

# Symposium Program

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**May 11(Wed), 2016 at Xi'an, China:**

9:00-22:00	# Registration:
17:00-22:00	#Get-together Party: Chairs: Attendants: Room: (Note)

**May 12(Thu), 2016 at Xi'an, China:**

**Plenary lectures**

<b>08:00-09:00</b>		<b># Registration:</b>
<b>08:00-08:15</b>		<b># Opening Remarks:</b> <b>Qiang Wang</b> , <i>Northeastern University, China</i> <b>Keiji Nakajima</b> , <i>Royal Institute of Technology (KTH), Sweden</i> <b>Kuaishe Wang</b> , <i>Xi'an University of Architecture Technology, China</i> Room: #3
		<b># Plenary presentation:</b> <b>Chair: Baicheng Liu</b> Room: #3
<b>08:15-08:55</b> <b>Plenary</b>	O-01	Computer Simulation of Casting Defect Formation: Inclusions, Porosity and Distortions <b>Christoph Beckermann*</b> , Seyyed Hojjat Majidi, Vahid Khalajzadeh, Daniel Galles <i>University of Iowa, USA</i>
<b>08:55-9:35</b> <b>Plenary</b>	O-02	Formation Mechanism of Channel Segregation in Solidifying Steels: 3D Microtomography Characterization and Multi-Phase Flow Modeling <b>Dianzhong Li*</b> , Yun Chen, Yanfei Cao <i>Institute of Metal Research, Chinese Academy of Sciences, China</i>
<b>9:35-10:00</b>		<b># Taking photos:</b>

May 12(Thu), 2016 at Xi'an, China:

Parallel sessions

Room	#1	Room	#2
10:00-12:00	<b>Session: Casting Process Modeling and Mechanics of Macro-segregation -1</b>	10:00-11:50	<b>Session: Solidification and Casting under Externally Applied Fields (high magnetic fields, electromagnetic fields, etc.)</b>
<b>Chairs</b>	<b>Charles-André Gandin / Dianzhong Li</b>	<b>Chairs</b>	<b>Eric Beaugnon / Xiaodong Wang</b>
10:00-10:30  <b>KEYNOTE</b>	O-03 Finite Element Modeling of Additive Manufacturing by Selective Laser Melting Qiang Chen, Gildas Guillemot, <b>Charles-André Gandin*</b> , Michel Bellet <i>Mines Paris TechCEMEF, UMR CNRS, France</i>	10:00-10:30  <b>KEYNOTE</b>	O-19 Solidification and Magnetism of Liquid Co Alloys in High Magnetic Field <b>Eric Beaugnon</b> <sup>1,2*</sup> , Jun Wang <sup>3</sup> , Jinshan Li <sup>3</sup> <sup>1</sup> <i>Univ. Grenoble Alps, LNCMI, France</i> <sup>2</sup> <i>CNRS, LNCMI, France</i> <sup>3</sup> <i>Northwestern Polytechnical University, SKLSP, China</i>
10:30-11:00  <b>KEYNOTE</b>	O-04 Discussion on Modeling Capability for Macro-segregation <b>Menghuai Wu*</b> , Abdellah Kharicha, Andreas Ludwig <i>Montanuniversitaet Leoben, Austria</i>	10:30-10:50  <b>INVITED</b>	O-20 Columnar-to-Equiaxed Transition of Metallic Alloys and Alignment of Equiaxed Grains by High Magnetic Field during Directional Solidification <b>Xi Li</b> <sup>1,2*</sup> , Yves Fautrelle <sup>2</sup> , Annie Gagnoud <sup>2</sup> , Zhongming Ren <sup>1</sup> <sup>1</sup> <i>Shanghai University, PR China</i> <sup>2</sup> <i>SIMAP-EPM-GrenobleINP UJF CNRS, France</i>
11:00-11:20	O-05 In-Situ Experimental Study of Core Shooting Process and Multiphase Modeling <b>Changjiang Ni</b> <sup>1*</sup> , Gaochun Lu <sup>2</sup> , Tao Jing <sup>1</sup> , Junjiao Wu <sup>1</sup> <sup>1</sup> <i>Tsinghua University, China</i> <sup>2</sup> <i>Suzhou Mingzhi Technology Co., Ltd., China</i>	10:50-11:10	O-21 3D Simulation of the Continuous Casting of Steel under the Influence of Electromagnetic Stirring <b>Robert Vertnik</b> <sup>1,2*</sup> , Katarina Mramor <sup>3</sup> , Božidar Šarler <sup>1,3</sup> <sup>1</sup> <i>Institute of Metals and Technology, Slovenia</i> <sup>2</sup> <i>Research, Štore Steel, Železarskacesta 3, Slovenia</i>

**Oral Session Details, Thursday May 12, 2016**

					<sup>3</sup> University of Nova Gorica, Slovenia
<b>11:20-11:40</b>	O-06	Application of a Powerful Fluid/Structure Algorithm to Ingot Casting Process <b>Olivier Jaouen*</b> , Ali Saad, Frédéric Costes <i>TRANSVALOR S.A., France</i>	<b>11:10-11:30</b>	O-22	Evolution of the Droplet in ESR Process under a Transverse Static Magnetic Field Huai Wang, <b>Yunbo Zhong*</b> , Qiang Li, Yipeng Fang, Zuosheng Lei <i>Shanghai University, China</i>
			<b>INVITED</b>		
<b>11:40-12:00</b>	O-07	Non-sinusoidal Mould Oscillation Analysis of Continuous Casting Practices through Numerical Modelling <b>Pooria Nazem Jalali</b> <sup>1,2*</sup> , Pavel Ramirez E. Lopez <sup>1</sup> , Christer Nilsson <sup>3</sup> , Pär Jönsson <sup>2</sup> , Sichen Du <sup>2</sup> <sup>1</sup> Swerea MEFOS AB, Sweden <sup>2</sup> KTH University, Sweden <sup>3</sup> SSAB EMEA, Sweden	<b>11:30-11:50</b>	O-23	Numerical Simulation of Flow and Heat Transfer Characteristics in Electromagnetic Stirring Ladle <b>Yang Li*</b> , Anyuan Deng, Huan Li, Weixing Zhou, Engang Wang <i>Northeastern University, China</i>
<b>12:00-13:30</b>		<b># Lunch</b>	<b>12:00-13:30</b>		<b># Lunch</b>
<b>Room</b>	#1		<b>Room</b>	#2	
<b>13:30-15:30</b>	<b># Session: Casting Process Modeling and Mechanics of Macro-segregation -2</b>		<b>13:30-15:40</b>	<b>#Session: Improvement of Ladle and Tundish Metallurgy Modeling -1</b>	
<b>Chairs</b>	<b>Pär G. JÖNSSON / Pavel E. Ramirez Lopez</b>		<b>Chairs</b>	<b>Timo Fabritius / Guangqiang Li</b>	
<b>13:30-14:00</b>	O-08	Study of Hot Tearing and Macro-segregation in Steel through Ingot Punch Pressing Test <b>Michel Bellet</b> <sup>1*</sup> , Takao Koshikawa <sup>1,2</sup> , Charles-André Gandin <sup>1</sup> , Hideaki Yamamura <sup>3</sup> , Manuel Bobadilla <sup>4</sup> <sup>1</sup> PSL Research University, CNRS, France <sup>2</sup> Nippon Steel & Sumitomo Metal Corporation, Japan <sup>3</sup> The Japan Institute of Metals and Materials, Japan	<b>13:30-14:00</b>	O-24	A Mathematical Model of Desulfurization Kinetics for Ultra-Low-Sulfur Steels Refining by Flux Injection during RH Processing Pengju Chen, Chengyi Zhu, <b>Guangqiang Li*</b> , Xiaoyan Luo, Henghui Wang <i>Wuhan University of Science and Technology, China</i>
<b>KEYNOTE</b>			<b>KEYNOTE</b>		

