

## Tentative program (2023.11.8.) of AFC 2023

December 1, 2023

December 1, 2023

Kiran Hall, Higashi Muroran

December 1, 2023						
Kiran Hall, Higashi Muroran						
Start	End					
14:00	14:15	Opening				
14:15	15:00	Plenary 1	Response and Initiatives for Carbon-Neutral in the Japanese Foundry Industry	○Kazumichi Shimizu <sup>1</sup>	1 Muroran Institute of Technology	
15:00	15:45	Plenary 2	Electroslag Casting-Welding Composite Forming Technology for Large-size and High-performance Structure	○Yanchun Lou <sup>1</sup>	1 National Key Laboratory of Advanced Casting Technologies	
15:45	16:05	Break				
16:05	16:50	Plenary 3	Digitalization for casting industries in Korea	○Young Cheol Lee <sup>1</sup>	1 Korea Institute of Industrial Technology	
16:50	17:35	Plenary 4	SUPPORT BY THE WFO IN THE RECRUITMENT OF YOUNG TALENT	○Carsten Kuhlitz <sup>1</sup> , J. J. González <sup>2</sup> , L. Tonn <sup>3</sup>	1 World Foundry Organization, Albertuswerke GmbH, 2 World Foundry Organization, 3 Technical University of Clausthal	
18:00	20:00	Welcome party				

December 2, 2023

Room A, Muroran Institute of Technology

Start	End				
9:00	9:30	Invite	Application of AI machine vision technology in foundry	○Moon-Jo Kim <sup>1</sup> , Dongeung Kim <sup>1</sup> , Jong Pil Yun <sup>1</sup>	1 Korea Institute of Industrial Technology
9:30	9:50	Oral	Development of training simulator for pouring work using virtual reality technology	○Takumi Miura <sup>1</sup> , Yoshiyuki Noda <sup>1</sup>	1 University of Yamanashi
9:50	10:10	Oral	Applications of Inline and Fully Automatic Green Sand Property Tester and Foundry Plant Quality Control System in a Production Plant	○Yuichi Ogura <sup>1</sup>	1 SINTOKOGIO,LTD.
10:10	10:25	Coffee break			
10:25	10:55	Invited	Development of Calculation Program for thermophysical properties of synthetic sand mold	○In-Sung Cho <sup>1</sup> , Si-Young Kwak <sup>1</sup>	1 Korea Insitute of Industrial Technology
10:55	11:15	Oral	Application of Colorimetric Method in Active Clay Content Measurement for Green Sand	○Taku Shinozuka <sup>2</sup> , Hirokazu Kawashima <sup>1</sup> , Takaaki Sone <sup>2</sup>	1 Matsubara Co., Ltd., 2 Hisagoya Co., Ltd.
11:15	11:35	Oral	Development of foundry sand and reclaim system for reducing dust in casting foundries	○In-Sung Cho <sup>1</sup> , Si-Young Kwak <sup>1</sup> , Kyeong-Hwan Choe <sup>1</sup>	1 Korea Insitute of Industrial Technology
11:35	12:55	Lunch			
12:55	13:25	Invite	Effectivity of Coldbox-PUR core making	Rudolf Wintgens 1	1. Laempe Mössner Sinto GmbH
13:25	13:45	Oral	Development of Molding Motion Control in Sand Molding Robot	○Haruki Ichianagi <sup>1</sup> , Yoshiyuki Noda <sup>1</sup>	1 University of Yamanashi
13:45	14:05	Oral	Introduction to the development of POSCO Mega Caster producing ultra-large section sized slab with low-casting speed	Joodong LEE 1, Kyungshik Oh 2	1. POSCO, 2 Korea Foundry Society
14:05	14:20	Coffee break			
14:20	14:50	Invite	Electroslag Casting-Welding Technology for Large High Alloy Steel Ingot	○Yu Wang <sup>1,2</sup> , Yanchun Lou <sup>1</sup> , Heng Cao <sup>1,2</sup> , Yunlong Xiong <sup>1,2</sup> , Zengrui Wang <sup>1,2</sup>	1 National Key Laboratory of Advanced Casting Technologies, 2 Shenyang Research Institute of Foundry Co.,Ltd
14:50	15:10	Oral	Soldering Behavior at Contact Interface between High-Manganese Cast Steel or High-Manganese Spheroidal Graphite Cast Iron and Molten Aluminum Alloys	○Ikuzo Goto <sup>1</sup> , Masanori Chiba <sup>2</sup> , Toshiharu Kon <sup>2</sup>	1 Akita University, 2 Hokko Metal Industry Co., Ltd.
15:10	15:30	Oral	Damage mechanism of ladle for spheroidal graphite cast iron	○Tohru Mizuki <sup>1</sup> , Yoshio Igarashi <sup>2</sup> , Yuki Iwami <sup>1</sup> , Ilgoo Kang <sup>1</sup>	1 Kimura Foundry, 2 Micro analysis cnter
15:30	15:45	Coffee break			
15:45	16:15	Invite	Erosion Resistance of Aluminum Cast Iron with Oxide Layer to Aluminum Alloy Melt	○Kazunori Asano <sup>1</sup> , Osamu Ota <sup>1</sup> , Naoto Kaji <sup>1</sup>	1 Kindai University
16:15	16:35	Oral	Erosive Wear Characteristics of High Cr Multi Component White Cast Irons	○Huq Mohammad Jobayer <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Kenta Kusumoto <sup>1</sup>	1 Muroran Institute of Technology
16:35	16:55	Oral	High Temperature Erosive Wear Properties of Heat-Resistant Cast Steel	○Soma Sato <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Kenta Kusumoto <sup>1</sup>	1 Muroran Institute of Technology
16:55	17:15	Oral	Evolution of microstructure and enhancement of high-temperature abrasive wear characteristics of multi-component white cast iron with Ni addition	○Yila Gagi <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Kenta Kusumoto <sup>1</sup> , Xinba Yaer <sup>2</sup>	1 Muroran Institute of Technology, 2 Inner Mongolia University of Technology

