunch 12:30 – 14:00		
	T8 - Modeling 3	T9 - Eutectics GF 2	T11 - Macrosegregation 1
14:00	D. Tournet (keynote)	A. Karma (keynote)	H. Combeau (keynote)
14:30	Y. Wu	U. Hecht	N. Ren *
14:50	T. Isensee	M. Perrut	J. Allen
15:10	M. Jančič	G. Boussinot	V. Govže
15:30	C.-A. Gandin	T. Pusztai	K. Mramor
15:50	Coffee Break 15:50 – 16:30		
	T12 - Rapid	T9 - Eutectics 3	T11 - Macrosegregation 2
16:30	P. Galenko	<i>A. Shahani</i>	
16:50	M. Kolbe	A. Ludwig	L. Gutman
17:10	N. Kropotin	Ö. Gürsoy	A. Al Rafi
17:30	T. Volkmann		M. Genneson
18:00	Poster Session 18:00 – 19:00		
19:30	Gala dinner 19:30 – 22:00		
21:00			

FRIDAY 24 JUNE		
9:00	AMPHITHEATER Ulrike Hecht (plenary lecture) 9:00 - 10:00	
10:00	Coffee Break 10:00 – 10:30	
	<i>ROOM 1</i>	<i>AMPHITHEATER</i>
	T13 - Welding	T9 - Eutectics 4
10:30	L. Quakatz	<i>H. Henein</i>
10:50	W. Mirihanage	H. Henein
11:10	J. Xie	H. Yasuda *
11:30		A. Genau
11:50		S. Mohagheghi
12:10		S. Akamatsu
12:30	Lunch 12:30 – 14:00	
14:00	AUDITORIUM Closing remarks, goodbye 14:00 - 14:30	
14:30		

T1

ORAL SESSION

TOPIC 1: NUCLEATION & GRAIN REFINEMENT

ROOM 1

T1. part 1		Tuesday June 21 (10:30 – 12:10) Chair: Michel Rappaz
377362 10:30	20'	Medium Range Ordering in liquid Al-based alloys: towards an unsupervised topological learning approach <u>Noel Jakse</u> ¹ , Philippe Jarry ² <i>1. SIMAP, Université Grenoble Alpes, CNRS, Grenoble INP, Grenoble, France</i> <i>2. C-TEC Constellium, Voreppe, France</i>
375846 10:50	20'	Grain refinement of gold alloys by iridium additions <u>Yi Cui</u> , Christopher Gourlay <i>Department of Materials, Imperial College London, SW7 2AZ, United Kingdom</i>
375882 11:10	20'	A 3D characterization of equiaxed grains induced by mediated nucleation in additively manufactured Inconel 718 <u>Ivan Cazic</u> ^{1,3,4} , Julien Zollinger ^{1,4} , Michael Engstler ² , Maxime El Kandaoui ³ , Benoît Appolaire ^{1,4} <i>1. Institut Jean Lamour, Université de Lorraine, Nancy, France</i> <i>2. Universität des Saarlandes, Saarbrücken, Deutschland</i> <i>3. Institut de Soudure, Yutz, France</i> <i>4. Labex Damas, Université de Lorraine, Nancy, France</i>
377520 11:30	20'	Prerenucleation at Liquid-Metal/Oxide Interfaces from Ab Initio Molecular Dynamics <u>Changming Fang</u> , Zhongyun Fan <i>BCAST, Brunel University London, Uxbridge, Middlesex, UB8 3PH, United Kingdom</i>
376116 11:50	20'	Grain initiation behaviours during solidification with different types of nucleant particles <u>Feng Gao</u> , Zhongyun Fan <i>BCAST, Brunel University London, Uxbridge, Middlesex, UB8 3PH, United Kingdom</i>

ROOM 1

T1. part 2		Tuesday June 21 (14:00 – 15:50) Chair: Jacob Kennedy
Keynote 377646 14:00	30'	Influence of melt undercooling on the growth of Ag₃Sn <u>Christopher Gourlay</u> , Yi Cui, Jingwei Xian <i>Department of Materials, Imperial College London, SW7 2AZ, United Kingdom</i>
376061 14:30	20'	Nucleation bursts of primary intermetallic crystals in a liquid Al alloy studied using in situ synchrotron X-ray radiography Shikang Feng, <u>Enzo Liotti</u> , Andrew Lui, Matthew Wilson, Patrick Grant <i>1. Department of materials, University of Oxford, Oxford, United Kingdom</i> <i>2. Science and Technology Facilities Council, Harwell Science and Innovation Campus, Didcot, United Kingdom</i>
392238 14:50	20'	Characterisations of the Al-Mn intermetallic phases formed under pulse magnetic fields solidification <u>Kang Xiang</u> , Shi Huang, Jiawei Mi <i>Department of Engineering, University of Hull, Hull, HU6 7RX, United Kingdom</i>

ROOM 1

377507 15:10	20'	In-operando synchrotron X-ray total scattering study of the 3D atomic structure evolution in an undercooled binary Al alloy melt <u>Shi Huang</u> ¹ , Shifeng Luo ² , Ling Qin ¹ , Jiawei Mi ¹ 1. Department of Engineering, University of Hull, Cottingham Road, Hull, HU6 7RX, United Kingdom 2. School of Materials Science and Engineering, Hefei University of Technology, 193 Tunxi Road, Hefei, People's Republic of China
375976 15:30	20'	Effect of Eu and P additions on solidification microstructure of Al-7Si-0.3Mg based alloys <u>Ivo Spacil</u> , Peter Schumacher, Jiehua Li 1. Institute of Casting Research, Montanuniversität Leoben, Leoben, Austria 2. Austrian Foundry Research Institute, Leoben, Austria

ROOM 1

T1. part 3	Tuesday June 21 (16:30 – 17:50) Chair: Julien Zollinger	
370645 16:30	20'	β Grain Refinement During Solidification of Ti-6Al-4V in Wire-Arc Additive Manufacturing (WAAM) <u>Jacob Kennedy</u> ^{1,2} , Alec Davis ¹ , Armando Caballero ³ , Ed Pickering ¹ , Phil Prangnell ¹ 1. University of Manchester, Department of Materials, Manchester, United Kingdom 2. Now at Institut Jean Lamour, Centre National de la Recherche Scientifique, Université de Lorraine, Nancy, France 3. Welding Engineering and Laser Processing Centre, Cranfield University Bedfordshire, United Kingdom
374219 16:50	20'	Nucleation and Crystal Growth in Undercooled CrB-Structured Alloys <u>Till Niersbach</u> , Matthias Kolbe, Florian Kargl Institut für Materialphysik im Weltraum, DLR, 51170 Köln, Germany
377685 17:10	20'	Interfacial Segregation at Metal/Oxide Interfaces in Al/Mg alloys <u>Shihao Wang</u> ¹ , Yun Wang ¹ , Ewan Lordan ¹ , Changming Fang ¹ , Quentin Ramasse ^{2,3} , Zhongyun Fan ¹ 1. BCAST, Brunel University London, Uxbridge, Middlesex UB8 3PH, United Kingdom 2 SuperSTEM Laboratory, SciTech Daresbury Campus, Daresbury WA4 4AD, United Kingdom 3 School of Chemical and Process Engineering and School of Physics, University of Leeds, Leeds LS2 9JT, United Kingdom
377534 17:30	20'	The cooling rate effects on the Nb-B inoculant potential of refining grains and dendritic scale in 6201 alloy Felipe Escher Saldanha ¹ , Sarah Maria de Albuquerque Sousa ² , Guilherme Lisboa de Gouveia ² , <u>José Eduardo Spinelli</u> ^{1,2} 1. Department of Materials Engineering, Federal University of São Carlos UFSCar, São Carlos, SP, Brazil 2. Federal University of São Carlos, Graduate Program in Materials Science and Engineering, São Carlos, SP, Brazil

