

# Visual-JW 2016



17-18 October, 2016

Hotel Hankyu Expo Park, Osaka, Japan

The International Symposium  
on Visualization in Joining & Welding Science through  
Advanced Measurements and Simulation,

in conjunction with

Symposium on the Research Activities of  
Joint Usage / Research Center on Joining and Welding

&

The 1<sup>st</sup> International Symposium  
on Creation of Life Innovation Materials  
for Interdisciplinary and International Researcher Development  
(iLIM-1)

## FINAL PROGRAM

Organized by Joining and Welding Research Institute, Osaka University  
Co-organized by Japan Welding Society

In the year 2016, 4th International Symposium on Visualization in Joining & Welding Science through Advanced Measurements and Simulation (Visual-JW 2016) in conjunction with Symposium on the Research Activities of Joint Usage / Research Center on Joining and Welding and the 1<sup>st</sup> International Symposium on Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development (iLIM-1) will be held on 17-18, October at the Hotel Hankyu Expo Park in Osaka, Japan.

The symposium aims to promote direct exchange of the latest scientific and technological information related to visualization of complex phenomena in material processing through advanced measurements and simulation. It will also provide a good opportunity to discuss on the future and the strategy regarding R&D of materials processing.

## Symposium Committee

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Okinawa National College of Technology, Japan  
Ai Ping WU, Tsinghua University, China  
Chuan Song WU, Shandong University, China  
Satoshi YAMANE, Saitama University, Japan  
Wenxing ZHOU, Western University, Canada

# Schedule of the Symposium

## Registration

17-October: 9:00 -18:00  
18-October: 8:30 -15:00

## 17-October

Monday 17-October					
Room	Orbit Hall				
9:50-10:00	Opening Ceremony				
10:00-10:30	Plenary Lecture 1				
10:30-11:00	Plenary Lecture 2				
11:00-11:30	Plenary Lecture 3				
11:30-13:00	Lunch at Izumi				
Room	Room A	Room	Room B	Room	
Session Name	Visualization of Advanced Material Processing (1)	Session Name	Visualization of Joining and Welding Process (1)	Room C	Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development (iLIM) Invited Lecture
13:00-13:20	AMP-1	13:00-13:20	JWP-1	13:00-13:20	iLIM-O-1
13:20-13:40	AMP-2	13:20-13:35	JWP-2	13:20-13:40	iLIM-O-2
13:40-14:00	AMP-3	13:35-13:50	JWP-3	13:40-14:00	iLIM-O-3
14:00-14:20	AMP-4	13:50-14:05	JWP-4	14:00-14:20	iLIM-O-4
		14:05-14:20	JWP-5	14:20-14:40	iLIM-O-5
14:20-14:35	Coffee Break			14:40-15:00	iLIM-O-6
Session Name	Visualization of Advanced Material Processing (2)		Visualization of Joining and Welding Process (2)	Coffee Break	
14:35-14:55	AMP-5	14:35-14:55	JWP-6	Room C	Invited Lecture (iLIM) by Young Researchers
14:55-15:10	AMP-6	14:55-15:10	JWP-7		
15:10-15:25	AMP-7	15:10-15:25	JWP-8		
15:25-15:40	AMP-8	15:25-15:40	JWP-9		
15:40-15:55	AMP-9	15:40-15:55	JWP-10		
15:55-16:10	Coffee Break			15:15-15:30	iLIM-O-7
				15:30-15:45	iLIM-O-8
Session Name	Visualization of Advanced Material Processing (3)	Session Name	Visualization of Joining and Welding Process (3)	15:45-16:00	iLIM-O-9
				16:00-16:15	iLIM-O-10
				16:15-16:30	iLIM-O-11
				16:30-16:45	iLIM-O-12
16:10-16:30	AMP-10	16:10-16:30	JWP-11	Coffee Break	
16:30-16:45	AMP-11	16:30-16:45	JWP-12		
16:45-17:00	AMP-12	16:45-17:00	JWP-13		
17:00-17:10	Break				
Session Name	Visualization of Advanced Material Processing (4)	Session Name	Visualization of Joining and Welding Process (4)	Room D	Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development (iLIM) Poster
17:10-17:30	AMP-13	17:10-17:30	JWP-14	16:45-18:15	iLIM-PT-1 ~ iLIM-PT-71
17:30-17:45	AMP-14	17:30-17:45	JWP-15		
17:45-18:00	AMP-15	17:45-18:00	JWP-16		
18:00-18:15	AMP-16	18:00-18:15	JWP-17		
18:15-18:30	Break				
18:30-20:30	Banquet at Orbit Hall				

\* Exhibition by Companies at Room D between 13:00 and 17:00

# 18-October

Tuesday 18-October				
Room	Room A	Room	Room B	Room D
Session Name	Visualization of quality, safety and reliability (1)	Session Name	Visualization of Joining and Welding Process (5)	
9:00-9:20	QSR-1	9:00-9:20	JWP-18	X
9:20-9:35	QSR-2	9:20-9:35	JWP-19	
9:35-9:50	QSR-3	9:35-9:50	JWP-20	
9:50-10:00	Coffee Break			
Session Name	The Research Activities of Joint Usage / Research Center on Joining and Welding (1)	Session Name	Visualization of Mechanics in Joining and Welding (1)	
10:00-10:20	RAJU-1	10:00-10:20	MCJW-1	X
10:20-10:40	RAJU-2	10:20-10:35	MCJW-2	
10:40-11:00	RAJU-3	10:35-10:50	MCJW-3	
11:00-11:20	RAJU-4	10:50-11:05	MCJW-4	
-	-	11:05-11:20	MCJW-5	
11:20-11:35	Break			
Session Name	The Research Activities of Joint Usage / Research Center on Joining and Welding (2)	Session Name	Visualization of Mechanics in Joining and Welding (2)	
11:35-11:55	RAJU-5	11:35-11:55	MCJW-6	X
11:55-12:15	RAJU-6	11:55-12:10	MCJW-7	
12:15-12:35	RAJU-7	12:10-12:25	MCJW-8	
12:25-13:40	Lunch at Room C			
13:40-14:40	X			Poster (Visual-JW2016) PT-1 ~ PT-68  Coffee Break
Session Name	Visualization of Metallurgy in Joining and Welding (1)	Session Name	Visualization of Joining and Welding Process (6)	
14:40-15:00	MTJW-1	14:40-15:00	JWP-21	X
15:00-15:15	MTJW-2	15:00-15:15	JWP-22	
15:15-15:30	MTJW-3	15:15-15:30	JWP-23	
15:30-15:45	MTJW-4	15:30-15:45	JWP-24	
15:45-16:00	MTJW-5	15:45-16:00	JWP-25	
16:00-16:15	Break			
Session Name	Visualization of Joining and Welding Process (7)	Session Name	Visualization of Joining and Welding Process (8)	
16:15-16:35	JWP-26	16:15-16:35	JWP-29	X
16:35-16:50	JWP-27	16:35-16:50	JWP-30	
16:50-17:05	JWP-28	16:50-17:05	JWP-31	

\* Exhibition by Companies at Room D between 9:00 and 15:00

# TECHNICAL PROGRAM

**-Oral Presentation-**

**Monday 17-October**

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**Orbit Hall**

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**9:50-10:00: Opening Ceremony**

Greetings: Prof. Manabu TANAKA, Osaka University  
The Conference Chairman  
The Director of Joining and Welding Research Institute, Osaka University

**10:00-11:30: Plenary Lectures**

Plenary Lecture 1: “Experimental and Numerical Investigation on the Process Mechanisms of Ultrasonic Vibration enhanced FSW”  
Prof. Chuan Song WU, Shandong University

Plenary Lecture 2: “Crossroads of Welding and Metallic Additive Manufacturing: Role of In-situ Visualization and Modeling”  
Prof. Sudarsanam Suresh BABU, University of Tennessee

Plenary Lecture 3: “Life Innovation Materials Project / Surface Modification for Biomaterials”  
Prof. Masazumi OKIDO, Nagoya University

# Visualization in Joining & Welding Science through Advanced Measurements and Simulation

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## Room A

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### 13:00-14:20: Visualization of Advanced Material Processing (1) (AMP)

Chair Persons: Sudarsanam Suresh BABU (University of Tennessee)  
Kazuhiro ITO (Osaka University)

- AMP-1 **Invited Lecture:** "Investigation on Cooling Strategies during Wire Arc Additive Layer Manufacturing"  
Abhay SHARMA, Jayprakash SHARMA (Indian Institute of Technology Hyderabad), Kazuhiro ITO (Osaka University), Surya S KUMAR (Indian Institute of Technology Hyderabad), Hajime YAMAMOTO, Kazuyuki KOHAMA (Osaka University)
- AMP -2 **Invited Lecture:** "Microstructure and Creep Behavior of Alloy 718 fabricated by Electron-Beam Melting"  
Yuichiro KOIZUMI, Shihai SUN, Xiao DING, Akihiko CHIBA (Tohoku University)
- AMP -3 **Invited Lecture:** "Mechanical Properties of Selective Laser-melted Co-Cr-Mo-N Alloys for Biomedical Applications"  
Naoyuki NOMURA, Keiko KIKUCHI, Akira KAWASAKI (Tohoku University)
- AMP -4 **Invited Lecture:** "Stereolithographic Additive Manufacturing of Bulky Components with Functional Geometries"  
Soshu KIRIHARA (Osaka University)

### 14:35-15:55: Visualization of Advanced Material Processing (2) (AMP)

Chair Persons: Omid MOKHATARI (Osaka University)  
Kazuhiro ITO (Osaka University)

- AMP-5 **Invited Lecture:** "Intermetallic Compound Formation and Mechanical Property of Sn-Cu-xCr/Cu Lead-free Solder Joint"  
Jung-Hwan BANG, Dong-Yuri YU (Korea Institute of Industrial Technology), Yong-Ho KO, Hiroshi NISHIKAWA (Osaka University), Chang-Woo LEE (KIIT)
- AMP-6 "Effects of Bi and In Addition on the Joint Reliability of Low-Ag Type Pb-free Solders"  
Kohei NAKANISHI, Tomoki MATSUDA, Tomokazu SANNO, Akio HIROSE (Osaka University), Madoka MINAGAWA, Masahide OKAMOTO (Hitachi Ltd.)
- AMP-7 "Effect of Solder Paste Addition on Shear Strength using Micro-sized Silver Particle Paste without Pressure for Power Device Packaging"  
Myong-Hoon ROH, Min-Su KIM, Hiroshi NISHIKAWA (Osaka University)
- AMP-8 "AIN-to-metal Direct Bonding Utilizing Sintering of In-situ Generated Ag Nanoparticles through Redox Reaction"  
Keita MOTOYAMA, Tomoki MATSUDA, Tomokazu SANNO, Akio HIROSE (Osaka University)
- AMP-9 "Effect of Thermal Aging on the Impact Strength of Soldered Bump using Formic Acid Atmosphere"  
Siliang HE, Hiroshi NISHIKAWA (Osaka University)

### 16:10-17:00: Visualization of Advanced Material Processing (3) (AMP)

Chair Persons: Chang-Jiu Li (Xi'an Jiaotong University)  
Ninshu MA (Osaka University)

- AMP-10 **Invited Lecture:** "Single-crystal WCp/Ti-6Al-4V Graded MMCs Coating Produced by Laser Melt Injection Technology"  
Liqun LI (Harbin Institute of Technology), Dejian LIU (HuaZhong University of Science and Technology)
- AMP-11 "Temperature Prediction and Control Method during Warm Forming Process"  
Hongbao DONG, Yao ZHAO, Changcheng HU, Guoyuan TANG (Huazhong University of Science and Technology)
- AMP-12 "Instantaneous Bonding of Aluminum Alloys Utilizing Multiple Self-exothermic Reactions of Combustion Synthesis and Thermite"  
Tomoki MATSUDA, Tomokazu SANO, Akio HIROSE (Osaka University)