Room B, Muroran Institute of Technology

Start	End				
9:00	9:30	Invite	Numerical Prediction of Shrinkage Defects in Iron Castings with Considering Solidification Characteristics of Cast Iron	○Jindong Zhu <sup>1</sup>	1 Multi-Flow Software Co. Ltd.
9:30	9:50	Oral	Injection Speed and Wave Behavior during Plunger Advancing in Aluminum Alloy Die Casting	○Toru Yamada <sup>1</sup> , Fuga Itakura <sup>1</sup> , Yasuhiro Maeda <sup>1</sup> , Akihito Hasuno <sup>2</sup> , Yasushi Mochida <sup>2</sup>	1 Daido University, 2 Ryobi Limited
9:50	10:10	Oral	Construction of the modified Cam-Clay model by triaxial compression and consolidation tests for a green sand mold with fused ceramic sand	○Naofumi Fukui <sup>1</sup> , Rei Imamura <sup>1</sup> , Yasuhiko Okimura <sup>1</sup> , Takashi Hanai <sup>2</sup> , Yusuke Kato <sup>2</sup> , Kunihiro Hashimoto <sup>2</sup> , Toshimitsu Okane <sup>3</sup> , Yuichi Motoyama <sup>4</sup> , Makoto Yoshida <sup>1</sup>	1 Waseda University, 2 Sintokogio, LTD., 3 Institute of Technologists, 3 National Institute of Advanced Industrial Science and Technology
10:10	10:25	Coffee break			
10:25	10:55	Invited	Attempt to apply frequency sweep eddy current testing for evaluation of ductile cast iron	○Noritaka Horikawa <sup>1</sup>	1 National Institute of Technology, Asahikawa College