T2. part 1		Tuesday June 21 (10:30 – 12:10) Chair: Hervé Combeau
376132 10:30	20'	Hot top sand casting <u>Ernst Neunteufl</u> , Peter Schumacher <i>Chair of Casting, Leoben, Austria</i>
375938 10:50 *Remote	20'	High-precision solidification simulation by estimating heat transfer coefficients through data assimilation <u>Yukinobu Natsume</u> ¹ , Toshihiko Oikawa ² , Munekazu Ohno ³ <i>1. Faculty of Engineering Science, Akita University, Akita, Japan</i> <i>2. Graduate School of Engineering Science, Akita University, Akita, Japan</i> <i>3. Faculty of Engineering, Hokkaido University, Hokkaido, Japan</i>
375902 11:10	20'	On modelling conjugated heat transfer in the thin slab CC mould and solid shell formation under the applied EMBR <u>Alexander Vakhrushev</u> ¹ , Abdellah Kharicha ¹ , Andreas Ludwig ² , Menghuai Wu ² , Gerald Nitzl ³ , Yong Tang ⁴ , Gernot Hackl ⁴ , Josef Watzinger ⁵ <i>1. Christian Doppler Laboratory for Metallurgical Applications of Magnetohydrodynamics, Montanuniversität Leoben, Austria</i> <i>2. Chair of Simulation and Modelling of Metallurgical Processes, Department of Metallurgy, Montanuniversität Leoben, Austria</i> <i>3. RHI Magnesita GmbH, Vienna, Austria</i> <i>4. RHI Magnesita GmbH, Leoben, Austria</i> <i>5. Primetals Technologies, Linz, Austria</i>
375843 11:30	20'	Potential eutectic accumulation in single crystal turbine blade due to geometry effect: a numerical study <u>Haijie Zhang</u> ¹ , Xiaoshan Liu ² , Dexin Ma ² , Andreas Ludwig ¹ , Abdellah Kharicha ¹ , Menghuai Wu ¹ <i>1. Chair for Simulation and Modeling of Metallurgy Processes, Department of Metallurgy, University of Leoben, A-8700 Leoben, Austria</i> <i>2. Central South University, Powder Metallurgy Research Institute, Changsha, 410083, China</i>
378521 11:50	20'	Anisotropic Mechanical Behavior of Nickel Base Single Crystal Superalloy CMSX-4 for Prediction of Grain Recrystallization during Homogenization Heat-treatment Following Solidification <u>Emile Hazemann</u> ¹ , Yancheng Zhang ² , Karim Inal ² , Michel Bellet ² , Charles-André Gandin ² , Ming Long ¹ , Ngadia Taha Niane ³ , Vincent Maguin ¹ , Mylène Leduc ¹ , Virginie Jaquet ¹ <i>1. Safran Advanced Turbine Airfoils, a Technology Platform of Safran Tech, 171 Boulevard Valmy, 92700 Colombes, France</i> <i>2. Mines ParisTech, PSL Research University, Centre de Mise en Forme des Matériaux (CEMEF), UMR CNRS 7635, Sophia Antipolis 06904, France</i> <i>3. Safran Aircraft Engines, 171 Boulevard Valmy, 92700 Colombes, France</i>

T2. part 2		Tuesday June 21 (14:00 – 15:50) Chair: Menghuai Wu	
AMPHITHEATER	Keynote 374839 14:00	30'	Ultrasonic melt processing upon direct-chill casting of aluminium alloys <u>Dmitry Eskin</u> ¹ , Tungky Subroto ¹ , Abhinav Priyadarshi ² , Christopher Beckwith ³ , Koulis Pericleous ³ , Iakovos Tzanakis ² 1. Brunel Centre for Advanced Solidification Technology, Brunel University London, Uxbridge, United Kingdom 2. Oxford Brookes University, Wheatley, United Kingdom 3. University of Greenwich, Greenwich, United Kingdom
	375927 14:30	20'	Contactless ultrasonic treatment of metal melts improves mechanical properties Koulis Pericleous ¹ , Valdis Bojarevics ¹ , Agnieszka Dybalska ² , William Griffiths ² , G. Djambazov ¹ , <u>Catherine Tonry</u> ¹ 1. University of Greenwich, London, United Kingdom 2. University of Birmingham, Birmingham, United Kingdom
	377529 14:50	20'	Enhanced Iron removal from highly Fe-contaminated Aluminium cast alloys by high shear melt conditioning recycling technology <u>Jaime Lazaro-Nebreda</u> ¹ , Jayesh Patel ¹ , Geoffrey Scamans ^{1,2} , Zhongyun Fan ¹ 1. Brunel Centre for Advanced Solidification Technology, Brunel University London, Uxbridge, UB8 3PH, United Kingdom 2. Innoval Technology Limited, Beaumont Cl, Banbury, OX16 1TQ, United Kingdom
	375980 15:10	20'	Influence of stirring process during slurry formation on the casting defects and high-temperature fatigue of rheocast AlSi7Mg alloys <u>Patrick Zaffarani</u> ¹ , Qing Zhang ² , Anders E.W. Jarfors ² , Giulio Timelli ¹ 1. University of Padova, Vicenza, Italy 2. Jönköping University, Jönköping, Sweden
	374208 15:30	20'	Thermo-mechanical modelling of AZS electrofused refractories <u>Tiphaine Houdard</u> ¹ , Isabelle Cabodi ¹ , Pierrick Vespa ¹ , Franck Pigeonneau ² , Charles-André Gandin ² 1. Saint-Gobain, SGR Provence, 84300 Cavailon, France 2. Mines ParisTech, PSL Research University, CEMEF UMR CNRS 7635, 06904 Sophia Antipolis, France

T2. part 3		Tuesday June 21 (16:30 – 17:50) Chair: Charles-André Gandin	
AMPHITHEATER	375432 16:30	20'	Forecast the casting of a medium manganese steel <u>Begoña Santillana</u> , Radhakanta Rana, Andre Burghardt Tata Steel R&D, The Netherlands
	410835 16:50	20'	A Simple Through Process Model of Steel Production Path <u>B. Šarler</u> ^{1,2} , T. Dobravec ¹ , U. Hanoglu ² , Q. Liu ² , B. Mavrič ¹ , M. Kovačič ³ , R. Vertnik ³ , G. Vuga ¹ 1. Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia 2. Institute of Metals and Technology, Ljubljana, Slovenia 3. Štore-Steel Company, Štore, Slovenia
	375994 17:10	20'	Multi-phase Modelling of porosity with combined gas and shrinkage effects in HPDC <u>Utkarsh Godwal</u> ¹ , Shishira Bhagavath ¹ , Bitu Ghaffari ² , Mei Li ² , Peter Lee ³ , Shyamprasad Karagadde ¹ 1. Dpt of Mechanical Engineering, Indian Institute of Technology Bombay, Mumbai, India 2. Ford Research and Advanced Engineering, Dearborn, United States of America 3. University College London, London WC1E 6BT, United Kingdom

376124 17:30 *Remote	20'	Revealing dilatancy-induced porosity formation using full-field strain measurement from digital image correlation <u>Shishira Bhagavath</u> ^{1,2} , Zhixuan Gong ^{2,3} , Tim Wigger ^{2,3} , Saurabh Shah ^{2,3} , Bita Ghaffari ⁴ , Mei Li ⁴ , Shashidhara Marathe ⁵ , Peter D. Lee ^{2,3} , Shyamprasad Karagadde ¹ 1. Dpt of Mechanical Engineering, Indian Institute of Technology Bombay, Mumbai, India 2. Research Complex at Harwell, Harwell Campus, OX11 0FA, United Kingdom 3. University College London, London WC1E 6BT, United Kingdom 4. Ford Research and Advanced Engineering, Dearborn, United States of America 5. Diamond Light Source, Harwell Campus, OX11 0DE, United Kingdom
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T3