Oral Session Details, Thursday May 12, 2016

		<sup>4</sup> Arcelor MittalMaizières, Research and Development, France			
<b>14:00-14:30</b>  <b>KEYNOTE</b>	O-09	New Gating System Designs to Improve the Initial Filling Conditions during Uphill Casting Hatong Bai <sup>1</sup> , Zhe Tan <sup>1</sup> , Line Hallgren <sup>2</sup> , Shinichiro Yokoya <sup>1</sup> , Mikael Ersson <sup>1</sup> , <b>Pär G. JÖNSSON</b> <sup>1*</sup> <sup>1</sup> Royal Institute of Technology (KTH), Sweden <sup>2</sup> SWEREA-KIMAB, Sweden	<b>14:00-14:20</b>  <b>INVITED</b>	O-25	How to Analyze RTD Curve in the Tundish: Combined Model or Revised Model? <b>Hong Lei</b> * Northeastern University, China
<b>14:30-14:50</b>  <b>INVITED</b>	O-10	Revisiting Key Lubrication Concepts to Understand the Role of Flow, Heat Transfer and Solidification on Defect Formation during Continuous Casting <b>Pavel E. Ramirez Lopez</b> <sup>1*</sup> , Pooria N. Jalali <sup>1</sup> , Ulf Sjöström <sup>1</sup> , Pär Jonsson <sup>2</sup> , Kenneth C. Mills <sup>3</sup> , IL Sohn <sup>4</sup> <sup>1</sup> Swerea MEFOS, Sweden <sup>2</sup> KTH Royal Institute of Technology, Sweden <sup>3</sup> Imperial College London, United Kingdom <sup>4</sup> Yonsei University, South Korea	<b>14:20-14:40</b>	O-26	Inclusion Behavior in the Swirling Flow SEN of a New Tundish during Continuous Casting of Steel <b>Peiyuan Ni</b> *, Lage Tord, Ingemar Jonsson, Mikael Ersson, Pär Göran Jönsson Royal Institute of Technology(KTH), Sweden
<b>14:50-15:10</b>	O-11	Mathematical Model of Slag Layer Fluctuation and Entrainment Behavior in the Slab Continuous Casting Process Based on VOF-LES Simulation <b>Peng Zhao</b> *, Qiang Li, Zongshu Zou Northeastern University, China	<b>14:40-15:00</b>	O-27	Advances in the 3D CFD Modeling and Validation of the LMF System <b>Qing Cao</b> *, April Pitts, Daojie Zhang, Laurentiu Nastac, Robert Williams University of Alabama, USA
<b>15:10-15:30</b>	O-12	Flow Dynamics Analysis of Continuous Casting Processes through Numerical and Physical Modelling <b>Pooria Nazem Jalali</b> <sup>1,2*</sup> , Pavel E.Ramirez Lopez <sup>1</sup> , Henrik	<b>15:00-15:20</b>	O-28	The Model Analysis of Inclusion Moving in the Swirl Flow Zone Sourcing from the Inner-Swirl-Type Turbulence Controller in Tundish <b>Jin Yan</b> *, Ye Chen, Luo Xiao, Yuan Hui

## Oral Session Details, Thursday May 12, 2016

		A.Barestrand <sup>3</sup> , Tobias Forslund <sup>3</sup> , Christer Olofsson <sup>1</sup> , Erik Roos <sup>4</sup> , Pär Jönsson <sup>2</sup> <i><sup>1</sup>Swerea MEFOS AB, Sweden</i> <i><sup>2</sup>KTH University, Sweden</i> <i><sup>3</sup>Luleå Tekniska Universitet, Sweden</i> <i><sup>4</sup>SSAB Special Steels, Sweden</i>			<i>Wuhan University of Science &amp; Technology, China</i>
			<b>15:20-15:40</b>	O-29	Transport and Entrapment of Inclusion Cluster in a Continuous Casting Mold <b>Zhonggiu Liu*</b> , Baokuan Li <i>Northeastern University, China</i>
<b>15:30-15:50</b>		<b># Coffee Break</b>	<b>15:40-15:50</b>		<b># Coffee Break</b>
<b>Room</b>	#1		<b>Room</b>	#2	
<b>15:50-18:00</b>	<b># Session: Casting Process Modeling and Mechanics of Macro-segregation -3</b>		<b>15:50-18:00</b>	<b>#Session: Improvement of Ladle and Tundish Metallurgy Modeling -2</b>	
<b>Chairs</b>	<b>Zhouhua Jiang / Christoph Beckermann</b>		<b>Chairs</b>	<b>Menghuai Wu / Sakhob Khumkoa</b>	
<b>15:50-16:20</b>	O-13	Recent Progress of Mathematical Models during the Electroslag Remelting Process <b>Zhouhua Jiang*</b> , Jia Yu, Fubin Liu, Xun Chen <i>Northeastern University, China</i>	<b>15:50-16:20</b>	O-30	Modelling of Rate Phenomena in the AOD and CAS-OB Processes <b>Timo Fabritius</b> <sup>1*</sup> , Ville-Valtteri Visuri <sup>1</sup> , Mika Järvinen <sup>2</sup> , Petri Sulasalmi <sup>1</sup> , Aki Kärnä <sup>1</sup> <i><sup>1</sup>University of Oulu, Finland</i> <i><sup>2</sup>Aalto University, Finland</i>
<b>KEYNOTE</b>			<b>KEYNOTE</b>		
<b>16:20-16:40</b>	O-14	Study of Macro-segregation and Hot Tearing in Steel Ingots Jingan Yang <sup>1</sup> , Wutao Tu <sup>1</sup> , Yadong Xu <sup>2</sup> , Yongping Hu <sup>2</sup> , Bingwang Lei <sup>2</sup> , Baicheng Liu <sup>1</sup> , <b>Houfa Shen</b> <sup>1*</sup> <i><sup>1</sup>Tsinghua University, China</i>	<b>16:20-16:40</b>	O-31	Study of Solutal Segregation Using a Multiphase, Multiscale Numerical Model <b>Xiaodong Wang</b> <sup>1*</sup> , Yves Fautrelle <sup>2</sup> <i><sup>1</sup>University of Chinese Academy of Sciences, China</i> <i><sup>2</sup>CNRS-SIMAP-EPM PHELMA, France</i>
<b>INVITED</b>			<b>INVITED</b>		