### 17:10-18:15: Visualization of Advanced Material Processing (4) (AMP)

Chair Persons: Liqun LI (Harbin Institute of Technology)  
Ninshu MA (Osaka University)

- AMP-13 **Invited Lecture:** "Understanding Heating Characteristics of Refractory Metal-clad Composite Alloy Particle in High Temperature Plasma Jet for Spray Bonding"  
Jia-Jia TIAN, Shu-Wei YAO, Shan-Lin ZHANG, Xiao-Tao LUO, Chang-Jiu LI (Xi'an Jiaotong University)
- AMP-14 "Process Visualizations of Thermal Nanoparticles Spraying Using Micro Composite Fragments"  
Makoto KATSUKI (Hitachi Zosen Corporation), Soshu KIRIHARA (Osaka University), Hiroki HARADA, Kohei YAMASE (Hitachi Zosen Corporation)
- AMP-15 "Numerical Analysis and Experiment on Hydro-forming of Combined Welded Ellipsoidal Shells"  
Shijian YUAN, Weiwei ZHANG, Zhicao ZHANG (Harbin Institute of Technology)
- AMP-16 "Microstructure and Mechanical Properties of TiC/Ti6Al4V Titanium Matrix Composite Produced by Laser Melting Deposition"  
Jiandong WANG, Liqun LI (Harbin Institute of Technology)
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## Room B

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### 13:00-14:20: Visualization of Joining and Welding Process (1) (JWP)

Chair Persons: John James LOWKE (CSIRO)  
Shinichi TASHIIRO (Osaka University)

- JWP-1 **Invited Lecture:** “A Coupled Chemical Kinetic and Nucleation Model of Fume Formation in MIG/MAG Welding”  
Maximilian MUDRA (CSIRO Manufacturing & University of the Federal Armed Forces, Germany), Hunkwan PARK (CSIRO Manufacturing), Marcus TRAUTMANN (CSIRO Manufacturing & Dresden University of Technology), Anthony Bruce MURPHY (CSIRO Manufacturing)
- JWP -2 “Determining Cooling Time  $t_{8/5}$  on AC-GMAW in Comparison to DC-pulse Welding”  
Gerd HUISMANN (HSU)
- JWP -3 “Investigation of Arc and Droplet Transfer in Variable Polarity GMAW Process Using Numerical Approach”  
Yangyang ZHAO, Hyun CHUNG (Korea Advanced Institution of Science and Technology)
- JWP -4 “Numerical Simulation of Metal Transfer Phenomena Depending on the Material Properties of Wire Electrode”  
Yosuke OGINO, Yoshinori HIRATA, Satoru ASAI (Osaka University)
- JWP -5 “3D Spectroscopic Measurement of Temperature Distribution in MIG Welding”  
Kaname TODA, Kaichiro YOSHII, Kazufumi NOMURA, Kohei MIMURA, Yoshinori HIRATA, Satoru ASAI (Osaka University)

### 14:35-15:55 Visualization of Joining and Welding Process (2) (JWP)

Chair Persons: Anthony Bruce MURPHY (CSIRO Manufacturing)  
Manabu TANAKA (Osaka University)

- JWP -6 **Invited Lecture:** “The Physics of Cathode Spots in Metal Inert Gas Welding”  
John James LOWKE (CSIRO), Manabu TANAKA (Osaka University), Anthony B MURPHY (CSIRO Manufacturing)
- JWP -7 “Arc Behavior and Its Effect on Solidification Process with High Frequency Pulsed Arc Welding”  
Hao ZHENG, MingXuan YANG, BoJin QI, Zhou YANG (BUAA)
- JWP -8 “Sensitivity of Driving Forces on Weld Pool Behavior and Defect Formation in High-speed Gas Tungsten Arc Welding”  
Xiangmeng MENG, Guoliang QIN, Zengda ZOU (Shandong University)
- JWP -9 “Visualization for Arc Phenomena of Constricted TIG Arcs by a Two-temperature Model Analysis”  
Kyohei KONISHI, Masaya SHIGETA, Manabu TANAKA (Osaka University), Akihisa MURATA, Tadasuke MURATA (Murata Welding Laboratory), Anthony B. MURPHY (CSIRO Manufacturing)
- JWP -10 “Simulation of Flux Melting Process during a SAW by DEM-ISPH Hybrid Method”  
Hisaya KOMEN, Masaya SHIGETA, Manabu TANAKA (Osaka University), Mitsuyoshi NAKATANI, Yohei ABE (Hitachi Zosen Corporation)



### 16:10-17:00: Visualization of Joining and Welding Process (3) (JWP)

Chair Persons: ChuanSong Wu (Shandong University)  
Yoshiaki MORISADA (Osaka University)

- JWP -11 **Invited Lecture:** “Effect of Inset Metals on Dissimilar Friction Welding of Titanium Alloy to Nickel Alloy”  
Tomo OGURA, Takahiro MATSUMURA, Tomoya IMAI, Kazuyoshi SAIDA (Osaka University)
- JWP -12 “High Frequency Linear Friction Welding of Aluminum Alloys”  
Hideo MOGAMI, Tomoki MATSUDA, Tomokazu SANO, Akio HIROSE (Osaka University), Ryo YOSHIDA, Hisashi HORI (Nippon Light Metal, Ltd.)
- JWP -13 “Effect of Joining Speed on Mechanical Properties of Friction Lap Joints of Pure Copper to Polyamide-6 and Carbon-Fiber-Reinforced Thermoplastic”  
Lihui WU, Kimiaki NAGATSUKA, Kazuhiro NAKATA (Osaka University)

### 17:10-18:15: Visualization of Joining and Welding Process (4) (JWP)

Chair Persons: Tomo OGURA (Osaka University)  
Kimiaki NAGATSUKA (Osaka University)

- JWP -14 **Invited Lecture:** “The Effect of Pin Profiles on Material Flow and Joint Microstructure in Friction Stir Welding”  
Zhen SUN, ChuanSong WU, Hao SU (Shandong University)
- JWP -15 “Effects of Surface-Microstructural Modification on Fatigue Strength of High Tensile Steel Welds by Friction Stir Processing”  
Hajime YAMAMOTO, Kazuhiro ITO, Makoto TAKAHASHI, Kazuyuki KOHAMA, Hidetoshi FUJII (Osaka University)
- JWP -16 “Microstructural Evolution of Friction Stir Welded Steel Joints”  
Yusei MAEDA, Tomoki MATSUDA, Tomokazu SANO (Osaka University), Atsushi TAKADA, Muneo MATSUSHITA, Naoya HAYAKAWA, Kenji OI (JFE Steel Corporation), Akio HIROSE (Osaka University)
- JWP -17 “Rotating Tool Spot Bonding by Different Designed Tools”  
Hiroshi KAWAKAMI, Shoki KOMADA, Jippe SUZUKI (Mie University)
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# Creation of Life Innovation Materials for Interdisciplinary and International Researcher Development

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## Room C

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### 13:00-15:00: (iLIM - Invited Lecture)

Chair Person: Takao HANAWA (Tokyo Medical and Dental University)

- iLIM-O-1 **Invited Lecture:** “Advances in Biomaterials Simulation and Evaluation Procedures”  
Michael GASIK (Aalto University Foundation)
- iLIM-O-2 **Invited Lecture:** “Development of Biomedical Shape Memory Alloys”  
Tomonari INAMURA, Hideki HOSODA (Tokyo Institute of Technology)
- iLIM-O-3 **Invited Lecture:** “New Education Systems to Encourage the Next Generation through the Leading Graduate School and EDGE Programs”  
Toru ASAHI (Waseda University)

Chair Person: Masakuni OZAWA (Nagoya University)

- iLIM-O-4 **Invited Lecture:** “Contacting thermoelectric CaCo- and CaMn-Ceramics with Cu wires”  
Wilfried WUNDERICH (Tokai University)
- iLIM-O-5 **Invited Lecture:** “Age-Hardenable Cu-Ti Alloys Prepared by Hydrogenation Process”  
Satoshi SEMBOSHI (Tohoku University), Akihiro IWASE, Yasuyuki KANENO, Takayuki TAKASUGI (Osaka Prefecture University)
- iLIM-O-6 **Invited Lecture:** “Synthesis of Tailor-Made Ceramic Nanocrystals by Organic Ligand-Assisted Hydrothermal Method”  
Satoshi OHARA (Osaka University)

### 15:15-16:45: (iLIM – Invited Lecture presented by Young Researchers)

Chair Person: Nobuhiro MATSUSHITA (Tokyo Institute of Technology)

- iLIM-O-7 **Invited Lecture:** “Surface Modification of Biomedical Metallic Materials”  
Yusuke TSUTSUMI (Tokyo Medical and Dental University)
- iLIM-O-8 **Invited Lecture:** “Micro Sheath Flow Formation for Complex Materials Using Three Dimensional PDMS Structures”  
Dong Hyun YOON, Kazuhiro KOBAYASHI, Tetsushi SEKIGUCHI, Shuichi SHOJI (Waseda University)
- iLIM-O-9 **Invited Lecture:** “Fabrication of Functional Components with Modulated Geometries by Using Stereolithographic Additive Manufacturing”  
Soshu KIRIHARA (Osaka University)

Chair Person: Hiroshi NISHIKAWA (Osaka University)

- iLIM-O-10 **Invited Lecture:** “Fabrication of Nano-Scaled Gratings by Nano-Plastic Deformation and Selective Dissolution”  
Daixiu WEI, Yuichiro KOIZUMI (Tohoku University), Masahiko YOSHINO (Tokyo Institute of Technology), Akihiko CHIBA (Tohoku University)
- iLIM-O-11 **Invited Lecture:** “New Type Ferroelectric Material and their Polarization Switching”  
Shintaro YASUJI, Yosuke HAMASAKI (Tokyo Institute of Technology), Ayako KONISHI, Hiroki MORIWAKE (Japan Fine Ceramics Center), Mitsuru ITOH (Tokyo Institute of Technology)
- iLIM-O-12 **Invited Lecture:** “Low Temperature Crystallization of SiSn Binary Alloys”  
Masashi KUROSAWA, Motohiro KATO, Osamu NAKATSUKA, Shigeaki ZAIMA (Nagoya University)

# TECHNICAL PROGRAM

## -Poster Presentation-

Monday 17-October

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### Room D

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#### 16:45-18:15: Poster (iLIM-PT)