ORAL SESSION

TOPIC 3: DENDRITES

T3. part 1		Tuesday June 21 (10:30 – 12:10) Chair: Christoph Beckermann
377609 10:30 Invited	20'	Dendrite orientations in aluminium alloys <u>Maike Becker</u> ¹ , Mareike Wegener ² , Matthias Kolbe ¹ , Sonja Steinbach ¹ , Florian Kargl ¹ 1. Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Köln, Germany 2. Technische Universität Berlin, Institute of Materials and Technology, Berlin, Germany
377553 10:50 Invited	20'	Formation of grain boundaries during polycrystalline solidification of hcp alloys <u>Ahmed Kaci Boukellal</u> ¹ , Maral Sarebanzadeh ^{1,2} , Alberto Orozco-Caballero ² , Federico Sket ¹ , Javier Llorca ^{1,2} , Damien Tourret ¹ 1. IMDEA Materials Institute, Madrid, Spain 2. Universidad Politecnica de Madrid, Madrid, Spain
375576 11:10	20'	Growth of Si particles and Al dendrites during solidification of a hypereutectic Al-Si-Cu alloy <u>Gerhard Zimmermann</u> , Laszlo Sturz, Christoph Pickmann ACCESS e.V, Aachen, Germany
375517 11:30	20'	Effect of dendrite inclination on fragmentation during solidification of Al-7wt.%Si in microgravity <u>Lara Abou Khalil</u> ¹ , Guillaume Reinhart ¹ , Zachary Thompson ² , Tiberiu Stan ² , Laszlo Sturz ³ , Gerhard Zimmermann ³ , Peters Voorhees ² , Nathalie Mangelinck-Noël ¹ , Henri Nguyen-Thi ¹ 1. Aix Marseille Univ, Université de Toulon, CNRS, IM2NP, Marseille, France 2. Department of Materials Science and Engineering, Northwestern University, Evanston, United States of America 3. Access e.V, Intzestrass 5, 52072, Aachen, Germany
373177 11:50	20'	Characterization of dendritic extended 3D patterns obtained in DECLIC Directional Solidification Insert onboard ISS Fatima Mota ¹ , Kaihua Ji ² , Louise Strutzenberg ³ , Rohit Trivedi ⁴ , Alain Karma ² , <u>Nathalie Bergeon</u> ¹ 1. IM2NP, Aix-Marseille Université and CNRS, Marseille, France 2. Physics Department, Northeastern University, Boston, USA 3. Marshall Space Flight Center, Huntsville, USA 4. Department of Materials Science & Engineering, Iowa State University, USA

ROOM 2

T3. part 2		Tuesday June 21 (14:00 – 15:50) Chair: Gerhard Zimmermann
Keynote 375999 14:00	30'	In situ study of solidification patterns of a ternary Ga-In-Bi alloy in presence of melt convection <u>Natalia Shevchenko</u> ¹ , Olga Budenkova ² , Mihails Birjukovs ³ , Guy Chichignoud ² , Sven Eckert ¹ 1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany 2. Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, F-38000 Grenoble, France 3. Institute of Numerical Modelling, Riga, Latvia
377628 14:30 Invited	20'	Modeling of melt flow and directional solidification in TiAl alloys <u>Alexandre Viardin</u> ¹ , Julien Zollinger ¹ , Laszlo Sturz ¹ , Markus Apel ¹ , Janin Eiken ¹ , Ralph Berger ¹ , Ulrike Hecht ¹ , Youssef Souhar ² , Martin Cisternas Fernandez ² , Miha Zaloznik ² 1. Access e.V., Aachen, Germany 2. Institut Jean Lamour, Nancy, France
375967 14:50	20'	Directional Solidification of Al-10wt.%Cu alloy in hypergravity <u>Ali Jafarizadeh Koohbanani</u> , Sonja Steinbach, Jan Frenzel, Florian Kargl 1. Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt (DLR), 51170 Köln, Germany 2. Institute for Materials, Ruhr-Universität Bochum (RUB), 44780 Bochum, Germany
377573 15:10 Invited	20'	The influence of thermoelectric magnetohydrodynamics in microstructure evolution <u>Andrew Kao</u> , Robert Attwood, Samuel Clark, Sven Eckert, Xianqiang Fan, Teddy Gan, Peter Lee, Koulis Pericleous, Natalia Shevchenko, Peter Soar, Catherine Tonry 1 University of Greenwich, United Kingdom 2 Diamond Light Source, United Kingdom 3 Argonne National Laboratory, United States of America 4 Helmholtz-Zentrum Dresden-Rossendorf, Germany 5 UCL, United Kingdom
375856 15:30	20'	Directional Solidification of Fe-containing Al-Si and Al-Si-Cu-alloys under Forced Flow Conditions: Effect of Intermetallic Phase Precipitation and Dendrite Coarsening <u>Sonja Steinbach</u> , Nannan Zhang, Haijie Zhang, Menghuai Wu 1. Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt (DLR), 51170 Köln, Germany 2. Chair for Simulation and Modeling of Metallurgy Processes, Department of Metallurgy, University of Leoben, 8700 Leoben, Austria

T4		Wednesday June 22 (10:30 – 12:30) Chair: Amber Genau
372122 10:30	20'	Solidification microstructure control of Al-7Si-0.3Mg based alloys for improving dynamic fatigue properties and fracture toughness Jiehua Li ¹ , Xun Zhang ^{1,2} , Ivo Spacil ¹ , Bernd Oberdorfer ³ , Wanqi Jie ² , Peter Schumacher ^{1,3} , <u>Ernst Neunteufl</u> <i>1. Institute of Casting Research, Montanuniversität Leoben, A-8700, Leoben, Austria</i> <i>2. State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, No.127 Youyi Western Road, Xi'an 710072, PR China</i> <i>3. Austrian Foundry Research Institute, Leoben, A-8700, Austria</i>
376206 10:50	20'	Microstructural study of containerless solidification of Al-Ce alloys Jonas Valloton ¹ , Sven Vogel ² , <u>Hani Henein</u> ¹ <i>1. Advanced Materials and Processing Laboratory, University of Alberta, Edmonton, Canada</i> <i>2. Los Alamos National Laboratory, Los Alamos, United States of America</i>
378384 11:10	20'	Microstructural Characterization and Mechanical Properties Investigation of NEMALLOY HE700 alloy <u>Talha Aziz</u> ¹ , André Phillion ¹ , Sumanth Shankar ² , Kumar Sadayappan ³ <i>1. Department of Materials Science and Engineering, McMaster University, Hamilton, ON, Canada</i> <i>2. Department of Mechanical Engineering, McMaster University, Hamilton, ON, Canada</i> <i>3. CanmetMATERIALS, Hamilton, ON, Canada</i>
377607 11:30	20'	Controlled solidification of second phase particles (SPPs) through SDAS refinement by minor element addition in Al-alloys <u>K. M. Sree Manu</u> , J. B. Patel, Z. Fan <i>BCAST, Brunel University London, Uxbridge, United Kingdom</i>
375652 11:50	20'	Solidification of Al-Mn-based alloys under various processing parameters Boštjan Markoli, Blaž Leskovar, <u>Adam Zaky</u> , Iztok Naglič <i>University of Ljubljana, Ljubljana, Slovenia</i>
382742 12:10	20'	Effect of Ti and Si on the formation and microsegregation of Al3Zr-D023 intermetallics of model Al-Zr hyperperitectic alloys <u>Georges Salloum-Abou-Jaoude</u> , Juan-Ricardo Castillo-Sánchez, Aimen Gheribi, Jean-Philippe Harvey <i>1. Constellium C-TEC Technology center C-TEC, Parc Economique Centr'alp, Voreppe, France</i> <i>2. Centre for Research in Computational Thermochemistry (CRCT), Department of Chemical Engineering, Polytechnique Montréal, University of Montreal Campus, Montreal, Quebec H3T 1J4, Canada</i>

ROOM 2

T5. part 1		Wednesday June 22 (10:30 – 12:30) Chair: Ulrike Hecht
376099 10:30	20'	Modelling of microstructures development in laser powder bed fusion process – Application to IN718 superalloy <u>Théophile Camus</u> ^{1,2} , Oriane Senninger ¹ , Gildas Guillemot ¹ , Daniel Maisonnète ² , Charles-André Gandin ¹ <i>1. Centre de Mise en Forme des Matériaux, Sophia Antipolis, France</i> <i>2. Cetim, Saint-Etienne, France</i>
375926 10:50	20'	Modelling the solidification of pure Ni during additive manufacturing: a Molecular Dynamics study <u>Quentin Bizot</u> ¹ , Olivier Politano ¹ , Vladyslav Turlo ² , Florence Baras ¹ <i>1. Laboratoire Interdisciplinaire Carnot de Bourgogne, CNRS-Université Bourgogne Franche-Comté, Dijon, France</i> <i>2. EMPA, Advanced Materials and Surfaces, Thun, Switzerland</i>
376082 11:10	20'	Multi-layer grain structure predictions for metallic additive manufacturing processes <u>Daniel Dreelan</u> , Alojz Ivankovic, David Browne <i>University College Dublin, Dublin, Ireland</i>
376176 11:30	20'	Influence of nanoparticles on melting and solidification during a Directed Energy Deposition process analysed by simulation <u>Jürgen Jakumeit</u> , Gongyuan Zheng, Romuald Laqua, Pilar Rey, Monica Salgueiro <i>1. Access e.V. Intzestr. 5, 52072 Aachen, Germany</i> <i>2. Technology Centre AIMEN, Relva 27A - O Porriño, Pontevedra, Spain</i>
376114 11:50	20'	Thermo-mechanical modelling of Powder Bed Fusion at Part Scale by a Super-Layer Deposition <u>Yancheng Zhang</u> , Gildas Guillemot, Charles-André Gandin, Michel Bellet <i>Mines Paris Tech, PSL Research University, Centre de Mise en Forme des Matériaux (CEMEF), CNRS, Sophia Antipolis, France</i>
390225 12:10	20'	Oxidation and Reduction behaviour during metal additive manufacturing of AISI316L <u>Jung-Wook Cho</u> ¹ , Do-Rim Eo ² <i>1 Graduate Institute of Ferrous Technology, POSTECH, Pohang, Republic of Korea</i> <i>2 Korea Institute of Industrial Technology (KITECH), Siheung, Republic of Korea</i>