Oral Session Details, Thursday May 12, 2016

		<sup>2</sup> <i>Special Material Institute of Inner Mongolia North Heavy Industries Group Co.Ltd, China</i>			
<b>16:40-17:00</b>	O-15	Determination of Interfacial Heat Transfer Coefficients in a Convex Mould for High Speed Continuous Casting Using an Inverse Analysis <b>Vinicius Karlinski de Barcellos*</b> , Carlos Raimundo Frick Ferreira <i>Federal University of Rio Grande do Sul (UFRGS), Brazil</i>	<b>16:40-17:00</b>	O-32	A CFD Model Study of Macroscopic Transport and Dynamic Removal of Inclusions in Tundishes with Considering of Inclusions Deposition at Steel-Slag Interface <b>Chao Chen</b> <sup>1*</sup> , Peiyuan Ni <sup>2</sup> , Lage T.I. Jonsson <sup>2</sup> , Anders Tilliander <sup>2</sup> , Pär G. Jönsson <sup>2</sup> <sup>1</sup> <i>Taiyuan University of Technology, China</i> <sup>2</sup> <i>Royal Institute of Technology (KTH), Sweden</i>
<b>17:00-17:20</b>  <b>INVITED</b>	O-16	Modeling of Macrosegregation and Microstructure in Electroslag Remelting Processes <b>Baokuan Li*</b> <i>Northeastern University, China</i>	<b>17:00-17:20</b>	O-33	A Viscoplastic Mechanical Model of Low-Frequency Electromagnetic DC Casting of Aluminium by a Local RBF Collocation Method <b>Boštjan Mavrič</b> <sup>1*</sup> , Božidar Šarler <sup>1,2</sup> <sup>1</sup> <i>Institute of Metals and Technology, Slovenia</i> <sup>2</sup> <i>University of Nova Gorica, Slovenia</i>
<b>17:20-17:40</b>	O-17	Mathematical Modeling on Deformation Behavior of Solidified Shell in Continuous Slab Casting with Soft Reduction <b>Changgui Cheng*</b> , Feng Zhang, Yang Li, Ying Chen, Yan Jin, Haibo Sun <i>Wuhan University of Science and Technology, China</i>	<b>17:20-17:40</b>	O-34	Physical Modeling and Numerical Simulation of Electromagnetic Stirring in Slab Continuous Casting Mold <b>Bin Li</b> <sup>1*</sup> , Zuosheng Lei <sup>1</sup> , Jiangmeng Ge <sup>1</sup> , Yunbo Zhong <sup>1</sup> , Zhongming Ren <sup>1</sup> , Yueming Zhou <sup>2</sup> , Cunyou Wu <sup>2</sup> , Xiaoli Jin <sup>2</sup> , Rujun Wei <sup>2</sup> <sup>1</sup> <i>Shanghai University, China</i> <sup>2</sup> <i>Baosteel Central Research Institute, China</i>
<b>17:40-18:00</b>	O-18	Research on Distribution of Soft Reduction Amount to Eliminate Internal Crack of X70 Pipeline Steel in Continuous Casting Slab by Numerical Model	<b>17:40-18:00</b>	O-35	Analysis on Residence Time Distribution Curve of Continuous Casting Tundishes by Combined Model

## Oral Session Details, Thursday May 12, 2016

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		<b>Ke Liu*</b> , Chang Wang, Guoliang Liu, Qisong Sun, Ning Ding <i>Shougang Research Institute of Technology, China</i>			<b>Xiaofeng Su*</b> , Jianhua Liu, Yilong Ji, Heng Cui, Shaobo Shen <i>University of Science and Technology Beijing, China</i>
<b>18:30-20:30</b>		<b># Supper</b>	<b>18:30-20:30</b>		<b># Supper</b>



May 13(Fri), 2016 at Xi'an, China:

Parallel sessions

Room	#1	Room	#2
8:00-9:50	<b>#Session: Solidification and Casting under Externally Applied Fields (high magnetic fields, electromagnetic fields, etc.)</b>	8:00-10:00	<b>#Session: Experimental Techniques for Model Validation</b>
<b>Chairs</b>	<b>Zhongming Ren / Noriyuki Hirota</b>	<b>Chairs</b>	<b>Natalia Shevchenko / Zongshu Zou</b>
8:00-8:30 <b>KEYNOTE</b>	O-36 Effects of Static Magnetic Field on Solidification of Alloys <b>Zhongming Ren</b> <sup>1*</sup> , Xi Li <sup>1</sup> , Chuanjun Li <sup>1</sup> , Yves Fautrelle <sup>2</sup> , Jiang Wang <sup>1</sup> , Yunbo Zhong <sup>1</sup> , Jianbo Yu <sup>1</sup> , Weidong Xuan <sup>1</sup> <sup>1</sup> Shanghai University, China <sup>2</sup> CNRS-SIMAP, Grenoble, France	8:00-8:30 <b>KEYNOTE</b>	O-52 Precipitation Behavior of BN in Structural Steels during Solidification and Heat Treatment <b>Katsunari Oikawa</b> <sup>1*</sup> , Hiroto Saito <sup>2</sup> <sup>1</sup> Tohoku University, Japan <sup>2</sup> JFE Bars and Shapes Co, Japan
8:30-8:50 <b>INVITED</b>	O-37 Control of Fluid Flow in Crystal Growth Process Using High Magnetic Force <b>Noriyuki Hirota</b> <sup>1*</sup> , Hidehiko Okada <sup>1</sup> , Hitoshi Wada <sup>1,3</sup> , Motosuke Kiyohara <sup>2</sup> , Masaru Tanokura <sup>3</sup> , Takahiro Ode <sup>2</sup> , Akira Nakamura <sup>3</sup> , Jun Ohtsuka <sup>3</sup> <sup>1</sup> National Institute for Materials Science, Sakura, Tsukuba, Japan <sup>2</sup> Kiyohara OpticsInc, Shinjuku, Shinjuku-ku, Tokyo, Japan <sup>3</sup> The University of Tokyo, Japan	8:30-9:00 <b>KEYNOTE</b>	O-53 Simultaneous Increase in Strength and Ductility of an Al-Si-Based Casting Aluminum Alloy <b>Feng Liu</b> <sup>*</sup> , Yuzeng Chen, Bo Dang Northwestern Polytechnical University, China
8:50-9:10	O-38 Deformation and Microstructure of Steel Droplets during Initial Solidification <b>Yang Li</b> <sup>1,2*</sup> , Jing Wang <sup>2</sup> , Jiaquan Zhang <sup>2</sup> , Changgui	9:00-9:20	O-54 Effect of Particle Size on Three-Dimensional Pore Structure Characteristics of Sipc Preforms by X-ray

**Oral Session Details, Friday May 13, 2016**

		Cheng <sup>1</sup> , Zhi Zeng <sup>3</sup> <i><sup>1</sup>Wuhan University of Science and Technology, China</i> <i><sup>2</sup>University of Science and Technology Beijing, China</i> <i><sup>3</sup>Shougang Research Institute of Technology, China</i>			Micro-computed Tomography <b>Han Long*</b> , Haidong Zhao, Ruizhe Liu, Jialin Peng <i>South China University of Technology, China</i>
<b>9:10-9:30</b>	O-39	Control of Agglomeration and Dispersion of Silica Particles in Water by Ultrasound Treatment <b>Jinwu Kang*</b> , Shuo Wang, Xiaopeng Zhang, Yisen Hu, Jiyu Ma <i>Tsinghua University, China</i>	<b>9:20-9:40</b>	O-55	Experimental and Simulation Research on Volume Change and Expansion Stress during the Solidification of Spheroidal Graphite Cast Iron <b>Hongliang Zheng*</b> , Anchen Shao, Qingming Zhao, Xuelei Tian* <i>Shandong University, China</i>
<b>9:30-9:50</b>	O-40	Mathematical Model and Numerical Simulation of Elastic Wave Propagation during Solidification of Alloy <b>Shiping Wu*</b> , Rujia Wang, Wei Chen <i>The material science and Engineering in Harbin Institute of Technology, China</i>	<b>9:40-10:00</b>	O-56	Study of the Dynamic Strain Induced Transformation Process of Low-Carbon Steels: Experiments and Finite Element Analysis <b>Lei He<sup>1*</sup></b> , Ruijie Ruan <sup>1</sup> , Like Xing <sup>1</sup> , Ting Dai <sup>1</sup> , Xianjun Hu <sup>2</sup> , Bruce Krakauer <sup>3</sup> , Mingfang Zhu <sup>1</sup> <i><sup>1</sup>Southeast University, China</i> <i><sup>2</sup>Institute of Research of Iron &amp; Steel, Shasteel, China</i> <i><sup>3</sup>AO Smith Corporate Technology Center, USA</i>
<b>9:50-10:10</b>		<b>#Coffee break</b>	<b>10:00-10:10</b>		<b>#Coffee break</b>
<b>Room</b>	#1		<b>Room</b>	#2	
<b>10:10-11:50</b>	<b>#Session: Solidification and Casting under Externally Applied Fields (high magnetic fields, electromagnetic fields, etc.)</b>		<b>10:10-12:00</b>	<b>#Session: Experimental Techniques for Model Validation</b>	
<b>Chairs</b>	<b>Laurentiu Nastac / Jungwook Cho</b>		<b>Chairs</b>	<b>Katsunari Oikawa / Peter D. Lee</b>	
<b>10:10-10:40</b>	O-41	Advanced Manufacturing of Aluminum-Based	<b>10:10-10:40</b>	O-57	Mathematical and Physical Simulation and

