



WSE2023

9th International Conference on Welding Science and Engineering

24-27 July 2023, Harbin, China

Program

Organized by : Harbin Institute of Technology
Shanghai Jiao Tong University
Chinese Welding Society



WSE2023

Emergence of new materials and structure always stimulates rapid development of welding & joining technology. To enhance the scientific research and engineering applications of welding & joining technology, also to provide a platform for discussions among researchers and industrial partners, the “9th International Conference on Welding Science and Engineering (WSE)” will be held focusing on further development of the research field. This year’s conference subjects on “Advances in Welding Science and Engineering”, and will bring together welding & joining researchers and engineers from industry, academia and laboratories to discuss the cutting-edge progress in the field of welding science and engineering. We warmly welcome participants all over the world to this academic event.

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- Paul Kah, University West, Sweden
- Dongil Kwon, Seoul National University, South Korea
- Huijun Li, University of Wollongong, Australia
- JeongUng Park, Chosun University, South Korea
- Upadrasta Ramamurty, Nanyang Technological University, Singapore
- Kazuyoshi Saida, Osaka University, Japan
- Yutaka S. Sato, Tohoku University, Japan
- Masakazu Shibahara, Osaka Metropolitan University, Japan
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Conference Secretary

- Shang Wang, Harbin Institute of Technology
- Chen Shen, Shanghai Jiao Tong University

— WSE2023-Plenaries —



Dr. Guoqing Wang

Dr. Guoqing Wang is the CIO (Chief Information Officer) of China Aerospace Science and Technology Corporation, academician of CAE (Chinese Academy of Engineering), and academician of IAA (International Academy of Astronautics). He has led the team to develop a new generation of key manufacturing technologies and equipment for China's Long March rockets, and make outstanding contributions to China's major aerospace projects. He has been selected as a national-level talent in the "New Century Talents Project" and a leading talent in the "Ten Thousand Talents Plan" for scientific and technological innovation.



Prof. Upadrasta Ramamurty

After obtaining a PhD degree from Brown University under the supervision of Professor Subra Suresh and post-doctoral stints at UCSB and MIT, Ramamurty held faculty positions at the Nanyang Technological University, Singapore and the Indian Institute of Science, Bangalore, India, before returning to NTU in 2018 where he currently holds a President's Chair Professor position. His research interests include deformation and fracture behavior of amorphous as well as crystalline alloys, additive manufacturing, and the development and application of the nanoindentation technique.



Prof. Hidetoshi Fujii

Prof. Hidetoshi Fujii, a director and professor of the Joining and Welding Research Institute, Osaka University. His research interests are various solid state welding such as Friction Stir Welding, Linear Friction Welding and Solid-state Resistance Spot Welding. He has published more than 500 journal papers (H-index 60) and received many awards such as the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (2016), several Best Paper Awards from Science and Technology of Welding and Joining (Institute of Materials, Minerals, Mining, UK) et al.



Prof. Dongil Kwon

Emeritus professor Dongil Kwon is currently working at Seoul National University. He has over 36 years of research career in materials science and engineering. This worldwide career includes experiences in pioneered institutes including Max Planck Institute, Korea Research Institute of Standards & Science, Changwon National University, Massachusetts Institute of Technology, and Korea Research Institute of Standards & Science. He is now also serving as the Head of National Laboratory for Material Reliability and Convergence Research Institute for Forensic Safety, Republic of Korea.

— WSE2023-Plenaries —**Prof. Jun Ding**

Dr. Jun Ding obtained his PhD degree in physics from University of Bochum (Germany) in 1990. After his research work as research fellow/senior research fellow at University of Western Australia, he joined National University of Singapore (NUS) in 1997. Now, he is working as Professor as Department of Materials Science & Engineering, NUS. He has published > 500 journal papers with total citations more than 30,000 with H-index = 96 (Google Scholar, May 2023).

**Prof. Huijun Li**

Senior Professor Huijun Li is currently working at University of Wollongong; he is the Associate Dean – Higher Degree Research at Faculty of Engineering and Information Sciences. He has over 26 years of research experience in materials science and engineering. This includes expertise in the use of electron microscopy to study the microstructure of materials (particularly metals and ceramics) in areas such as phase transformations and structural evolution, additive manufacturing. He also has extensive experience in mechanical tests, failure analysis and materials development, as well as detailed knowledge of crystallography, welding metallurgy, line pipe steels, nickel-based alloys, high entropy alloys, and shape memory alloys.

**Prof. Zhuguo Li**

Prof. Li is a distinguished professor of Shanghai Jiao Tong University, the vice dean of School of Materials Science and Engineering, the director of Shanghai Key Laboratory of Materials Laser Processing and Modification, and the vice president of Chinese Welding Society. Research interests include laser welding, laser cladding, laser additive manufacturing and laser micro-processing. More than 200 papers published on peer-review journals, including Acta Mater, Mater Design, Appl Surf Sci, etc. Won the first prize of Science and Technology Award from Shanghai Municipality in 2015 and 2019, from Chinese Mechanical Engineering Society in 2016, and the second prize of Technological Invention Award from Ministry of Education in 2015. He is on the list of Stanford University's World Top 2% Scientists.

Technical Program of WSE2023

Registration

Hotel Lobby

24 July: 14:00 - 21:00

25 July: 07:00 - 10:30

8:00-12:20 Tuesday, 25 July

Room Longxi (2 nd floor)	
8:00-8:10	Opening Ceremony
8:10-8:20	Greeting
8:20-8:50 PL-1	Plenary Lecture 1
8:50-9:20 PL-2	Plenary Lecture 2
9:20-9:50 PL-3	Plenary Lecture 3
9:50-10:20	Break
10:20-10:50 PL-4	Plenary Lecture 4
10:50-11:20 PL-5	Plenary Lecture 5
11:20-11:50 PL-6	Plenary Lecture 6
11:50-12:20 PL-7	Plenary Lecture 7
12:30-13:30	Cafeteria (1 st and 3 rd floor)
	Buffet Lunch

13:30-18:30 Tuesday, 25 July

Room Yuanwei (2 nd floor)	Room Baihe (2 nd floor)	Room Dingxiang (2 nd floor)	Room Mudan (2 nd floor)	Room Longjin-I (1 st floor)	Room Longjin-II (1 st floor)
High Performance Materials Processing (1)	Modeling, Safety and Reliability (1)	Welding Processing and Metallurgy (1)	Welding Processing and Metallurgy (2)	Additive Manufacturing (1)	Brazing & Micro-Nano Joining (1)
13:30-13:55 HPMP-1	13:30-13:55 MSR-1	13:30-13:55 WPM-1	13:30-13:55 WPM-8	13:30-13:55 AM-1	13:30-13:55 BMNJ-1
13:55-14:15 HPMP-2	13:55-14:15 MSR-2	13:55-14:15 WPM-2	13:55-14:15 WPM-9	13:55-14:15 AM-2	13:55-14:15 BMNJ-2
14:15-14:35 HPMP-3	14:15-14:35 MSR-3	14:15-14:35 WPM-3	14:15-14:35 WPM-10	14:15-14:35 AM-3	14:15-14:35 BMNJ-3
14:35-14:50 HPMP-4	14:35-14:50 MSR-4	14:35-14:50 WPM-4	14:35-14:50 WPM-11	14:35-14:50 AM-4	14:35-14:50 BMNJ-4
14:50-15:05 HPMP-5	14:50-15:02 MSR-5*	14:50-15:02 WPM-5*	14:50-15:02 WPM-12*	14:50-15:05 AM-5	14:50-15:05 BMNJ-5
15:05-15:17 HPMP-6*	15:02-15:14 MSR-6*	15:02-15:14 WPM-6*	15:02-15:14 WPM-13*	15:05-15:17 AM-6*	15:05-15:20 BMNJ-6
15:17-15:29 HPMP-7*	15:14-15:26 MSR-7*	15:14-15:26 WPM-7*	15:14-15:26 WPM-14*	15:17-15:29 AM-7*	15:20-15:35 BMNJ-7
15:30-15:45 Coffee Break					
High Performance Materials Processing (2)	Modeling, Safety and Reliability (2)	Welding Processing and Metallurgy (3)	Welding Processing and Metallurgy (4)	Additive Manufacturing (2)	Brazing & Micro-Nano Joining (2)
15:45-16:10 HPMP-8	15:45-16:10 MSR-8	15:45-16:10 WPM-15	15:45-16:10 WPM-22	15:45-16:10 AM-8	15:45-16:10 BMNJ-8
16:10-16:30 HPMP-9	16:10-16:30 MSR-9	16:10-16:30 WPM-16	16:10-16:30 WPM-23	16:10-16:30 AM-9	16:10-16:30 BMNJ-9
16:30-16:50 HPMP-10	16:30-16:50 MSR-10	16:30-16:45 WPM-17	16:30-16:50 WPM-24	16:30-16:50 AM-10	16:30-16:50 BMNJ-10
16:50-17:05 HPMP-11	16:50-17:05 MSR-11	16:45-16:57 WPM-18*	16:50-17:05 WPM-25	16:50-17:05 AM-11	16:50-17:05 BMNJ-11
17:05-17:17 HPMP-12*	17:05-17:17 MSR-12*	16:57-17:09 WPM-19*	17:05-17:20 WPM-26	17:05-17:20 AM-12	17:05-17:20 BMNJ-12
17:17-17:29 HPMP-13*	17:17-17:29 MSR-13*	17:09-17:21 WPM-20*	17:20-17:32 WPM-27*	17:20-17:32 AM-13*	17:20-17:35 BMNJ-13
17:29-17:41 HPMP-14*	17:29-17:41 MSR-14*	17:21-17:33 WPM-21*	17:32-17:44 WPM-28*	17:32-17:44 AM-14*	17:35-17:50 BMNJ-14
17:41-17:53 HPMP-15*	17:41-17:53 MSR-15*		17:44-17:56 WPM-29*		17:50-18:05 BMNJ-15
17:40-18:30 Lobby (2nd floor)	Poster Session				
18:30-20:30 Room LongXi (2nd floor)	Banquet				

Note: Keynote Lectures are highlighted in red and bold (e.g. **HPMP-1**), Invited Lectures are highlighted in red (e.g. **HPMP-2**), candidates for Excellent Young Researchers Award are marked with * (e.g. **HPMP-6***).