ROOM 2

T5. part 2		Wednesday June 22 (14:00 – 15:30) Chair: David Browne
Keynote 374816 14:00	30'	The Effects of Melt Pool Geometry and Scan Strategy on Microstructure Development During Additive Manufacturing <u>Alexander Chadwick</u> , Peter Voorhees <i>Northwestern University, Evanston, Illinois, USA</i>
377595 14:30	20'	A Phase-Field study of microstructure evolution during rapid solidification of additively manufactured metallic alloys <u>Abdur Rahman Al Azad</u> , Philip Cardiff, David J Browne <i>University College Dublin, Dublin, Ireland</i>

377863 14:50	20'	Microstructural transition and grain selection across the wire/powder interface in hybrid additive manufacturing <u>Ilia Ushakov</u> ¹ , Amal Aaddi ¹ , Jérôme Wursthorn ² , Dominique Daloz ¹ 1. Université de Lorraine, IJL, Nancy, France 2. IREPA LASER, Illkirch, France
378644 15:10	20'	Accelerated Material Development for Laser Powder-Bed Fusion using the Arc Melting process <u>Magnus Reiersen</u> ¹ , Anette Eleonora Gunnaes ¹ , Amin Shahrestani Azar ² , Spyros Diplas ² , Qiang Du ² , Mohammed M'hamdi ² 1. University of Oslo, Oslo, Norway 2. SINTEF, Oslo, Norway
377303 15:30	20'	Effect of cold work on the aging response of the aluminium alloy 2024 deposited by Wire + Arc Additive Manufacturing E. Eimer ¹ , <u>S. Ganguly</u> ¹ , J. Ding ¹ , S. Williams ¹ 1 Cranfield University, School of Aerospace, Transport, and Manufacturing, Welding Engineering and Laser Processing Centre

T6

ORAL SESSION

TOPIC 6: FLOW AND CONVECTION EFFECTS

T6	Wednesday June 22 (10:30 – 12:30) Chair: Miha Založnik	
377539 10:30 Invited	20'	Role of solidifying structures on natural convection in binary and ternary fluids Virkeshwar Kumar ^{1,2} , Atul Srivastava ¹ , <u>Shyamprasad Karagadde</u> ¹ 1. Indian Institute of Technology Bombay, India 2. Indian Institute of Science, Bangalore, India
376089 10:50 *Remote	20'	In-situ experimental investigations of the morphological characteristics of plumes and chimneys formed during the directional solidification of a binary alloy <u>Alok Kumar</u> , Arvind Kumar Department of Mechanical Engineering, Indian Institute of Technology Kanpur, Kanpur, 208016, India.
377124 11:10	20'	Modeling Fluid Flow for Recent Solidification Experiments in Microgravity Electromagnetic Levitation <u>Gwendolyn Bracker</u> , Robert W. Hyers University of Massachusetts, Amherst, United States of America
375810 11:30	20'	Effect of stirring by different types of Traveling Magnetic Field on the grain structure of Al-7wt%Si-1wt%Fe alloy András Roósz, Arnold Rónaföldi, Mária Svéda, <u>Zsolt Veres</u> 1. University of Miskolc, Institute of Physical Metallurgy, Metal Forming and Nanotechnology, Hungary 2. MTA-ME Materials Science Research Group, ELKH, Hungary
375564 11:50	20'	Bubble migration in semi-liquid metallic alloys <u>Thomas Werner</u> , Maike Becker, Xiao Xiao, Jürgen Brillo, Florian Kargl, Christoph Pickmann, Laszlo Sturz 1. Institute of Materials Physics in Space (German Aerospace Center), Cologne, Germany 2. ACCESS e.V., Aachen, German
376773 12:10 Invited	20'	Direct measurement of shrinkage induced flow in Al-Cu and Al-Cu-Fe alloys using in-situ synchrotron X-ray radiography I. Han ¹ , S. Feng ¹ , A. Lui ¹ , F. Wilde ² , P. S. Grant ¹ , <u>E. Liotti</u> ¹ 1. Department of Materials, University of Oxford, Oxford, United Kingdom 2. Helmholtz-Zentrum Hereon, Geesthacht, Germany

T7		Wednesday June 22 (14:00 – 15:50) Chair: Hervé Combeau
Keynote 375613 14:00	30'	Measurement of the Columnar to Equiaxed Transition in Aluminum Alloys Solidified in Terrestrial and Microgravity Environments Thomas Williams, <u>Christoph Beckermann</u> <i>Department of Mechanical Engineering, University of Iowa, Iowa City, USA</i>
375906 14:30	20'	Effect of Solidification rate on the microstructure and transition from columnar to equiaxed <u>A. Abdallah</u> ¹ , A. Roósz ^{1,2} , A. Rónaföldi ^{1,2} , Zs. Veres ^{1,2} <i>1. University of Miskolc, Institute of Material Science, Metal forming and Nanotechnology, Hungary</i> <i>2. MTA-ME Materials Science Research Group, ELKH, Hungary</i>
370295 14:50	20'	A CALPHAD-coupled multi-component columnar to equiaxed grain transition model with an application to additive manufacturing <u>Qiang Du</u> <i>SINTEF Industry, Oslo, Norway</i>
375762 15:10	20'	Equiaxed crystal migration and remelting: an important species/energy transport mechanism in alloy solidification <u>Menghuai Wu</u> , Haijie Zhang, Z. Zhang, Ch. Gomes Rodrigues, Andreas Ludwig, Abdellah Kharicha <i>Chair for Simulation and Modelling of Metallurgical Processes, Dept. of Metallurgy, University of Leoben, Leoben, Austria</i>
375680 15:30 <i>Invited</i>	20'	Influence of the bulk melt superheat on fragment survival and CET during dendritic alloy solidification Christian M. G. Rodrigues ¹ , Menghuai Wu ¹ , <u>Haijie Zhang</u> ¹ , Andreas Ludwig ¹ , Abdellah Kharicha ^{1,2} <i>1. Chair of simulation and modeling metallurgical processes, Metallurgy Department, Montanuniversitaet of Leoben, Leoben, Austria</i> <i>2. Christian-Doppler Laboratory for Metallurgical Application of Magnetohydrodynamics, Montanuniversitaet of Leoben, Leoben, Austria</i>

ROOM 1

T8. part 1		Wednesday June 22 (14:00 – 15:50) Chair: Damien Tournet
Keynote 377045 14:00	30'	Geometry of the triple junction during grain boundary premelting <u>Guillaume Boussinot</u> , Mahdi Torabi Rad, Markus Apel <i>Access e.V., Aachen, Germany</i>
375911 14:30	20'	A Phase field methodology for simulating the alloying of blended elemental powders during laser powder bed fusion <u>Zhen Li</u> ¹ , Michael Greenwood ^{1,2} , André Phillion ¹ <i>1 Department of Materials Science and Engineering, McMaster University, Hamilton, ON, Canada</i> <i>2 Natural Resources Canada, CanmetMATERIALS, Hamilton, ON, Canada</i>
377649 14:50	20'	Through process modelling for solidification, deformation and recrystallization of FeMnNi Complex Concentrated Alloy <u>Saumya Jha</u> , Pratik Pradhan, Krishanu Biswas, Nilesh Gurao <i>Indian Institute of Technology Kanpur, India</i>
375752 15:10	20'	2D multi-phase-field lattice Boltzmann simulations of semi-solid shear deformation Namito Yamanaka, Shinji Sakane, <u>Tomohiro Takaki</u> <i>Kyoto Institute of Technology, Kyoto, Japan</i>
375407 15:30	20'	Computer vision neural networks trained using phase field results for equiaxed dendrite tracking in experiments <u>Alexandre Viardin</u> , Killian Nöth, Laszlo Sturz <i>Access e.V., Aachen, Germany</i>