Oral Session Details, Friday May 13, 2016

<b>KEYNOTE</b>		Nanocomposites Assisted by Ultrasonic and Electromagnetic Processing <b>L. Nastac*</b> , D. Zhang, Y. Xuan <i>The University of Alabama, USA</i>	<b>KEYNOTE</b>		Optimization of RH Snorkel Design Tao Xu <sup>1,2</sup> , Zilong Qiu <sup>1</sup> , Zhiguo Luo <sup>1</sup> , <b>Zongshu Zou<sup>1*</sup></b> <sup>1</sup> <i>Northeastern University, China</i> <sup>2</sup> <i>Research Institute of Jiangsu Shagang Co. Ltd, China</i>
<b>10:40-11:10</b>	O-42	Dendrites Fragmentation due to Cavitation Bubble Vibration in Ultrasound Field <b>S. Wang*</b> , J.W. Kang, Z. Guo, X.P. Zhang <i>Tsinghua University, Beijing, China</i>	<b>10:40-11:00</b>	O-58	Calculation of Heat Flux across the Hot Surface of Continuous Casting Mold through Two-Dimensional Inverse Heat Conduction Problem Haihui Zhang, <b>Wanlin Wang*</b> , Lejun Zhou <i>Central South University, China</i>
<b>11:10-11:30</b>	O-43	Processing and Microstructure of A356 Alloy Manufactured via Ultrasonic Cavitation and Solidification Processing <b>Yang Xuan*</b> , Laurentiu Nastac <i>The University of Alabama, USA</i>	<b>11:00-11:20</b>	O-59	Evolution of Solid Fraction of Brass <b>Yuichi Motoyama*</b> , Toshimitsu Okane <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>
<b>11:30-11:50</b>	O-44	Study of Microstructure Transition during the Solidification of Metal Alloys under External Forces <b>Zhipeng Guo<sup>1,2*</sup></b> , S. Wang <sup>1</sup> , M. Yang <sup>1</sup> , S.M. Xiong <sup>1,2</sup> <sup>1</sup> <i>Tsinghua University, China</i> <sup>2</sup> <i>Key Laboratory for Advanced Materials Processing Technology, Ministry of Education, China</i>	<b>11:20-11:40</b>	O-60	Multiscale and Multiphysics Simulation of Low Frequency Electromagnetic DC Casting of Aluminium Alloys <b>Božidar Šarler<sup>1,2,3*</sup></b> , Boštjan Mavrič <sup>1</sup> , Vanja Hatić <sup>1</sup> , Agnieszka Guštin <sup>1</sup> <sup>1</sup> <i>Institute of Metals and Technology, Slovenia</i> <sup>2</sup> <i>University of Nova Gorica, Slovenia</i> <sup>3</sup> <i>Taiyuan University of Technology, China</i>
			<b>11:40-12:00</b>	O-61	Quantification of Microsegregation of Solute Elements in 20CrMnTiH Gear Steel by Using Electron Probe Microanalyzer

Oral Session Details, Friday May 13, 2016

					<u>Yangbo Liu</u> *, Qian Tong, Ke Liu, Qisong Sun <i>Shougang Research Institute of Technology, China</i>
<b>12:10-13:30</b>		<b># Lunch break</b>	<b>12:00-13:30</b>		<b># Lunch break</b>
<b>Room</b>	#1		<b>Room</b>	#2	
<b>13:30-16:00</b>	<b>#Session: Improvement of Numerical Techniques</b>		<b>13:30-16:10</b>	<b>#Session: Experimental Techniques for Model Validation</b>	
<b>Chairs</b>	<b>Mingfang Zhu / Yasushi Shibuta</b>		<b>Chairs</b>	<b>Hideyuki Yasuda / Feng Liu</b>	
<b>13:30-14:00</b>	O-45	Cellular Automaton Modeling of Microstructure Evolution in the Mushy Zone Involving Melting and Resolidification <u>Mingfang Zhu</u> <sup>1*</sup> , Hua Xue <sup>1</sup> , Qianyu Tang <sup>1</sup> , Qingyu Zhang <sup>1</sup> , Shiyuan Pan <sup>1,2</sup> <sup>1</sup> <i>Southeast University, China</i> <sup>2</sup> <i>Nanjing University of Science and Technology, China</i>	<b>13:30-14:00</b>	O-62	4D X-ray Imaging of Solidification <u>Peter D. Lee</u> <sup>1,2*</sup> , B. Cai <sup>1,2</sup> , E. Guo <sup>1,2</sup> , G. Zeng <sup>1,2</sup> , M. A. Azeem <sup>1,2</sup> , J. R. A. Godinho <sup>1,2</sup> , C. Puncreobutr <sup>3</sup> , S. Karagadde <sup>4</sup> , R. Atwood <sup>5</sup> , T. Connolley <sup>5</sup> , J. Bent <sup>6</sup> <sup>1</sup> <i>The University of Manchester, UK</i> <sup>2</sup> <i>Rutherford Appleton Laboratory, UK</i> <sup>3</sup> <i>Chulalongkorn University, Thailand</i> <sup>4</sup> <i>IIT Bombay, India</i> <sup>5</sup> <i>Harwell Science and Innovation Campus, UK</i> <sup>6</sup> <i>Unilever Research Colworth, UK</i>
<b>KEYNOTE</b>			<b>KEYNOTE</b>		
<b>14:00-14:20</b>	O-46	Spiral Growth in Directional Solidified Ternary Eutectic Alloys Using Large Scale and Massive Parallel Three-Dimensional Phase-Field Simulation <u>Johannes Hötzer</u> <sup>1,2*</sup> , Philipp Steinmetz <sup>1</sup> , Marcus Jainta <sup>1</sup> , Michael Kellner <sup>1</sup> , Britta Nestler <sup>1,2</sup> <sup>1</sup> <i>Karlsruhe Institute of Technology(KIT), Germany</i> <sup>2</sup> <i>University of Applied Sciences, Germany</i>	<b>14:00-14:30</b>	O-63	The Role of High-Temperature Laser-Scanning Microscopy in Advancing the Frontiers of Material Science <u>Rian Dippenaar</u> * <i>University of Wollongong, Australia</i>
<b>14:20-14:40</b>	O-47	The Revised Drucker-Prager/Cap Model for	<b>14:30-14:50</b>	O-64	X-ray Radiography Studies of Melt Convection