8:00-12:30 Wednesday, 26 July

Room Yuanwei (2 nd floor)	Room Baihe (2 nd floor)	Room Dingxiang (2 nd floor)	Room Mudan (2 nd floor)	Room Longjin-I (1 st floor)	Room Longjin-II (1 st floor)
High Performance Materials Processing (3)	Modeling, Safety and Reliability (3)	Additive Manufacturing (3)	Additive Manufacturing (4)	Welding Processing and Metallurgy (5)	Brazing & Micro-Nano Joining (3)
8:00-8:25 HPMP-16	8:00-8:25 MSR-16	8:00-8:25 AM-15	8:00-8:25 AM-21	8:00-8:25 WPM-30	8:00-8:25 BMNJ-16
8:25-8:45 HPMP-17	8:25-8:45 MSR-17	8:25-8:45 AM-16	8:25-8:45 AM-22	8:25-8:45 WPM-31	8:25-8:45 BMNJ-17
8:45-9:05 HPMP-18	8:45-9:05 MSR-18	8:45-9:05 AM-17	8:45-9:05 AM-23	8:45-9:00 WPM-32	8:45-9:05 BMNJ-18
9:05-9:17 HPMP-19*	9:05-9:20 MSR-19	9:05-9:20 AM-18	9:05-9:20 AM-24	9:00-9:15 WPM-33*	9:05-9:20 BMNJ-19
9:17-9:29 HPMP-20*	9:20-9:35 MSR-20	9:20-9:35 AM-19	9:20-9:35 AM-25	9:15-9:30 WPM-34*	9:20-9:35 BMNJ-20
9:29-9:41 HPMP-21*	9:35-9:47 MSR-21*	9:35-9:47 AM-20*	9:35-9:47 AM-26*	9:30-9:45 WPM-35*	9:35-9:50 BMNJ-21
9:41-9:53 HPMP-22*	9:47-9:59 MSR-22*		9:47-9:59 AM-27*	9:45-10:00 WPM-36*	9:50-10:05 BMNJ-22
10:00-10:15 Coffee Break					
High Performance Materials Processing (4)	Modeling, Safety and Reliability (4)	Additive Manufacturing (5)	Additive Manufacturing (6)	Welding Processing and Metallurgy (6)	Brazing & Micro-Nano Joining (4)
10:15-10:40 HPMP-23	10:15-10:40 MSR-23	10:15-10:40 AM-28	10:15-10:35 AM-34	10:15-10:40 WPM-37	10:15-10:40 BMNJ-23
10:40-11:00 HPMP-24	10:40-11:00 MSR-24	10:40-11:00 AM-29	10:35-10:55 AM-35	10:40-11:00 WPM-38	10:40-11:00 BMNJ-24
11:00-11:20 HPMP-25	11:00-11:20 MSR-25	11:00-11:15 AM-30	10:55-11:07 AM-36*	11:00-11:20 WPM-39	11:00-11:20 BMNJ-25
11:20-11:32 HPMP-26*	11:20-11:35 MSR-26	11:15-11:30 AM-31	11:07-11:19 AM-37*	11:20-11:35 WPM-40	11:20-11:35 BMNJ-26
11:32-11:44 HPMP-27*	11:35-11:47 MSR-27*	11:30-11:42 AM-32*	11:19-11:31 AM-38*	11:35-11:47 WPM-41*	11:35-11:50 BMNJ-27*
11:44-11:56 HPMP-28*	11:47-11:59 MSR-28*	11:42-11:54 AM-33*	11:31-11:43 AM-39*	11:47-11:59 WPM-42*	11:50-12:05 BMNJ-28*
11:56-12:08 HPMP-29*	11:59-12:11 MSR-29*		11:43-11:55 AM-40*	11:59-12:11 WPM-43*	12:05-12:20 BMNJ-29*
	12:11-12:23 MSR-30*			12:11-12:23 WPM-44*	
	12:23-12:35 MSR-31*				
12:30-13:30 Cafeteria (1 st and 3 rd floor)	Buffet Lunch				

13:30-18:00 Wednesday, 26 July

Room Yuanwei (2 nd floor)	Room Baibe (2 nd floor)	Room Dingxiang (2 nd floor)	Room Mudan (2 nd floor)	Room Longjin-I (1 st floor)	Room Longjin-II (1 st floor)
High Performance Materials Processing (5)	Modeling, Safety and Reliability (5)	Additive Manufacturing (7)	International Education & Academic Exchange	Welding Processing and Metallurgy (7)	Brazing & Micro-Nano Joining (5)
13:30-13:55 HPMP-30	13:30-13:55 MSR-32	13:30-13:50 AM-41	13:30-14:00 Osaka University	13:30-13:55 WPM-45	13:30-13:55 BMNJ-30
13:55-14:15 HPMP-31	13:55-14:15 MSR-33	13:50-14:10 AM-42		13:55-14:15 WPM-46	13:55-14:15 BMNJ-31
14:15-14:30 HPMP-32	14:15-14:35 MSR-34	14:10-14:25 AM-43	14:00-14:30 Harbin Institute of Technology	14:15-14:35 WPM-47	14:15-14:35 BMNJ-32
14:30-14:42 HPMP-33*	14:35-14:50 MSR-35	14:25-14:40 AM-44		14:35-14:50 WPM-48	14:35-14:50 BMNJ-33
14:42-14:54 HPMP-34*	14:50-15:02 MSR-36*	14:40-14:55 AM-45	14:30-15:00 Shanghai Jiao Tong University	14:50-15:05 WPM-49	14:50-15:05 BMNJ-34*
14:54-15:06 HPMP-35*	15:02-15:14 MSR-37*	14:55-15:07 AM-46*		15:05-15:17 WPM-50*	15:05-15:20 BMNJ-35*
15:06-15:18 HPMP-36*	15:14-15:26 MSR-38*	15:07-15:19 AM-47*		15:17-15:29 WPM-51*	15:20-15:35 BMNJ-36*
15:18-15:30 HPMP-37*		15:19-15:31 AM-48*			
15:30-15:45 Coffee Break					
High Performance Materials Processing (6)	Modeling, Safety and Reliability (6)	Additive Manufacturing (8)	Additive Manufacturing (9)	Welding Processing and Metallurgy (8)	Brazing & Micro-Nano Joining (6)
15:45-16:05 HPMP-38	15:45-16:10 MSR-39	15:45-16:05 AM-49	15:45-16:05 AM-57	15:45-16:05 WPM-52	15:45-16:05 BMNJ-37
16:05-16:20 HPMP-39	16:10-16:30 MSR-40	16:05-16:25 AM-50	16:05-16:25 AM-58	16:05-16:25 WPM-53	16:05-16:25 BMNJ-38
16:20-16:35 HPMP-40	16:30-16:50 MSR-41	16:25-16:40 AM-51	16:25-16:40 AM-59	16:25-16:40 WPM-54	16:25-16:45 BMNJ-39
16:35-16:47 HPMP-41*	16:50-17:05 MSR-42	16:40-16:55 AM-52	16:40-16:52 AM-60*	16:40-16:55 WPM-55	16:45-17:00 BMNJ-40
16:47-16:59 HPMP-42*	17:05-17:17 MSR-43*	16:55-17:07 AM-53*	16:52-17:04 AM-61*	16:55-17:07 WPM-56*	17:00-17:15 BMNJ-41
16:59-17:11 HPMP-43*	17:17-17:39 MSR-44*	17:07-17:19 AM-54*	17:04-17:16 AM-62*	17:07-17:19 WPM-57*	17:15-17:30 BMNJ-42*
17:11-17:23 HPMP-44*	17:39-17:51 MSR-45*	17:19-17:31 AM-55*	17:16-17:28 AM-63*	17:19-17:31 WPM-58*	17:30-17:45 BMNJ-43*
	17:51-18:02 MSR-46*	17:31-17:43 AM-56*			17:45-18:00 BMNJ-44*
18:30-19:00 Room Longjin-1 (1st floor)			Award Ceremony for Excellent Young Researchers		

8:00-12:20 Tuesday, 25 July

8:00-12:20 Tuesday, 25 July

Room Longxi (2nd floor)

Opening Ceremony

Chair: Sanbao Lin (Harbin Institute of Technology)

Opening Ceremony

8:00-8:10 Peng He
(Harbin Institute of Technology)

Greeting

8:10-8:20 Shuili Gong
(Chinese Welding Society)

Plenary Lecture

Chair: Peng He (Harbin Institute of Technology)

8:20-8:50 PL-1	Guoqing Wang (China Aerospace Science and Technology Corporation)	Development and applications of additive manufacturing in China's aerospace industry
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8:50-9:20 PL-2	Upadrasta Ramamurty (Nanyang Technological University)	Structural integrity of 3D printed metals
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9:20-9:50 PL-3	Hidetoshi Fujii (Osaka University)	Flat hardness joints by solid-state welding
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9:50-10:20 Break

Plenary Lecture

Chair: Ninshu Ma (Osaka University)

10:20-10:50 PL-4	Dongil Kwon (Seoul National University)	Novel method to evaluate nondestructive mechanical properties and residual stress using instrumented indentation method
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10:50-11:20 PL-5	Jun Ding (National University of Singapore)	Fabrication of 3D structures for energy and environment applications
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11:20-11:50 PL-6	Huijun Li (University of Wollongong)	Qualification and certification of DED-Arc additive manufacturing
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11:50-12:20 PL-7	Zhuguo Li (Shanghai Jiao Tong University)	Laser cladding of novel Fe-based coatings for abrasive application
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13:30-18:00 Tuesday, 25 July

13:30-18:00 Tuesday, 25 July

Room Yuanwei (2nd floor)

High Performance Materials Processing (1)

Chairs: Sanbao Lin (Harbin Institute of Technology)
Guoliang Qin (Shandong University)

13:30-13:55 (Keynote) HPMP-1	Shujun Chen (Beijing University of Technology)	Study on material flow behavior during friction stir welding
13:55-14:15 (Invited) HPMP-2	Baoqiang Cong (Beihang University)	Ultrasonic frequency pulsed square-wave arc welding and additive manufacturing of lightweight alloy structures
14:15-14:35 (Invited) HPMP-3	Caiwang Tan (Harbin Institute of Technology, Weihai)	Joining characteristics and strengthening mechanism during laser joining of metal to CFRP
14:35-14:50 HPMP-4	Zuming Liu (Tianjin University)	Double-layer hybrid arc with constraint and free arcs: principle, arc properties and welding state
14:50-15:05 HPMP-5	Yu Zhang (Harbin Institute of Technology)	Hot-deformation, microstructure and properties of beta-gamma Ti-Al-V alloy
15:05-15:17 HPMP-6*	Sora Hirose (Osaka Metropolitan University)	AI-based optimization of welding sequence in multi-pass welding
15:17-15:29 HPMP-7*	Laihui Han (China University of Petroleum)	Effects of welding torch deviation on microstructure and mechanical properties of keyhole-TIG welded SAF2205/Q235 dissimilar joints

High Performance Materials Processing (2)

Chairs: Hidetoshi Fujii (Osaka University)
Baoqiang Cong (Beihang University)

15:45-16:10 HPMP-8 (Keynote)	Guoliang Qin (Shandong University)	Numerical simulation of low current pulsed GMA assisted high-power laser welding process
16:10-16:30 HPMP-9 (Invited)	Ping Jiang (Huazhong University of Science and Technology)	High power laser and its composite energy field welding technology
16:30-16:50 HPMP-10 (Invited)	Linjie Zhang (Xi'an Jiaotong University)	A study on laser welding of molybdenum alloy for the manufacture of ultra-high temperature heat pipes
16:50-17:05 HPMP-11	Chuang Cai (Southwest Jiaotong University)	Study on process stability in narrow-gap laser-arc hybrid welding of thick-plate titanium alloys
17:05-17:17 HPMP-12*	Xiaoying Liu (Shanghai Jiao Tong University)	Peel-off behavior of molten metal during laser ablation subjected to subsonic airflow