ROOM 1

T8. part 2		Thursday June 23 (10:30 – 12:30) Chair: Tomohiro Takaki
377671 10:30 <i>Invited</i>	20'	Phase-field modeling of mobile particles in melt flow <u>László Rátkai</u> ¹ , Tamás Pusztai ¹ , László Gránásy ^{1,2} <i>1. Wigner Research Centre for Physics, Budapest, Hungary</i> <i>2. BCAST, Brunel University, Uxbridge, United Kingdom</i>
377593 10:50	20'	Development of adaptive-meshless solution procedure for the phase-field modelling of dendritic solidification with melt convection <u>Tadej Dobravec</u> , Boštjan Mavrič, Božidar Šarler <i>1. Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia</i> <i>2. Division of Scientific Computing, Department of Information Technology, Uppsala University, Uppsala, Sweden</i> <i>3. Institute of Metals and Technology, Ljubljana, Slovenia</i>
375528 11:10	20'	Directional solidification of photovoltaic silicon studied by phase-field model <u>Terkia Braik</u> , Jean-Marc Debierre <i>Aix Marseille University, IM2NP, Marseille, France</i>
375724 11:30	20'	Diffuse modelling of interdendritic eutectic regions in multicomponent multi-phase-field simulations <u>Janin Eiken</u> , Bernd Boettger <i>Access e.V., Aachen, Germany</i>
375937 11:50	20'	A pseudo-sharp interface methodology to simulate microstructure evolution during solidification G. S. Abhishek, <u>Shyamprasad Karagadde</u> <i>Indian Institute of Technology Bombay, Mumbai, India</i>

377575 12:10	20'	Modelling microstructure evolution influenced by concurrent structural mechanics Peter Soar, <u>Andrew Kao</u> , Georgi Djambazov, Koulis Pericleous <i>University of Greenwich, United Kingdom</i>
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T8. part 3	Thursday June 23 (14:00 – 15:50) Chair: Janin Eiken	
ROOM 1	Keynote 376782 14:00	30' Fluid flow and dendritic growth during directional solidification – Multiscale simulations with experimental comparisons <u>Damien Tournet</u> ¹ , Thomas Isensee ^{1,2} <i>1. IMDEA Materials Institute, Getafe, Madrid, Spain</i> <i>2. Universidad Politecnica de Madrid, Madrid, Spain</i>
	374658 14:30	20' Simulation of dendritic grain structures with a Cellular Automaton – Parabolic Thick Needle model <u>Yijian Wu</u> , Oriane Senninger, Charles-André Gandin <i>MINES ParisTech, PSL University, Centre for material forming (CEMEF), CNRS, Sophia Antipolis, France</i>
	377537 14:50	20' Benchmark simulations of multiscale models for dendritic growth in alloys under isothermal and directional conditions <u>Thomas Isensee</u> ^{1,2} , Alexandre Viardin ³ , Laszlo Sturz ³ , Miha Založnik ⁴ , <u>Damien Tournet</u> ¹ <i>1. IMDEA Materials Institute, Getafe, Madrid, Spain</i> <i>2. Universidad Politécnica de Madrid, E.T.S. de Ingenieros de Caminos, Madrid, Spain</i> <i>3. Access e.V., Aachen, Germany</i> <i>4. Université de Lorraine, CNRS, IJL, Nancy, France</i>
	377643 15:10	20' A sharp-interface mesoscopic model for dendritic growth <u>Mitja Jančič</u> ¹ , Gregor Kosec ¹ , Miha Založnik ² <i>1. Institut Jožef Stefan, Ljubljana, Slovenia</i> <i>2. Université de Lorraine, CNRS, IJL, Nancy, France</i>
	376847 15:30	20' Kinetics of dendrites – Coupling with CALPHAD calculations Gildas Guillemot ¹ , Oriane Senninger ¹ , Chris A. Hareland ² , Peter W. Voorhees ² , <u>Charles-André Gandin</u> ¹ <i>1. MINES ParisTech, PSL University, CEMEF, CNRS, Sophia Antipolis, France</i> <i>2. Department of Materials Science and Engineering, Northwestern University, 2220 Campus Drive, Evanston, IL 60208, United States of America</i>

MEMORIAL SESSION IN HONOR OF GABRIEL FAIVRE		
T9. part 1	Thursday June 23 (10:30 – 12:30) Chair: Alain Karma	
375971 10:30 <i>Invited</i>	20'	A brief account of Gabriel Faivre's research on the dynamics of eutectic solidification patterns <u>Silvère Akamatsu</u> <i>Institut des Nanosciences de Paris, Sorbonne Université, CNRS, Paris, France</i>
375708 10:50	20'	Lamellar eutectic grain growth in directionally solidified Al-Al₂Cu alloys in thin samples Mehdi Medjkoune, <u>Sabine Bottin-Rousseau</u> , Silvère Akamatsu <i>Institut des Nanosciences de Paris, Sorbonne Université, CNRS, Paris, France</i>
376035 11:10	20'	Triple line dynamics in eutectic solidification patterns: insights from phase-field simulations <u>Mathis Plapp</u> ¹ , Silvère Akamatsu ² , Sabine Bottin-Rousseau ² 1. <i>Laboratoire PMC, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, Palaiseau, France</i> 2. <i>Institut des Nanosciences de Paris, Sorbonne Université, CNRS UMR 7588, 4 place Jussieu, Paris, France</i>
375875 11:30	20'	The role of the interphase boundary anisotropy on the microstructure selection in a three-phase eutectic system Samira Mohagheghi ¹ , <u>Melis Serefoğlu</u> ² 1. <i>Istinye University, Istanbul, Turkey</i> 2. <i>Marmara University, Istanbul, Turkey</i>
376835 11:50	20'	Modeling of eutectic growth kinetics with thermodynamic couplings for multicomponent alloys <u>Oriane Senninger</u> , Houssam Bakkis, Charles-André Gandin <i>Centre de Mise en Forme des Matériaux, Sophia Antipolis, France</i>
375693 12:10	20'	On the role of interfacial segregation on graphite shape in cast irons <u>Jacques Lacaze</u> <i>CIRIMAT, Université de Toulouse, Toulouse, France</i>

MEMORIAL SESSION IN HONOR OF GABRIEL FAIVRE		
T9. part 2	Thursday June 23 (14:00 – 15:50) Chair: Silvère Akamatsu	
Keynote 378520 14:00	30'	Formation of self-organized bi-continuous two-phase structures during peritectic melting Mingwang Zhong, Longhai Lai, <u>Alain Karma</u> <i>Physics Department, Northeastern University, Boston, United States of America</i>
376149 14:30	20'	Directional solidification of Al-Al₂Cu eutectics: results from the SETA microgravity experiments <u>Ulrike Hecht</u> ¹ , Susanne Hemes ¹ , Silvere Akamatsu ² , Sabine Bottin-Rousseau ² , Hammel Jörg Ulrich ³ 1. <i>Access e.V., Aachen, Germany</i> 2. <i>Institut des NanoSciences de Paris, Sorbonne Université, Paris, France</i> 3. <i>Institute of Materials Physics, Helmholtz-Zentrum Hereon (DESY), Hamburg, Germany</i>
412243 14:50	20'	Lateral resolution in EDS/WDS microanalysis <u>Mikael Perrut</u> , Denis Boivin, Raphaël Arquier <i>DMAS, ONERA, Université Paris-Saclay, Châtillon, France</i>