Oral Session Details, Friday May 13, 2016

		<p>Aeration Sand Filling-High Pressure Squeeze Molding Method</p> <p><b>Qingdong Zhang</b><sup>1*</sup>, Changjiang Ni<sup>1</sup>, Tao Jing<sup>1</sup>, Junjiao Wu<sup>1</sup>, Hiroyasu Makino<sup>2</sup></p> <p><sup>1</sup><i>Tsinghua University, China</i></p> <p><sup>2</sup><i>Sintokogio Ltd, Japan</i></p>	<b>INVITED</b>		<p>Effects on Dendritic Evolution in Ga-In Alloy</p> <p><b>Natalia Shevchenko</b><sup>*</sup>, Olga Roshchupkina, Sven Eckert</p> <p><i>Helmholtz-Zentrum Dresden-Rossendorf, Germany</i></p>
<b>14:40-15:00</b>	O-48	<p>Integration of Thermodynamic Energies in Phase-Field Simulation for Binary and Ternary Systems</p> <p><b>Michael Kellner</b><sup>1*</sup>, Johannes Hötzer<sup>1,2</sup>, Philipp Steinmetz<sup>1</sup>, Sebastian Schulz<sup>1</sup>, Britta Nestler<sup>1,2</sup></p> <p><sup>1</sup><i>Karlsruhe Institute of Technology(KIT), Germany</i></p> <p><sup>2</sup><i>University of Applied Sciences, Germany</i></p>	<b>14:50-15:10</b>	O-65	<p>Columnar Dendrite Growth via Real-Time Synchrotron X-ray Tomography</p> <p><b>B. Cai</b><sup>1,2*</sup>, A. Kao<sup>3</sup>, J. Wang<sup>1,2</sup>, K. Pericleous<sup>3</sup>, R. Atwood<sup>4</sup>, P.D. Lee<sup>1,2</sup></p> <p><sup>1</sup><i>The University of Manchester, UK</i></p> <p><sup>2</sup><i>Rutherford Appleton Laboratory, UK</i></p> <p><sup>3</sup><i>University of Greenwich, UK</i></p> <p><sup>4</sup><i>Harwell Science and Innovation Campus, UK</i></p>
<b>15:00-15:20</b>	O-49	<p>Large-Scale 3D Phase-Field Studies of Competitive Grain Growth during Directional Solidification</p> <p><b>Tomohiro Takaki</b><sup>1*</sup>, Shinji Sakane<sup>1</sup>, Munekazu Ohno<sup>2</sup>, Yasushi Shibuta<sup>3</sup>, Takashi Shimokawabe<sup>4</sup>, Takayuki Aoki<sup>4</sup></p> <p><sup>1</sup><i>Kyoto Institute of Technology, Japan</i></p> <p><sup>2</sup><i>Hokkaido University, Japan</i></p> <p><sup>3</sup><i>University of Tokyo, Japan</i></p> <p><sup>4</sup><i>Tokyo Institute of Technology, Japan</i></p>	<b>15:10-15:30</b>	O-66	<p>Combining In-Situ 3D Imaging and CFD Simulation to Quantify Intermetallic Formation and Permeability of Aluminium-Silicon Alloys</p> <p><b>Chedtha Puncreobutr</b><sup>1*</sup>, Surada Chuaypradit<sup>1</sup>, Benjamas Apilapphan<sup>1</sup>, Julie L. Fife<sup>2</sup>, Andre Phillion<sup>3</sup>, Peter D. Lee<sup>4</sup></p> <p><sup>1</sup><i>Chulalongkorn University, Thailand</i></p> <p><sup>2</sup><i>Paul Scherrer Institut, Switzerland</i></p> <p><sup>3</sup><i>McMaster University, Canada</i></p> <p><sup>4</sup><i>The University of Manchester, UK</i></p>
<b>15:20-15:40</b>	O-50	<p>Numerical Modeling of Fluid Flow, Heat Transfer and Arc-Melt Interaction in Arc Smelting Processes</p> <p><b>Linmin Li</b><sup>*</sup>, Lichao Liu, Baokuan Li</p> <p><i>Northeastern University, China</i></p>	<b>15:30-15:50</b>	O-67	<p>Synchrotron X-ray Tomographic Quantification of Primary Dendrite Evolution during the Solidification of Magnesium Alloys</p> <p><b>Sansan Shuai</b><sup>1,2*</sup>, Enyu Guo<sup>2</sup>, Tao Jing<sup>1</sup>, Peter D. Lee<sup>2</sup></p>

**Oral Session Details, Friday May 13, 2016**

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					<sup>1</sup> <i>Tsinghua University, China</i> <sup>2</sup> <i>The University of Manchester, UK</i>
<b>15:40-16:00</b>	O-51	Multi-Scale Simulation of Stray Grains Formation in the Platform of a Pseudo Single Crystal Turbine Blade <b>Runnan Wang*</b> , Xuewei Yan, Zhonglin Li, Rui Chen, Qingyan Xu, Baicheng Liu <i>Tsinghua University, China</i>	<b>15:50-16:10</b>	O-68	Massive-Like Transformation Following $\delta$ Solidification in Fe-18Cr-Ni Alloys <b>Tomohiro Nishimura</b> <sup>1*</sup> , Kohei Yoshida <sup>1</sup> , Koki Sugimura <sup>1</sup> , Kohei Morishita <sup>1</sup> , Tomoya Nagira <sup>2</sup> , Masato Yoshiya <sup>2</sup> , Hideyuki Yasuda <sup>1</sup> <sup>1</sup> <i>Kyoto University, Japan</i> <sup>2</sup> <i>Osaka University, Japan</i>
<b>16:00-18:00</b>	<b># Poster Session</b>				
<b>18:30-21:00</b>	<b># Supper</b>				

**May 14(Sat), 2016 at Xi'an, China:**

**Parallel sessions**

Room	#1	Room	#2
<b>8:00-9:50</b>	<b>#Session: Phase Field Method, Molecular Dynamics Modeling</b>	<b>8:00-10:00</b>	<b>#Session: Improvement of Numerical Techniques -2</b>
<b>Chairs</b>	<b>Ingo Steinbach / Rian Dippenaar</b>	<b>Chairs</b>	<b>Vinicius Karlinski de Barcellos / Yong Du</b>
<b>8:00-8:30</b>  <b>KEYNOTE</b>	O-69 Why Solidification? Why Phase-Field? <b><u>Ingo Steinbach*</u></b> <i>Ruhr-University Bochum, Germany</i>	<b>8:00-8:20</b>  <b>INVITED</b>	O-79 Study on the Influence of Processing Parameters on Perforation Extrusion Process of Large Diameter Cupronickel Alloy Pipe Using 3D FEM Analysis <b><u>Jun Cai*</u></b> , Kuaishe Wang, Bing Zhang, Wen Wang <i>Xi'an University of Architecture and Technology, China</i>
<b>8:30-8:50</b>  <b>INVITED</b>	O-70 Applications of Phase Field Crystal Model in Solidification <b><u>Jincheng Wang*</u></b> , Can Guo, Sai Tang, Junjie Li, Zhijun Wang <i>Northwestern Polytechnical University, China</i>	<b>8:20-8:40</b>	O-80 Morphological Transitions of Secondary Arms in Alloy Solidification: Numerical Simulations and Synchrotron Experiments <b><u>Hieram Neumann Heyme</u></b> <sup>1*</sup> , Natalia Shevchenko <sup>2</sup> , Christoph Beckermann <sup>3</sup> , Zhe Lei <sup>1</sup> , Kerstin Eckert <sup>1</sup> , Sven Eckert <sup>2</sup> <i><sup>1</sup>Institute of Fluid Mechanics, Germany</i> <i><sup>2</sup>Institute of Fluid Dynamics, Germany</i> <i><sup>3</sup>University of Iowa, USA</i>
<b>8:50-9:10</b>  <b>INVITED</b>	O-71 Large-Scale Molecular Dynamics Simulation of Solidification and Grain Growth <b><u>Yasushi Shibuta</u></b> <sup>1*</sup> , Shin Okita <sup>1</sup> , Shinji Sakane <sup>2</sup> , Tomohiro Takaki <sup>3</sup> , Munekazu Ohno <sup>4</sup> <i><sup>1</sup>The University of Tokyo, Japan</i>	<b>8:40-9:00</b>	O-81 Nucleation Mode of Condensate Droplets on Superhydrophobic Nanoarrays-Lattice Boltzmann Simulation <b><u>Qingyu Zhang*</u></b> , Mingfang Zhu <i>Southeast University, China</i>