10:55	11:15	Oral	Effect of forming pressure of a green sand mold on the contraction of casting and restraint force from the mold during the cooling process of flanged gray iron casting	○Yasuhiko Okimura <sup>1</sup> , Kazuma Nakamura <sup>1</sup> , Takashi Hanai <sup>2</sup> , Yusuke Kato <sup>2</sup> , Kunihiro Hashimoto <sup>2</sup> , Toshimitsu Okane <sup>3</sup> , Makoto Yoshida <sup>4</sup>	1 Waseda University, 2 Sintokogio Ltd., 3 Institute of Technologists, 3 Waseda University Kagami Memorial Research Institute for Materials Science and Technology
11:15	11:35	Oral	Characterization of growing dendrites in Mg-Zn alloys by 4D-CT+XRD	○Arisa Nishiguchi <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Taka Narumi <sup>1</sup> , Hideyuki Yasuda <sup>1</sup>	1 Kyoto University
11:35	12:55	Lunch			
12:55	13:25	Invite	Feasibility study of permanent mold casting for bismuth bronze	○Yuichi Motoyama <sup>1</sup> , Hiroshi Yamada <sup>2</sup> , Takafumi Akashi <sup>3</sup> , Yasushi Kurono <sup>4</sup> , Hiroki Mori <sup>5</sup> , Toshimitsu Okane <sup>6</sup> , Toru Maruyama <sup>7</sup>	1 AIST, 2 Kurimoto, 3 AKASHI GOHDOH, 3 Kurono Kinzoku, 3 Azbil Kimmon Haramachi, 3 Inst. of Technologists, 3 Kansai Univ.
13:25	13:45	Oral	In-situ tomography observation of crack formation induced by shear localization in semisolid Al-Cu alloys	○Taisuke Numata <sup>1</sup> , Taka Narumi <sup>1</sup> , Yuta Shoji <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Hideyuki Yasuda <sup>1</sup>	1 Kyoto University
13:45	14:05	Oral	Effect of Fe addition on solidification cracking susceptibility of Al-Mn-Cu alloy	○Takumi Kumaki <sup>1</sup> , Yoshihiro Nagata <sup>1</sup> , Ryohei Nakagawa <sup>1</sup> , Akira Matsushita <sup>2</sup> , Kenichi Yaguchi <sup>2</sup> , Toshio Sakamoto <sup>2</sup> , Kanta Orio <sup>3</sup> , Yasuhiko Okimura <sup>1</sup> , Toshimitsu Okane <sup>4</sup> , Muhammad Khairi Faiz <sup>5</sup> , Makoto Yoshida <sup>6</sup>	1 Waseda Univ., 2 Mitsubishi Materials Co., 3 MA Aluminum Co., 3 Institute of Technologist, 3 Universiti Malaya, 3 Institute for Materials Science and Technology, Waseda Univ.
14:05	14:20	Coffee break			
14:20	14:50	Invite	Continuous casting of highly purified aluminum billets from Al-Si alloys by using Lorentz force	○Takuya Tamura <sup>1</sup> , Mingjun Li <sup>1</sup>	1 National Institute of Advanced Industrial Science and Technology
14:50	15:10	Oral	Optimization of Pore-Free Die Casting Process for High-Integrity Casting	○Gi-Geun Hong <sup>1,2</sup> , Young Cheol Lee <sup>1</sup> , Yoon Suk Choi <sup>2</sup>	1 Korea Institute of Industrial Technology, 2 Department of Materials Science and Engineering, Pusan National University
15:10	15:30	Oral	Effects of trace impurity elements on castability and mechanical properties of JIS AC4C aluminum alloy	○Ken Moizumi <sup>1</sup> , Shigeru Iwasawa <sup>2</sup> , Kenji Hayashi <sup>3</sup>	1 ISUZU MOTORS LTD., 2 Industrial Research Institute of Shizuoka Prefecture, 3 Nissan Motor Co., Ltd.
15:30	15:45	Coffee break			
15:45	16:15	Invite	Demonstrating fragmentation due to grain-boundary remelting in deformed solid grains at the semisolid state using in-situ synchrotron imaging techniques	○Taka Narumi <sup>1</sup> , Makoto Ohta <sup>1</sup> , Taisuke Numata <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Hideyuki Yasuda <sup>1</sup>	1 Kyoto University
16:15	16:35	Oral	Influence of Bi and S as impurities on mechanical properties and solidification microstructure of phosphorus bronzes castings	Toru Maruyama 1, Goka Hiroyama 2, Toshimitsu Okane 3, Yuichi Motoyama 4, Takafumi Akashi 5, Katsuyuki Nakajima 6, Yoshinobu Yasuda 7, Hideaki Kobayashi 8	1 Kansai University, 2 Daimaru Kogyo co., LTD., 3 Institute of Technology, 4 National Institute of Advanced Industrial Science and Technology (AIST), 5 AKASHI GOHDOH Inc., 6 Joetsu Bronze1 Corporation, 7 Northeastern Industrial Research Center of Shiga Prefecture, 8 NIHON BRONZE CO., LTD.
16:35	16:55	Oral	Exploration of microsegregation-free compositions in the Cr-Mn-Fe-Co-Ni system aided by regression methods in machine learning	○Shigehiro Tokuri <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Taka Narumi <sup>1</sup> , Hideyuki Yasuda <sup>1</sup>	1 Kyoto University
16:55	17:15	Oral	Influence of Sr addition on the mechanical properties of Al-Si eutectic during solidification process	○Shogo Ozaki <sup>1</sup> , Rio Hirano <sup>1</sup> , Yoshihiro Nagata <sup>1</sup> , Akira Matsushita <sup>2</sup> , Toshio Sakamoto <sup>2</sup> , Kanta Orio <sup>3</sup> , Yasuhiko Okimura <sup>1</sup> , Toshimitsu Okane <sup>4</sup> , Muhammad Khairi Faiz <sup>5</sup> , Makoto Yoshida <sup>6</sup>	1 Waseda University, 2 Mitsubishi Materials Corporation, 3 MA Aluminum Corporation, 3 Department of Manufacturing Technologies, 3 University Malaya, 3 Kagami Memorial Research Institute for Materials Science and Technology