ROOM 2

377055 15:10	20'	LPBF solidification in near-eutectic Al-Ni <u>Guillaume Boussinot</u> ¹ , Markus Döring ² , Michael Schmidt ² , Markus Apel ¹ 1. Access e.V, Aachen, Germany 2. LPT, University Erlangen-Nürnberg, Germany
376159 15:30	20'	Phase-field modelling of directional melting of lamellar and rod eutectic structures <u>Tamás Pusztai</u> ¹ , László Rátkai ¹ , Levente Horváth ^{1,2} , László Gránásy ¹ 1. Wigner Research Centre for Physics, Budapest, Hungary 2. Budapest University of Technology and Economics, Budapest, Hungary

ROOM 2

T9. part 3		Thursday June 23 (16:30 – 17:30) Chair: Ulrike Hecht
377639 16:30 <i>Invited</i>	20'	Pseudo-4D view of the growth and form of 'locked' eutectic colonies Paul Chao ¹ , George Lindemann ¹ , <u>Ashwin Shahani</u> ^{1,2} 1. Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI, United States of America 2. Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, United States of America
376028 16:50	20'	Observation of peritectic couple growth under microgravity condition <u>Andreas Ludwig</u> , Johann Mogeritsch <i>Department Metallurgy, Montanuniversitaet Leoben, Leoben, Austria</i>
376130 17:10	20'	The effect of Sr modification on the eutectic structure of AlSi7Mg alloys at different purity levels <u>Ozen Gursoy</u> , Giulio Timelli <i>Department of Management and Engineering, University of Padova, Vicenza, Italy</i>

AMPHITHEATER

T9. part 4		Friday June 24 (10:30 – 12:30) Chair: Sabine Bottin-Rousseau
377679 10:30 <i>Invited</i>	20'	In situ solidification of eutectic Al-33wt%Cu droplets Jonas Valloton ¹ , Najia Mahdi ² , Loraine Rabago ¹ , Jason Chung ¹ , <u>Hani Henein</u> ¹ 1. Advanced Materials and Processing Laboratory, University of Alberta, Edmonton, Canada 2. Norcada inc., Edmonton, Canada
377596 10:50	20'	Microstructure and hardness of an Al-8wt.%Si-2.5wt.%Bi alloy subjected to three different solidification techniques Jose Marcelino da Silva Dias Filho ¹ , Abdoul-Aziz Bogno ² , José Eduardo Spinelli ³ , Ricardo Oliveira ¹ , Noe Cheung ¹ , Amauri Garcia ¹ , <u>Hani Henein</u> ⁴ 1. University of Campinas, Campinas, São Paulo, Brazil 2. formerly with University of Alberta, Alberta, Canada 3. Federal University of São Carlos, São Carlos, São Paulo, Brazil 4. University of Alberta, Alberta, Canada
377543 11:10 <i>*Remote</i>	20'	Microstructure evolution induced by the solidification and the ferrite - austenite massive-like in Fe-C and Fe-Cr-Ni alloys <u>Hideyuki Yasuda</u> , Taka Narumi, Ryoji Katsube, Yukihiro Nanri, Sota Tsuji <i>Department of Materials Science and Engineering, Kyoto University, Kyoto, Japan</i>
375807 11:30	20'	Microstructure Evolution in Al-Cu-Mg Ternary Eutectic <u>Amber Genau</u> , Dominic Ezemenaka <i>Materials Science and Engineering Department, University of Alabama at Birmingham, Birmingham, Alabama, USA</i>
375834 11:50	20'	In-situ investigation of the solidification dynamics in an irregular eutectic alloy <u>Samira Mohagheghi</u> ¹ , Sabine Bottin-Rousseau ² , Silvère Akamatsu ² , Melis Serefoglu ³ 1. Istinye University, Department of Mechanical Engineering, Istanbul, Turkey 2. Sorbonne Université, CNRS UMR 7588, Institut des NanoSciences de Paris, Paris, France 3. Marmara University, Department of Metallurgical and Materials Engineering, Istanbul, Turkey

377418 12:10	20'	<p>Lamellar-to-rod transition and vice versa during eutectic growth <u>S. Akamatsu</u>¹, S. Bottin-Rousseau¹, Melis Şerefoğlu², Victor Witusiewicz³, Ulrike Hecht³</p> <p>1. Institut des Nanosciences de Paris, Sorbonne Université, CNRS UMR 7588, 4 place Jussieu, 75005 Paris, France 2. Department of Metallurgical and Materials Engineering, Marmara University, Maltepe, İstanbul, Turkey 3. ACCESS e. V., Intzestrassse 5, D-52072 Aachen, Germany</p>
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T10

ORAL SESSION

TOPIC 10: EXPERIMENTAL AND CHARACTERIZATION METHODS

T10	Thursday June 23 (10:30 – 12:10) Chair: Jean-Philippe Tinnes	
375677 10:30 Invited	20'	<p>X-ray tomoscopy of dendrite morphology and growth in solidifying aluminum alloys <u>Mareike Wegener</u>, Paul H. Kamm, Tillmann R. Neu, Christian Schleputz, Francisco García-Moreno, John Banhart</p> <p>1. Technische Universität Berlin, Institute of Materials Science and Technology, Berlin, Germany 2. Helmholtz-Zentrum für Materialien und Energie GmbH, Institute of Applied Materials, Berlin, Germany 3. Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland</p>
375941 10:50 *Remote	20'	<p>Observation of grain motion during semisolid deformation by using 4D-CT and 3DXRD <u>Taka Narumi</u>, Koki Ohta, Makoto Ohta, Taisuke Numata, Kentaro Asahi, Ryoji Katsube, Hideyuki Yasuda</p> <p>Materials Science and Engineering, Kyoto University, Kyoto, Japan</p>
375769 11:10	20'	<p>Investigation of Al-20Sn-10Cu alloy directional solidification by laboratory X-radiography <u>Guillaume Reinhart</u>, Fabiola Ngomessse, Felipe Bertelli, Pierre Benigni, Andréa Campos, Nguyen-Thi Henri</p> <p>1. Aix-Marseille Univ, Université de Toulon, CNRS, IM2NP, Marseille, France 2. Sea Science Department, Federal University of São Paulo – UNIFESP, Santos, SP, Brazil 3. Aix Marseille Univ, CNRS, Centrale Marseille, FSCM (FR1739), CP2M, Marseille, France</p>
377660 11:50	20'	<p>In operando study of the dynamics of multiphase evolution during solidification by synchrotron X-ray and machine learning <u>Jiawei Mi</u></p> <p>Department of Engineering, University of Hull, East Yorkshire HU6 7RX, United Kingdom</p>

T11. Part 1		Thursday June 23 (14:00 – 15:50) Chair: Andreas Ludwig
Keynote 378457 14:00	30'	Multiphysics and multiscale modeling for the prediction of structures and macrosegregations in steel ingots <u>Hervé Combeau</u> <i>Université de Lorraine, Institut Jean Lamour, Nancy, France</i>
416353 14:30 *Remote	20'	Multiscale simulation of channel segregation in directional solidification of nickel-based superalloys <u>Neng Ren</u> ^{1,2} , Jun Li ¹ , C. Panwisawas ² , M. Xia ¹ , Hongbiao Dong ² , Jianguo Li ¹ <i>1. Shanghai Jiao Tong University, Shanghai, China</i> <i>2. University of Leicester, Leicester, United Kingdom</i>
376189 14:50	20'	CFD study on the relation between plume formation and presence of freckle defects in single crystal superalloy castings <u>Joshua Allen</u> ¹ , Nick R Green ² , Nils Warnken ¹ <i>1. School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom</i> <i>2. HTRC, University of Birmingham, Birmingham, United Kingdom</i>
377521 15:10	20'	Simulation of macrosegregation in direct chill cast aluminium billets by considering the solid motion <u>Viktor Govže</u> ¹ , Katarina Mramor ² , Božidar Šarler ^{1,2} <i>1. Institute of Metals and Technology, Ljubljana, Slovenia</i> <i>2. Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia</i>
377540 15:30	20'	Simulation of macrosegregation in continuous casting of steel based on large-eddy turbulence model and meshless solution procedure <u>Katarina Mramor</u> ¹ , Robert Vertnik ¹ , Božidar Šarler ^{1,2} <i>1. Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia</i> <i>2. Institute of Metals and Technology, Ljubljana, Slovenia</i>