17:17-17:29 HPMP-13*	Yan Li (Huazhong University of Science and Technology)	Effects of heat source configuration on the welding process and joint formation in ultra-high power laser-MAG hybrid welding
17:29-17:41 HPMP-14*	Keyan Wang (Xi'an Jiaotong University)	Investigation on Marangoni effect on fluid flow during laser processing
17:41-17:53 HPMP-15*	Zhiyuan Wang (Harbin Institute of Technology)	Experimental and numerical study on spatters mitigation in keyhole-mode laser welding by superimposing additional ring-shaped beam

13:30-18:00 Tuesday, 25 July

Room Baihe (2nd floor)

Modeling, Safety and Reliability (1)

Chairs: Chuansong Wu (Shandong University)
Lianyong Xu (Tianjin University)

13:30-13:55 (Keynote) MSR-1	Ninshu Ma (Osaka University)	16Cr-8Ni LTT welding material and dilution effect due to all welding positions for compressive residual stress generation
13:55-14:15 (Invited) MSR-2	Rui Cao (Lanzhou University of University)	Strengthening and toughening mechanism of high strength bainite weld metals
14:15-14:35 (Invited) MSR-3	Jian Lin (Beijing University of Technology)	Joining mechanism and microstructure evolution of pressure resistance seal welding of clad tubes
14:35-14:50 MSR-4	Bakytzhan Sariyev (Nazarbayev University)	Fusion of NiTi-Al bimetal strips for producing high-damping lightweight hyperelastic flexures
14:50-15:02 MSR-5*	Shaohua Yan (Shenzhen University)	Multiscale mechanical properties of a hybrid laser welded Al alloy joint: experiment and dislocation-based modelling
15:02-15:14 MSR-6*	Tianxiang Tang (Tsinghua University)	Transition of interfacial friction regime and its influence on thermal responses in inertia friction welding of superalloys
15:14-15:26 MSR-7*	Xueyan Qi (Tianjin University)	Cyclic deformation response of 316H at room temperature: Phenomenological dislocation constitutive modelling

Modeling, Safety and Reliability (2)

Chairs: Masaki Omiya (Keio University)
Fenggui Lu (Shanghai Jiao Tong University)

15:45-16:10 (Keynote) MSR-8	Lianyong Xu (Tianjin University)	Fracture assessment using modified reference strain method for offshore welded pipelines under large strain
16:10-16:30 (Invited) MSR-9	Wenxian Wang (Taiyuan University of Technology)	Fatigue fracture behavior and life evaluation of metal and its welded joints based on energy theory
16:30-16:50 (Invited) MSR-10	Yunwu Ma (Shanghai Jiao Tong University)	Fracture modelling of resistance spot welded advanced high-strength steel

16:50-17:05 MSR-11	Shengli Li (Shandong University)	Microstructure-sensitive modeling for predicting creep properties of friction stir welded ferritic/martensitic heat-resistance steel
17:05-17:17 MSR-12*	Zhenduo Yao (Keio University)	Local experimental investigation and fracture prediction for resistance spot-welded joints of AHSS
17:17-17:29 MSR-13*	Fengjing Xu (Shanghai Jiao Tong University)	Feature point extraction method based on point distribution model for multi-layer multi-pass seam tracking
17:29-17:41 MSR-14*	Mingzhe Fan (Shanghai Jiao Tong University)	The creep-fatigue fracture behavior of heat-resistant steel welded joint under different tensile and compressive holding
17:41-17:53 MSR-15*	Chengchong Hu (Tianjin University)	Investigation of the low cycle fatigue behavior of 316H steel based on the cyclic response and damage accumulation: experiment and modelling

13:30-18:00 Tuesday, 25 July

Room Dingxiang (2nd floor)

Welding Processing and Metallurgy (1)		
Chairs: Weimin Long (Zhengzhou Machinery Research Institute) Yongbing Li (Shanghai Jiao Tong University)		
13:30-13:55 (Keynote) WPM-1	Changjiu Li (Xi'an Jiaotong University)	Metallurgical bonding formation during high velocity ultra-high temperature molten droplets impact for advanced metal coatings by air plasma spraying
13:55-14:15 (Invited) WPM-2	Zhen Luo (Tianjin University)	Progress of global welding research progress based on big data
14:15-14:35 (Invited) WPM-3	Ke Chen (Shanghai Jiao Tong University)	High-performance metal/non-polar polymer hybrid structure: interface design and bonding mechanisms
14:35-14:50 WPM-4	Dengwen Hu (Southwest Jiaotong University)	Effect of vanadium addition on the microstructure and properties of NiCuBSi-WC60 composite coatings
14:50-15:02 WPM-5*	Yutao Li (Beijing University of Technology)	Microstructure of laser clad AlCoCrFeNi-TiC composite coating
15:02-15:14 WPM-6*	Seungyeop Baek (Korea Automotive Technology Institute)	Effect of magnesium remelting and weld interface geometry on fatigue properties of resistance element welded
15:14-15:26 WPM-7*	Huwei Tao (Beijing Institute of Petrochemical Technology)	Effect of natural aging on mechanical properties and corrosion behavior of cold sprayed 2219 aluminum alloy coating

Welding Processing and Metallurgy (3)		
Chairs: Changjiu Li (Xi'an Jiaotong University) Zhen Luo (Tianjin University)		
15:45-16:10 (Keynote) WPM-15	Yongbing Li (Shanghai Jiao Tong University)	Advances in spot joining technologies of lightweight thin-walled structures
16:10-16:30 (Invited) WPM-16	Shanglu Yang (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences)	Developing innovative resistance spot welding process based on newton-ring electrode for high performance aluminum welds
16:30-16:45 WPM-17	Sendong Ren (Zhejiang University of Technology)	Validation of fatigue strength improvement by post-weld cold working in advanced high-strength steel spot joints
16:45-16:57 WPM-18*	Pengyu Zhang (Southeast University)	Research on vortex-friction stir welding process for TC4 titanium alloy
16:57-17:09 WPM-19*	Chao Ding (Beijing University of Technology)	Effect of piezo-actuating on resistance spot welding of aluminium alloy to steel
17:09-17:21 WPM-20*	Xiao Wang (Southwest Jiaotong University)	Numerical simulation study on factors influencing the uneven heating of alternative current rail flash butt welding end-face
17:21-17:33 WPM-21*	Baoming Zhao (Shanghai Aerospace Equipment Manufacturing Co., Ltd)	High performance precision micro resistance spot welding extreme manufacturing technology for the large area flexible solar wing

13:30-18:00 Tuesday, 25 July

Room Mudan (2nd floor)

Welding Processing and Metallurgy (2)		
Chairs: Jian Cao (Harbin Institute of Technology) Christos Spitas (University of Nottingham Ningbo China)		
13:30-13:55 (Keynote) WPM-8	Honggang Dong (Dalian University of Technology)	Design and application of interlayer for vacuum diffusion bonding of TC4 titanium alloy to T2 copper
13:55-14:15 (Invited) WPM-9	Ying Wang (Tianjin University)	Design of TiB ₂ -based gradient composite ceramic and optimization of its brazing performance with metal
14:15-14:35 (Invited) WPM-10	Shanlin Wang (Nanchang Hangkong University)	Solid-state joining of titanium/aluminum dissimilar alloys
14:35-14:50 WPM-11	Jiecai Feng (Shanghai University)	Laser welding of 30Cr3-30CrMnSiA dissimilar ultra-high strength steel
14:50-15:02 WPM-12*	Junxuan Tang (Dongguan University of Technology)	Influence of surface etching on welding performance of TC4/CFRP composite materials

15:02-15:14 WPM-13*	Chengle Yang (Tsinghua University)	Material flow behaviors during dissimilar friction stir welding of Al and Mg alloys: experimental investigation and numerical analysis
15:14-15:26 WPM-14*	Hongyang Cao (Jiangsu University)	Influence of the laser power on the welding joint of TC4 and SiCp/6092Al dissimilar alloys
Welding Processing and Metallurgy (4)		
Chairs: Honggang Dong (Dalian University of Technology) Ying Wang (Tianjin University)		
15:45-16:10 (Keynote) WPM-22	Xiaoguo Song (Harbin Institute of Technology, Weihai)	Fundamental and applied study on surface activation assisted brazing process and mechanism of dissimilar materials
16:10-16:30 (Invited) WPM-23	Christos Spitas (University of Nottingham Ningbo China)	Fusion of NiTi-Al bimetal strips for producing high-damping lightweight hyperelastic flexures
16:30-16:50 (Invited) WPM-24	Yulong Li (Nanchang University)	Ultrafast wetting phenomenon of Ag and formation of microporous structure on the surface of pure Ti
16:50-17:05 WPM-25	Guoqing Chen (Harbin Institute of Technology)	Electron beam welding of refractory metal/Ni-based superalloy: Nb/GH3128
17:05-17:20 WPM-26	Xiaohu Hao (Taiyuan University of Technology)	Metallurgical reaction mechanism and its effect on the properties of fusion welded titanium/steel dissimilar joint
17:20-17:32 WPM-27*	Chao Li (Dalian University of Technology)	Interlayer design and welding parameters optimization for diffusion bonding of titanium alloy to stainless steel
17:32-17:44 WPM-28*	Haoyue Li (Harbin Institute of Technology)	Dynamic spreading and interfacial evolution during the laser-induced wetting process of aluminum on titanium
17:44-17:56 WPM-29*	Baiyun Yang (Yangzhou University)	Synchronously improved tensile and deforming abilities of laser welded-brazed Al/steel joints by addition of element Si

13:30-18:00 Tuesday, 25 July

Room Longjin-I (1st floor)

Additive Manufacturing (1)		
Chairs: S Joo Na (Xi'an Jiaotong University) Shuili Gong (AVIC Manufacturing Technology Institute)		
13:30-13:55 (Keynote) AM-1	Wei Zhou (Nanyang Technological University)	Multi-material additive manufacturing by cold spray technology
13:55-14:15 (Invited) AM-2	Yiqiang Wang (Dalian University of Technology)	Optimization design of structure and lattice structure for additive manufacturing
14:15-14:35 (Invited) AM-3	Wei Guo (Huazhong University of Science and Technology)	Wire based laser directed energy deposition for repairing Q690D high strength steel