**Oral Session Details, Saturday May 14, 2016**

		<p><sup>2</sup><i>Kyoto Institute of Technology, Japan</i>  <sup>3</sup><i>Kyoto Institute of Technology, Japan</i>  <sup>4</sup><i>Hokkaido University, Japan</i></p>			
<b>9:10-9:30</b>	O-72	<p>Quantitative Multi-Phase-Field Simulation of the Peritectic Reaction in an Fe-C Alloy under Conditions Close to Chemical and Thermal Equilibrium  <u>Shiyan Pan</u><sup>1,2*</sup>, Mingfang Zhu<sup>2</sup>  <sup>1</sup><i>Nanjing University of Science and Technology, China</i>  <sup>2</sup><i>Southeast University, China</i></p>	<b>9:00-9:20</b>	O-82	<p>The Development of Cellular Automaton-Adaptive Finite Volume Method for Dendritic and Eutectic Growth in Binary Alloys  <u>Tadej Dobravec</u><sup>1*</sup>, Božidar Šarler<sup>1,2</sup>  <sup>1</sup><i>Institute of Metals and Technology(IMT), Slovenia</i>  <sup>2</sup><i>University of Nova Gorica (UNG), Slovenia</i></p>
<b>9:30-9:50</b>	O-73	<p>Phase Transformation in Solidified Fe-Ni Clusters by Molecular Dynamics Simulation  <u>Guojian Li</u><sup>*</sup>, Yang Gao, Lin Xiao, Chenjie Jiang, Jianhao Wang, Kai Wang, Qiang Wang  <i>Northeastern University, China</i></p>	<b>9:20-9:40</b>	O-83	<p>Magneto Fluid Dynamics Analysis of Continuous Casting Practices through Numerical Modelling  <u>Pooria Nazem Jalali</u><sup>1,2*</sup>, Emmanuel Abiona<sup>3</sup>, Pavel Ramirez E. Lopez<sup>1</sup>, Hongliang Yang<sup>3</sup>, Pär Jönsson<sup>2</sup>, Sichen Du<sup>2</sup>  <sup>1</sup><i>SwereaMEFOS, Sweden</i>  <sup>2</sup><i>KTH University, Sweden</i>  <sup>3</sup><i>ABB AB, Metallurgy, Sweden</i></p>
			<b>9:40-10:00</b>	O-84	<p>Simulation of Interdendritic Fluid Flow by the Method of Regularized Sources  <u>Božidar Šarler</u><sup>1,2,3*</sup>, Rizwan Zahoor<sup>2</sup>, Kai Wang<sup>3</sup>, Shiting Wen<sup>3</sup>, Ming Li<sup>3</sup>  <sup>1</sup><i>Institute of Metals and Technology, Slovenia</i>  <sup>2</sup><i>University of Nova Gorica, Slovenia</i>  <sup>3</sup><i>Taiyuan University of Technology, China</i></p>
<b>9:50-10:10</b>		<b>#Coffee break</b>	<b>10:00-10:10</b>		<b>#Coffee break</b>
<b>10:10-12:10</b>	<b># Session: Casting Process Modeling Combined with</b>		<b>10:10-12:00</b>	<b>#Session: Improvement of Numerical Techniques -3</b>	



Oral Session Details, Saturday May 14, 2016

		Solidification Path		
Chairs	Seppo Louhenkilpi / Hideki Ono		Chairs	Michel Bellet / Houfa Shen
10:10-10:40  KEYNOTE	O-74	Phenomena Based Modeling of Solidification and Continuous Casting: Application to On-Line Quality Prediction  <u>Seppo Louhenkilpi</u> * <i>Aalto University, Finland</i>	10:10-10:40  KEYNOTE	O-85 Modeling of Semisolid Deformation and Induced Segregation <u>H. Yasuda</u> <sup>1*</sup> , T. Itoh <sup>1</sup> , S. Morita <sup>1</sup> , T. Nagira <sup>2</sup> , K. Morishita <sup>1</sup> , M. Yoshiya <sup>2</sup> <sup>1</sup> <i>Kyoto University</i> <sup>2</sup> <i>Osaka University</i>
10:40-11:10  KEYNOTE	O-75	Thermodynamic and Thermophysical Databases of Multicomponent Al Alloys and Their Applications to Simulation of Microstructure Evolution <u>Yong Du</u> <sup>1,2*</sup> , Lijun Zhang <sup>1,2</sup> , Shuhong Liu <sup>1,2</sup> , Ming Wei <sup>1</sup> , Dandan Huang <sup>1</sup> , Cong Zhang <sup>1</sup> , Fan Zhang <sup>1</sup> , Dan Cai <sup>1,2</sup> , Jinghua Xin <sup>1,2</sup> , Kaiming Cheng <sup>1,2</sup> , Jiong Wang <sup>1,2</sup> , Kai Li <sup>1,2</sup> <sup>1</sup> <i>Central South University, China</i> <sup>2</sup> <i>Sino-German cooperation group "Microstructure in Al alloys", China</i>	10:40-11:00	O-86 Pattern Formation during the Directional Solidification of Ternary Eutectic Alloys with Large Scale Three-Dimensional Phase-Field Simulations <u>Philipp Steinmetz</u> <sup>1*</sup> , Johannes Hötzer <sup>1,2</sup> , Michael Kellner <sup>1</sup> , Britta Nestler <sup>1,2</sup> , Yuksel Yabansu <sup>3</sup> , Surya R. Kalidindi <sup>3</sup> <sup>1</sup> <i>Karlsruhe Institute of Technology(KIT), Germany</i> <sup>2</sup> <i>University of Applied Sciences, Germany</i> <sup>3</sup> <i>Georgia Institute of Technology, USA</i>
11:10-11:30	O-76	An Analytical Approach for Predicting As-Cast Grain Size of Inoculated Aluminum Alloys <u>Xinbo Qi</u> <sup>1*</sup> , Yun Chen <sup>1</sup> , Xiuhong Kang <sup>1</sup> , Dianzhong Li <sup>1</sup> , Qiang Du <sup>2</sup> <sup>1</sup> <i>Institute of Metal Research, Chinese Academy of Sciences, China</i> <sup>2</sup> <i>SINTEF Materials and Chemistry, Norway</i>	11:00-11:20	O-87 A High Efficient Quantitative Phase-Field Model for Polycrystalline Solidification of Alloys <u>Yun Chen</u> <sup>*</sup> , Xinbo Qi, DianZhong Li, Xiuhong Kang <i>Institute of Metal Research, Chinese Academy of Sciences, China</i>
11:30-11:50	O-77	Effect of La and Ti on Solidification Structure of	11:20-11:40	O-88 Phase Field Crystal Simulation of Dislocation

**Oral Session Details, Saturday May 14, 2016**

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		FeCrAl Stainless Steel <u>Jianhua Liu</u> *, Yang He, Jian Liu, Zhibiao Han, Zhenqiang Deng <i>University of Science and Technology Beijing, China</i>	<b>INVITED</b>		Movement of Premelting Grain Boundries at High Temperature <u>Yingjun Gao</u> *, Qianqian Deng, Kui Lin, Chuanggao Huang <i>Guangxi University, China</i>
<b>11:50-12:10</b>	O-78	Structure Transition in Metallic Liquids and its Effect on Nucleation: Characterization by In-Situ Magnetization Measurement <u>Jun Wang</u> <sup>1*</sup> , Yixuan He <sup>1</sup> , Jinshan Li <sup>1</sup> , Eric Beaugnon <sup>2</sup> <sup>1</sup> <i>Northwestern Polytechnical University, China</i> <sup>2</sup> <i>University Grenoble Alpes, France</i>	<b>11:40-12:00</b>	O-89	Multi-Scale Modeling of First Order Phase Transformations <u>Kang Wang</u> *, Feng Liu <i>Northwestern Polytechnical University, China</i>
<b>12:10-13:30</b>		<b># Lunch</b>	<b>12:00-13:30</b>		<b># Lunch</b>
<b>13:30-17:00</b>	<b># Visiting History Museum</b>				
<b>17:00-18:00</b>	<b>#Supper</b>				
<b>18:00-22:00</b>	<b>#Watching the show</b>				