**Room C, , Muroran Institute of Technology**

Start	End				
9:00	9:30	Invite	Effect of Combined Addition of Molybdenum and Tungsten on Continuous Cooling Transformation Behavior of High Chromium Cast Iron	○Kaoru Yamamoto <sup>1</sup> , Sudsakorn Inthidech <sup>2</sup> , Yuzo Yokomizo <sup>3</sup> , Nobuya Sasaguri <sup>1</sup> , Yasuhiro Matsubara <sup>1</sup>	1 National Institute of Technology, Kurume College, 2 Maharakham University, 3 Japan Castering Co., Ltd
9:30	9:50	Oral	Effects of manganese and heat treatment on mechanical properties in spheroidal graphite cast iron	Takanori Aoki <sup>2</sup> , ○Tohru Nobuki <sup>1</sup> , Minoru Hatate <sup>1</sup>	1 Kindai University, 2 Yoshiwa Co., Ltd.
9:50	10:10	Oral	Influence of the pre-existed austenite on the mechanical response of a hot rolled Fe-4Mn-4Ni-3Al-0.3C steel	○Linfeng Zhang <sup>1</sup> , Kazuhiro Matsugi <sup>1</sup> , Yongbum Choi <sup>1</sup> , Kenjiro Sugio <sup>1</sup> , Yusuke Ochi <sup>1</sup> , Zhefeng Xu <sup>2</sup>	1 Hiroshima University, 2 Yanshan University
10:10	10:25	Coffee break			
10:25	10:55	Invited	Electroslag Overflow Forming and Numerical Simulation	○Heng Cao <sup>1</sup> , Yanchun Lou <sup>1,2</sup> , Yu Wang <sup>1,2</sup> , Yunlong Xiong <sup>1,2</sup> , Zengrui Wang <sup>1,2</sup> , Rui Chen <sup>1,2</sup>	1 National Key Laboratory of Advanced Casting Technologies, 2 Shenyang Research Institute of Foundry Co.,Ltd.
10:55	11:15	Oral	Liquid level control in sprue cup in consideration of falling position of outflow liquid in automatic pouring machine	○Takafumi Nakai <sup>1</sup> , Yoshiyuki Noda <sup>1</sup>	1 University of Yamanashi

11:15	11:35	Oral	cancel	cancel	
11:35	12:55	Lunch			
12:55	13:25	Oral	Application of time-resolve tomography to evaluations of solidification structure for macrosegregation modeling	○Hideyuki Yasuda <sup>1</sup> , Haon Xue <sup>1</sup> , Sota Nakano <sup>1</sup> , Arisa Nishiguchi <sup>1</sup> , Take Narumi <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Akira Sugiyama <sup>2</sup>	1 Kyoto University, 2 Osaka Sangyo University
13:25	13:45	Oral	Effects of contact conditions and mold release agent on heat transfer coefficient between Al-7%Si alloy and permanent mold during solidification process	○Takuma Kuno <sup>1</sup> , Ikumi Nakamura <sup>1</sup> , Yasuhiko Okimura <sup>1</sup> , Hiroshi Kambe <sup>2</sup> , Toshimitsu Okane <sup>3</sup> , Makoto Yoshida <sup>4</sup>	1 Waseda University, 2 Japan Foundry Engineering Society, 3 Institute of Technologists, 3 Institute for Materials Science and Technology, Waseda University
13:45	14:05	Oral	Boundary Condition and Fluidity in Mold Filling of Aluminum Alloy	○Taisei Deguchi <sup>1</sup> , Toru Yamada <sup>1</sup> , Kosuke Taki <sup>1</sup> , Masahiro Hagino <sup>1</sup> , Yasuhiro Maeda <sup>1</sup>	1 Daido University
14:05	14:20	Coffee break			
14:20	14:50	Invite	Experience in Using 3D Sand Printing to Produce Moulds for New and Replacement Cast Components	John Thomas Harry Pearce <sup>2</sup> , ○Nattinee Valun-Araya <sup>1</sup> , Otis Chantrarasukkasem <sup>1</sup> , Sankum Nusen <sup>2</sup>	1 Speed 3D Mold Co. Ltd., 2 Chiang Mai University
14:50	15:10	Oral	Dynamic Additive Manufacturing Based on Real-time State Observation and Visual Feedback by a 3D Sensing System	○Shinichi Ishikawa <sup>1</sup> , Ryo Yamada <sup>1</sup> , Takahito Yamashita <sup>1</sup> , Ryosuke Tasaki <sup>1</sup>	1 Aoyama Gakuin University
15:10	15:30	Oral	Robotic Deburring System using Reaction Force Control During High-speed Grinding for Various Materials	○Ryuji Nakagawa <sup>1</sup> , Masakazu Fujimoto <sup>2</sup> , Ryosuke Tasaki <sup>1</sup>	1 Aoyama Gakuin University, 2 Kindai University
15:30	15:45	Coffee break			