14:35-14:50 AM-4	Xiaoteng Wang (China Railway Construction Heavy Industry Corporation Limited)	Study on process and performance of twin-wire wear-resistant surfacing welding
14:50-15:05 AM-5	Jie Ning (Xi'an Jiaotong University)	Preparation of Cu ₂ Se thermoelectric material with excellent overall performance via selective laser melting
15:05-15:17 AM-6*	Haodong Wang (Shanghai Jiao Tong University)	Understanding the role of energy densities on microstructure and mechanical properties to fabricate high-strength Ti-6wt%Cu alloys by laser metal deposition
15:17-15:29 AM-7*	Kun Liu (Beijing University of Technology)	Inconel-copper functional bimetallic structures with grain-size gradients and heterogeneous Interfacial characteristic fabricated by directed energy deposition-arc
Additive Manufacturing (2)		
Chairs: Fengchun Jiang (Harbin Engineering University) Wei Zhou (Nanyang Technological University)		
15:45-16:10 (Keynote) AM-8	Shuili Gong (AVIC Manufacturing Technology Institute)	Metal structure additive manufacturing technology: application and development
16:10-16:30 (Invited) AM-9	Baohua Chang (Tsinghua University)	Studies on the fabrication of NiTi shape memory alloys by electron beam wire-feed additive manufacturing process
16:30-16:50 (Invited) AM-10	Yongxian Huang (Harbin Institute of Technology)	Wire-based friction stir additive manufacturing: denser, stronger, faster
16:50-17:05 AM-11	Kaiming Wang (Changsha University of Science & Technology)	Research on the microstructure and properties of K648 superalloy manufactured by the extreme highspeed laser metal deposition
17:05-17:20 AM-12	Guan Liu (Central South University)	Research on gradient structure and properties of laser melting deposited directional solidified superalloy
17:20-17:32 AM-13*	Shuai Wang (Shanghai Jiao Tong University)	Study on mechanism and elimination of hot crack in laser additive manufacturing of new complex concentration superalloy
17:32-17:44 AM-14*	Zhifei Xu (Beijing University of Technology)	Effect of in-situ micro impacting assisted wire arc additive manufacturing on microstructure of aluminum alloy

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Room Longjin-II (1st floor)**Brazing & Micro-Nano Joining (1)**

Chairs: Guisheng Zou (Tsinghua University)

Chuantong Chen (Osaka University)

13:30-13:55 (Keynote) BMNJ-1	Xiujuan Zhao (Signify Research Netherlands)	Challenge in quantification of solder interconnect degradation and correlation of ML based lifetime prediction
13:55-14:15 (Invited) BMNJ-2	Zhenwen Yang (Tianjin University)	Interface design and reaction control of C/C composite joining
14:15-14:35 (Invited) BMNJ-3	Dongjin Kim (Korea Institute of Industrial Technology)	Macroscale and microscale structural mechanisms capable of delaying the fracture of low-temperature and rapid pressureless Ag sintered electronics packaging
14:35-14:50 BMNJ-4	Qian Wang (Osaka University)	Development of a material model for elucidating supersonic impact-bonding behavior and micro-forging strengthening principle during cold spray additive manufacturing
14:50-15:05 BMNJ-5	Jin Yang (Shanghai University of Engineering Science)	Ultrafast laser selective welding of sapphire and Invar alloy
15:05-15:20 BMNJ-6	Su Ding (Xidian University)	Failure mechanism of transparent electrodes materials under current
15:20-15:35 BMNJ-7	Lu Liu (Shanghai Jiao Tong University)	Preparation and properties characterization of Sn-Bi composite solder paste with high-strength and high-reliability

Brazing & Micro-Nano Joining (2)

Chairs: Yanhong Tian (Harbin Institute of Technology)

Xiujuan Zhao (Signify Research Netherlands)

15:45-16:10 (Keynote) BMNJ-8	Mingyu Li (Harbin Institute of Technology, Shenzhen)	Die attach technology for power electronics packaging
16:10-16:30 (Invited) BMNJ-9	Shang Wang (Harbin Institute of Technology)	Synthesis and performance analysis of MnSe@rGO for aqueous zinc-ion batteries
16:30-16:50 (Invited) BMNJ-10	Jianing An (Jinan University)	Design and manufacturing of intelligent flexible sensors based on femtosecond laser direct writing
16:50-17:05 BMNJ-11	Xiaoliang Ji (Beijing University of Technology)	Microstructure and properties of Sn-based solder joint with nickel-coated carbon fibers addition
17:05-17:20 BMNJ-12	Ce Wang (Harbin Institute of Technology)	Application of glass brazing technology in all solid state lithium batteries
17:20-17:35 BMNJ-13	Luchan Lin (Shanghai Jiao Tong University)	Ultrafast laser microjoining of heterogeneous semiconductor-oxide structures

17:35-17:50 BMNJ-14	Guanzhi Wu (Shanghai Jiao Tong University)	High-conductivity and low-thermal-damage micro-resistance welds of Ag-coated Cu wire to Ag-coated Kovar interconnector by redesign of electrode system
17:50-18:05 BMNJ-15	Rui Pan (Beijing University of Technology)	Ultrafast laser welding of transparent materials

8:00-12:30 Wednesday, 26 July

8:00-12:30 Wednesday, 26 July

Room Yuanwei (2nd floor)

High Performance Materials Processing (3)

Chairs: Zhenmin Wang (South China University of Technology)

Linjie Zhang (Xi'an Jiaotong University)

8:00-8:25 (Keynote) HPMP-16	Xiaohong Zhan (Nanjing University of Aeronautics and Astronautics)	Cross-scale control of shape and performance for laser welding of light alloys
8:25-8:45 (Invited) HPMP-17	Yan Liu (Southwest Jiaotong University)	Forming and performance regulation of large-scale titanium components processed by high-power laser
8:45-9:05 (Invited) HPMP-18	Zhan Sun (Harbin Institute of Technology)	Phase transition induced low temperature diffusion bonding of Zr-4 alloy using a pure Ti interlayer
9:05-9:17 HPMP-19*	Guodong Liang (Shandong University)	Numerical analysis of narrow gap oscillating laser welding process of high-strength steel
9:17-9:29 HPMP-20*	Jiacheng Li (Shanghai Jiao Tong University)	Intelligent weld seam grinding based on laser vision sensor and EHA floating tool
9:29-9:41 HPMP-21*	Xiaocong Yang (Tianjin University)	The co-precipitation evolution of NiAl and Cu and its influence on strengthening and toughening mechanisms in ultra-high strength martensite seamless tube steel
9:41-9:53 HPMP-22*	Kan Li (Shandong University)	Numerical simulation of rotating arc behavior for non-axisymmetric tungsten narrow gap GTAW

High Performance Materials Processing (4)

Chairs: Xiaohong Zhan (Nanjing University of Aeronautics and Astronautics)

Ping Jiang (Huazhong University of Science and Technology)

10:15-10:40 (Keynote) HPMP-23	Ruifeng Li (Jiangsu University of Science and Technology)	Fabrication of medium entropy alloys using ultrasonic impact treatment aided laser direct energy
10:40-11:00 (Invited) HPMP-24	Dhanesh G. Mohan (Zhengzhou Research Institute Harbin Institute of Technology)	Fabrication of non-equimolar cantor high entropy alloys using additive manufacturing
11:00-11:20 (Invited) HPMP-25	Jiankang Huang (Lanzhou University of Technology)	Arc additive manufacturing process sense and control along with melt droplet and pool behavior under multi-field coupling
11:20-11:32 HPMP-26*	Feipeng An (Xi'an Jiaotong University)	Comparison of performance of laser powder bed fused thin-walled TC11 alloy samples welded via laser welding and electron beam welding
11:32-11:44 HPMP-27*	Guolin Cao (Huazhong University of Science and Technology)	Research on laser scanning welding process of rectangular copper wires applied in electrical drives

11:44-11:56 HPMP-28*	Xing Liu (Nanjing University of Aeronautics and Astronautics)	Integrated control of shape and properties in large thickness titanium alloy laser welding for aviation
11:56-12:08 HPMP-29*	Yuzhou Zeng (Harbin Engineering University)	Effects of thermal conditions on tic behaviors in TiC/Ti6Al4V composites by laser melting deposition

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Room Baihe (2nd floor)

Modeling, Safety and Reliability (3)

Chairs: Aiping Wu (Tsinghua University)
Dean Deng (Chongqing University)

8:00-8:25 (Keynote) MSR-16	Masakazu Shibahara (Osaka Metropolitan University)	Digital twin in welding and gas heating
8:25-8:45 (Invited) MSR-17	Jianguo Yang (Zhejiang University of Technology)	Hydrogen-induced one-dimensional growth of nanophases in high-entropy alloy AlCoCrFeNi _{2.1}
8:45-9:05 (Invited) MSR-18	Jun Xiao (Beijing University of Technology)	High-efficient magnetic control of molten pool flow during oscillating laser dual wire deposition process
9:05-9:20 MSR-19	Hao Su (Shandong University)	Effect of tool eccentricity on the periodic material flow in friction stir welding process
9:20-9:35 MSR-20	Shuibao Liang (Hefei University of Technology)	Enable understanding the preferential growth of intermetallic in electronic interconnects through multi-phase field modelling
9:35-9:47 MSR-21*	Fangzheng Shi (Tsinghua University)	First-principles calculation on GR/Al direct bonding interface: spatial structure, interface binding energy and electron transfer
9:47-9:59 MSR-22*	Tongtong Liu (Shanghai Jiao Tong University)	A comprehensive model for multiphysics effects on microstructure in powder-fed laser cladding

Modeling, Safety and Reliability (4)

Chairs: Ninshu Ma (Osaka University)
Wenxian Wang (Taiyuan University of Technology)

10:15-10:40 (Keynote) MSR-23	Xia Liu (Shanghai Turbine Plant of Shanghai Electric Power Generation Equipment Co. Ltd.)	Research on FB2/CrMoV dissimilar materials welded rotor for USC steam turbine
10:40-11:00 (Invited) MSR-24	Hua Zhang (Beijing Institute of Petrochemical Technology)	A primary introduction of solid-state formation technologies on additive manufacture
11:00-11:20 (Invited) MSR-25	Dan Wang (Jiangsu University)	Mechanism of radiation damage resistance of fusion welded joint

11:20-11:35 MSR-26	Lin Wang (China University of Mining and Technology)	Numerical analysis of the heat transfer and fluid flow during the external magnetic field-assisted MIG welding-brazing of aluminum to steel
11:35-11:47 MSR-27*	Hao Pan (Harbin Institute of Technology)	Effect of isothermal shortage on the microstructure and mechanical properties of Kovar/SnSb/Kovar joint
11:47-11:59 MSR-28*	Fengyuan Zhao (Shandong University)	Phase field simulation of intermetallic compound growth during friction stir welding of dissimilar Al/Mg
11:59-12:11 MSR-29*	Chu Han (Huazhong University of Science & Technology)	Inhomogeneous microstructure distribution and its formation mechanism in deep penetration laser welding of medium-thick aluminum-lithium alloy plates
12:11-12:23 MSR-30*	Yueting Ma (Dalian University of Technology)	Galvanic corrosion of AA5052/304SS welded joint with Zn-based filler metal in marine engineering
12:23-12:35 MSR-31*	Xueyan Qi (Tianjin University)	Cyclic deformation response of 316H at room temperature: Phenomenological dislocation constitutive modelling

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Room Dingxiang (2nd floor)

Additive Manufacturing (3)

