

Visual-JW2012

28-30 November, 2012

Hotel Hankyu Expo Park, Osaka, Japan

The International Symposium
on Visualization in Joining & Welding Science through
Advanced Measurements and Simulation,
and
2nd International Workshop "In-situ Studies with
Photons, Neutrons and Electrons Scattering"
in conjunction with
symposium on the research activities of Joint Usage / Research
Center on Joining and Welding

TENTATIVE PROGRAM

Organized by Joining and Welding Research Institute, Osaka University

Co-organized by Japan Welding Society

Visual-JW2012

In the year 2012, 2nd International Symposium on Visualization in Joining & Welding Science through Advanced Measurements and Simulation (Visual-JW2012), and 2nd International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" in conjunction with symposium on the research activities of Joint Usage / Research Center on Joining and Welding will be held on 28-30, November 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.

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David J. Smith, University of Bristol, UK
George Spanos, TMS, USA
Takao Taka, Sumitomo metal technology, Japan
Ai Ping Wu, Tsinghua University, China
Chuan Song Wu, Shandong University, China

Schedule of the Symposium

28-November

- 11:00-17:00 : Excursion (Spring-8)
- 15:30 : Registration open
- 17:30-19:30 : Welcome party

29-November

Thursday 29-November					
Room	Room A	Room B	Room C	Room D	Room E
Session Name					
8:50-9:00	Opening Ceremony at Room G				
9:00-9:30	Plenary Lecture 1 at Room G				
9:30-10:00	Plenary Lecture 2 at Room G				
10:00-10:30	Plenary Lecture 3 at Room G				
10:30-11:00	Coffee Break				
Session Name	Visualization of joining and welding process (1)	Visualization of mechanics in joining and welding (1)	Visualization of metallurgy in joining and welding (1)	Visualization of advanced material processing (1)	International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (1)
11:00-11:20	JWP-1	MCJW-1	MTJW-1	AMP-1	IWIS-1
11:20-11:40	JWP-2	MCJW-2	MTJW-2	AMP-2	IWIS-2
11:40-12:00	JWP-3	MCJW-3	MTJW-3	AMP-3	IWIS-3
12:00-12:20	JWP-4	MCJW-4	MTJW-4	AMP-4	IWIS-4
12:20-13:30	Lunch				
Session Name	Visualization of joining and welding process (2)	Visualization of mechanics in joining and welding (2)	Visualization of metallurgy in joining and welding (2)	Visualization of advanced material processing (2)	International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (2)
13:30-13:50	JWP-5	MCJW-5	MTJW-5	AMP-5	IWIS-5
13:50-14:10	JWP-6	MCJW-6	MTJW-6	AMP-6	IWIS-6
14:10-14:30	JWP-7	MCJW-7	MTJW-7	AMP-7	IWIS-7
14:30-14:50	JWP-8	MCJW-8	MTJW-8	AMP-8	IWIS-8
14:50-15:10	JWP-9	MCJW-9	MTJW-9	AMP-9	IWIS-9
15:10-15:30	Coffee Break				
Session Name	Visualization of joining and welding process (3)	Visualization of mechanics in joining and welding (3)	Visualization of joining and welding process (6)	Visualization of nano & micro joining (1)	International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (3)
15:30-15:50	JWP-10	MCJW-10	JWP-26	NMJ-1	IWIS-10
15:50-16:10	JWP-11	MCJW-11	JWP-27	NMJ-2	IWIS-11
16:10-16:30	JWP-12	MCJW-12	JWP-28	NMJ-3	IWIS-12
16:30-16:50	JWP-13	MCJW-13	JWP-29	NMJ-4	IWIS-13
16:50-17:10	JWP-14	MCJW-14	JWP-30	NMJ-5	IWIS-14
17:10-17:30	JWP-15	MCJW-15	JWP-31	NMJ-6	IWIS-15
17:30-18:20	Poster at Room F				
18:30-20:30	Reception				