##### Environmental and Sustainable Materials

- iLIM-PT-1 “Plasma Interactions with Organic Materials for Low-Temperature Processing of Engineering Polymers and Biomolecules”  
Kosuke TAKENAKA, Giichiro UCHIDA, Yuichi SETSUHARA (Osaka University)
- iLIM-PT-2 “Synthesis of Inorganic-Organic Proton Conductive Membranes using Nanoporous Cu”  
Naoya OZAWA, Koichiro HAYASHI (Nagoya University), Shin-ichi YAMAURA (Tohoku University), Wei ZHANG (Dalian University of Technology), Wataru SAKAMOTO, Toshinobu YOGO (Nagoya University)
- iLIM-PT-3 “Phase Transitions of Absorbed Molecules in the Nanoporous Metal-Organic Framework HKUST-1”  
Hitoshi KAWAJI, Tomokazu KOMIYAMA, Suguru KITANI (Tokyo Institute of Technology)
- iLIM-PT-4 “Fabrication of SOFC and Cell Stack by Slurry Coating on Plastic Mold Made by 3D Printing”  
Shun KUDOH, Masaki SUZUKI, Shingo KANEHIRA, Koichi KIKUTA (Nagoya University), Soshu KIRIHARA (Osaka University)
- iLIM-PT-5 “Development of New Amorphous Oxide Semiconductor by Controlling Defects”  
Toshio KAMIYA, Keisuke IDE, Hidenori HIRAMATSU (Tokyo Institute of Technology), Yuichi SETSUHARA (Osaka University), Atsushi HIRAIWA, Hiroshi KAWARADA (Waseda University), Hideo HOSONO (Tokyo Institute of Technology)
- iLIM-PT-6 “Exhaust Gas Purification by Transition Metal Composite Oxide”  
Masatomo HATTORI, Kouji YOKOTA (Nagoya University), Masaaki HANEDA (Nagoya Institute of Technology), Masakuni OZAWA (Nagoya University)
- iLIM-PT-7 “Catalytic Evaluation of Pd NPs/CeO<sub>2</sub>-ZrO<sub>2</sub> Composite Derived from Amorphous Alloy”  
Naoya KATSURAGAWA, Shiro KATO, Toshinobu YOGO, Masakuni OZAWA (Nagoya University)
- iLIM-PT-8 “Dioxygen Activation by Hexagonal SrMnO<sub>3</sub> for Aerobic Liquid-Phase Oxidation”  
Keigo KAMATA, Shuma KAWASAKI, Michikazu HARA (Tokyo Institute of Technology)
- iLIM-PT-9 “Transmission of Spin Waves in Ordered FeRh Films”  
Takamasa USAMI, Takuya MIYAUCHI, Kazuki ICHIKAWA, Mitsuru ITOH, Tomoyasu TANIYAMA (Tokyo Institute of Technology)
- iLIM-PT-10 “Crystal Growth of Black Phosphorus at Ordinary Pressure and its Physical Properties”  
Takanari TAKAHASHI, Hiromasa NAMIKI, Takao SASAGAWA (Tokyo Institute of Technology)
- iLIM-PT-11 “CeO<sub>2</sub> Nanoparticles Films and Solid State Reaction on Al<sub>2</sub>O<sub>3</sub> Substrate”  
Takashi HATTORI, Masakuni OZAWA (Nagoya university)
- iLIM-PT-12 “Vertical Type Diamond Metal-Oxide-Semiconductor Field-Effect Transistors with 2 Dimensional Hole Gas Channel”  
Masafumi INABA, Tsubasa MUTA, Nobutaka OI, Toshiki SAITO, Takuya KUDO, Hiroshi KAWARADA (Waseda University)

## Biomedical and Healthcare Materials

- iLIM-PT-13 “Synthesis of Tailor-Made Ceramic Nanocrystals towards Bio-Medical Applications”  
Satoshi OHARA (Osaka University), Kosuke NOZAKI, Akiko NAGAI, Kimihiro YAMASHITA (Tokyo Medical and Dental University)
- iLIM-PT-14 “Polyvinylidene Difluoride (PVDF) Suture for Microsurgery”  
Michiko TERADA-NAKAISHI, Shukan OKANO, Mayuko HAMANAGA, Tsutomu HOMMA, Kentaro TANAKA, Kazuo TAKAKUDA (Tokyo Medical and Dental University)
- iLIM-PT-15 “Development of Decellularized Tissues for Controlling Stem Cell Functions”  
Tsuyoshi KIMURA, Yoshihide HASHIMOTO, Naoko NAKAMURA, Yuuka IGARI, Takaaki KUBOTA, Mayuka KONDO, Saki HIGASHINO, Akio KISHIDA (Tokyo Medical and Dental University)
- iLIM-PT-16 “Development of Super Engineering Plastic (PEEK) Made Orthodontic Wires”  
Motohiro UO, Takahiro WADA, Minami MAEKAWA, Zusei KANNO, Takashi ONO, Takao HANAWA (Tokyo Medical and Dental University)
- iLIM-PT-17 “Antibacterial Activity of Silver Nanoparticles Coating on Zirconia against Oral Bacteria”  
Kosuke NOZAKI, Risa YAMADA, Hiroyuki MIURA, Kimihiro YAMASHITA, Akiko NAGAI (Tokyo Medical and Dental University)
- iLIM-PT-18 “Development of a Partial Reinforced Faceguard Using a Fiber Reinforced Thermoplastic (FRTP) and Shock Escape Space”  
Takahiro WADA, Hiroshi CHUREI, Haruka TAKAYANAGI, Mako YOKOSE, Shintaro FUKASAWA, Takahiro SHIRAKO, Naohiko IWASAKI, Toshiaki UENO, Hidekazu TAKAHASHI, Motohiro UO (Tokyo Medical and Dental University)
- iLIM-PT-19 “Formation and Evaluation of Mg(OH)<sub>2</sub> Films on AZ31 Mg Alloys Using Hydrothermal Treatment”  
Liwei ZHU, Kensuke KURODA, Masazumi OKIDO (Nagoya University.)
- iLIM-PT-20 “Non-Viral Selective Gene Transfer Using Apatite Nanoparticle”  
Shuhei ISHII, Ai OONO, Wakana NAKAMURA, Yu NATSUME, Tetsushi FURUKAWA, Akiko NAGAI, Tetsuo SASANO (Tokyo Medical and Dental University)
- iLIM-PT-21 “Modeling and Simulation of Electron Beam Additive Manufacturing for Biomedical Co-Cr-Mo Alloy”  
Yufan ZHAO, Yuichiro KOIZUMI, Kenta AOYAGI, Kenta YAMANAKA, Akihiko CHIBA (Tohoku University)
- iLIM-PT-22 “Cellular Lattice of Biomedical Co-Cr-Mo Alloy Fabricated by Electron Beam Melting”  
Yuichiro KOIZUMI, Arata OKAZAKI, Akihiko CHIBA (Tohoku University), Takahiko KATO (Hitachi Ltd.), Akihiro TAKEZAWA (Hiroshima University)
- iLIM-PT-23 “Supermolecule-Coated Metal Surfaces for Fabricating Dynamic Biointerfaces”  
Yoshinori ARISAKA, Atsushi TAMURA, Nobuhiko YUI (Tokyo Medical and Dental University)
- iLIM-PT-24 “Calcification of Preosteoblast on Nano Topography Fabricated by Femtosecond Laser”  
Peng CHEN (Tokyo Medical and Dental University), Takuya KAWA, Masayoshi MIYAKE, Takahiro OOGA, Masahiro TSUKAMOTO (Osaka University), Maki ASHIDA, Yusuke TSUTSUMI, Hisashi DOI, Takao HANAWA (Tokyo Medical and Dental University)
- iLIM-PT-25 “Observation of Dental Restoration Gap Formation Using Optical Coherence Tomography”  
Hidekazu TAKAHASHI, Naohiko IWASAKI, Tohru YASUE (Tokyo Medical and Dental University), Yasunori SUMI (National Center for Geriatrics and Gerontology)
- iLIM-PT-26 “UV-Photofunctionalization on TNTZ Alloy Having Bioactive Surface”  
Kei TAKAHASHI, Tetsuo KISHI, Tetsuji YANO, Nobuhiro MATSUSHITA (Tokyo Institute of Technology)
- iLIM-PT-27 “Fracture Behavior of Biomaterial Evaluated by Using Micro-Sized Specimen”  
Risako SEKINE, Kimiko YOSHIDA, Fumihiro WAKAI (Tokyo Institute of Technology), Kosuke NOZAKI, Kimihiro YAMASHITA (Tokyo Medical and Dental University)
- iLIM-PT-28 “ZnO Nanoparticles Fabricated on Bioactive Ceramic Nanostructure for Antibacterial Property”  
Ryo MATSUDO, Toshiyuki IKOMA, Tetsuo KISHI, Tetsuji YANO, Nobuhiro MATSUSHITA (Tokyo Institute of Technology)
- iLIM-PT-29 “Transplantation of Paclitaxel Impregnated HAp/Col to Bone Metastasis Model Rat”  
Rempei MATSUMOTO, Akihiro YASUDA, Satoru EGAWA, Weixuetao, Atsushi OHKAWA, Shiniti SOTOME (Tokyo Medical and Dental University)

- iLIM-PT-30 “Protein Adsorptivity and Osteoconductivity of Surface Modified PEEK with Hydrophilicity”  
Kenta IGARASHI, Kensuke KURODA, Masazumi OKIDO (Nagoya University)
- iLIM-PT-31 “Protein Adsorptivity and Osteoconductivity of Surface Modified Titanium”  
Yuki YAMAGUCHI, Kensuke KURODA, Masazumi OKIDO (Nagoya University)
- iLIM-PT-32 “Tendon Regeneration and Development by Transcription Factor Mx<sup>2</sup>”  
Kensuke KATAOKA, Yoshiaki ITO, Tomoki CHIBA, Ryo NAKAMICHI, Hiroshi ASAHARA (Tokyo Medical and Dental University)
- iLIM-PT-33 “Simple Electrochemical Surface Treatment to Achieve Antibacterial Property on Titanium”  
Yusuke TSUTSUMI, Masaya SHIMABUKURO, Maki ASHIDA, Peng CHEN, Hisashi DOI, Takao HANAWA (Tokyo Medical and Dental University)
- iLIM-PT-34 “Repair of Femoral Bone Defects in Rats Using Hydroxyapatite/Collagen (HAp/Col) with BMP2”  
Satoru EGAWA, Wei Xue TAO, Hiroaki YASUDA, Rempei MATSUMOTO, Atsushi OKAWA, Shinichi SOTOME (Tokyo Medical and Dental University)
- iLIM-PT-35 “Microstructure and Mechanical Properties of a Biomedical Co-Cr-Mo Alloy Processed by High Pressure Torsion”  
Huihong LIU (Osaka University), Murat ISIK, Mitsuo NIINOMI (Tohoku University), Peng CHEN, Takao HANAWA (Tokyo Medical and Dental University), Hidetoshi FUJII (Osaka University)
- iLIM-PT-36 “A Mouthguard Biosensor Using UV Curable Biocompatible Polymer for Stable Enzyme Immobilization in Saliva Glucose Monitoring”  
Koji TOMA, Hiroki NITTA, Zhiwei ZHANG, Keisuke TOMOTO (Tokyo Medical and Dental University), Yukihiro SHINTANI (Yokogawa Electric Corporation), Shuhei TAKEUCHI, Takahiro ARAKAWA, Toshiaki SEKITA (Tokyo Medical and Dental University), Yasuhiko IWASAKI (Kansai University), Hiroshi KAWARADA (Waseda University), Shunsuke MINAKUCHI, Kohji MITSUBAYASHI (Tokyo Medical and Dental University)
- iLIM-PT-37 “Control of Metal Ion Release and Biocompatibility Using Surface Treatment of Stainless Steel”  
Takayuki ISAWA, Kensuke KURODA, Masazumi OKIDO (Nagoya University)
- iLIM-PT-38 “Dual Stimulus-Responsive Degradable Hollow Organic-Inorganic Hybrid Nanoparticles for Image-Guided Trimodal Therapy”  
Koichiro HAYASHI, Takuma MARUHASHI, Wataru SAKAMOTO, Toshinobu YOGO (Nagoya University)
- iLIM-PT-39 “Potentiality of Periosteum/Adipose-Derived Stem Cells for Osteoblastic Differentiation”  
Hidemi NAKATA, Shinji KURODA, Shohei KASUGAI (Tokyo Medical and Dental University)
- iLIM-PT-40 “Dependence of Ti Plate Surface Morphology Varied by Femtosecond Laser Irradiation on Cell Spreading”  
Masayoshi MIYAKE, Masahiro TSUKAMOTO, Yuji SATO, Takahiro OGA (Osaka University), Akiko NAGAI, Peng CHEN, Takao HANAWA (Tokyo Medical and Dental University)
- iLIM-PT-41 “Demonstration of Environment-Sensitive Tetra-Gel by Using Stimuli-Sensitive Macromer”  
Tomoko SAKAMAKI, Akira MATSUMOTO (Tokyo Medical and Dental University), Shinzi KONDO, Takamasa SAKAI (The University of Tokyo), Shohei SATO, Akihiko KIKUCHI (Tokyo University of Science), Yuichi TEI (The University of Tokyo), Tatsuro GODA, Yuji MIYAHARA (Tokyo Medical and Dental University)
- iLIM-PT-42 “Microstructural and Mechanical Properties of Near  $\alpha$ -Titanium with Solid-Solution Elements by Powder Metallurgy Process”  
Katsuyoshi KONDOH, Shota KARIYA, Ryuho IKEMASU, Mizuki FUKUO, Junko UMEDA, Hisashi IMAI (Osaka University)