Chairs: Yanling Guo (Northeast Forestry University)

Dongdong Gu (Nanjing University of Aeronautics and Astronautics)

8:00-8:25 (Keynote) AM-15	S Joo Na (Xi'an Jiaotong University)	Modeling and simulation of laser materials processing
8:25-8:45 (Invited) AM-16	Huiliang Wei (Nanjing University of Science and Technology)	Transient processes and control mechanisms of laser additive manufacturing
8:45-9:05 (Invited) AM-17	Chunhuan Guo (Harbin Engineering University)	A novel controlling microstructure and properties technique for metal additive manufacturing assisted with ultrasonic energy
9:05-9:20 AM-18	Bin Xu (Beijing University Of Technology)	A numerical study of effects of bypass current on physical fields and thermal transfer in hybrid variable polarity plasma arc
9:20-9:35 AM-19	Yue Zhao (Jiangsu University of Science and Technology)	WTaNbMo/ γ -(Ni, Cr) refractory high entropy alloy composite coating prepared by out-field assisted laser deposition
9:35-9:47 AM-20*	Wenjia Huang (Osaka University)	Residual stresses distribution patterns in typical wire arc additive manufactured wall and pipe structures

Additive Manufacturing (5)

Chairs: Xin Lin (Northwestern Polytechnical University)

Lujun Huang (Harbin Institute of Technology)

10:15-10:40 (Keynote) AM-28	Dongdong Gu (Nanjing University of Aeronautics and Astronautics)	Material-structure integrated laser additive manufacturing of lightweight and high-performance metallic components
10:40-11:00 (Invited) AM-29	Xiuli He (Chinese Academy of Sciences)	Multi-scale and multi-physics modeling for laser advanced manufacturing
11:00-11:15 AM-30	Jiandong Wang (Harbin Engineering University)	Effects of ultrasonic impact on the microstructure and properties of stainless steel by directed energy deposition
11:15-11:30 AM-31	Kaijie Lin (Nanjing University of Aeronautics and Astronautics)	Improving fuel cell performances of laser powder bed fusion processed 316L bipolar plates by active screen plasma nitriding
11:30-11:42 AM-32*	Yaowei Wang (Tianjin University)	Tribo-corrosion behavior of Fe-Cr-B alloys manufactured by high speed laser directed energy deposition (H-LDED)
11:42-11:54 AM-33*	Xiaowei Wang (Beijing University of Technology)	In-order stacking of primitives in arc directed energy deposition-based additive manufacturing

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Room Mudan (2nd floor)

Additive Manufacturing (4)

Chairs: Zhuguo Li (Shanghai Jiao Tong University)

Liqun Li (Harbin Engineering University)

8:00-8:25 (Keynote) AM-21	Xin Lin (Northwestern Polytechnical University)	Numerical simulation for metal additive manufacturing process
8:25-8:45 (Invited) AM-22	Guangjun Zhang (Harbin Institute of Technology)	Arc additive manufacturing technology
8:45-9:05 (Invited) AM-23	Xiaoxia Xu (Aerospace Engineering Equipment (Suzhou) Co., Ltd)	Current development and prospect of high-efficiency and high-performance solid-state-based additive friction stir deposition technology
9:05-9:20 AM-24	Lei Zhang (Shanghai Jiao Tong University)	High-accuracy analysis method for the compressive properties of thin shell lattice structures with consideration of AM-induced geometric defects
9:20-9:35 AM-25	Shengbin Zhao (Soochow University)	Additive remanufacturing Ni-based multilayer with homogeneously distributed dual-scale tungsten carbide reinforcements by an integrated strategy of hot-wire-feed laser deposition and remelting
9:35-9:47 AM-26*	Pengfei Guo (Harbin Institute of Technology)	Particle distribution and focusing behaviour of coaxial nozzle in laser metal deposition

9:47-9:59 AM-27*	Xia Meng (Jiangsu University)	Strengthening mechanism of near additive manufacturing B-containing Cr17Ni2 EHLA coating
Additive Manufacturing (6)		
Chairs: Guangjun Zhang (Harbin Institute of Technology) Huiliang Wei (Nanjing University of Science and Technology)		
10:15-10:35 (Invited) AM-34	Furong Chen (Inner Mongolia University of Technology)	Effect of coating submicron-sized La ₂ O ₃ particles on regulating grain structure and mechanical properties of 6061 aluminum alloy CMT welded joints
10:35-10:55 (Invited) AM-35	Zhi Zeng (University of Electronic Science and Technology of China)	Wire arc additive manufacturing of NiTi shape memory alloys
10:55-11:07 AM-36*	Cheng Li (Beijing University of Technology)	Temperature, mass and velocity of droplet in the bypass hybrid plasma arc wire additive manufacturing
11:07-11:19 AM-37*	Guoxin Ren (Taiyuan University of Technology)	Effect of subcrystalline microstructure on mechanical properties of Invar alloy prepared by SLM
11:19-11:31 AM-38*	Qianhui Cao (Beihang University)	Microstructure evolution and mechanical properties of magnesium-rare earth alloy fabricated by arc-directed energy deposition
11:31-11:43 AM-39*	Tao Zhao (Beijing University of Technology)	Integration of direct energy deposition systems with an optimized process planning method
11:43-11:55 AM-40*	Zhijia Hua (Huazhong University of Science and Technology)	Investigation on the microstructure evolution and mechanical properties of (TiB+TiC)/Ti-6Al-4V composites fabricated via in situ laser-directed energy deposition in an underwater environment

8:00-12:30 Wednesday, 26 July

Room Longjin-I (1st floor)

Welding Processing and Metallurgy (5)		
Chairs: Gongqi Shi (Jiangsu Industrial Technology Research Institute) Yanfa Han (Ansteel Group Research Institute)		
8:00-8:25 (Keynote) WPM-30	Wenya Li (Northwestern Polytechnical University)	Solid-state friction stir welding & cold spraying — go beyond metal bonding
8:25-8:45 (Invited) WPM-31	Anton Naumov (Saint Petersburg Polytechnic University)	Friction stir welding of aluminium alloys: improving the quality of the joint and increasing the productivity of the process
8:45-9:00 WPM-32	Xiangchen Meng (Harbin Institute of Technology)	Friction stir channeling of lightweight materials
9:00-9:15 WPM-33*	Haining Yao (Shanghai Jiao Tong University)	Superb metallurgical bonding formed in friction stir lap welding FeCoCrNiMn high entropy alloy to 6061 Al alloy
9:15-9:30 WPM-34*	Yang Li (Shandong University)	Double-side friction stir Z shape butt-lap welding of medium-thick Ti/Al dissimilar plates

9:30-9:45 WPM-35*	Jingyue Luo (Southeast University)	Vortex-friction stir lap welding of 5083 aluminum alloy/304 stainless steel dissimilar materials
9:45-10:00 WPM-36*	Yixing Zhu (Tsinghua University)	Enhanced mechanical and degradation properties of Mg-Re-Sr alloy by friction stir processing
Welding Processing and Metallurgy (6)		
Chairs: Chunlin Dong (Guangzhou Jiaotong University) Fengchao Liu (Institute of Metal Research, Chinese Academy of Sciences)		
10:15-10:40 (Keynote) WPM-37	Gongqi Shi (Jiangsu Industrial Technology Research Institute)	Advanced welding technologies and applications
10:40-11:00 (Invited) WPM-38	Tiesong Lin (Harbin Institute of Technology)	Joining and application of advanced ceramics
11:00-11:20 (Invited) WPM-39	Lina Yu (Osaka University)	Mechanism for stress relaxation and long-term stability of WJP and buffing stress improving treatments
11:20-11:35 WPM-40	Yunpeng Liu (Shanghai Jiao Tong University)	Formation mechanism and mechanical strength evaluation of hybrid riveted/solid-state bonded aluminium alloy joint
11:35-11:47 WPM-41*	Ryo Matsuoka (Osaka Metropolitan University)	Development of digital twin for structures with thermal-elastic-plastic field
11:47-11:59 WPM-42*	Yunbin Lu (Jiangsu University)	Microstructure evolution and wear behaviour of TiB whisker reinforced titanium matrix composites with columnar structure
11:59-12:11 WPM-43*	Lingzhi Ba (Tianjin University)	Enhancing hot ductility of a cryogenic high manganese steel by matrix homogenization and grain refinement
12:11-12:23 WPM-44*	Chuanzong Li (Shanghai Jiao Tong University)	Interfacial microstructure evolution and bonding mechanism transformation of CoCrFeMnNi high-entropy alloy joints fabricated by vacuum hot-compression bonding

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Room Longjin-II (1st floor)

Brazing & Micro-Nano Joining (3)		
Chairs: Guangbin Dou (Southeast University) Hongbo Xu (Zhejiang Lab)		
8:00-8:25 (Keynote) BMNJ-16	Qidong Wang (Institute of Microelectronics of the Chinese Academy of Sciences)	Challenges in soldering and future trend of assembly in Advanced Packaging
8:25-8:45 (Invited) BMNJ-17	Lei Liu (Tsinghua University)	Nanojoining and low temperature bonding based on pulsed laser deposition
8:45-9:05 (Invited) BMNJ-18	Xinyu Ren (Beijing Institute of Aeronautical Materials)	Study on vacuum brazing of DD6 single crystal superalloy using high entropy filler alloy

9:05-9:20 BMNJ-19	Hong Bian (Harbin Institute of Technology)	Research on brazing process and corrosion mechanism of titanium and ZrO ₂ ceramic based on biocompatibility
9:20-9:35 BMNJ-20	Hongjun Ji (Harbin Institute of Technology, Shenzhen)	Cu@Ag nanoparticles: synthesis, characterization, sintering mechanism and applications for power and printed electronics
9:35-9:50 BMNJ-21	Yong Xiao (Wuhan University of Technology)	Ultrasonic-assisted soldering technology for high-strength bonding of Al alloy employing metal mesh reinforced Sn-based solder
9:50-10:05 BMNJ-22	Liangbo Sun (Harbin Institute of Technology)	Joining dense Si ₃ N ₄ to porous Si ₃ N ₄ using a novel glass-ceramic bonding method
Brazing & Micro-Nano Joining (4)		
Chairs: Zhiquan Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences) Shang Wang (Harbin Institute of Technology)		
10:15-10:40 (Keynote) BMNJ-23	Guangbin Dou (Southeast University)	Key technology for 100 nm alignment-accuracy integration and packaging of advanced IC chips
10:40-11:00 (Invited) BMNJ-24	Dianpeng Qi (Harbin Institute of Technology)	Interface bonding for soft bioelectronics
11:00-11:20 (Invited) BMNJ-25	Junlei Qi (Harbin Institute of Technology)	Thermal shock assisted ceramic surface modification and high temperature joining
11:20-11:35 BMNJ-26	Xiaoqing Si (Harbin Institute of Technology)	Effects of the Mn–Co spinel coating on BaZr _{0.1} Ce _{0.7} Y _{0.1} Yb _{0.1} O _{3-δ} /AISI 441 reactive air brazed joint: Microstructure, strength, and stability
11:35-11:50 BMNJ-27*	Zemin Li (Xidian University)	Photoelectrically nanojoining of silver nanowires for preparing transparent electrodes
11:50-12:05 BMNJ-28*	Shuai Wang (Harbin Institute of Technology)	Interfacial reaction between high entropy solder alloy SnPbInbiSb and Cu substrate
12:05-12:20 BMNJ-29*	Shi Chen (Dalian University of Technology)	Elimination of Kirkendall voids in Sn/electroplated Cu joints