30-November

	Friday 30-November				
Room	Room A	Room B	Room C	Room D	Room E
Session Name	The research activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing 1)	The research activities of Joint Usage / Research Center on Joining and Welding (Visualization & Evaluation 1)	The research activities of Joint Usage / Research Center on Joining and Welding (Smart Processing 1)		
9:00-9:25	RAJU-JW1	RAJU-VE1	RAJU-SP1		
9:25-9:50	RAJU-JW2	RAJU-VE2	RAJU-SP2		
9:50-10:15	RAJU-JW3	RAJU-VE3	RAJU-SP3		
10:15-10:30	Coffee Break				
Session Name	The research activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing 2)	The research activities of Joint Usage / Research Center on Joining and Welding (Visualization & Evaluation 2)	The research activities of Joint Usage / Research Center on Joining and Welding (Smart Processing 2)		
10:30-10:55	RAJU-JW4	RAJU-VE4	RAJU-SP4		
10:55-11:20	RAJU-JW5	RAJU-VE5	RAJU-SP5		
11:20-11:45	RAJU-JW6	General discussion (11:20-11:35)	RAJU-SP6		
11:45-12:00	General discussion		General discussion		
12:00-13:00	Lunch				
Session Name	Visualization of joining and welding process (4)	Visualization of mechanics in joining and welding (4)	Visualization of joining and welding process (7)	Visualization of nano & micro joining (2)	International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (4)
13:00-13:20	JWP-16	MCJW-16	JWP-32	NMJ-7	IWIS-16
13:20-13:40	JWP-17	MCJW-17	JWP-33	NMJ-8	IWIS-17
13:40-14:00	JWP-18	MCJW-18	JWP-34	NMJ-9	IWIS-18
14:00-14:20	JWP-19	MCJW-19	JWP-35	NMJ-10	IWIS-19
14:20-14:40	JWP-20	MCJW-20	JWP-36	NMJ-11	IWIS-20
14:40-15:00	Coffee Break				
Session Name	Visualization of joining and welding process (5)	Visualization of mechanics in joining and welding (5)	Visualization of joining and welding process (8)	Visualization of metallurgy in joining and welding (3)	International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (5)
15:00-15:20	JWP-21	MCJW-21	JWP-37	MTJW-10	IWIS-21
15:20-15:40	JWP-22	MCJW-22	JWP-38	MTJW-11	IWIS-22
15:40-16:00	JWP-23	MCJW-23	JWP-39	MTJW-12	IWIS-23
16:00-16:20	JWP-24	MCJW-24	JWP-40	MTJW-13	IWIS-24
16:20-16:40	JWP-25	MCJW-25	JWP-41	MTJW-14	IWIS-25

TECHNICAL PROGRAM

-Oral Presentation-

Thursday 29-November

Room G

8:50-9:00: Opening ceremony

Greetings:

Prof. Yu-ichi Komizo, Osaka University

The Conference Chairman

Prof. Kazuhiro Nakata, Osaka University

The Director of Joining and Welding Research Institute, Osaka University

9:00-10:30: Plenary lecture

Plenary lecture 1:

“Visualization of Welding and Joining Processes, Based on CFD – Simulations”

Prof. Suck-Joo NA, KAIST

Plenary lecture 2:

“A Study of Intergranular Fracture in an Aluminium Alloy Due to Hydrogen Embrittlement”

Prof. Esteban P. BUSSO, École des Mines de Paris

Plenary lecture 3:

“Modern Visualization Methods for Materials Research in Welding”

Dr. Thomas KANNENGIESSER, BAM

Visualization in Joining & Welding Science through Advanced Measurements and Simulation

Room A

11:00-12:20: Visualization of joining and welding process (1) (JWP)