December 3, 2023

Start	End	Poster No			
10:10	10:55	P01	Investigation of microstructural evolution of SNCM439 alloy steel during hot forging and heat treatments	Sang-Yun Shin 1, Seong-Ho Ha 2, Dong-Hyuk Kim 2, Jaegu Choi 2	1 SBB TECH Co., Ltd, 2 Korea institute of industrial technology
10:55	11:40	P02	Application of vacuum melt treatment in refining impure copper	Hoon CHO, Jae-heon Jeong, Tae-hyeong Kim, Ram Song	Smart Liquid Processing R&D Department, Korea Institute of Industrial Technology, South Korea
10:10	10:55	P03	Properties of Short Alumina Fiber and VGCF Hybrid Reinforced Aluminum Alloy Composites	○Yuki Fujioka <sup>1</sup> , Kazunori Asano <sup>1</sup>	1 Kindai Univ.
10:55	11:40	P04	Effects of Mg based intermetallics on microstructures and oxidation characteristics in Al-Mg-Si, Al-Mg-Cu, and Al-Mg-Zn based alloys	○Youngok Yoon <sup>1</sup> , Nam-Seok Kim <sup>1</sup> , Ki-Dug Seong <sup>1</sup> , Bong-Hwan Kim <sup>1</sup> , Hyun-Kyu Lim <sup>1</sup> , Shae K. Kim <sup>1</sup>	1 KITECH(Korea Institute of Industrial Technology)
10:10	10:55	P05	Image Synthesis of Microstructures of Al-Si Casting Alloy Using Vector Quantized Generative Adversarial Network	○In-Sung Cho <sup>1</sup> , Hee-Soo Kim <sup>2</sup>	1 Korea Insitute of Industrial Technology, 2 Chosun University
10:55	11:40	P06	Non-destructive Evaluation of Tensile Strength of Gray Cast Iron Using DC Bias Alternating Magnetic Field	○Syunsuke Mio <sup>1</sup> , Kohei Kawada <sup>1</sup> , Naoki Kanemaru <sup>1</sup> , Yuji Gotoh <sup>2</sup>	1 Oita University Graduate School, 2 Oita University
10:10	10:55	P07	Distribution of TiN inclusion in Incoloy825 alloy under different electromagnetic stirring	○Engang Wang <sup>1</sup> , Fan Yang <sup>1</sup> , Zhongxin Zhai <sup>1</sup>	1 Northeastern University
10:55	11:40	P08	Changes in microstructures and tensile properties of 6061 aluminum alloy forged by a biaxial alternate forging	○Seong-Ho Ha <sup>1</sup> , Young-Chul Shin <sup>1</sup>	1 Korea institute of industrial technology
10:10	10:55	P09	Study of Junction of High Mn Steel powder and Mollten Metal using Sand Mold Press Casting	Kang-Rae Lee 1 and 2, Kyeong-Hwan Choe 1	1 KITECH (Korea Institute of Industrial Technology), 2 Inha University
10:55	11:40	P10	Effect of carbide grain size on high temperature erosive wear characteristics of high-chromium white cast iron	○Kenta Kusumoto <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Riki Hendra Purba <sup>1</sup> , Yila Gao <sup>1</sup> , Yudai Momma <sup>1</sup>	1 Muroran Institute of Technology
10:10	10:55	P11	Effect of ultrasonic melt treatment on the formation of primary intermetallic particles in aluminum alloys	Ram Song, Jae Heon Jeong, Tae-hyeong Kim, Hoon Cho	Smart Liquid Processing R&D Department, Korea Institute of Industrial Technology
10:55	11:40	P12	Observation of Microstructural Transition in Vacuum Induction Cast Al-X (X=Nd, Dy) alloy	Hyunseung Lee 1, Gangsan Kim 1, Seungho Han 1, Donhee Lee 1, Si Young Chang 1	1 Korea Aerospace University
10:10	10:55	P13	Application of Electromagnetic Force Vibration to Measure Shrinkage Cavity in Spheroidal Graphite Cast Iron.	○Shoutarou Niwa <sup>1</sup> , Yanfui Gao <sup>1</sup> , Yuji Gotoh <sup>1</sup>	1 Oita University
10:55	11:40	P14	Characteristics of High Mn Steel was manufactured by Sand Mold Press Casting	Kang-Rae Lee 1 and 2, Yoon-Jun Kim 2, Kyeong-Hwan Choe 1	1 KITECH (Korea Institute of Industrial Technology), 2 Inha University
10:10	10:55	P15	Analysis of Hot-rolled TRIP Steel without Artificial Patterns Using Digital Image Correlation	○Kyung Il Kim <sup>1</sup>	1 Korea Institute of Industrial Technology
10:55	11:40	P16	Sand Mold Press Casting simulation of High Mn Steel using Flow-3D	Kang-Rae Lee 1, Kyeong-Hwan Choe 1	1 KITECH (Korea Institute of Industrial Technology)
10:10	10:55	P17	Strength of sand core varied with the mixing ratio of foundry sands	Kyeonghwan Choe 1, Jiho Ahn 2, Kangrae Lee 1, Jae-cheol Jang 1,3	1 Korea Institute of Industrial Technology, 2 Hyundai Steel, 3 Seoul National University
10:55	11:40	P18	Development of Al-Si-Mg-Mn alloy for Aluminum Die Casting with High Thermal Conductivity	○Nameok Kim <sup>1</sup> , Seongho Ha <sup>1</sup> , Bonghwan Kim <sup>1</sup> , Hyunkyoo Lim <sup>1</sup> , Shae K. Kim <sup>1</sup> , Kidug Seong <sup>1</sup> , Youngok Yoon <sup>1</sup>	1 Korea institute of industrial technology
10:10	10:55	P19	Prediction of Fatigue Limit and its Variation for Spheroidal Graphite Cast Iron in various Stress Ratio	Naoto Shiraki <sup>1</sup> , ○Yumi Suzuki <sup>2</sup> , Ryosuke Fujimoto <sup>3</sup>	1 Tokyo City University, 2 Graduate school of Tokyo City University, 3 SHIBAURA MACHINE CO., LTD.
10:55	11:40	P20	Study on the optimum metal powder manufacturing process using AI	○Jun Ho Hong <sup>1</sup> , Hwi Jun Kim <sup>1</sup>	1 KITECH(Korea Institute of Industrial Technology)
10:10	10:55	P21	Nitrogen pickup in molten Fe-25Cr-35Ni heat resistant steel	○Junhyub Jeon <sup>1,2</sup> , Namhyuk Seo <sup>1,2</sup> , Ji-Woo Park <sup>2</sup> , Min-Su Kim <sup>2</sup>	1 Jeonbuk National University, 2 Korea Institute of Industrial Technology
10:55	11:40	P22	Effect of Fe surface pretreatment on the interfacial bonding properties of Al-Fe bimetals produced by high pressure die casting	Tae-hyeong Kim, Keun-hyo Lee, Je-sik Shin	Smart Liquid Processing R&D Department, Korea Institute of Industrial Technology