**Poster session**

**May 13(Fri), 2016 at Xi'an, China:**

**Time:16:00-18:00**

**Location:**

	<b>Session: Improvement of Casting Process Modeling and Macro-segregation</b>
P-01	Temperature and Thermal Stress Fields during Peritectic Steel Solidification in Wide Slab Continuous Casting Mold <b>Nan Wang*</b> , Xiang Shen, Meile He, Min Chen <i>Northeastern University, China</i>
P-02	Behaviour of Level Fluctuation in Continuous Casting Mold with Different Configuration of Static Magnetic Field <b>Engang Wang*</b> , Zhuang Li, Yu Xu, Lin Xu, Anyuan Deng <i>Northeastern University, China</i>
P-03	Prediction of Influences of Alloy Elements on Precipitation Behavior of Carbides in Solidification of High Speed Steels <b>Mengmeng Su</b> <sup>1*</sup> , Hongwei Zhang <sup>1</sup> , Keiji Nakajima <sup>2</sup> , Jicheng He <sup>1</sup> <sup>1</sup> <i>Northeastern University, China</i> <sup>2</sup> <i>Royal Institute of Technology (KTH), Sweden</i>
P-04	Segregation of Phosphorus in Meta-Rapidly Solidified Carbon Steels <b>Na Li*</b> , Junwei Zhang, Shengli Li, Hongmei Zhang <i>University of Science and Technology Liaoning, China</i>
P-05	Liquid-Liquid Phase Separation in Binary Immiscible Alloy by Lattice Boltzmann Method <b>Zhongting Yu*</b> , Yilun Li, Jianrong Gao, Hongwei Zhang <i>Northeastern University, China</i>
P-06	Fractal Characteristics of Dendrite Microstructure in Al-Si Alloys <b>Kenichi Ohsasa*</b> , Yukinobu Natsume, Takumi Hatayama <i>Akita University, Japan</i>
P-07	Mechanism of Spot-Like Centerline Segregation Formation in Continuous Casting <b>Shigeaki Ogibayashi*</b>

**Poster Session Details, Friday May 13, 2016**

	<i>Department of Management Information Science, Chiba Institute of Technology Tsudanuma, Japan</i>
P-08	Numerical Analysis of Macrosegregation in AaSemi-Continuous Casting <b>Yongjian Zheng*</b> , Menghuai Wu, Abdellah Kharicha, Andreas Ludwig <i>Montanuniversitaet Leoben, Austria</i>
P-09	Temperature Distribution and Thermal Stress of Side Dam with Composite Structure for Twin Roll Strip <b>Min Chen</b> <sup>1*</sup> , Jianhong Dong <sup>2</sup> , Lei Xu <sup>1</sup> , Nan Wang <sup>1</sup> <sup>1</sup> <i>Northeastern University, China</i> <sup>2</sup> <i>Jiangxi University of Science and Technology, China</i>
P-10	Investigation of the Heat Transfer in Secondary Cooling Zone with Scale Formation on the Slab Surface <b>Nan Wang*</b> , Guangzong Zhang, Shan Yu, Jin Xu, Min Chen <i>Northeastern University, China</i>
P-11	Phase Change Behavior in Steel Strip Adding Process of Continuous Casting Mold <b>Ran Niu*</b> , Zhongqiu Liu, Baokuan Li <i>Northeastern University, China</i>
	<b>Session: Experimental Techniques for Model Validation</b>
P-12	Constitutive Model of a Newly-Designed $\beta$ Titanium Alloy Based on the Friction Correction
P-13	Time -Resolved X-ray Tomographic Quantification of Semi-Solid Deformation <b>B. Cai</b> <sup>1*</sup> , S. Karagadde <sup>1</sup> , T.J. Marrow <sup>2</sup> , T. Connolley <sup>3</sup> , P.D. Lee <sup>1</sup> <sup>1</sup> <i>University of Manchester, Manchester, UK</i> <sup>2</sup> <i>University of Oxford, Oxford, UK</i> <sup>3</sup> <i>Diamond Light Source Ltd., Harwell Science and Innovation Campus, UK</i>
P-14	Application of Computer Aided Cooling Curve Analysis Technique for Thermal Analysis of Casting AlSiMg Alloys <b>Carlos Raimundo Frick Ferreira</b> <sup>1*</sup> , Berenice Anina Dedavid <sup>2</sup> , Vinícius Karlinski de Barcellos <sup>1</sup> <sup>1</sup> <i>Federal University of Rio Grande do Sul (UFRGS), Brazil</i> <sup>2</sup> <i>Pontifical Catholic University of Rio Grande do Sul (PUCRS), Brazil</i>
P-15	In-Situ Observations of Intragranular Ferrite Nucleation and Growth in the Steel with TiO <sub>2</sub> Addition during Continuous Cooling

**Poster Session Details, Friday May 13, 2016**

	<p><b>Wangzhong Mu</b><sup>1,2*</sup>, Hiroyuki Shibata<sup>3</sup>, Pär Göran Jönsson<sup>1</sup>, Keiji Nakajima<sup>1</sup>  <sup>1</sup><i>KTH Royal Institute of Technology, Sweden</i>  <sup>2</sup><i>McMaster University, Canada.</i>  <sup>3</sup><i>Tohoku University, Japan</i></p>
P-16	<p>Morphology and Orientation of Growing Dendrites in Gain Alloy Characterized by Synchrotron X-ray Techniques  <b>Natalia Shevchenko</b><sup>*</sup>, Joerg Grenzer, Olga Roshchupkina, Carsten Baetz, Sven Eckert  <i>Helmholtz-Zentrum Dresden-Rossendorf, Germany</i></p>
P-17	<p>Simulation of Slurry Flow and Shrinkage Defects of A356–SiCp Composite High Pressure Die Casting  <b>Qiyao Hu</b><sup>*</sup>, Haidong Zhao, Jilong Ge, Fangdong Li  <i>South China University of Technology, China</i></p>
P-18	<p>Formation Conditions of Ti<sub>2</sub>O<sub>3</sub>, MgTi<sub>2</sub>O<sub>4</sub>, Mg<sub>2</sub>TiO<sub>4</sub>, and MgAl<sub>2</sub>O<sub>4</sub> in Molten Iron and Variations in Stable Oxides with Temperature  <b>Hideki Ono</b><sup>1*</sup>, Keiji Nakajima<sup>2</sup>, Shingo Agawa<sup>1</sup>, Toshio Ibuta<sup>1</sup>, Ryota Maruo<sup>1</sup>  <sup>1</sup><i>Osaka University, Japan</i>  <sup>2</sup><i>Royal Institute of Technology (KTH), Sweden</i></p>
	<p><b>Session: Improvement of Ladle and Tundish Metallurgy Modeling</b></p>
P-19	<p>Numerical Simulation on Bubble Disintegration and Dispersion Based on Mechanical Stirring in Magnesium Desulfurization Process  <b>Junhong Ji</b><sup>1,2*</sup>, Ruquan Liang<sup>1</sup>, Jicheng He<sup>1</sup>  <sup>1</sup><i>Northeastern University, China</i>  <sup>2</sup><i>Liaoning Technical University, China</i></p>
P-20	<p>Inclusion Collision-Coalescence in the Bloom Continuous Casting Mold with Electromagnetic Stirring  <b>Hong Lei</b><sup>*</sup>, Jimin Jiang, Bin Yang, Yan Zhao  <i>Northeastern University, China</i></p>
P-21	<p>Decarburization and Inclusion Removal Process in Single Snorkel Vacuum Refining Furnace  <b>Dianqiao Geng</b><sup>*</sup>, Hong Lei, Haitao Liu, Jicheng He  <i>Northeastern University, China</i></p>
	<p><b>Session: Improvement of Numerical Techniques</b></p>
P-22	<p>Simulation of Turbulent Melt Flow and Deposition of Non-metallic Inclusions on Nozzle Wall of a Clogging Simulator  <b>Hadi Barati</b><sup>*</sup>, Menghuai Wu, Ablellah Kharicha, Andreas Ludwig</p>