- JWP-1 **Keynote Lecture:** "Three-Dimensional Modelling of MIG Welding-Influence of Metal Vapour and Droplets"
Anthony Bruce MURPHY (CSIRO)
- JWP-2 "Numerical Simulation of the GMAW Process"
Martin HERTEL (Joining Technology and Assembling), Andreas SPILLE-KOHOFF (CFX Berlin Software GmbH), Sebastian JÄCKEL, Uwe FÜSSEL, Michael Karl SCHNICK (Joining Technology and Assembling)
- JWP-3 "Numerical Modelling of Pulsed GMAW Including Experimental Determined Time-Dependent Geometries"
Sascha ROSE, Martin HÄßLER, Martin HERTEL, Uwe FÜSSEL, Michael Karl SCHNICK (Joining Technology and Assembling)
- JWP-4 "CFD-Simulation of Metal Transfer in GMA Welding"
Uwe REISGEN, Markus SCHLESER, Oleg MOKROV, Alexander ZABIROV (RWTH Aachen University ISF)

13:30-15:10: Visualization of joining and welding process (2) (JWP)

- JWP-5 **Keynote Lecture:** "Visualisation of the Thermal Conditions in the Stick Out for Optimisation of the Run-In Procedure in MIG Welding"
Gerd HUISMANN (Helmut Schmidt University)
- JWP-6 "Towards a New Theory of Electrical Breakdown in Air"
John James LOWKE (CSIRO)
- JWP-7 "Comprehensive Diagnostic Description of Plasma and TIG Welding Processes by Analyzing the Temperature of the Anode and Cathode, Energy Density and Pressure Distribution as Well as the Anode, Cathode and Arc Geometry"
Erwan SIEWERT, Jochen SCHEIN (Universität der Bundeswehr München)
- JWP-8 "Numerical Study of Plasma Arc Behaviors"
Jian XIAOXIA (Shandong University)
- JWP-9 "Study for TIG-MIG Hybrid Welding Process"
Shuhei KANEMARU (Taiyo Nippon Sanso Corporation)

15:30-17:30: Visualization of joining and welding process (3) (JWP)

- JWP-10 **Keynote Lecture:** "Visualization of the Dynamic Keyhole Behaviors in the Controlled Pulse Key-holing Plasma Arc Welding"
Chuan Song WU (Shandong University)
- JWP-11 "Clever Vision Systems for the New Generation of Welding Robots"
Jean-Paul BOILLLOT (Servo-Robot Inc.)
- JWP-12 "Optical In-Situ Measurement System for Determination of Material Behaviour in Welds"
Christian GOLLNOW, Thomas KANNENGIESSER (BAM Federal Institute for Materials Research and Testing)
- JWP-13 "Influence of Wire Material and Gas Consumption on Surface Temperature, Surface Tension and Enthalpy of the Material Transfer from the Electrode to the Workpiece in Pulse GTAW"
Erwan SIEWERT, Jochen SCHEIN (Universität der Bundeswehr München)
- JWP-14 "Probing Metal Transfer in Gas Metal Arc Welding of Thin Sheets using Pulsed and Cold Arc Techniques"
Sven Frithjof GOECKE (University of Applied Science Brandenburg), De Amitava, Ismail Arshad Alam Mohd

Syed (Indian Institute of Technology), Indea, Michael EBERT-SPIEGEL (University of Applied Science Brandenburg)

JWP-15 “Development of the Experimental System for Automatic Deep Oceanic Wet Welding”

Ziqiang YIN (Institute of Oceanographic Instrumentation Shandong Academy of Sciences), Huihui ZHAO (Harbin Institute of Technology), Fang WANG, Xin YUAN (Institute of Oceanographic Instrumentation Shandong Academy of Sciences), Lin WU (Harbin Institute of Technology)

Room B

11:00-12:20: Visualization of mechanics in joining and welding (1) (MCJW)