10:10	10:55	P23	Effect of heat treatment conditions on erosive wear properties of multi-component white cast iron	○Mayumi Fujii <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Kenta Kusumoto <sup>1</sup> , Yila Gaqi <sup>1</sup>	1 Muroran Institute Of Thechnology
10:55	11:40	P24	Study on the optimum metal powder manufacturing process using Al	○Jun Ho Hong <sup>1</sup> , Hwi Jun Kim <sup>1</sup>	1 KITECH(Korea Institute of Industrial Technology)
10:10	10:55	P25	Solidification Microstructure and Distribution of Alloy Elements in Cu Added High Carbon High Speed Steel Type Cast Alloy	○Yuki Tanaka <sup>1</sup> , Ryohei Nishino <sup>1</sup> , Kazunori Kamimiyada <sup>2</sup> , Kohei Morishita <sup>1</sup> , Hirofumi Miyahara <sup>1</sup>	1 Kyushu Univ., 2 Nippon Steel Rolls Corp.
10:55	11:40	P26	Activities to promote understanding of clearance metals undertaken by a technical high school located near a nuclear power plant	Jin Uduka <sup>1</sup> , Taiki Kamamoto <sup>1</sup> , Haruto Takemura <sup>1</sup> , Aki Matuura <sup>1</sup> , Naoki Deguchi <sup>1*</sup>	1 Fukui Prefectural Tsuruga Technical High School
10:10	10:55	P27	Repurposing and evaluation of general steel waste from nuclear power plants into street lights	Momono Nishida <sup>1</sup> , Honoka Maegawa <sup>1</sup> , Yukinori Asai <sup>1*</sup>	1 Fukuiminami High School
10:55	11:40	P28	tba	tba	1 Hokkaido Muroran Sakae High School