## Base Materials and Technology

- iLIM-PT-43 “Spherically Self-Assembled Magnetite Nanocrystals for Magnetorheological Fluid”  
Hiroya ABE, Kazuo KURUMA (Osaka University), Kazuyoshi SATO (Gunma University), Takasi NAKA (National Institute for Materials Science), Yoshikazu SUZUKI (University of Tsukuba)
- iLIM-PT-44 “Effect of Friction Stir Welding Conditions on Joinability of Butt ODS/F82H Joint”  
Hisashi SERIZAWA, Masakazu MURAKAMI, Yoshiaki MORISADA, Hidetoshi FUJII (Osaka University), Takuya NAGASAKA (National Institute for Fusion Science), Hiroyasu TANIGAWA (National Institutes for Quantum and Radiological Science and Technology)
- iLIM-PT-45 “Innovative Development of Production and Evaluation Technologies of Silicon Compounds and their Thin Films for Advanced Fields”  
Katsuyoshi HARADA, Jun KUMAGAI (Nagoya University)
- iLIM-PT-46 “Formation of Graphene on SiC in Nitrogen Atmosphere and its Interface Structure”  
Michiko KUSUNOKI, Wataru NORIMATSU (Nagoya University)
- iLIM-PT-47 “Metal Phosphate-Catalyzed Benzylic Fluorination”  
Yusuke KITA, Michikazu HARA (Tokyo Institute of Technology)
- iLIM-PT-48 “Nano-Structural Analysis of Catalyst and Design of the Diesel Particulate Filter with a Multiphysics Approach”  
Maki NAKAMURA, Masakuni OZAWA (Nagoya University)
- iLIM-PT-49 “The High-Throughput Microscopy Screening System with Genome-Wide cDNA Expression Libraries”  
Takahide MATSUSHIMA (Tokyo Medical and Dental University), Naoki GOSHIMA (National Institute of Advanced Industrial Science and Technology), Hiroshi ASAHARA (Tokyo Medical and Dental University)
- iLIM-PT-50 “Development of Plasma Processing Technology for Low-Temperature Formation of High Quality Functional Films”  
Kosuke TAKENAKA, Yuichi SETSUHARA, Giichiro UCHIDA (Osaka University), Keisuke IDE, Toshio KAMIYA (Tokyo Institute of Technology)
- iLIM-PT-51 “Carrier-Type Control of Close-Packed Carbon Nanotube Film on SiC”  
Wataru NORIMATSU, Keita MATSUDA, Michiko KUSUNOKI (Nagoya University)
- iLIM-PT-52 “Preparation of 3D Nanoporous Si by Dealloying in Metallic Melt and its Application of Lithium Ion Rechargeable Battery Negative Electrode”  
Takeshi WADA, Hidemi KATO (Tohoku University)
- iLIM-PT-53 “Graphitization and Activation of Open-Cell Type Porous Carbon Prepared by Dealloying in Metallic Melt”  
Won-Young PARK, Seung-Geun YU, Takeshi WADA, Hidemi KATO (Tohoku University)
- iLIM-PT-54 “First-Principles Study of Structural Distortion in a Layered Perovskite  $\text{La}_3\text{Ni}_2\text{O}_7$ ”  
Yasuhide MOCHIZUKI, Hirofumi AKAMATSU, Yu KUMAGAI, Fumiyasu OBA (Tokyo Institute of Technology)
- iLIM-PT-55 “Photoinduced Electrical Properties of Ag Nanoparticle-Embedded  $\text{BiFeO}_3$  Thin Films Synthesized through a Chemical Process”  
Rika MARUYAMA, Koichiro HAYASHI, Wataru SAKAMOTO (Nagoya University), Isamu YUITOO, Teruaki TAKEUCHI (Waseda University), Toshinobu YOGO (Nagoya University)
- iLIM-PT-56 “Complementary Study for Effects of Annealing on Density and Pore Structures in Amorphous In-Ga-Zn-O Thin-Film Transistors”  
Keisuke IDE, Masato OTA (Tokyo Institute of Technology), Kousuke TAKENAKA, Yuichi SETSUHARA (Osaka University), Atsushi HIRAIWA, Hiroshi KAWARADA (Waseda University), Hidenori HIRAMATSU, Hideo HOSONO, Toshio KAMIYA (Tokyo Institute of Technology)
- iLIM-PT-57 “Optimizing Imprinting Condition for High Aspect Grating of Pd-Based Metallic Glass”  
Masanari DATEKYU, Wataru YASHIRO, Atsushi MOMOSE, Hidemi KATO (Tohoku University)
- iLIM-PT-58 “Microstructural Characteristics of Al-Ag Precursor for Fabricating Nanoporous Ag and its Dealloying Behavior in HCl Solution”  
Min-Su KIM, Hiroshi NISHIKAWA (Osaka University)
- iLIM-PT-59 “Substitution Effects of Cr on Magnetic Properties for MnAlGe Compound with  $\text{Cu}_2\text{Sb}$ -Type Structure”  
Rie Y. UMETSU (Tohoku University), Yoshifuru MITSUI (Kagoshima University), Isamu YUITOO, Teruaki TAKEUCHI, Hiroshi KAWARADA (Waseda University)

- iLIM-PT-60 "Preparation of Yb-Si-O Ceramic Films by Laser CVD"  
Masato SEKIYAMA (Tohoku University), Akihiko ITO (Yokohama National University), Takashi GOTO (Tohoku University)
- iLIM-PT-61 "Basic Characteristics of Plasma MIG Welding Process"  
Shinichi TASHIRO, Sarizam Bin MAMAT, Manabu TANAKA (Osaka University)
- iLIM-PT-62 "SiC Coating on Powder and Fiber Surfaces by Rotary CVD"  
Daiki HORI, Hirokazu KATSUI, Takashi GOTO (Tohoku University)
- iLIM-PT-63 "Eutectic Composite of SiC and Boride Ceramics by Arc and Laser Melting"  
Kishin MORITA, Hirokazu KATSUI, Takashi GOTO (Tohoku University)
- iLIM-PT-64 "Development of High-Quality and High Efficient Laser Welding for Biomaterial Titanium"  
Yousuke KAWAHITO, Masami MIZUTANI (Osaka University)
- iLIM-PT-65 "Glass-to-Glass Anodic Bonding with Transparent Joint Interface"  
Makoto TAKAHASHI (Osaka University)
- iLIM-PT-66 "Dynamic Thermo-Elasto-Plasticity FE Analysis on Nano- and Femto-second Laser Shock Peenings for a Ferrite Steel"  
Seiichiro TSUTSUMI, Kazushi UEDA, Riccardo FINCATO, Tomokazu SANO (Osaka University)
- iLIM-PT-67 "Fracture Toughness Increase by Friction-Stir-Processing Microstructure Modification in TIG-welds of SS400 Steels"  
Kazuhiro ITO, Hiroki IZUMI, Hajime YAMAMOTO, Makoto TAKAHASHI, Kazuyuki KOHAMA, Yoshikazu DANNO, Hidetoshi FUJII (Osaka University)
- iLIM-PT-68 "Chemical Vapor Deposition for Synthesis and Powder Surface Modification of Energy-Related and Biocompatible Materials"  
Hirokazu KATSUI, Takashi GOTO (Tohoku University)
- iLIM-PT-69 "Preparation of Porous Metal by Dealloying in Metallic Melt and its Application to the Binder-Free Cathode for Rechargeable Li-Air Battery"  
Fumiya MORISHITA (Tohoku University), Masaya NOHARA, Yuhki YUI, Shuhei SAKAMOTO, Masahiko HAYASHI, Takeshi KOMATSU (NTT Device Technology Labs, NTT Corporation), Takeshi WADA, Hidemi KATO (Tohoku University)
- iLIM-PT-70 "Current Conduction in Atomic-Layer-Deposition Al<sub>2</sub>O<sub>3</sub> as Investigated Based on Space-Charge-Controlled Field Emission Model"  
Atsushi HIRAIWA (Nagoya University), Daisuke MATSUMURA, Satoshi OKUBO, Hiroshi KAWARADA (Waseda University)
- iLIM-PT-71 "Physical Properties of Superconducting Boron-Doped Diamond Synthesized by MPCVD Method"  
Taisuke KAGEURA, Masanobu SHIBATA (Waseda University), Takao SASAGAWA (Tokyo institute of Technology), Hiroshi KAWARADA (Waseda University)
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# Tuesday 18-October

## The Research Activities of Joint Usage / Research Center on Joining and Welding

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### Room A

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#### 10:00-11:20: The Research Activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing) (1) (RAJU-JW)

Chair Person: Hisashi SERIZAWA (Osaka University)  
Seiichiro TSUTSUMI (Osaka University)

- RAJU-1 **Invited Lecture:** “Characteristic of Charpy Absorbed Energy for Steel Bridge Member with Fire Damage”  
Mikihito HIROHATA (Nagoya University), Yasuhito TAKASHIMA, Fumiyoshi MINAMI (Osaka University)
- RAJU-2 **Invited Lecture:** “Influence of Shot Peening and Thermal Aging Treatment on Resistance to Intergranular Corrosion in Shielded Metal Arc Weld Metal for Type 600 Nickel Base Alloy”  
Satoru NISHIKAWA, Koichi OOI (JAPEIC), Makoto TAKAHASHI (Osaka University)
- RAJU-3 **Invited Lecture:** “Analytical Simulation of Residual Stress Introduced by Hammer Peening”  
Risa MATSUMOTO (Kyoto University), Toshiyuki ISHIKAWA (Kansai University), Seiichiro TSUTSUMI (Osaka University), Hiroataka KAWANO (Kyoto University), Kentaro YAMADA (Central Nippon Highway engineering Nagoya, Co. Ltd)
- RAJU-4 **Invited Lecture:** “Effect of Loading on Stress Distribution in Welded Joint with Low-transformation-temperature Welding Wire”  
Yoshiki MIKAMI, Kazushi TANIGAWA, Hisashi SERIZAWA, Masahito MOCHIZUHKI (Osaka University)

#### 11:35-12:35: The Research Activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing) (2) (RAJU-JW)

Chair Person: Katsuyoshi KONDOH (Osaka University)  
Hiroshi NISHIKAWA (Osaka University)

- RAJU-5 **Invited Lecture:** “Size- and Shape-controlled Colloidal Fluid of Surface-modified Iron Oxide Magnetic Fine Particles: The Magnetorheological Property”  
Kiyoshi KANIE, Yasufumi ODA, Jun YABUKI, (Tohoku University), Shinya YAMANAKA (Muroran Institute of Technology), Masaki MATSUBARA (Tohoku University), Hiroya ABE, Makio NAITO (Osaka University), Atsushi MURAMATSU (Tohoku University)
- RAJU-6 **Invited Lecture:** “Modification of Vacuum Plasma Sprayed Tungsten Coating by Friction Stir Processing”  
Hiroyasu TANIGAWA, Kazumi Ozawa (NIQRST), Yoshiaki MORISADA, Hidetoshi FUJII (Osaka University)
- RAJU-7 **Invited Lecture:** “Biomedical Assessment of Titanium coated with Carbon Nanotubes”  
Hirofumi MIYAJI, Erika NISHIDA (Hokkaido University), Junko UMEDA, Katsuyoshi KONDOH (Osaka University), Hiroko TAKITA, Tadashi IIZUKA, Tsukasa AKASAKA, Saori TANAKA, Akihito KATO (Hokkaido University), Bunshi FUGETSU (The University of Tokyo), Tsutomu SUGAYA (Hokkaido University)
- RAJU-8\* **Invited Lecture:** “Mechanical Properties of Selective Laser-melted Co-Cr-Mo-N Alloys for Biomedical Applications”  
Naoyuki NOMURA, Keiko KIKUCHI, Akira KAWASAKI (Tohoku University)

\* Presented in “**Visualization of Advanced Material Processing (1) (AMP)** on Monday 17-October.