- MCJW-1 **Keynote Lecture:** “Application of ICME to Weld Process Innovations and Residual Stress Management”
Zhili FENG, Wei ZHANG (Oak Ridge National Laboratory), Eric WILLIS, Ken WOLFE (EPRI), Stan A. DAVID (Oak Ridge National Laboratory)
- MCJW-2 **Keynote Lecture:** “Development of FEM Pre/Post Software (Weld-Sta) for Welding and Its Application”
Yu LUO, Yang WANG, Chu SHI (Shanghai Jiaotong University)
- MCJW-3 “Development of Thermal Elastic-plastic FEM for Line Heating with Remeshing Technique”
Hui HUANG (Huazhong University of Science and Technology)
- MCJW-4 “Study of the Effect of Boundary Conditions on Welding Residual Stress”
Lu PENG, Zhao YAO, Yuan HUA (Huazhong University of Science and Technology)

13:30-15:10: Visualization of mechanics in joining and welding (2) (MCJW)

- MCJW-5 **Keynote Lecture:** “Architected Modeling Method in Analysis of Welding Distortion, Stress and Cracking”
Hao LU (Shanghai Jiaotong University)
- MCJW-6 **Keynote Lecture:** “Prediction of Welding Deformation of Multiple-Pipe Components”
Shinsuke ITOH, Masakazu SHIBAHARA (Osaka Prefecture University), Masahito MOCHIZUKI (Osaka University)
- MCJW-7 “Numerical Analysis of Welding Deformation for Large-Scale Structure”
Kazuki IKUSHIMA, Takumi SHIGEMASA, Shinsuke ITOH, Masakazu SHIBAHARA (Osaka Prefecture University)
- MCJW-8 “Finite Element Analysis and Measurement of Weld Residual Stress in Large-Diameter Thick-Walled Stainless Steel Pipe Joints”
Akira MAEKAWA (Institute of Nuclear Safety System, Inc.), Hisashi SERIZAWA, Keiji NAKACHO, Hidekazu MURAKAWA (Osaka University)
- MCJW-9 “High Accurate Residual Stress Evaluation by Deep Hole Drilling Technique Considering Three-Dimensional Stress Fields”
Houichi KITANO, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)

15:30-17:30: Visualization of mechanics in joining and welding (3) (MCJW)

- MCJW-10 **Keynote Lecture:** “Study on Effects of Stir Tool’s Mechanical Loads during FSW on the Residual Stresses and Distortion of Joints”
Qin Yu SHI (Tsinghua University)
- MCJW-11 **Keynote Lecture:** “Weld Distortion Measurement of Large 3-D Ship Structural Units using Photogrammetry”
Nisith Ranjan MANDAL, Pankaj BISWAS, Sharat KUMAR (Ocean Engineering and Naval Architecture)
- MCJW-12 “Study on Prevention Method of the Welding Distortion in Large Welded Structures”
Junya YAMADA, Takeshi ITCHI, Kazuhiko TANI (Hitachi Zosen Corporation), Mitsuyoshi NAKATANI (Osaka University), Shinsuke ITOH, Masakazu SHIBAHARA (Osaka Prefecture University)
- MCJW-13 “Numerical Study on Straightening of Angular Distortion in Fillet Joint Produced by Welding”
Juan BLANDON, Hidekazu MURAKAWA, Sherif RASHED (Osaka University), Masanori SANO (Naikai Shipyard)
- MCJW-14 “Process Optimization for Bending U-Rib by Line Heating based on Theoretical Prediction”
Hidekazu MURAKAWA, Yuki MATSUO (Osaka University), Shinji TAKABA, Tohoru OHOMAE (Takadakiko Co. Ltd.)
- MCJW-15 “Research on the Measurement of the Thick-Plate Multi-Pass Welding Residual Stress based on the Layer Removal Method”
Yuan HUA, Zhao YAO, Ying Zhang BING, Lu PENG (Huazhong University of Science and Technology)

Room C

11:00-12:20: Visualization of metallurgy in joining and welding (1) (MTJW)