13:30-18:00 Wednesday, 26 July

13:30-18:00 Wednesday, 26 July

Room Yuanwei (2nd floor)

High Performance Materials Processing (5)

Chairs: Ruifeng Li (Jiangsu University of Science and Technology)

Yan Liu (Southwest Jiaotong University)

13:30-13:55 (Keynote) HPMP-30	Zhenmin Wang (South China University of Technology)	Key technology and application of welding manufacturing for underwater robot in extreme environment
13:55-14:15 (Invited) HPMP-31	Fan Jiang (Beijing University of Technology)	Study on the active control of variable polarity plasma arc welding based on the characterizable parameters of the molten pool
14:15-14:30 HPMP-32	Xin Yue (Harbin Institute of Technology)	Advances on the research and development of novel high-performance materials and welding technologies for the international energy and offshore applications
14:30-14:42 HPMP-33*	Weiguo Xiang (Chongqing University of Technology)	Influence of filler thickness on temperature field and residual stress in friction stir welding of dissimilar aluminum-steel butt joints
14:42-14:54 HPMP-34*	Fan Yang (Harbin Institute of Technology)	Investigation of the plasma-FCAW underwater hybrid welding process for EH36 steel
14:54-15:06 HPMP-35*	Weilu Zhou (Shandong University)	Dynamic evolution of keyhole and weld pool during keyhole plasma arc welding of stainless steel
15:06-15:18 HPMP-36*	Zhida Ni (Harbin Institute of Technology)	Forming mechanism of lack-of-fusion defect in swing-arc narrow gap GMA vertical-up welding
15:18-15:30 HPMP-37*	Yanfei Han (Shandong University)	Revealing the mechanisms of metal transfer and inner physical processes during the novel underwater submerged arc welding

High Performance Materials Processing (6)

Chairs: Fan Jiang (Beijing University of Technology)

Caiwang Tan (Harbin Institute of Technology, Weihai)

15:45-16:05 (Invited) HPMP-38	Jiayue Chen (VOYAH Automobile Technology Company Ltd.)	Study on laser tailor welding performance of Al-Si coated press hardened steel
16:05-16:20 HPMP-39	Yuming Xie (Harbin Institute of Technology)	Anti-corrosion aluminum matrix composites prepared by deformation-driven metallurgy and their battery applications
16:20-16:35 HPMP-40	Qihao Chen (Jiangsu University of Science and Technology)	Study on porosity and microstructure uniformity of narrow gap GMA weld of thick-walled aluminum alloy
16:35-16:47 HPMP-41*	Liangyuan Ren (Huazhong University of Science and Technology)	Numerical simulation of 2D/3D dendritic growth during solidification process using multiphase-field model aided with optimization methods

16:47-16:59 HPMP-42*	Mingyang Zhang (Huazhong University of Science and Technology)	Effect of keyhole mode on microstructure evolution, interface and mechanical properties of SiCp/2A14 joint during laser welding
16:59-17:11 HPMP-43*	Jiangyue Han (Shanghai Jiao Tong University)	Precipitate evolution and its effect on corrosion properties of different weld joints for Al-Mg-Er alloy
17:11-17:23 HPMP-44*	Banghe Su (Shandong University)	Recognition and extraction of TIG welding tacked spot based on deep learning

13:30-18:00 Wednesday, 26 July

Room Baihe (2nd floor)

Modeling, Safety and Reliability (5)		
Chairs: Masakazu Shibahara (Osaka Metropolitan University) Jianguo Yang (Zhejiang University of Technology)		

13:30-13:55 (Keynote) MSR-32	Qingyu Shi (Tsinghua University)	Study of material flow in FSW: from modelling and simulation to application
13:55-14:15 (Invited) MSR-33	Shengyong Pang (Huazhong University of Science & Technology)	A unified model of complex coupling behavior in laser-MIG hybrid welding
14:15-14:35 (Invited) MSR-34	Ji Chen (Shandong University)	Simulating the influence of water depth on arc and bubble behaviors during underwater wet flux-cored arc welding
14:35-14:50 MSR-35	Yaqi Wang (Shanghai Jiao Tong University)	Characterization of intergranular acicular precipitate and its effect on creep rupture behavior for Fe-Ni-based alloy welded joint
14:50-15:02 MSR-36*	Changan Li (Shandong University)	Numerical modelling of inertia friction welding and computational investigation on thermo-mechanical coupling mechanism
15:02-15:14 MSR-37*	Junnan Qiao (Tsinghua University)	Computational fluid dynamics analysis on interfacial contact condition, heat generation and material
15:14-15:26 MSR-38*	Faliang He (Shandong University)	Numerical simulation of dynamic recrystallization in friction stir welding of magnesium alloy with

Modeling, Safety and Reliability (6)		
Chairs: Qingyu Shi (Tsinghua University) Shengyong Pang (Huazhong University of Science & Technology)		

15:45-16:10 (keynote) MSR-39	Dean Deng (Chongqing University)	Investigation on residual stress and welding deformation of low alloy ultra-high-strength quenched steel joint
16:10-16:30 (Invited) MSR-40	Jiangchao Wang (Huazhong University of Science and Technology)	Mitigation of welding buckling of AH36 stiffened structure with thermal tension and technique optimization

16:30-16:50 (Invited) MSR-41	Lei Shi (Shandong University)	Formation mechanism of void defects in friction stir welding
16:50-17:05 MSR-42	Gaoqiang Chen (Tsinghua University)	Computational fluid dynamics simulation of dissimilar friction stir welding of aluminum and steel: Friction-induced material flow and material mixing
17:05-17:17 MSR-43*	Wenxiao Yu (Beijing Institute of Technology)	Quality predication of Al/steel dissimilar metal resistance spot welding using neural network
17:17-17:39 MSR-44*	Guanlan Zhang (Shandong University)	Numerical analysis of heat generation and material flow in ultrasonic assisted friction stir welding of dissimilar Al/Mg alloys
17:39-17:51 MSR-45*	Jiaao Ning (Tianjin University)	Stress state analysis of X80 welded joints with variable-wall-thickness and misaligned geometric features
17:51-18:02 MSR-46*	Shichang Xu (Shandong University)	A non-axisymmetric 3D model coupling droplet, arc, and molten pool behaviors for underwater wet FCAW

13:30-18:00 Wednesday, 26 July

Room Dingxiang (2nd floor)

Additive Manufacturing (7)

Chairs: Baohua Chang (Tsinghua University)

Shuai Chang (Harbin Institute of Technology)

13:30-13:50 (Invited) AM-41	Kai Feng (Shanghai Jiao Tong University)	Cracking inhibition and microstructure-mechanical property regulation of the CoCrFeMnNi high entropy alloy fabricated by laser powder bed fusion
13:50-14:10 (Invited) AM-42	Xiaoyu Cai (Harbin Institute of Technology)	Microstructure and mechanical properties of wire arc additive manufactured magnesium alloy
14:10-14:25 AM-43	Chaochao Wu (Fuzhou University)	High-fidelity modeling of building process in electron beam powder bed fusion
14:25-14:40 AM-44	Runsheng Li (China University of Petroleum, East China)	Path planning and process optimization for laser and arc hybrid additive manufacturing of aircraft frame parts
14:40-14:55 AM-45	Danyang Lin (Harbin Institute of Technology, Weihai)	LPBF Haynes 230 superalloy with significantly improved ductility and crack inhibition by adjusting carbon content
14:55-15:07 AM-46*	Jie Zhu (Shanghai Jiao Tong University)	Suppression of epitaxial grain growth and mechanical anisotropy in a laser powder bed fusion processed Inconel 625 through the variation of the build layer thickness
15:07-15:19 AM-47*	Yuan Chen (Harbin Institute of Technology)	Obtaining equiaxed prior β grains in coaxial laser wire additive manufacturing of Ti6Al4V alloy
15:19-15:31 AM-48*	Sheng Luo (Shanghai Jiao Tong University)	Numerical simulation and in-situ observation method of the gas atomization for the metal powder preparation

Additive Manufacturing (8)		
Chairs: Xiaoyu Cai (Harbin Institute of Technology) Kai Feng (Shanghai Jiao Tong University)		
15:45-16:05 (Invited) AM-49	Shurong Yu (Lanzhou University of Technology)	Wire and arc additive manufacturing of gradient functional materials for titanium alloys
16:05-16:25 (Invited) AM-50	Jun Xiong (Southwest Jiaotong University)	Process stability control of cross structures in pulsed gas tungsten arc additive manufacturing via arc sensing
16:25-16:40 AM-51	Yongzhe Li (Southeast University)	Distributing paths for multi-robot cooperative wire and arc additive manufacturing of large-scale parts
16:40-16:55 AM-52	Meng Jiang (Harbin Institute of Technology)	Benefits of high-power laser beam welding under vacuum
16:55-17:07 AM-53*	Jiahao Zhang (Nanjing University of Aeronautics and Astronautics)	Microstructural evolution and mechanical properties of TiC/Ti6Al4V functionally gradient materials with unique microstructure prepared by laser melting deposition
17:07-17:19 AM-54*	Longxiang Sun (Nanjing University of Aeronautics and Astronautics)	Regionalization of microstructure characteristics and mechanisms of slip transmission in oriented grains deposited by wire arc additive manufacturing
17:19-17:31 AM-55*	Xin Xi (Harbin Institute of Technology)	Improved weldability of laser welded LPBF-Haynes 230 superalloys by HIP+ST pre-treatment
17:31-17:43 AM-56*	Xiang Wang (Xi'an Jiaotong University)	Hierarchical grain refinement method and mechanism of Ti-6Al-4V alloy by laser wire deposition

13:30-18:00 Wednesday, 26 July

Room Mudan (2nd floor)

International Education & Academic Exchange		
Chair: Jian Cao (Harbin Institute of Technology)		
13:30-14:00 IEAE-1	Yu-ichi Komizo (Osaka University)	The activities for global cooperation in Osaka University
14:00-14:30 IEAE-2	Wei Shao (Harbin Institute of Technology)	International education in Harbin Institute of Technology
14:30-15:00 IEAE-3	Ke Chen (Shanghai Jiao Tong University)	International education in Shanghai Jiao Tong University
Additive Manufacturing (9)		
Chairs: Yongxian Huang (Harbin Institute of Technology) Zhi Zeng (University of Electronic Science and Technology of China)		
15:45-16:05 (Invited) AM-57	Shuai Chang (Harbin Institute of Technology)	Highly effective smoothening of 3D-printed metallic porous structures via overpotential electrochemical polishing
16:05-16:25 (Invited) AM-58	Chen Shen (Shanghai Jiao Tong University)	Element homogenization mechanism during twin-wire directed energy deposition-arc of TiAl-4822 alloy