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# Tuesday 18-October

## Visualization in Joining & Welding Science through Advanced Measurements and Simulation

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### Room A

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#### 9:00-9:50: Visualization of Quality, Safety and Reliability (1) (QSR)

Chair Person: Seiichiro TSUTSUMI (Osaka University)  
Hisashi SERIZAWA (Osaka University)

- QSR-1 **Invited Lecture:** "Anisotropic Damage Constitutive Law Derived from Atomic Separation Process on Cleavage Plane"  
Yuichi SHINTAKU (University of Tsukuba), Kenjiro TERADA (Tohoku University), Seiichiro TSUTSUMI (Osaka University)
- QSR -2 "Development of a Blowhole Detection System for Robotic MAG Welding"  
"Yosuke SASAKI, Yingda DAI, Yukio HIOKI, Siyang TU (Hitachi Zosen Corporation), Mitsuyoshi NAKATANI (Osaka University (Hitachi Zosen Corporation))
- QSR -3 "Effects of Femtosecond Laser Peening on Fatigue Properties of Laser-welded 2024 Aluminum Alloy"  
Takayuki EIMURA, Tomokazu SANO, Akio HIROSE, Seiichiro TSUTSUMI, Masami MIZUTANI, Yousuke KAWAHITO, Seiji KATAYAMA (Osaka University), Kazuto ARAKAWA (Shimane University), Ayumi SHIRO (National Institutes for Quantum and Radiological Science and Technology), Takahisa SHOBU (Japan Atomic Energy Agency), Kiyotaka MASAKI (National Institute of Technology, Okinawa College), Yuji SANO (Japan Science and Technology Agency)

#### 14:40-16:00: Visualization of Metallurgy in Joining and Welding (1) (MTJW)

Chair Person: Kazuyoshi SAIDA (Osaka University)  
Hiroshige INOUE (Osaka University)

- MTJW-1 **Invited Lecture:** "Hardness Simulation - An Effective Tool to Visualize and Validate the Material Properties in Welds"  
Dieter SIEGELE (Fraunhofer IWM), Herman F. NIED (Lehigh University)
- MTJW-2 "In-situ Investigation of Solidification Behaviour of Commercial Automotive Steels using High Temperature Microscopy"  
Gautam AGARWAL (Delft University of Technology), Murugaiyan AMIRTHALINGAM (Indian Institute of Technology Madras), Marcel JM HERMANS, Ian M RICHARDSON (Delft University of Technology), Suk C MOON, Rian J DIPPENAAR (University of Wollongong)
- MTJW-3 "Effects of Ni content and Induction Heat Treatment on Microstructure and Toughness of Laser-arc Hybrid Welded Martensitic Stainless Steel"  
Kangda HAO, Ming GAO, Xiaoyan ZENG (Huazhong University of Science and Technology)
- MTJW-4 "Precision Microanalysis of B toward Actualization of Welded Structure Using B Doped Al-Si-Mn Weathering Steel"  
Susumu MEGURO, Takashi KIMURA, Terumi NAKAMURA, Hai QIU, Satoshi KAWADA (National Institute for Materials Science), Kaneaki TSUZAKI (Kyushu University)
- MTJW-5 "Fundamental Study on Intra-granular Transformation Mechanism in Low Alloy Steel Weld Metal"  
Suo SARUWATARI, Kazuhiro KOJIMA, Hiroyuki HIRATA (Nippon Steel & Sumitomo Metal Corporation), Hiroshige INOUE (Osaka University)

## 16:15-17:05: Visualization of Joining and Welding Process (7) (JWP)

Chair Person: Yohei ABE (Osaka University (Hitachi Zosen))  
Shinichi TASHIRO (Osaka University)

- JWP-26 **Invited Lecture:** "A New Digital Approach to Weld Quality Management"  
Jean-Paul BOILLOT (Chairman & CEO, Servo-Robot Group), Takuya NOMATA, Hiroshi MIZUNUMA (Servo-Robot Japan)
- JWP-27 "Properties of Additively-manufactured 316L Austenitic Stainless Steel using Laser Metal Deposition Method"  
Kosuke SASAKI, Tomoki MATSUDA, Tomokazu SANO, Akio HIROSE (Osaka University), Go OBARA, Takashi OBARA, Naotada OKADA, Miki MORI (Toshiba Corporation)
- JWP-28 "Clarification of Reduction Process of CuO in Cu-to-Cu Bonding using CuO Paste"  
Takafumi YAO, Tomoki MATSUDA, Tomokazu SANO, Akio HIROSE, Katsunori ISHII (Osaka University), Chiaki MORIKAWA, Atsushi OHBUCHI, Hisashi YASHIRO (Rigaku Corporation)
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# Visualization in Joining & Welding Science through Advanced Measurements and Simulation

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## Room B

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### 9:00-9:50: Visualization of Joining and Welding Process (5) (JWP)

Chair Persons: Jean-Paul BOILLOT (Chairman & CEO, Servo-Robot Group)  
Yousuke KAWAHITO (Osaka University)

- JWP-18 **Invited Lecture:** “Gap Bridging in Laser-GMA-Hybrid Welding of Boron Manganese UHSS - Realtime Two-Colour-Pyrometry in order to improve high Speed Hybrid Welding -”  
Sven Frithjof GOECKE (Technical University of Applied Sciences Brandenburg THB), Helge KÜGLER (BIAS), Sebastian BAUM (Technical University of Applied Sciences Brandenburg THB), Frank VOLLERTSEN (BIAS)
- JWP-19 “Effect of Residual Oxygen Content in Ar Atmosphere on Dissimilar Laser Brazing of Hexagonal Boron Nitride and Cemented Carbide using Silver-Copper-Titanium Braze Alloys”  
Yoshihisa SECHI (Kagoshima Prefectural Institute of Industrial Technology), Kimiaki NAGATSUKA, Takahiro FUJIMOTO, Masahiro TSUKAMOTO, Kazuhiro NAKATA (Osaka University)
- JWP-20 “Reconstruction of the Penetration Channel Shape in Electron Beam Welding Using Penetrating X-Rays”  
Stepan VARUSHKIN, Dmitriy TRUSHNIKOV, Elena KROTOVA, Nikolay MUSIKHIN, Nikita BOGDANOV (Perm National Research Polytechnic University)

### 10:00-11:20: Visualization of Mechanics in Joining and Welding (1) (MCJW)

Chair Person: Aiping WU (Tsinghua University)  
Ninshu MA (Osaka University)

- MCJW-1 **Invited Lecture:** “Optimization of Heat Sinking Process for Welding Buckling Controlling”  
Jiangchao WANG (Huazhong University of Science and Technology), Hongquan ZHAO, Fangming ZHOU (Jiangsu University of Science and Technology)
- MCJW-2 “Formation Mechanism of the Different Interfacial Morphology of Electron Beam Welded TA2/2024Al Dissimilar Joints”  
Xiaopeng LI, Ting WANG, Binggang ZHANG (Harbin Institute of Technology)
- MCJW-3 “Influence of IMC Morphology on Fracture Behavior in Laser Welding-brazing Fe/Al Butt-joint”  
Hongbo XIA, LiQun LI (Harbin Institute of Technology), Ninshu MA (Osaka University)
- MCJW-4 “Numerical Simulation of Welding Residual Stresses in a P92/SUS304 Dissimilar Weldment”  
Suo LI, Xiaowei PU, Yanbin ZHANG, Dean DENG (Chongqing University)
- MCJW-5 “Finite Element Assisted Investigations on the Thermo-cyclic Failure Behavior of Soldered TSOPs”  
Adrian LIS, Kohei NAKANISHI, Tomoki MATSUDA, Tomokazu SANO (Osaka University), Madoka MINAGAWA, Masahide OKAMOTO (Hitachi Ltd), Akio HIROSE (Osaka University)

### 11:35-12:40: Visualization of Mechanics in Joining and Welding (2) (MCJW)

Chair Person: Deng DEAN (Chongqing University)  
Yasuhito TAKASHIMA (Osaka University)

- MCJW-6 **Invited Lecture:** "Effects of Electron Beam Welding Parameters on the Weld Profiles and the Residual Stresses of Ti2AlNb"  
Aiping WU, Yanjun LI (Tsinghua University), Quan LI, Ruican ZHU (Capital Aerospace Machinery Company), Guoqing WANG (China Academy of Launch Vehicle Technology), Yue ZHAO (Tsinghua University)
- MCJW-7 "Effect of Phase Transformation and Element Activation and Deactivation on Deformation and Residual Stress of Carbon Steel Weldment"  
Jason CHEON, Suck-Joo NA (KAIST)
- MCJW-8 "Research on the Simulation of Zig-zag Line Heating based on the Thermal Elastic-plastic FEM"  
Hua YUAN, Yao ZHAO, Changcheng HU, Hongbao DONG, Guoyuan TANG (Huazhong University of Science and Technology)

### 14:40-16:00: Visualization of Joining and Welding Process (6) (JWP)

Chair Persons: Suck-Joo NA (KAIST)  
Kimiaki NAGATSUKA (Osaka University)

- JWP-21 **Invited Lecture:** "Application Study to Duplex Stainless Steel of Narrow Gap Oscillation Laser Welding"  
Yohei ABE (Osaka University (Hitachi Zosen)), Yosuke YAMAZAKI, Yukio HIOKI (Hitachi Zosen), Mitsuyoshi NAKATANI (Osaka University (Hitachi Zosen))
- JWP-22 "Relationship between Spatter Reduction and Laser Conditions on the Basis of Three-dimensional X-ray Transmission In-situ Observation of Welding Phenomena in High-power Laser Welding of Stainless Steel"  
Yosuke KAWAHITO, Kouki NAKADA, Yosuke UEMURA, Masami MIZUTANI, Seiji KATAYAMA (Osaka University), Hiroshi KAWAKAMI (Mie University), Koji NISHIMOTO (National Institute of Technology, Anan College)
- JWP-23 "Visualization of Empty Core in Laser Induced Plume"  
Masami MIZUTANI, Yosuke KAWAHITO, Seiji KATAYAMA (Osaka University)
- JWP-24 "Three-dimensional Numerical Simulations of Keyhole Behavior and Molten Pool Dynamics in Aluminum Laser Welds"  
Qiaofeng ZHOU, Katsuma HORIO, Fumikazu MIYASAKA, Hiroaki MORI, Masami MIZUTANI, Yosuke KAWAHITO, Seiji KATAYAMA (Osaka University)
- JWP-25 "Experimental and Numerical Study on Gas Protection in Laser Welding of Titanium Alloy"  
Meng JIANG, Wang TAO, Shuai ZOU, Liqun LI, Yanbin CHEN (Harbin Institute of Technology)

### 15:00-16:40: Visualization of Joining and Welding Process (8) (JWP)

Chair Persons: Sven Frithjof GOECKE (Technical University of Applied Sciences Brandenburg THB)  
Yosuke KAWAHITO (Osaka University)