December 3, 2023

**Room A, Muroran Institute of Technology**

Start	End					
9:00	10:10	Poster Talk				
10:10	10:55	Poster A (Odd number)				
10:55	11:40	Poster B (Even number)				
11:40	12:50	Lunch				
12:50	13:20	Invite	Spheroidizer Agent Suited for Permanent Mold Casting	○Haruki Itofujii <sup>1</sup> , Masayuki Itamura	1 I2C Technology Institute	
13:20	13:40	Oral	Zirconia crucible for high temperature casting	Aziz Ahamed <sup>1</sup> , ○Sosuke Kitano <sup>1</sup> , Minehiko Ota <sup>1</sup>	1 Nippon Crucible company Ltd	
13:40	14:00	Oral	Effect of normalizing temperature on microstructure and mechanical properties of ductile cast iron	○Namhyuk Seo <sup>1,2</sup> , Junhyub Jeon <sup>1,2</sup> , Ji-Woo Park <sup>2</sup> , Min-Su Kim <sup>2</sup>	1 Jeonbuk National Univ., 2 Korea Institute of Industrial Technology	
14:00	14:20	Oral	Effects of Solidification Cooling Rate and Heat Treatment on Impact Properties of Pearlitic Spheroidal Graphite Iron Castings with heavy section	○Satoshi Yamamoto <sup>1</sup> , Haruki Itofujii <sup>2</sup> , Minoru Hatate <sup>3</sup> , Sadato Hiratsuka <sup>4</sup>	1 Daiwa heavy industry co.,LTD, 2 IC2 Technology institute co.,LTD, 3 kindai univ., 3 iwate univ.	
14:20	14:35	Coffe break				
14:35	15:05	Invite	Three body abrasive wear behavior of high Cr-based multi-component white cast iron with recycled material addition	○Riki Hendra Purba <sup>1</sup> , Kazumichi Shimizu <sup>2</sup> , Kenta Kusumoto <sup>2</sup>	1 University of Pembangunan Nasional Veteran Jakarta, 2 Muroran Institute of Technology	
15:05	15:25	Oral	Effect of Mo and W on the Microstructure and Hardness of Ni-hard Type cast Iron	○Ryohei Nishino <sup>1</sup> , Ryusei Tsunoda <sup>1</sup> , Yuki Tanaka <sup>1</sup> , Kazunori Kamimiyada <sup>2</sup> , Kohei Morishita <sup>1</sup> , Hirofumi Miyahara <sup>1</sup>	1 Kyushu University , 2 R & D, Nippon Steel Rolls Corporation	
15:25	15:45	Oral	Fatigue Limit Prediction of Cast Steel by Considering Porosity Distribution	○Yuma Ito <sup>1</sup> , Kazumichi Shimizu <sup>1</sup> , Kenta Kusumoto <sup>1</sup> , Atushi Nakahashi <sup>2</sup>	1 Muroran Institute of Technology, 2 Japan Steel works M&E, Inc.	
15:45	16:05	Oral	Relationship between the inclusion compositions and the castability of Al-Ti-Ca containing alloy	○Yusuke Kimura <sup>1</sup> , Takanori Yoshioka <sup>1</sup>	1 Sanyo Special Steel Co., Ltd., Japan	
16:05	16:25	Oral	Nucleation-controlled selection of metastable ferrite in Fe-Cr-Ni and Fe-C-Mn austenite steels	○Kengo Fujita <sup>1</sup> , Taka Narumi <sup>1</sup> , Ryoji Katsube <sup>1</sup> , Hideyuki Yasuda <sup>1</sup>	1 Kyoto University	
16:25	16:35	Closing				