16:25-16:40 AM-59	Jian Long (Xi'an Jiaotong University)	Fiber laser spot welding of molybdenum alloy in a hyperbaric environment
16:40-16:52 AM-60*	Shengchong Ma (Harbin Institute of Technology)	Oscillating laser-arc hybrid additive manufacturing of Al-6Mg-0.3Sc thin-wall part
16:52-17:04 AM-61*	Tianjian Yu (Xi'an Shiyou University)	Preparation and performance analysis of 2319-1100 aluminium-based FMG via GMA additive manufacturing with auxiliary wire
17:04-17:16 AM-62*	Yubin Zhou (Beihang University)	Microstructure, mechanical property, and corrosion behavior of wire + arc additive manufactured Al-Mg-Sc-Zr aluminum alloy
17:16-17:28 AM-63*	You Wang (Beihang University)	Microstructure, crack formation and improvement on Nickel-based superalloy fabricated by powder bed fusion

13:30-18:00 Wednesday, 26 July

Room Longjin-I (1st floor)

Welding Processing and Metallurgy (7)

Chairs: Wenya Li (Northwestern Polytechnical University)

Tiesong Lin (Harbin Institute of Technology)

13:30-13:55 (Keynote) WPM-45	Chunlin Dong (Guangzhou Jiaotong University)	Development and application of robotic friction stir welding systems
13:55-14:15 (Invited) WPM-46	Fengchao Liu (Institute of Metal Research, Chinese Academy of Sciences)	Welding aluminum alloys to steels without the formation of detrimental intermetallic compound at joint interface
14:15-14:35 (Invited) WPM-47	Huihong Liu (Shanghai Jiao Tong University)	Fabricating sound high-carbon-steel joints below the A1 point by a novel solid-state joining method
14:35-14:50 WPM-48	Xiaochao Liu (Southeast University)	Development of a modified friction stir welding process based on internal friction between identical materials
14:50-15:05 WPM-49	Gaohui Li (Shanghai Jiao Tong University)	Semi-stationary shoulder bobbin-tool: a new approach in tailoring macrostructure and mechanical properties of bobbin-tool friction stir welds in magnesium alloy
15:05-15:17 WPM-50*	Jiachen Li (Dalian University of Technology)	Friction stir spot welding between AA5052 and CFRP via surface pretreatment technology
15:17-15:29 WPM-51*	Yunhao Xia (Harbin Institute of Technology)	Multi-source ultrasonic assisted TIG welding of Inconel 690 alloy

Welding Processing and Metallurgy (8)

Chairs: Ke Chen (Shanghai Jiao Tong University)

Lina Yu (Osaka University)

15:45-16:05 (Invited) WPM-52	Yanfa Han (Ansteel Group Research Institute)	Research and development of high heat input welding steel in Ansteel
16:05-16:25 (Invited) WPM-53	Chun Li (Harbin Institute of Technology)	Understanding the residual stress distribution as a function of depth in alumina-stainless steel brazed joint by XRD, μ -CT and image based modelling
16:25-16:40 WPM-54	Mengran Zhou (Tsinghua University)	Friction stir processing on Mg-based alloy for better corrosion resistance
16:40-16:55 WPM-55	Junya Tateishi (JSOL Corp.)	Fast prediction for arc welding and resistance spot welding deformation using inherent strain method
16:55-17:07 WPM-56*	Weihua Liu (Shanghai Jiao Tong University)	Research on welding quality of online monitoring and evaluation system of nuclear pipe by vision sensing
17:07-17:19 WPM-57*	Fangzheng Zhou (Shandong University)	Unified CNN-LSTM for keyhole status prediction in PAW based on spatial-temporal features
17:19-17:31 WPM-58*	Zihao Jiang (Beihang University)	Ultrasonic frequency pulsed helium arc welding for medium-thick aluminum alloy structure

13:30-18:00 Wednesday, 26 July**Room Longjin-II (1st floor)****Brazing & Micro-Nano Joining (5)**

Chairs: Lei Liu (Tsinghua University)

Hongjun Ji (Harbin Institute of Technology, Shenzhen)

13:30-13:55 (Keynote) BMNJ-30	Zhiqian Liu (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences)	Joining strength enhancement and interfacial reaction mechanism of nanotwinned copper substrate in electronic packaging
13:55-14:15 (Invited) BMNJ-31	Jianlei Cui (Xi'an Jiaotong University)	Femtosecond laser treatment of SWNT onto metal electrodes and its effect on carbon nanotube field effect transistor
14:15-14:35 (Invited) BMNJ-32	Shuye Zhang (Harbin Institute of Technology)	Failure behavior analysis of high density electronic packaging microbumps in extreme environment
14:35-14:50 BMNJ-33	Shengpeng Hu (Harbin Institute of Technology)	A novel method for improving interfacial joining strength of vacuum brazed TiAl/GH3536 thin-walled structure by Au coating
14:50-15:05 BMNJ-34*	Yang Liu (Osaka University)	A novel and cost-effective Ag/Si hybrid sinter joining with highly stable microstructure maintenance
15:05-15:20 BMNJ-35*	Naibin Chen (Harbin Institute of Technology, Weihai)	Laser direct metallization assisted fabrication of AlN/Cu composite substrate

15:20-15:35 BMNJ-36*	Ming Zhu (Nanyang Technological University)	A mechanically interlocking strategy for soft electronic packaging of stretchable electronics
Brazing & Micro-Nano Joining (6)		
Chairs: Junlei Qi (Harbin Institute of Technology) Jianlei Cui (Xi'an Jiaotong University)		
15:45-16:05 (Keynote) BMNJ-37	Chuantong Chen (Osaka University)	Progress of Ag sinter joining technology in SiC power modules
16:05-16:25 (Invited) BMNJ-38	Hongbo Xu (Zhejiang Lab)	The role of micro-joining for AI chips and intelligence sensors
16:25-16:45 (Invited) BMNJ-39	Panpan Lin (Harbin Institute of Technology)	New techniques for the joining of advanced materials and dissimilar materials
16:45-17:00 BMNJ-40	Yanyu Song (Harbin Institute of Technology)	Fabrication of Si ₃ N ₄ /Cu substrate via laser surface modification assisted brazing technology
17:00-17:15 BMNJ-41	Pengcheng Wang (Northwestern Polytechnical University)	Preparation of low thermal expansion Sc ₂ W ₃ O ₁₂ composite brazing filler for brazing CSiC and GH3536
17:15-17:30 BMNJ-42*	Han Yu (Xi'an Jiaotong University)	Enhancement mechanism of sapphire and purple copper femtosecond laser micro-welding joints
17:30-17:45 BMNJ-43*	Shuye Zheng (Huazhong University of Science and Technology)	Effect of peak power and repetition frequency on picosecond laser microwelding of glass and Kovar alloys
17:45-18:00 BMNJ-44*	Shijun Huang (Sun Yat-sen University Shenzhen Campus)	Air-sintered copper paste with self-reducibility as a die attached layer for power electronics

Poster Session

17:40-18:30 Wednesday, 25 July

Lobby of 2nd floor

No.	Name & Institution	Title
PS-1	Ruwei Geng (China University of Mining and Technology)	Microstructure and solute concentration analysis of epitaxial growth during wire and arc additive manufacturing of aluminum alloy
PS-2*	Mingchuan Li (Harbin Institute of Technology)	Mechanism of texture formation for nickel-based superalloys fabricated via LPBF
PS-3*	Shiyu Niu (Tianjin University)	Self-transformation engineering of high entropy carbides induced by pulsed discharge
PS-4*	Liangliang Zhang (Dalian University of Technology)	Vacuum brazing TiAl intermetallic to K4169 alloy using amorphous filler metals Ti56.25-xZrCu25Ni18.75
PS-5*	Binxin Dong (University of Chinese Academy of Science)	Study on morphology and mechanical properties for laser beam oscillation welding of thin steel plates
PS-6*	Pu Zhao (Harbin Institute of Technology)	Dynamic behavior of interfacial elements and oxide layers during diffusion welding of 6063Al alloys by Zn interlayer
PS-7*	Yaotian Yan (Harbin Institute of Technology)	Corrosion behavior monitoring and mechanism analysis of heterogeneous brazed joints
PS-8*	Bin Wang (Harbin Institute of Technology)	Efficient multi-path heat dissipation of aluminum framework composites assisted with high crystalline carbon coatings
PS-9*	Xu Wang (Harbin Institute of Technology)	Adaptability of femtosecond laser processing of ceramic matrix composites (CMCs)
PS-10*	Yinggang Wang (Shandong University)	Titanium alloy thick plate rotating arc narrow gap GTAW welding technology research
PS-11*	Haitao Zhu (Harbin Institute of Technology)	Comprehensive enhancement of the mechanical property of TZM/graphite joints by striped structure
PS-12*	Bin Han (Southeast University)	Prediction of deposit characteristics based on the discrete coaxial nozzle during laser direct metal deposition
PS-13	Jinghuan Chang (East China University of Science and Technology)	Corrosion behavior and fracture mechanism of titanium alloy/stainless steel lapped joints by cold metal transfer joining technology
PS-14*	Jia Zhang (Lanzhou University of Technology)	Wire and arc additive manufacturing of gradient functional materials for titanium alloys
PS-15*	Dashi Lu (Harbin Institute of Technology, Shenzhen)	Low-temperature direct metal-metal bonding in air using sputtered nanocrystalline silver interconnects
PS-16*	Guanchen Zong (Beijing University of Technology)	Research on virtual welding technology of robotic friction stir welding based on digital twin method

PS-17*	Eunjin Jo (Korea Institute of Industrial Technology)	Laser soldering interconnected Al FPCB/Cu FPCB lap joints for use in battery applications: SAC305 vs. Sn-57Bi-1Ag solder materials
PS-18*	Paponpat Chaimano (Osaka University)	3D modeling for electric-thermal-mechanics phenomena in micro resistance spot welding spark plug of Pt and Inconel 600
PS-19*	Yunhao Xia (Harbin Institute of Technology)	Wire arc additive manufacturing of 205C aluminum alloy: microstructures and mechanical properties
PS-20*	Jing Wang (Shandong Jianzhu University)	Remelting process study on wire and arc additive manufacturing products
PS-21*	Tong Lin (Harbin Institute of Technology)	High-quality diffusion bonding of copper at ultra-low temperature
PS-22*	Shengli Li (Harbin Institute of Technology)	The microstructure evolution of Sn37Pb solder joints under the coupling effects of extreme temperature variation and electromigration
PS-23*	Bo Yang (Harbin Institute of Technology)	Enhanced Ti3AlC2/Zircaloy-4 interfacial bonding by using copper as an interlayer
PS-24*	Hui Pan (Harbin Institute of Technology)	Low contact resistivity and long-term thermal stability of thermoelectric junction
PS-25*	Yefan Wang (Jiangsu University of Science and Technology)	Influence law of electromagnetic induction heating parameters on the leveling effect in thin plates
PS-26*	Jianfeng Gong (Harbin Institute of Technology)	Research on characteristics of laser welding under vacuum for Ta-10W alloy.
PS-27*	Shenghao Meng (Harbin Institute of Technology)	Microstructure and properties of laser narrow gap multi pass weld Ti-6Al-4V alloy with different filling layers
PS-28*	Qilong Guan (Harbin Institute of Technology)	Effect of γ -irradiation on the Sn-based solder joints
PS-29*	Yiqun Ren (Harbin Institute of Technology)	Evaluation of the ATI 718Plus joint repaired by laser metal deposition under heat treatment regimes
PS-30*	Fukang Chen (Harbin Institute of Technology)	Effect of heat treatment on the microstructure and mechanical properties of wire arc additive manufactured AZ91D magnesium alloy
PS-31*	Yingkai Ma (Harbin Institute of Technology)	Hydrogen induced $\alpha \rightarrow \beta$ phase transformation mechanism in low temperature diffusion bonding of Zr-4 alloy

Note: Candidates for Excellent Young Researchers Award are marked with * (e.g. PS-2*).