**Poster Session Details, Friday May 13, 2016**

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	<i>University of Leoben, Austria</i>
P-23	<p>Interface Energies of the Ferrite and the B1 Type Compounds (TiO, TiN, MgO) at Finite Temperature</p> <p><b>Satoshi Minamoto*</b>, Keiji Nakajima  <i>National Institute for Materials Science (NIMS), Japan</i>  <i>Royal Institute of Technology(KTH), Sweden</i></p>
P-24	<p>Phase Field Study of Transient Coarsening Behavior in Two Phase System</p> <p><b>Junjie Li*</b>, Zhijun Wang, Jincheng Wang  <i>Northwestern Polytechnical University, China</i></p>
P-25	<p>A Model of Shrinkage Prediction during Solidification Simulation Based on Dynamic Grid Technology</p> <p><b>Hao Lu*</b>, Bing Wu, Hongliang Zheng, Xuelei Tian  <i>Shandong University, China</i></p>
P-26	<p>Prediction of Deformation and Recrystallization of a Ni-Based Single Crystal Superalloy</p> <p><b>Zhonglin Li</b><sup>1*</sup>, Changbo Sun<sup>2</sup>, Qingyan Xu<sup>1</sup>, Jichun Xiong<sup>3</sup>, Jiarong Li<sup>3</sup>, Baicheng Liu<sup>1</sup>  <sup>1</sup><i>Tsinghua University, China</i>  <sup>2</sup><i>Shengyang Liming Aero-Engine (Group) Corporation Ltd, China</i>  <sup>3</sup><i>Beijing Institute of Aeronautical Materials, China</i></p>
P-27	<p>Multi-Scale Modeling of Microstructure and Yield Strength Evolution in Cast Aluminum Alloys</p> <p><b>Rui Chen</b><sup>1*</sup>, Qingyan Xu<sup>1</sup>, Zhiyuan Xia<sup>2</sup>, Huiting Guo<sup>2</sup>, Qinfang Wu<sup>2</sup>, Baicheng Liu<sup>1</sup>  <sup>1</sup><i>Tsinghua University, China</i>  <sup>2</sup><i>Mingzhi Technology Co.Limited, China</i></p>
P-28	<p>Study of Macrosegregation Formation during Solidification of Alloys</p> <p><b>Hongwei Zhang</b><sup>1*</sup>, Keiji Nakajima<sup>2</sup>, Jicheng He<sup>1</sup>  <sup>1</sup><i>Northeastern University, China</i>  <sup>2</sup><i>Royal Institute of Technology (KTH), Sweden</i></p>
P-29	<p>Numerical Simulation and Experimental of Directional Solidification for Ni-Based Superalloy Casting</p> <p><b>Xuwei Yan</b><sup>1*</sup>, Runnan Wang<sup>1</sup>, Xiong Guo<sup>2</sup>, Dexin Ma<sup>2</sup>, Qingyan Xu<sup>1</sup>, Baicheng Liu<sup>1</sup>  <sup>1</sup><i>Tsinghua University, China</i>  <sup>2</sup><i>Material R&amp;D Center, Dongfang Turbine Co., LTD, China</i></p>

**Poster Session Details, Friday May 13, 2016**

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P-30	<p>Effect of Axial Vibration on Spur Gear Precision Forging  <u>Cheng Yang</u><sup>*</sup>, Fan Liang, Xinyi Yang  <i>Xi'an University of Architecture and Technology, China</i></p>
P-31	<p>Higher-Order Multi-Phase-Field Simulations of Anisotropic Grain Growth with GPU Acceleration  <u>Eisuke Miyoshi</u><sup>*</sup>, Tomohiro Takaki  <i>Kyoto Institute of Technology, Japan</i></p>
<p><b>Session: Solidification and Casting under Externally Applied Fields</b></p>	
P-32	<p>Experimental Apparatus for In-Situ Investigation of Dendritic Growth under a High Magnetic Field  <u>Changsheng Lou</u><sup>1*</sup>, Chendi Li<sup>1</sup>, Tie Liu<sup>2</sup>, Qiang wang<sup>2</sup>  <sup>1</sup><i>Shenyang Ligong University, China</i>  <sup>2</sup><i>Northeastern University, China</i></p>
P-33	<p>Numerical Simulation of Droplets Behavior in Immiscible Alloys Solidifying under Magnetic Field  <u>Lin Zhang</u><sup>*</sup>, Tiannan Man, Zhuang Li, Xiaorong Zhang, Xiaowei Zuo, Engang Wang  <i>Northeastern University, China</i></p>
P-34	<p>Numerical Investigation on Solidification Progress in Electroslag Remelting Process with Triple-Electrode  <u>Neng Ren</u><sup>*</sup>, Qiang Wang, Baokuan Li  <i>Northeastern University, China</i></p>
P-35	<p>Influences of Growth Rates and Horizontal Magnetic Fields on Eutectic Lamellar Spacing and Properties of Directionally Solidified Ag-Cu Alloys  <u>Xiaowei Zuo</u><sup>*</sup>, Lin Zhang, Yu Xu, Engang Wang  <i>Northeastern University, China</i></p>
P-36	<p>Dendrite Growth Characteristics of GCr15 Bearing Steel Billet with Electromagnetic Stirring  <u>Yu Xu</u><sup>*</sup>, Zhuang Li, Tao Wang, Anyuan Deng, Engang Wang  <i>Northeastern University, China</i></p>
P-37	<p>Effect of the Third Element on the Microstructure of Cu-20%Co Immiscible Alloys  <u>Tiannan Man</u><sup>*</sup>, Lin Zhang, Wenbin Wang, Zhaolong Xiang, Xiaorong Zhang, Engang Wang  <i>Northeastern University, China</i></p>
P-38	<p>The Simulation Research of the Microstructure and Performance for the Steel Casting Solidification Process and Heat Treatment</p>

**Poster Session Details, Friday May 13, 2016**

	<p>Process  <b>Dongqiao Zhang*</b>, Jianxin Zhou, Fei Sun  <i>Huazhong University of Science and Technology, China</i></p>
P-39	<p>Large Eddy Simulation of Transient Flow and Solidification for Bloom Casting Using Electromagnetic Stirring  <b>Xianglong Li*</b>, Zhongqiu Liu, Baokuan Li  <i>Northeastern University, China</i></p>
P-40	<p>Enhancement in the Strength of Cu-28%Ag Composite Deformed after Solidifying under High Magnetic Field  <b>Congcong Zhao*</b>, XiaoweiZuo, Engang Wang  <i>Northeastern University, China</i></p>
P-41	<p>Microstructure and Property Evolution of Pulse-Electrodeposited Co-Ni-P Films Induced by High Magnetic Field Annealing  <b>Donggang Li</b><sup>1,3*</sup>, Chun Wu<sup>2</sup>, Qiang Wang<sup>2</sup>, Alexandra Levesque<sup>3</sup>, Jean-Paul Chopart<sup>3</sup>  <sup>1</sup><i>Northeastern University, China</i>  <sup>2</sup><i>Northeastern University, China</i>  <sup>3</sup><i>LISM, Université de Reims Champagne-Ardenne, France</i></p>
P-42	<p>Evolutions of Microstructure, Magnetization and Magneto Striction of TbFe<sub>2</sub> Alloy Solidified under High Magnetic Fields  <b>Yubao Xiao*</b>, Tie Liu, Pengfei Gao, Meng Dong, Qiang Wang  <i>Northeastern University, China</i></p>
P-43	<p>Effect of Annealing under High Magnetic Field on the Structure and Optical Properties of Electrodeposited ZnO Films  <b>Yang Gao*</b>, Guojian Li, Jianhao Wang, Qiang Wang, Mengmeng Li, Xuesi Qin  <i>Northeastern University, China</i></p>
P-44	<p>Effect of Unsteady Flow on a Particle Orientation Process in Rotating Container under High Magnetic Field  <b>Tsutomu Ando</b><sup>1*</sup>, Noriyuki Hirota<sup>2</sup>, Mao Inoue<sup>1</sup>, Ryota Jonishi<sup>1</sup>  <sup>1</sup><i>Nihon University, Japan</i>  <sup>2</sup><i>Fine Particles Engineering Group, National Institute for Materials Science, Tsukuba, Japan</i></p>