T11. Part 2		Thursday June 23 (16:30 – 17:50) Chair: Menghuai Wu
376804 16:50	20'	3D Characterisation of mesosegregation in large steel ingots <u>Lucie Gutman</u> ^{1,2} , Julien Zollinger ¹ , Miha Založnik ¹ , Jacob Kennedy ¹ , François Roch ² , Jean Cauzid ³ , Hervé Combeau ¹ , Bernard Rouat ¹ <i>1. Université de Lorraine, CNRS, IJL, Nancy, France</i> <i>2. Framatome DTI, Courbevoie, France</i> <i>3. Université de Lorraine, CNRS, GeoRessources, Nancy, France</i>
376191 17:10	20'	Comparative Analysis of Centerline Macroseggregation in Continuous Casting of Advanced High Strength Steels (AHSSs) <u>Araf Al Rafi</u> , Begoña Santillana, Renfei Feng, Brian Thomas, André Phillion <i>1. McMaster University, Hamilton, Canada</i> <i>2. Tata Steel Europe, IJmuiden, The Netherlands</i> <i>3. Canadian Light Source, Saskatoon, Canada</i> <i>4. Colorado School of Mines, Colorado, United States of America</i>
377340 17:30	20'	Macroseggregation maps in industrial continuous casting low alloyed steel ingots <u>Marvin Gennesson</u> , Sébastien Evrard, Yassine Amhoud <i>1. Ascométal CREAS, Hagondange, France</i> <i>2. Master of advanced metallurgy, Nancy, France</i>

T12		Thursday June 23 (16:30 – 17:50) Chair: Hani Henein
375800 16:30	20'	Analysis of rapid solidification data using kinetic phase field model <u>Peter Galenko</u> <i>Friedrich Schiller University, Jena, Germany</i>
375995 16:50	20'	Anomalies in the crystal growth velocities of intermetallic alloys at the hypercooling limit <u>Matthias Kolbe</u> ¹ , Patrick Fopp ¹ , Florian Kargl ^{1,2} , Raphael Kobold ^{1,3} , Wolfgang Hornfeck ⁴ <i>1. Institut für Materialphysik im Weltraum, DLR, Köln, Germany</i> <i>2. Foundry Institute, Faculty of Georesources and Materials Engineering, RWTH Aachen University, Aachen, Germany</i> <i>3. Programmatik Raumfahrtforschung und -technologie, DLR, Köln, Germany</i> <i>4. Institute of Physics of the Academy of Sciences of the Czech Republic, Prague, Czech Republic</i>
375829 17:10	20'	Theoretical modelling and experimental investigation of crystalline microstructure in rapidly solidifying Inconel 718 <u>Nikolai Kropotin</u> ¹ , Yindong Fang ¹ , Martin Seyring ¹ , Stephanie Lippmann ¹ , Katharina Freiberg ¹ , Markus Rettenmayr ¹ , Matthias Kolbe ² , Tatu Pinomaa ³ , Nikolas Provatas ⁴ , Peter Galenko ¹ <i>1. Otto Schott Institute of Materials Research, Friedrich Schiller University Jena, Jena, Germany</i> <i>2. Institute of Materials Physics in Space, German Aerospace Center, Cologne, Germany</i> <i>3. VTT Technical Research Centre of Finland Ltd, Espoo, Finland,</i> <i>4. Department of Physics and Centre for the Physics of Materials, McGill University, Montreal, Canada</i>
375975 17:30	20'	Formation and transformation of the metastable bcc phase in undercooled Fe-Co alloy melts <u>Thomas Volkmann</u> , Carolina Kreisler <i>Institute of Materials Physics in Space, German Aerospace Center (DLR), Cologne, Germany</i>

T13		Friday June 24 (10:30 – 11:30) Chair: Jacob Kennedy
376811 10:30	20'	Rapid solidification during welding of duplex stainless steels – in situ measurement of the chemical Concentration by Laser-Induced Breakdown Spectroscopy (LIBS) <u>Lukas Quackatz</u> ¹ , Axel Griesche ¹ , Thomas Kannengiesser ^{1,2} <i>1. Federal Institute for Materials Research and Testing (BAM), Berlin, Germany</i> <i>2 Otto-von-Guericke-Universität, Magdeburg, Germany</i>
375990 10:50	20'	Effects of melt pool flow on porosity levels in arc welding Fan Wu ¹ , Ken Vidar Falch ¹ , Micheal Drakopoulos ² , <u>Wajira Mirihanage</u> ¹ <i>1. The University of Manchester, Manchester, United Kingdom</i> <i>2. Diamond Light Source, Didcot, United Kingdom</i>
377614 11:10	20'	Effect of laser scanning velocity on the microstructural changes and mechanical properties of the H13 steel part treated by laser surface remelting <u>Jichang Xie</u> ¹ , Ruifeng Di ² , Jishuai Li ³ , Yanan Liu ⁴ , Rija Nirina Raelisone ⁵ , Mohamed Rachik ¹ <i>1. Laboratoire Roberval, FRE UTC-CNRS 2012, Sorbonne universités, Université de Technologie de Compiègne, Centre de recherche Royallieu, Compiègne, France</i> <i>2. LaserTechnology Institute, Tiangong University, Tianjin 300387, China</i> <i>3. UCLouvain, Institute of Mechanics, Materials and Civil Engineering, IMAP, Louvain-la-Neuve, Belgium</i> <i>4. School of Mechatronics Engineering, Harbin Institute of Technology, Heilongjiang, Harbin, China</i> <i>5 Université de Bourgogne Franche-Comté – UTBM, Laboratoire Interdisciplinaire Carnot de Bourgogne, CNRS, Belfort, France</i>

POSTERS THEME 1	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) NUCLEATION AND GRAIN REFINEMENT	
377586		Heterogeneous Nucleation Mechanisms in Systems with Large Lattice Misfit Hua Men, Zhongyun Fan <i>BCAST, Brunel University London, Uxbridge, Middlesex, UB83PH, United Kingdom</i>
377611		Regulating interface for nucleation Hui Wang, Long Zeng, Mingxu Xia, Jianguo Li <i>School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, China</i>
376740		Effects of trace elements in 6XXX alloys during rapid solidification Victor Moudin ¹ , Julien Zollinger ¹ , Philippe Jarry ² , Jean-Philippe Tinnes ¹ <i>1. Institut Jean Lamour, Nancy, France</i> <i>2. C-TEC Constellium, Voreppe, France</i>

POSTERS THEME 2	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) CASTING	
376120		Effect of macro heat transfer on thermal analysis for foundry-process control Eduardo Estrada-Guzmán, Manuel De J. Castro Román, Andrés Acosta-González, Raymundo Del Campo-Castro, Martín Herrera-Trejo <i>Cinvestav Unidad Saltillo, Ramos Arizpe, Coahuila, Mexico</i>
376795		A Novel Method to Homogenise By Using High-Temperature Thermal-Cycling and Ce - 5wt% La as a Surrogate Material Dr. Vijay Varsani and Mr. James Lennard <i>AWE, Aldermaston, Reading, RG7 4PR, United Kingdom</i>

POSTERS THEME 3	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) DENDRITES	
375827		Effect of the shape of cooling curve on the secondary dendrite arm spacing Mária Svéda ² , Ferenc Tranta ¹ , Zsolt Veres ¹ , András Roósz ^{1,2} <i>1. University of Miskolc, Institute of Physical Metallurgy, Metal Forming and Nanotechnology, Hungary</i> <i>2. MTA-ME Materials Science Research Group, ELKH, Hungary</i>

POSTERS THEME 4	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) ALLOYS, THEIR MICROSTRUCTURES AND PROPERTIES	
376182		Effects of Zinc Additions and Natural Aging on the Microstructure and Mechanical Properties of AlSi7Cu2 alloys Giulia Scampone, Ozen Gursoy, Simone Brutti, Giulio Timelli <i>University of Padova, Department of Management and Engineering, Vicenza, Italy</i>