- JWP-29 **Invited Lecture:** "Some Issues in Modeling for CFD Simulations of Welding and Related Processes"  
Suck-Joo NA, Jason CHEON, Sang-Woo HAN, Su-Deok KIM (KAIST), Dae-Won CHO (KIMM), Yuchao FANG (HIT-KAIST), Wenjun GE (KAIST)
- JWP-30 "Study on the In-situ Measurement of the Molten Pool Shape using a Laser Ultrasonic"  
Fumiya IMURA, Yu MINE, Kazufumi NOMURA, Satoru ASAI (Osaka University), Takeshi HOSHI, Azusa SUGAWARA (Toshiba Corporation)
- JWP-31 "Monitoring of Penetration Shape during Hot-wire Laser Narrow-gap Welding"  
Motomichi YAMAMOTO, Kenji SHINOZAKI, Masatomo TODO (Hiroshima University), Eakkachai WARINSIRIRUK (Mahidol University)

# TECHNICAL PROGRAM

## -Poster Presentation-

Tuesday 18-October

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### Room D

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#### 13:40-14:40: Poster (PT)

AMP

- PT-1 “Stereolithographic Additive Manufacturing of Ceramic Objects with 1/F Fluctuation to Modulate Environmental Compatibility”  
Hirotohi NOZAKI, Soshu KIRIHARA (Osaka University)
- PT-2 “Design and 3D Fabrication the Sound Structures with Internal Fractal Structure”  
Shoichiro KISANUKI, Soshu KIRIHARA (Osaka University)
- PT-3 “Stereolithographic Additive Manufacturing of Ultra Thinness Ceramic Sheets with Micro Emboss Patterns”  
Koki NONAKA, Soshu KIRIHARA (Osaka University)”
- PT-4 “Effect of Aging Time on the Formation of IMC Layer as well as Voids in the Sn-Ag-Cu-Ni/Cu Substrate Interface in Laser Soldering”  
Ryo MATSUNOBU, Hiroshi NISHIKAWA (Osaka University)

JWP

- PT-5 “Upset Welding of Shear Reinforcement with Large Diameter”  
Kohei HAYASHI, Hidenori TERASAKI, Yu MIYAHARA (Kumamoto University), Manabu TANAKA, Kyohei KONISHI (Osaka University), Hiroshi INOUE (Kansai Law and Patent office), Yoshinobu HAYASHI (Keishin Kougyou)
- PT-6 “Influence Mixture of Oxidant into Shielding Gas on Cathode Spot Behavior”  
Toshifumi YUJI (University of Miyazaki), Shinichi TASHIRO, Titinan METHONG (Osaka University), Hiroyuki KINOSHITA (University of Miyazaki), Toshio BOUNO (Salesian Polytechnic), Manabu TANAKA (Osaka University)
- PT-7 “Observation of Metal Vapor Behavior during Gas Tungsten Arc Welding using Helium Gas”  
Keigo TANAKA, Titinan METHONG, Masaya SHIGETA, Manabu TANAKA (Osaka University)
- PT-8 “Electrode Negative TIG Welding of Non-flammable Magnesium Alloys”  
Hidenori TERASAKI, Kyohei OBATA (Kumamoto University), Manabu TANAKA (Osaka University), Akihisa MURATA (Murata Welding Laboratories), Mitsuru OHATA (Osaka University), Yoshihito KAWAMURA (Kumamoto University)
- PT-9 “Influence of Preheating on Oxygen Plasma Cutting Process”  
Shinichi TASHIRO, Anh Van NGUYEN (Osaka University), Mikio SADAIKE (Yousetsu Techno Sadaike), Yoshio MATSUMOTO (Matsumoto Tekkosyo Limited Liability Company), Yoshihiro YAMAGUCHI (Komatsu Industries Corporation), Manabu TANAKA (Osaka University)
- PT-10 “Numerical Analysis on Influence of Wire Composition on Droplet Temperature in Duplex Current Feeding MIG Welding”  
Shinichi TASHIRO, Manabu TANAKA (Osaka University), Masaru SETO, Atsuhito AOKI (Kawasaki Heavy Industries, Ltd.)

- PT-11 “Study on New GMA Welding Process with Duplex Current Feeding”  
Masaru SETO (Kawasaki Heavy Industries, Ltd.), Manabu TANAKA, Shinichi TASHIRO (Osaka University),  
 Atsuhito AOKI (Kawasaki Heavy Industries, Ltd.)
- PT-12 “Convective Pattern of Weld Pool in Plasma Keyhole Arc Welding”  
Anh Van NGUYEN, Shinichi TASHIRO, Manabu TANAKA (Osaka University)
- PT-13 “Development of Plasma-MIG Hybrid Welding Process”  
Anh Van NGUYEN, Shinichi TASHIRO, Manabu TANAKA (Osaka University)
- PT-14 “Feature of Steady Arc Plasma during GTA Welding with a Constricted Nozzle”  
Satoshi MIKI, Kyohei KONISHI, Masaya SHIGETA, Manabu TANAKA (Osaka University), Akihisa MURATA,  
 Tadasuke MURATA (Murata Welding Laboratory)
- PT-15 “Residual Stress, Deformation and Material Hardening of an Aluminum Alloy induced by Laser Shock Peening  
 with Nano- and Femto-second Lasers”  
Seiichiro TSUTSUMI, Kazushi UEDA, Riccardo FINCATO, Tomokazu SANO (Osaka University)
- PT-16 “SiC/SiC Joint Formation by Diffusion Bonding Using Paste-Like Si Powder for High-Temperature Application”  
Shunichi TERADA, Kazuyuki KOHAMA, Kazuhiro ITO, Soshu KIRIHARA (Osaka University)
- PT-17 “Effect of Process Variable on Temperature Distribution in the Heat-Affected Zone of Temper Bead Welds”  
Tadayoshi KASHIYAMA, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)
- PT-18 “Observation and Control of Keyhole in Robotic Plasma Welding”  
Takaaki HIRANO, Weixi WANG, Satoshi YAMANE (Saitama University), Kazumichi HOSOYA, Toru  
 NAKAJIMA, Hikaru YAMAMOTO (Hitachi Construction Machinery Co., Ltd.)
- PT-19 “Development on Numerical Simulation Model of Weld Pool in Gas Metal Arc Welding for Engineering Tool”  
Kosuke TAMURA, Yosuke OGINO, Yoshinori HIRATA, Satoru ASAI (Osaka University)
- PT-20 “Analysis of Keyhole Formation and its Related Phenomena in Laser Welding with Numerical Method”  
Yuta NONAKA, Yousuke KAWAHITO, Isaku CHIMURA (Osaka University)
- PT-22 “Droplet Temperature Measurement in Gas Metal Arc Welding Process by using Two Color Measurement  
 Method”  
Sarizam Bin MAMAT, Titinan METHONG, Shinichi TASHIRO, Manabu TANAKA (Osaka University)
- PT-23 “Measurement of Surface Tension Supporting Pendant Drop of Molten Metal Formed by Arc Discharge”  
Masahiro IIDA, Yoshinori HIRATA, Kazufumi NOMURA, Yosuke OGINO, Satoru ASAI (Osaka University),  
 Shun IZUTANI (Kobe Steel, Ltd), Koichi HOSOI (The Japan Welding Engineering Society)
- PT-24 “Numerical Simulation of GMA Short-Circuiting Transfer Process by Control of Welding Current and Wire  
 Feeding”  
Natsuki NITTA, Shogo KIHANA, Yosuke OGINO, Yoshinori HIRATA (Osaka University)
- PT-25 “Simulation of Droplet Transfer in FCAW by Incompressible SPH Method and Finite Volume Method”  
Takahiro FUJIMOTO, Hisaya KOMEN, Masaya SHIGETA, Manabu TANAKA (Osaka University), Naoki  
 MUKAI, Reiichi SUZUKI (Kobe Steel, Ltd.)
- PT-26 “Diffusion Behavior of Electrode Additives during GTAW”  
Akitoshi KUROKAWA, Manabu TANAKA, Masaya SHIGETA, Kyohei KONISHI, Kazuya ISHIDA (Osaka  
 University), Tomohiro TAKIDA, Seiji NAKABAYASHI, Ayuri TSUJI (A.L.M.T. Corp.)
- PT-27 “Diagnostic of Heat Source Properties in Gas Metal Arc Welding Using CO2 Shielding Gas”  
Titinan METHONG, Masaya Shigeta, Manabu Tanaka (Osaka University), Rinsei Ikeda, Muneo Matsushita  
 (JFE Steel Corporation), Tokihiko Kataoka (JFE Techno-Research Corporation)
- PT-28 “Numerical Simulation in High Efficiency Spot Welding”  
Ayumi TAKAHASHI, Satoshi YAMANE (Saitama University), Nobuyori YOSHIOKA, Akihiko KOHANAWA,  
 Hideki YAMAMOTO (Fuji Electric Co.,Ltd.)
- PT-29 “Dissimilar Joint Formation of SUS304 / CFRTP by Friction Lap Joining”  
Tsuyoshi MIWA, Daiki KITAGAWA, Kimiaki NAGATSUKA, Kazuhiro ITO, Kazuhiro NAKATA (Osaka  
 University), Hiroto YAMAOKA (IHI Corporation)
- PT-30 “Resistance Spot Welding of Metal / Thermoplastic and Carbon Fiber Reinforced Plastic”  
Kimiaki NAGATSUKA, Lihui WU, Kazuhiro NAKATA (Osaka University), Shuhei SAEKI, Yamato KITAMOTO,  
 Yoshiaki IWAMOTO (DENGENSHA MFG. CO., LTD.)

- PT-32 “Beadless Bonding by Laser Heating”  
Futoshi HIMI, Yousuke KAWAHITO, Hiroshige INOUE (Osaka University), Kouji NISHIMOTO, Seiichi NISHINO (The Anan College of Technology), Hiroshi KAWAKAMI (Mie University)
- PT-33 “Numerical Simulation of Electron Beam Welding of Dissimilar Materials Taking into Account Thermoelectric Phenomena”  
 Gleb PERMYAKOV, Dmitriy TRUSHNIKOV, Stepan VARUSHKIN (Perm National Research Polytechnic University)
- PT-34 “Investigation of Hot-wire Laser Brazing Technology for Steel / Aluminum Alloy Dissimilar Joint”  
Shunsuke TAKAYA, Motomichi YAMAMOTO, Kenji SHINOZAKI, Kota KADOI (Hiroshima University), Hiroshi MATSUDA, Rinsei IKEDA (JFE Steel Corp.)
- MCJW
- PT-35 “Prediction of Welding Distortion of Large Structures using Inherent Deformation Database and Comparison with Measurement”  
Ninshu MA, Junya TATEISHI, Yosuke OTSUKI, Shiya HIROI (JSOL Corporation), Hui HUANG (Oak Ridge National Laboratory)
- PT-36 “Computational Prediction of Groove Shrinkage in Multi-pass Circumferential Welding of Thick-walled Pipes with Narrow Gap”  
Hisashi SERIZAWA, Ryosuke DOI, Hidekazu MURAKAWA (Osaka University)
- PT-37 “Influence of Welding Sequence on Residual Stress Distribution in Q345 Steel H-section Butt Welded Joints”  
Xiaowei PU, Suo LI, Yanbin ZHANG, Dean DENG (Chongqing University)
- PT-38 “Dynamic Explicit Finite Element Analysis of Near-Crack Tip Stress Field with Inertial Effect”  
 Suguru YAMADA, Yasuhito TAKASHIMA, Fumiyoshi MINAMI (Osaka University)
- PT-39 “Deformation Prediction of Plate Line Rolling Forming Based on Inherent Strain Method”  
Changcheng HU, Yao ZHAO, Hongbao DONG, Guoyuan TANG (Huazhong University of Science and Technology)
- PT-40 “Significance of Strength Mismatch Effects on Charpy Absorbed Energy and CTOD Fracture Toughness”  
Yusuke ITO (Osaka University), Yasuhito TAKASHIMA, Fumiyoshi MINAMI (Osaka University)
- PT-41 “The Effects of Temperature during Post-heating Treatment on Residual Stress of Resistance Spot Welded High-strength Steel Sheets”  
Akira SATO, Izuru NISHIKAWA, Muneyoshi IYOTA (Osaka Institute of Technology)
- PT-42 “X-ray Investigation of the Effect of Machining Condition on Residual Stress Distribution due to Welding after Surface Machining”  
Yuu TANIGUCHI, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)
- PT-43 “Numerical Investigation of Effect of Plastic Property on Error in Young’s Modulus Estimation using Instrumented Indentation Technique”  
Akinobu OGAWA, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)
- PT-44 “Improving of Cross Tension Strength using Insert Materials in Resistance Spot Welded High-strength Steel Sheets”  
Muneyoshi IYOTA, Yuki YAMAMOTO (Osaka Institute of Technology), Masahito MOCHIZUKI (Osaka University)
- PT-45 “Influence of Restraint Conditions on Residual Stress Reduction Using Low-transformation-temperature Welding Wire”  
Kazushi TANIGAWA, Yoshiki MIKAMI (Osaka University), Houichi KITANO, Terumi NAKAMURA (National Institute for Materials Science), Masahito MOCHIZUKI (Osaka University)
- PT-46 “Numerical Simulation of Microscopic Residual Stress Distribution in Weld Metal Considering Anisotropic Mechanical Behavior of Crystals”  
Wataru SADAKANE, Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
- PT-47 “Numerical Simulation of Hydrogen Diffusion and Accumulation Behavior under Residual Stress Distribution in Resistance Spot Welds”  
Takeharu KIZAKI, Yoshiki MIKAMI (Osaka University), Nao KAWABE, Hiroshi MATSUDA, Rinsei IKEDA (JFE Steel Corporation), Masahito MOCHIZUKI (Osaka University)