**Room B, Muroran Institute of Technology**

Start	End					
12:50	13:20	Invite	Development of Bimodal Microstructure of Al-Cu-Si Ternary Eutectic Alloy with Different Cooling Rates	○Young Cheol Lee <sup>1</sup>	1 Korea Institute of Industrial Technology	
13:20	13:40	Oral	The origin of superheating grain refinement process of Mg-Al alloys	○Sungshu Jung <sup>1</sup> , Youngcheol Lee <sup>1</sup>	1 Korea Institute of Industrial Technology (KITEH)	
13:40	14:00	Oral	Solidification structure and mechanical properties of high-rigidity Al-Si-Cu-Ni-Mg alloys	○Koki Takeya <sup>1</sup> , Yusaku Sugawa <sup>1</sup> , Hirofumi Miyahara <sup>2</sup> , Keisaku Ogi <sup>3</sup>	1 HINODE Holdings Co., 2 Kyusyu Univ., 3 Professor Emeritus of Kyushu Univ.	
14:00	14:20	Oral	Chemical units in titanium alloy and alloy composition design	○Tianyu Liu <sup>1,2</sup> , Yanchun Lou <sup>1,2</sup> , C Dong <sup>3</sup> , Z Zhao <sup>1,2</sup> , S.B. Liu <sup>1,2</sup>	1 National Key Laboratory of Advanced Casting Technologies, 2 Shenyang Research Institute of Foundry Co., Ltd, 3 Dalian Jiaotong University	
14:20	14:35	Coffe break				
14:35	15:05	Invite	Effect of cooling conditions after solution treatment on age-hardening behavior of JIS AC4CH aluminum casting alloy	○Naohiro Saruwatari <sup>1</sup> , Takuya Yoneyama <sup>1</sup> , Sumiya Koike <sup>1</sup> , Yoshihiro Nakayama <sup>1</sup> , Eiji Sekiya <sup>2</sup>	1 University of Yamanashi, 2 MARUSHIN-HEAT TREATMENT Co.	
15:05	15:25	Oral	Fatigue characteristics of NiCrMo cast steel used in large cast steel products	○Atsushi Nakahashi <sup>1</sup> , Yusuke Yanagisawa <sup>2</sup> , Makoto Shikano <sup>2</sup> , Kazumichi Shimizu <sup>3</sup> , Kenta Kusumoto <sup>3</sup>	1 Japan Steel Works M&E, Inc., 2 Japan Steel Works , LTD., 3 Muroran Institute of technology.	
15:25	15:45	Oral	Structure and properties of micron-thick high-chromium cast iron synthesized on metal substrate by pulsed-plasma technique	Yuliia Chabak 1.3, Kazumichi Shimizu 2, Vasily Efremenko 1.3, Kenta Kusumoto 2, Alexey Efremenko 1	1 Pryazovskyi State Technical University, 2 Muroran Institute of Technology, 3 Institute of Materials Research of Slovak Academy of Sciences	
15:45	16:05	Oral	Influence of Heat Treatment on the Impact-wear Resistance of High Cr Cast Iron	○Huynh Kinh Luan Ngo <sup>1</sup> , Tetsuya Okuyama <sup>2</sup> , Masaru Nakayama <sup>2</sup> , Kuniaki Mizuno <sup>1</sup> , Koreaki Koizumi <sup>1</sup>	1 Itoh Kikoh Co. Ltd., 2 National Institute of Technology, Kurume College	

**Room C, Muroran Institute of Technology**

Start	End					
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11:40	12:50	Lunch			
12:50	13:20	Invite	Experience in Using 3D Sand Printing to Produce Moulds for New and Replacement Cast Components	John Thomas Harry Pearce <sup>2</sup> , <sup>o</sup> Nattinee Valun-Araya <sup>1</sup> , Otis Chantrarasukkasem <sup>1</sup> , Sankum Nusen <sup>2</sup>	1 Speed 3D Mold Co. Ltd., 2 Chiang Mai University
13:20	13:40	Oral	Dynamic Additive Manufacturing Based on Real-time State Observation and Visual Feedback by a 3D Sensing System	<sup>o</sup> Shinichi Ishikawa <sup>1</sup> , Ryo Yamada <sup>1</sup> , Takahito Yamashita <sup>1</sup> , Ryosuke Tasaki <sup>1</sup>	1 Aoyama Gakuin University
13:40	14:00	Oral	Robotic Deburring System using Reaction Force Control During High-speed Gridding for Various Materials	<sup>o</sup> Ryuji Nakagawa <sup>1</sup> , Masakazu Fujimoto <sup>2</sup> , Ryosuke Tasaki <sup>1</sup>	1 Aoyama Gakuin University, 2 Kindai University
14:00	14:20	Oral	Flow rate measurement and feedback control system with vision and force sensors in stainless steel casting	<sup>o</sup> Ryosuke Tasaki <sup>1</sup> , Ryunosuke Taguchi <sup>1</sup>	1 Aoyama Gakuin University
14:20	14:35	Coffe break			
14:35	15:05	Invite	Dynamic Compacting Analysis of Green Sand Test-piece Various Squeeze Conditions using Cooper-Eaton's Equation	<sup>o</sup> Yasuhiro Maeda <sup>1</sup> , Mikito Funahashi <sup>1</sup> , Takachiho Kume <sup>1</sup> , Fumitaka Kondo <sup>1</sup>	1 Dept. of Mechanical Engineering, Daido University
15:05	15:25	Oral	Data analysis for casting quality using machine learning	<sup>o</sup> Atsushi Kishimoto <sup>1</sup> , Masaru Hosokawa <sup>1</sup> , Kosuke Hamada <sup>2</sup> , Keiji Matsumoto <sup>1</sup>	1 KUBOTA corporation, Mass Production Casting Technology Development Team Casting Technology Section, Materials & Castings Center, 2 KUBOTA corporation
15:25	15:45	Oral	Effect of mulling methods on properties of green sand	<sup>o</sup> Lin Wang <sup>1</sup> , Keiji Matsumoto <sup>1</sup>	1 KUBOTA Corporation
15:45	16:05	Oral	Automatic detection of shrinkage cavities in casting products by AI using X-ray images	<sup>o</sup> Atsushi Fukura <sup>1</sup> , Takeshi Kasuya <sup>1</sup>	1 Proterial, Ltd. Casting Technology Research Laboratory