377519	High-Order Multicomponent Alloys Ewan Lordan ¹ , Isaac Chang ¹ , Feng Gao ¹ , Brian Cantor ^{1,2} , Zhongyun Fan ¹ <i>1. Brunel Centre for Advanced Solidification Technology (BCAST), London, UK</i> <i>2. Department of Materials, University of Oxford, Oxford, UK</i>
380461	Solidification microstructure and mechanical behavior of iron-manganese-aluminum-nickel high entropy alloy Abdelrhman Hassan ¹ , Taha Mattar ² , Mohamed Kamal ³ <i>1. Lecturer, Tabbin Institute for Metallurgical Studies (TIMS), Cairo, Egypt</i> <i>2. Professor, Tabbin Institute for Metallurgical Studies (TIMS), Cairo, Egypt</i> <i>3. Assistant Professor, CMRDI, Cairo, Egypt</i>

POSTERS THEME 5	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) ADDITIVE MANUFACTURING
376168	Investigation of the controlled remelting on the melt pool morphology and the dendritic microstructure in laser directed energy deposition of Inconel-625 Akash Aggarwal, Arvind Kumar <i>Department of Mechanical Engineering, Indian Institute of Technology Kanpur, Kanpur, India</i>
377949	Modeling and Simulation of a Laser Metal Deposition process at a mesoscopic scale Ghassen Dali ¹ , Mohamed Rachik ¹ , Jérôme Favergeon ¹ , Sadok Gaied ² <i>1. Laboratoire Roberval, Compiègne, France</i> <i>2. ArcelorMittal Global R&D Montataire, F-60160 Montataire, France</i>

POSTERS THEME 8	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) MODELING METHODS
375747	Effective evaluation of permeability for interdendritic fluid flow using adaptive mesh refinement: Phase-field lattice Boltzmann study Yasumasa Mitsuyama, Shinji Sakane, Tomohiro Takaki <i>1. Kyoto Institute of Technology, Kyoto, Japan</i>
376971	Preliminary system of data assimilation to infer material parameters from directional solidification experiments: twin experimental study using phase-field method Yuki Imai ¹ , Shinji Sakane ¹ , Munekazu Ohno ² , Hideyuki Yasuda ³ , Tomohiro Takaki ¹ <i>1 Kyoto Institute of Technology, Kyoto, Japan</i> <i>2 Hokkaido University, Sapporo, Japan</i> <i>3 Kyoto University, Kyoto, Japan</i>
377634	Modeling equiaxed grain interactions during growth <u>Abdelhalim Chirouf</u> ^{1,2} , Benoît Appolaire ¹ , Alphonse Finel ² , Yann Le Bouar ² , Miha Založnik ¹ <i>1. Université de Lorraine, CNRS, IJL, F-54000 Nancy, France</i> <i>2. Université Paris-Saclay, ONERA, CNRS, LEM, F-92322 Châtillon, France</i>

POSTERS THEME 9	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) EUTECTIC GROWTH, PERITECTIC GROWTH	
375905		<p>Changes in microstructure of Al-Si eutectic alloy under the effect of forced melt flow by RMF</p> <p>Kassab Al-Omari¹, Amold Ronaföldi^{1,2}, András Roosz^{1,2}, Zsolt Veres¹</p> <p>1. University of Miskolc, Institute of Physical Metallurgy, Metal forming & Nanotechnology, Hungary</p> <p>2. MTA-ME Materials Science Research Group, ELKH, Hungary</p>
375871		<p>Effect of Rotational Magnetic Field on the macrostructure of unidirectional solidified Al-Si eutectic</p> <p>Zsolt Veres¹, András Roosz^{1,2}, Amold Rónaföldi^{1,2}, Mária Svéda², Kassab Al-Omari¹</p> <p>1. University of Miskolc, Institute of Physical Metallurgy, Metal forming & Nanotechnology, Hungary</p> <p>2. MTA-ME Materials Science Research Group, ELKH, Hungary</p>
375767		<p>Data assimilation for dendritic solidification with melt convection: Phase-field lattice Boltzmann study</p> <p>Ayano Yamamura¹, Shinji Sakane¹, Munekazu Ohno², Hideyuki Yasuda³, Tomohiro Takaki¹</p> <p>1. Kyoto Institute of Technology, Kyoto, Japan</p> <p>2. Hokkaido University, Hokkaido, Japan</p> <p>3. Kyoto University, Kyoto, Japan</p>
375814		<p>The effect of front velocity and the RMF stirring on the grain and microstructure of unidirectional solidified Al-7wt%Si-1wt%Fe alloy</p> <p>A. Rónaföldi¹, A. Roósz^{1,2}, Zs. Veres¹, M. Svéda²</p> <p>1. University of Miskolc, Institute of Physical Metallurgy, Metal Forming and Nanotechnology, Hungary</p> <p>2. MTA-ME Materials Science Research Group, ELKH, Hungary</p>
411601		<p>Numerical simulation of Gobin - Le Quéré melting benchmark by using the meshless smooth particle hydrodynamics method</p> <p>Mohsen Abdolazadeh¹, Božidar Šarler^{1,2}, Ali Tayebi³</p> <p>1. Faculty of Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia</p> <p>2. Institute of Metals and Technology, Ljubljana, Slovenia</p> <p>3. Department of Mechanical Engineering, Yasouj University, Iran</p>

POSTERS THEME 10	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) EXPERIMENTAL AND CHARACTERIZATION METHODS	
377165		<p>On/Off directional solidification with a planar but tilted solid/liquid interface under microgravity condition</p> <p>Andreas Ludwig¹, Johann Mogeritsch¹, Markus Rettenmayr²</p> <p>1. Department Metallurgy, University of Leoben, Austria</p> <p>2. Chair of Metallic Materials, Friedrich-Schiller-University Jena, Germany</p>

POSTERS THEME 11	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) MACROSEGREGATION	
376083		<p>Numerical Simulations of Solidification of Alloys in Ultrasonic Field</p> <p>Jigar Desai, Atul Sharma, Shyamprasad Karagadde</p> <p>Indian Institute of Technology Bombay, India</p>
375428		<p>Development of a 2D Macro-segregation model</p> <p>Begona Santillana¹, Kateryna Hechu¹, Malek Al-Ameri², Esa Vuorinen²</p> <p>1. Tata Steel R&D, The Netherlands</p> <p>2. University of Luleå, Sweden</p>

379527	<p>Multiscale numerical approach for predicting channel segregates Julien Banos^{1,2}, Thibault Quatravaux¹, Alain Jardy¹, Yvon Millet² 1. Institut Jean Lamour, Nancy, France 2. Timet Savoie, Ugine, France</p>
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POSTERS THEME 12	Tuesday June 21 & Thursday June 23 (18:00 – 19:00) RAPID SOLIDIFICATION
375831	<p>Directional Solidification of Commercial 1050 Aluminum Alloys Arash Kazazi¹, Onur Meydanoglu², Cemil Işıksaçan², Hatice Mollaoğlu Altuner², Melis Şerefoglu³ 1. Koç University, Istanbul, Turkey 2. Assan Alüminyum Sanayi ve Ticaret A.Ş. Istanbul, Turkey 3. Marmara University, Istanbul, Turkey</p>
376134	<p>Understanding from slow to fast solidification of a Ni-modified AlSi10Mg alloys Danusa Araújo de Moura¹, Guilherme Lisboa de Gouveia¹, Gustavo Figueira¹, Piter Gargarella^{1,2}, José Eduardo Spinelli^{1,2} 1. Federal University of São Carlos, Graduate Program in Materials Science and Engineering, São Carlos, SP, Brazil. 2. Department of Materials Engineering, Federal University of São Carlos UFSCar, São Carlos, SP, Brazil.</p>

POSTERS THEME 13	Tuesday June 21 & Thursday June 23 (18:00 PM – 19:00 PM) WELDING, REMELTING, CLADDING
375992	<p>Effect of scanning speed on molten pool's dynamic behavior in hybrid Laser-MIG Welding of Aluminum alloy Xuyang Chen^{1,2}, Feng Lin^{1,2}, Xiuli He³ 1. Department of Mechanical Engineering, Tsinghua University, Beijing, China 2. Biomanufacturing and Rapid Forming Technology Key Laboratory of Beijing, Tsinghua University, Beijing, China 3. Key Laboratory of Mechanics in Advanced Manufacturing, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China</p>
376144	<p>Numerical and experimental studies to characterize the weld width variation for Copper in Gas Tungsten Arc Welding process Jaykishan Chamudiah¹, Ojas Satbhai², Vishvesh Badheka¹ 1. Pandit Deendayal Energy University, Gandhinagar, India 2. Indian Institute of Technology Bombay, Mumbai, India</p>