- PT-48 “Numerical Simulation of Relationship between Member Dimension and Weld Induced Stress in Plate-fin Type Heat Exchanger”  
Shunta YAMAGISHI, Yoshiki MIKAMI (Osaka University), Kenji OTANI, Norihiro HISADA, Shigeru AOKI (Sumitomo Precision Products), Masahito MOCHIZUKI (Osaka University)
- PT-49 “Numerical Optimization of Welding Condition on T-joint Multi Passes Welding and Validation by a Welding Test”  
Toshiaki SAITO, Daisuke TAKAKURA (IHI Corporation), Masakazu SHIBAHARA, Atsushi KAWAHARA, Kazuki IKUSHIMA (Osaka Prefecture University)
- PT-50 “Effect of Welding Angular Distortion on the Crack Initiation Life of Non-load Carrying Fillet Weld Joint”  
Seiichiro TSUTSUMI, Kasumi MORITA, Riccardo FINCATO (Osaka University)
- PT-51 “Numerical and Experimental Study on Fatigue Life Extension of U-rib Steel Structure by Hammer Peening”  
Seiichiro TSUTSUMI, Ryota NAGAO, Riccardo FINCATO (Osaka University), Toshiyuki ISHIKAWA (Kansai University), Risa MATSUMOTO (Kyoto University)
- PT-52 “Local Elastoplasticity Behavior of HT780 Butt Welded Joint Analyzed by Digital Image Correlation Technique”  
Seiichiro TSUTSUMI, Takuya KITAMURA, Riccardo FINCATO (Osaka University)
- PT-53 “Residual Stresses induced by Sandblasting and Laser-cladding Analyzed by X-ray Diffraction with  $\cos\alpha$  Method”  
Seiichiro TSUTSUMI, Ryota NAGAO (Osaka University), John Hock Lye PANG, Kin Shun TSANG (Nanyang Technological University)
- PT-54 “Study on Influence of Various Factors on Welding Distortion of Thin-plate Structures”  
Takaaki HARADA, Shintaro MAEDA, Kazuki IKUSHIMA, Masakazu SHIBAHARA (Osaka Prefecture University)
- PT-55 “Study on Residual Stress Distribution on Shot Peening Process using Large Scale Numerical Analysis”  
Kazuki IKUSHIMA, Yuji KITANI, Masakazu SHIBAHARA (Osaka Prefecture University), Satoru NISHIKAWA, Koichi AKITA, Hiroshi SUZUKI, Satoshi MOROOKA (Japan Atomic Energy Agency)
- PT-56 “Fracture Mechanics Analysis System to Evaluate Failure Mode of Spot Welded Joint”  
Tatsuro ISHIZAKA, Hiroshi OKADA, Yasunori YUSA (Tokyo University of Science), Kouji CHIBA (Nissan Motor Co., Ltd.), Hidekazu MURAKAWA, Hisashi SERIZAWA (Osaka University), Masakazu SHIBAHARA (Osaka Prefecture University), Satoyuki TANAKA (Hiroshima University)
- PT-57 “Influence of Loading Rate on Transition Time for V-notched Charpy Specimen”  
Yasuhito TAKASHIMA, Fumiyoshi MINAMI (Osaka University)
- MTJW
- PT-58 “Correlation between Microstructure and Nano-Indentation Hardness in HAZ Region of F82H Steel Jointed with SUS316L by Fiber Laser Welding before/after PWHT”  
Sho KANO, Huilong YANG, Hiroaki ABE (The University of Tokyo), Hisashi SERIZAWA (Osaka University)
- PT-59 “Dissimilar Metal Lap Joining of Nickel-based Alloy to Commercial Pure Titanium by Friction Stir Welding”  
Masayuki AONUMA, Taku IWAOKA, Isao NAKAMURA, Yoshikazu TERANISHI, Kazuo MORIKAWA (Tokyo Metropolitan Industrial Technology Research Institute)
- PT-60 “Study on the TiAl Alloy and SCM440 with Insert Metals by Friction Welding”  
Jong Moon PARK (Kumoh National Institute of Technology), Ki Young KIM, Kyoung Kyun KIM (Asan Friction Welding Co. Ltd.), Myung Hoon OH (Kumoh National Institute of Technology)
- PT-61 “Modeling of Hydrogen Diffusion Behavior Considering the Microstructure of Duplex Stainless Steel Weld Metal”  
Yuhei SHIBAMOTO, Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
- PT-62 “Interface-Microstructure Characterization of Dissimilar Joints between Group 5 Refractory Metals and Copper Produced by Underwater Explosive Welding”  
Shota KOTEGAWA, Hajime YAMAMOTO, Kazuhiro ITO (Osaka University), Kazuyuki HOKAMOTO (Kumamoto University)



Nano Micro

- PT-63 “Influence of Mist Size on Surface Structure of ZnO Films Deposited with Plasma Assisted Mist Chemical Vapor Deposition”  
Kosuke TAKENAKA, Giichiro UCHIDA, Yuichi SETSUHARA (Osaka University)

QSR

- PT-64 “Femtosecond Laser Peening of Friction Stir Welded 7075-T73 Aluminum Alloy”  
Terumasa KAWASHIMA, Tomokazu SANO, Akio HIROSE, Seiichiro TSUTSUMI (Osaka University), Kiyotaka MASAKI (National Institute of Technology, Okinawa College), Hisashi HORI (Nippon Light Metal Company, Ltd.)
- PT-65 “Numerical Analysis of Effect of TGO Creep on Cracking Behavior in the Plasma Sprayed Thermal Barrier Coating”  
ZhiYuan WEI, HongNeng CAI, ChangJiu LI, GuanJun YANG (Xi'an Jiaotong University)
- PT-66 “Study on Fracture Mode of Spot Weld Joint using Continuum Damage Mechanics Model”  
Kazuki IKUSHIMA, Takahiro YANO, Ryohei NATSUME, Masakazu SHIBAHARA (Osaka Prefecture University), Mitsuru OHATA (Osaka University)
- PT-67 “Effect of the Stress Triaxiality and Lode Angle on the Ductile Damage Evolution”  
Seiichiro TSUTSUMI, Riccardo FINCATO (Osaka University)
- PT-68 “Residual Stress Behavior of Dissimilar Metal Weld Joint under Thermal Cycle Examined by Neutron Diffraction and Idealized Explicit FEM”  
Koichi AKITA, Hiroshi SUZUKI, Satoshi MOROOKA, Stefanus HARJO, Takuro KAWASAKI (Japan Atomic Energy Agency), Vladimir LUZIN (Australian Nuclear Science and Technology Organisation), Masakazu SHIBAHARA, Kazuki IKUSHIMA (Osaka Prefecture University), Satoru NISHIKAWA, Takashi FURUKAWA (Japan Power Engineering and Inspection Corporation)
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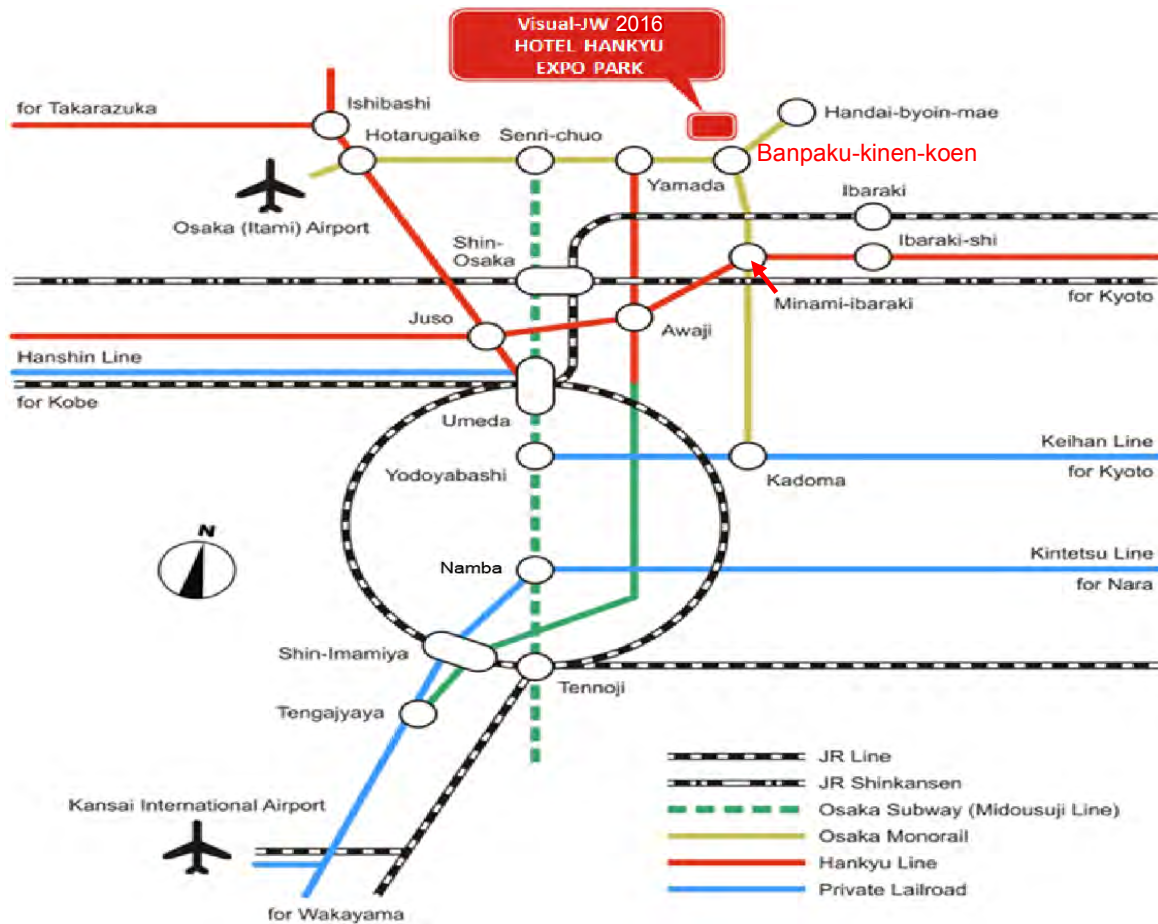
# Oral Presentation Guide