Oral Presentation Guide

- (1) A laptop computer with Windows 7 or 10 (64 bit) is equipped in each room.
- (2) You are able to use your own laptop computer for your presentation.
- (3) The presentation time (including ~5 min discussion):
 - Plenary lecture: 30 min
 - Keynote lecture: 25 min
 - Invited lecture: 20 min
 - General presentation: 12-15 min
- (4) You are requested to confirm if your presentation slides are properly projected on a screen before the session.

Author's Guide to Prepare Posters for the Poster Session

- (1) Language: Poster must be written in English.
- (2) Poster size: A0 size (841 mm × 1189 mm).
- (3) Poster submission: The author must send the electronic poster to the email changshuai@hit.edu.cn by July 18. The poster number must be added to the top left corner of the electronic poster. The number can be found on the Poster Session page.
- (4) Presentation: The author must stand at the front of your board during the Poster Session from 17:40 to 18:30 on July 25 and can present your paper to attendees. Presentation must be done in English.
- (5) After Poster Session: Please take off your poster from the board at once.

Location and Traffic



JW Marriott Hotel Harbin River North

No.199 Chuangxin Yi Road, Songbei District, Harbin, China

Tel: +86 451 82640581

Airport

Harbin Taiping International Airport

Distance from Hotel: **39 km**

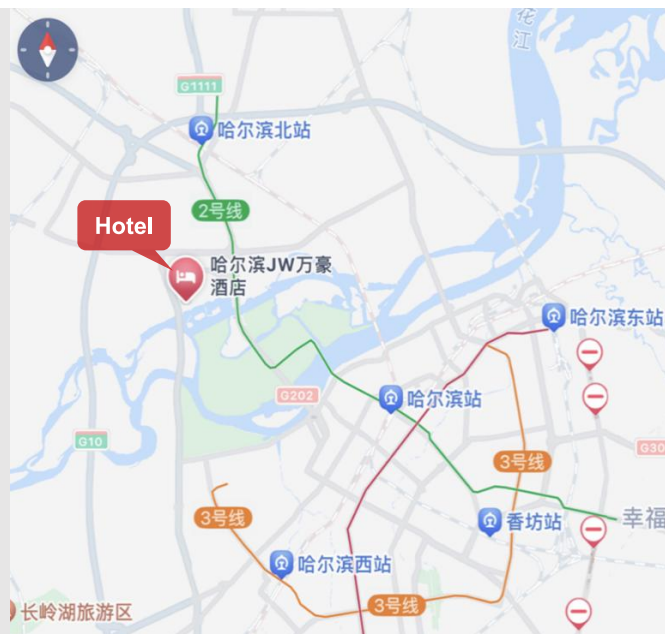
Train Station

Harbin Railway Station

Distance from Hotel: **13 km**

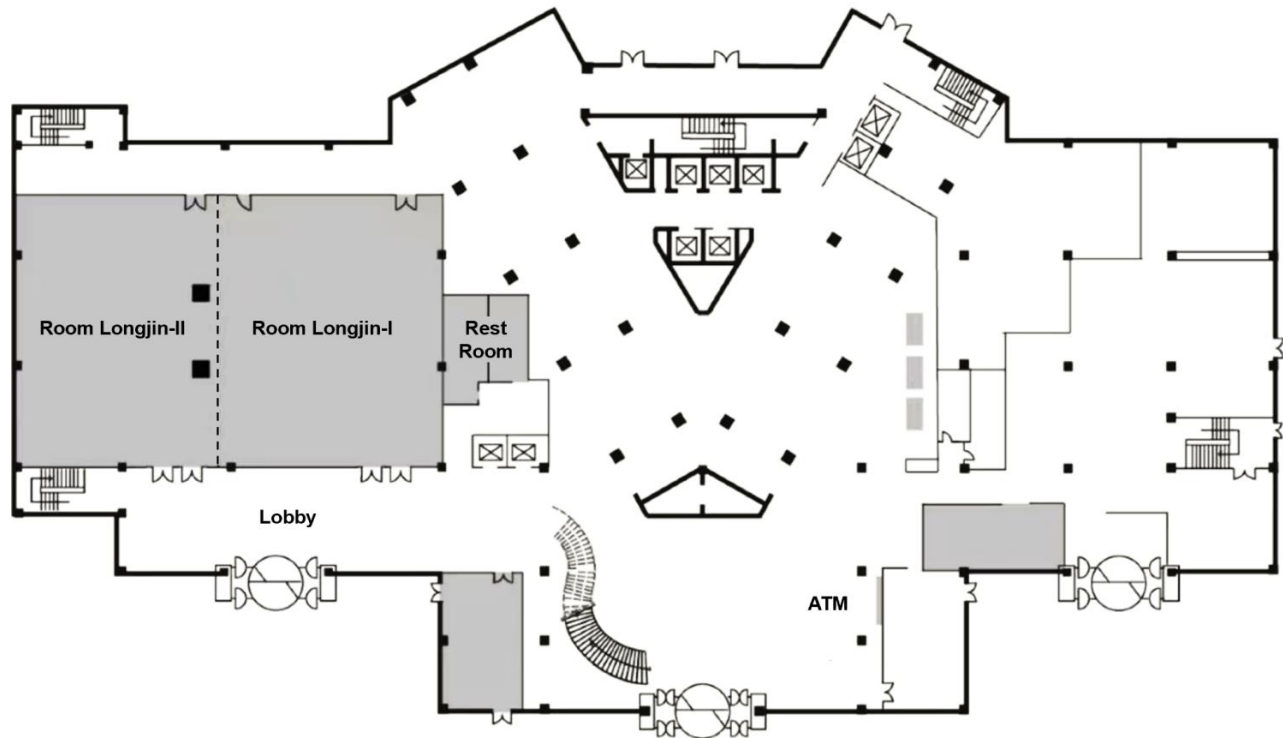
Harbin West Railway Station

Distance from Hotel: **16 km**

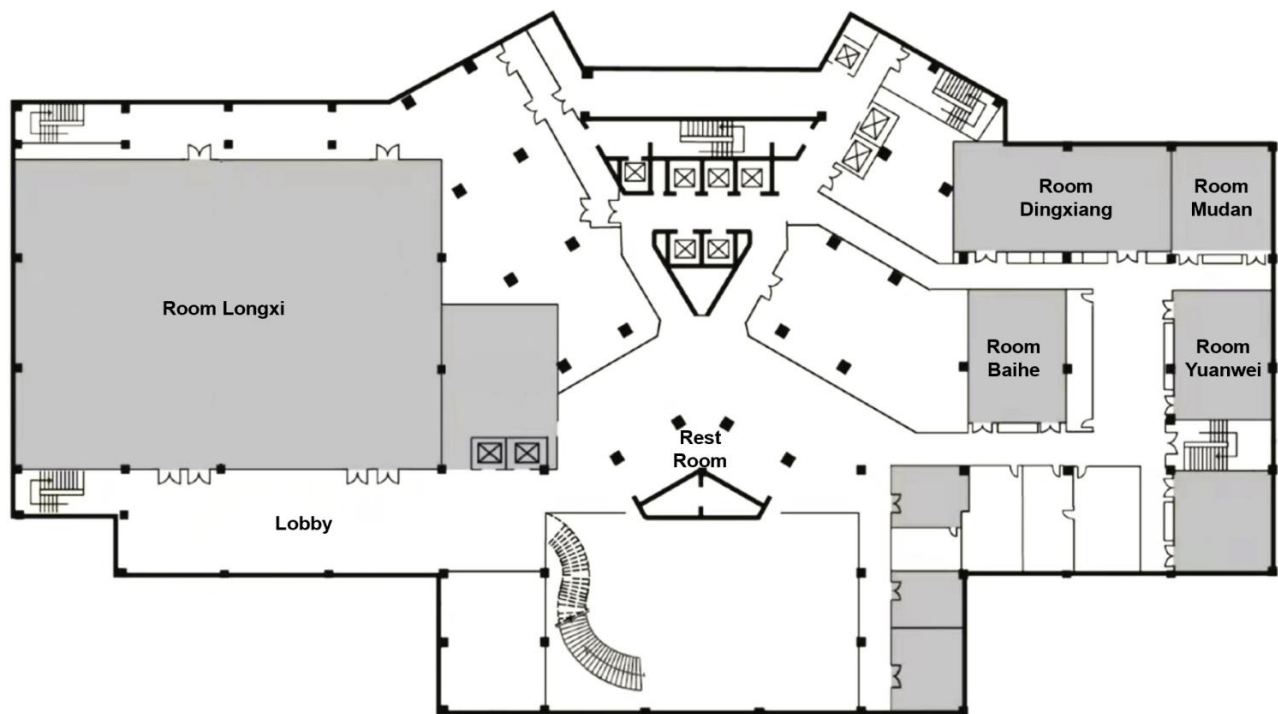


Maps of Conference Rooms

1st Floor



2nd Floor



Co-organizers

- State Key Laboratory of Metal Material for Marine Equipment and Application, Ansteel Group
- National Engineering Research Center for New Welding Technology of High Efficiency
- State Key Laboratory of Advanced Brazing Filler Metals & Technology
- Shandong Provincial Key Laboratory of Special Welding Technology, Harbin Institute of Technology at Weihai
- Engineering Research Center of Advanced Manufacturing Technology for Automotive Components Ministry of Education, Beijing University of Technology
- State Key Laboratory of Advanced Processing and Recycling of Nonferrous Metals, Lanzhou University of Technology
- Tianjin Key Laboratory of Advanced Joining Technology, Tianjin University
- School of Materials Science and Engineering, Jiangsu University of Science and Technology
- Key Laboratory of Intelligent Manufacturing Technology for Aeronautics Advanced Equipment, Ministry of Industry and Information Technology, Beihang University
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