- (1) A crystal-liquid projector will be equipped for presentation at each room. Overhead projector for transparencies will be NOT available.
- (2) A laptop computer with Windows 7(64 bit) is also equipped in each room. PowerPoint 2013(Office2013) can be used. A USB memory is available for installation of your PowerPoint file to the laptop computer.
- (3) You are able to use your own laptop computer for your presentation. The projector has only a usual analog mini D-sub 15 pin connector. Please bring an adapter for interface conversion, if necessary.
- (3) The presentation time including discussion (about 5 min) is 30 min for Plenary Lecture.
- (4) The presentation time including discussion (about 5 min) for Visual-JW2016 is 20 min for Invited Lecture and 15min for usual oral presentation.
- (5) The presentation time including discussion (about 5 min) for the research activities of Joint Usage / Research Center on Joining and Welding is 20min.
- (6) The presentation time including discussion (about 5 min) for iLIM is 20 min for Invited Lecture and 15min for Invited Lecture by Young Researchers.
- (7) 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 at Room D

- (1) **Language:** Poster must be written in English.
- (2) **Poster size:** A0 size (841 mm× 1189 mm)
- (3) **Your poster board:** The author can find your board due to a sign of your presentation number, for example "iLIM-PT-1" for iLIM and "PT-1" for Visual-JW 2016 at the upper left on the board. The author must finish pinning your poster on the board by 15:00 on October 17 for iLIM and by 13:00 on October 18 for Visual-JW 2016. The room D opens from 13:00 on October 17 and from 10:00 on October 18.
- (4) **Presentation:** The author must stand at the front of your board during the Poster Session from 16:45 to 18:15 on October 17 for iLIM and from 13:40 to 14:40 on October 18 for Visual-JW 2016 and can present your paper to attendees in English.
- (5) **After Poster Session:** Please take off your poster from the board at once.

# Location of Hotel Hankyu Expo Park



**HOTEL HANKYU EXPO PARK**  
 1-5 Senri-Banpaku-koen Suita, 565-0826 Osaka, Japan  
 TEL: +81-6-6878-5151 / FAX: +81-6-6878-3456  
 URL: <http://www.htl-expopark.jp/en>

## Access to the hotel by train

From Umeda and Shin-Osaka Stations

-Take the Midousuji subway line to Senri-chuo Station and change to the Osaka Monorail bound for Kadoma-shi or Saito-nishi. Get off at Banpaku-kinen-koen Station and walk for five minutes.

From Osaka (Itami) International Airport

-Take the Osaka Monorail and get off at Banpaku-kinen-koen Station. The hotel is a five-minute walk away.

From Kyoto Station

-Take the JR line and get off at Ibaraki Station. The hotel is a 10-minute bus or taxi ride away.

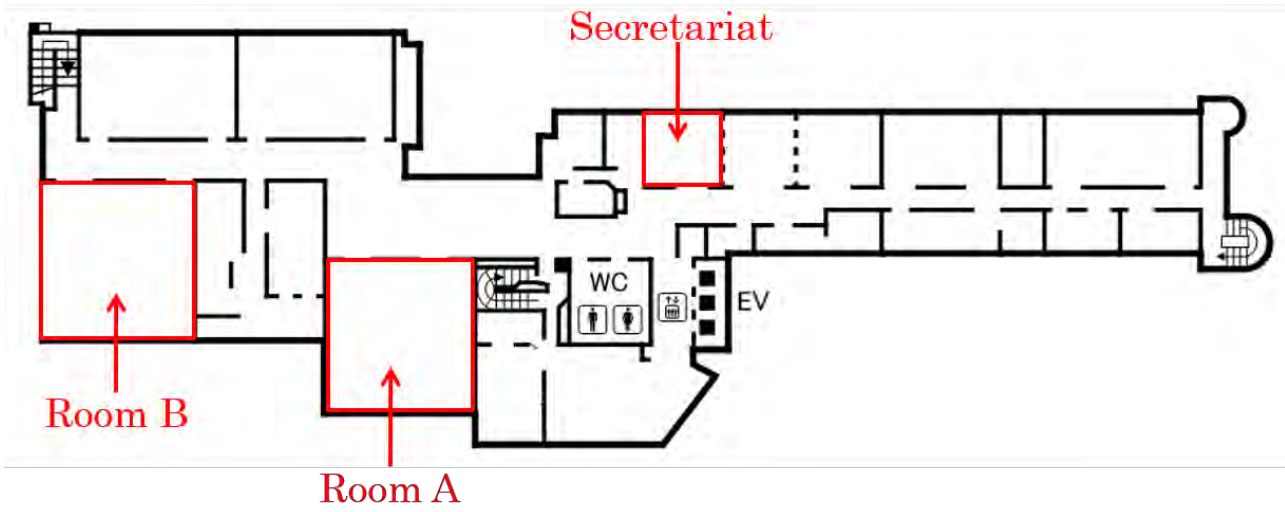
-Take the Hankyu Kyoto Line to Minami-ibaraki Station and transfer to the Osaka Monorail bound for Osaka International Airport. Get off at Banpaku-kinen-koen Station. The hotel is a five-minute walk from the Station.

From Kansai International Airport

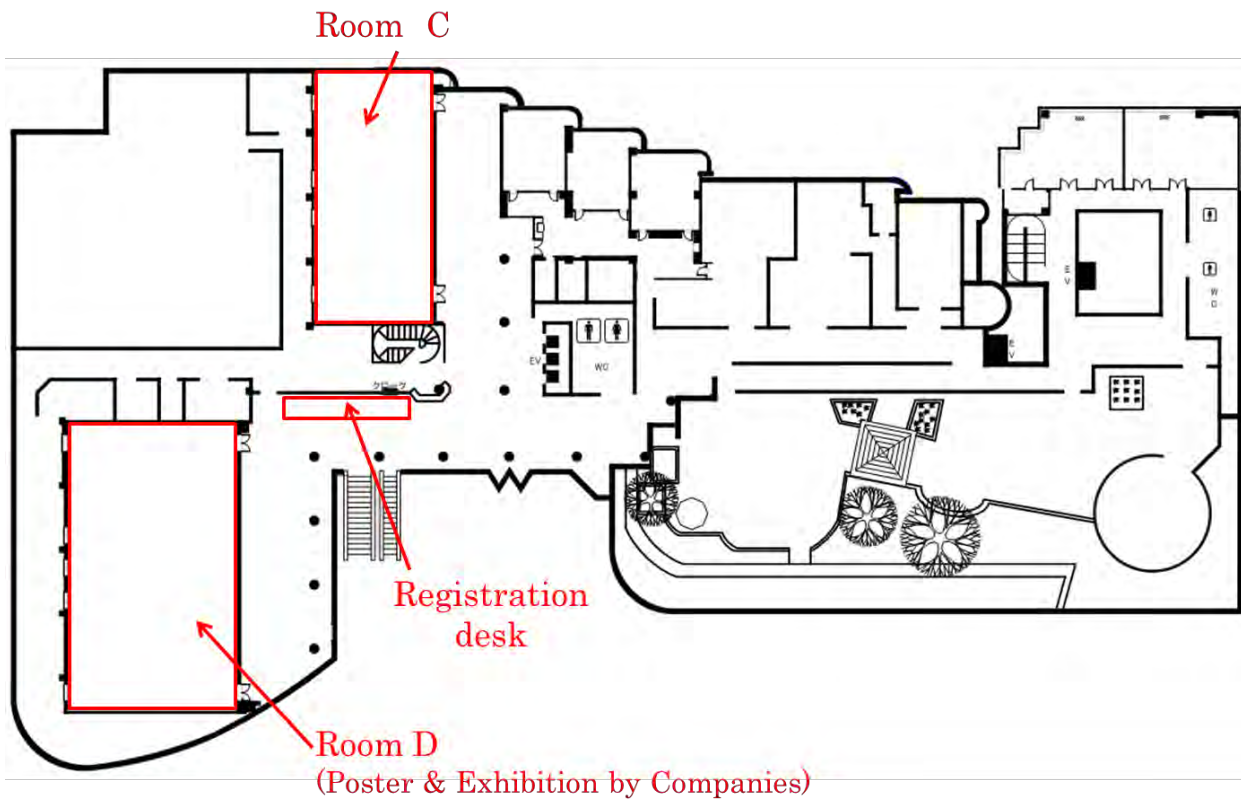
-Take the Nankai Line to Namba Station and change to the Midousuji subway line to Senri-chuo Station. Then change to the Osaka Monorail bound for Kadoma-shi or Saito-nishi. Get off at Banpaku-kinen-koen Station and walk for five minutes.

-Take the bus to Itami Airport/Osaka Airport, and change to the Osaka Monorail bound for Kadoma-shi or Saito-nishi. Get off at Banpaku-kinen-koen Station and walk for five minutes.

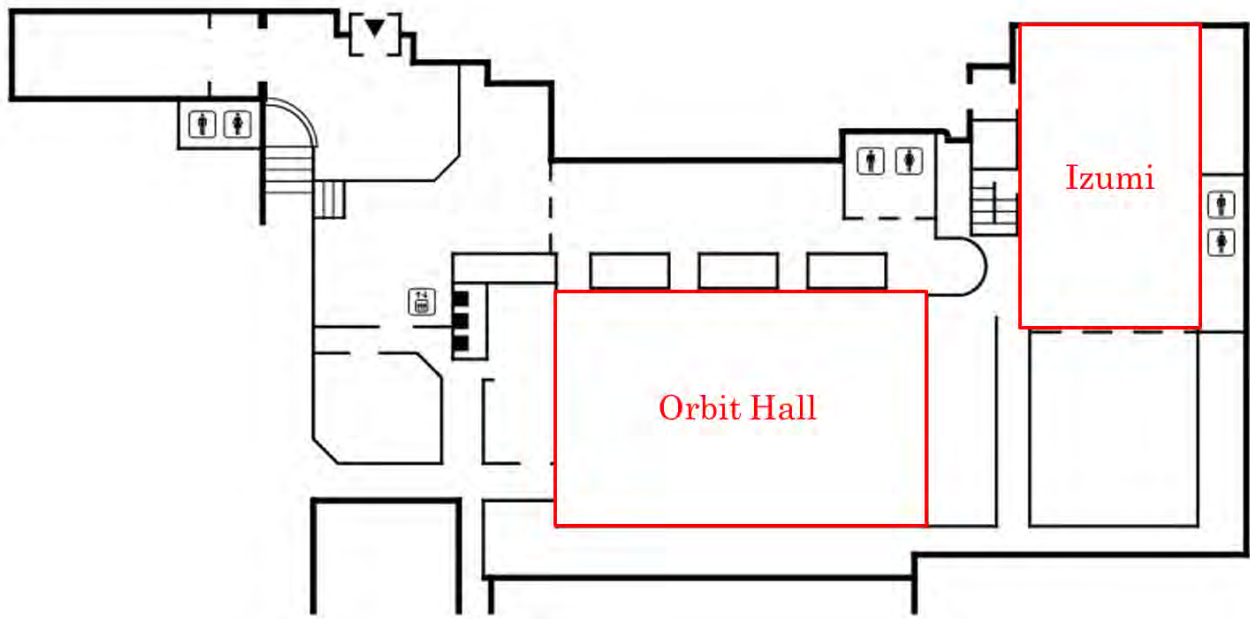
# Map of Hotel Hankyu Expo Park



## 3rd Floor



## 2nd Floor



## **B Floor**

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Tel & Fax: +81 6 6879 8645

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