- MTJW-1 **Keynote Lecture:** "Investigation on Microstructure and Damage of the TIG Welded Joint for Ti-6Al-4V Alloy"
Jianxun ZHANG (Shandong University)
- MTJW-2 "Microstructure and Properties of Underwater Wet Welding Joints of High Strength Steel"
Yibo LIU, LIU Duo, Wenxiong HE, Jicai FENG (Harbin Institute of Technology)
- MTJW-3 "Phase Transformation Behavior of Cr-Mo Steel during FSW"
Takuya MIURA (Osaka University), Rintaro UEJI (Kagawa University), Yoshiaki MORISADA, Hidetoshi FUJII, Hiroyuki YASUDA (Osaka University)
- MTJW-4 "Interfacial and Mechanical Characterization of YSZ-to-Steel Joints for Solid Oxide Fuel Cell Applications"
Kun-Lin LIN (National Nano Device Laboratories), Taiwan, Mrityunjay SINGH (Ohio Aerospace Institute), Rajiv ASTHANA (University of Wisconsin-Stout)

13:30-15:10: Visualization of metallurgy in joining and welding (2) (MTJW)

- MTJW-5 "The Growth Rules of Blocks and Packets in Fe-18Ni Maraging Steel"
Shou YOSHIDA, Shigekazu MORITO, Taisuke HAYASHI (Shimane University)
- MTJW-6 "Three-Dimensional Analysis for Acicular Ferrite in Low Carbon Steel Weld Metal"
Atsushi TAKADA, Hidenori TERASAKI, Yu-ichi KOMIZO (Osaka University)
- MTJW-7 "Effect of M_s Gradient on Variant Selection of Lath Martensite in Nickel Steel Alloy"
Yamato MISHIRO, Mayumi OJIMA, Shoichi NAMBU, Junya INOUE, Toshihiko KOSEKI (The University of Tokyo)
- MTJW-8 "Effect of Welding Conditions on Solidification Cracking Susceptibility of Type 310S Stainless Steel during Laser Welding"
Kota KADOI, Shotaro YAMASHITA, Akira FUJINAGA, Kenji SHINOZAKI, Motomichi YAMAMOTO (Hiroshima university)
- MTJW-9 "Modeling of Temperature Field and Grain Growth in HAZ of 12 wt.% Cr Ferritic Stainless Steel during hybrid welding"
Zhuanzhuan ZHANG, Chuansong WU (Shandong University)

15:30-17:30: Visualization of joining and welding process (6) (JWP)

- JWP-26 **Keynote Lecture:** "Practical Weld Process Monitoring"
Steve SIMPSON, Peter HUGHES, Michael RADOS (University of Sydney)
- JWP-27 "Effect of Surface Structural Relaxation on the Diffusion Bonded Joints of $Zr_{55}Cu_{30}Ni_5Al_{10}$ Bulk Metallic Glass to Pure Copper"
Haiyan CHEN, Jian CAO, Jicai FENG (Harbin Institute of Technology)
- JWP-28 "Microstructures and Mechanical Properties of Diffusion Bonded TiAl Alloy and Ti-Si-C Ceramic Joints"
Jiakun LIU, Jian CAO, Jicai FENG (Harbin Institute of Technology)
- JWP-29 "Visualization of Temperature Distribution during RSW of Ultra-thin Gage AHSS via Infrared Thermography"
Yangyang ZHAO, Yansong ZHANG, Dong LI (Shanghai Jiao Tong University)
- JWP-30 "Visualization of Weld Formation in Weld-bonding of Advanced High Strength Steels"
Yansong ZHANG (Shanghai Jiao Tong University)
- JWP-31 "Effect of Preheat and Buttering on Cracking Susceptibility and Wear Resistance of Hardfaced HSLA Steel Deposit"
WINARTO, Dedi PRIADI (Universitas Indonesia)

Room D

11:00-12:20: Visualization of advanced material processing (1) (AMP)

- AMP-1 **Keynote Lecture:** "Dimple Formation Conditions on SUS304 Stainless Steel by Indirect Laser Peening"
Hiroshi KAWAKAMI, Yasuaki SONODA (Mie University), Muneharu KUTUNA (Advanced Laser Technology Research Center), Kiyotaka SAITO (Saito Industry), Hiroki INOUE (Advanced Laser Technology Research Center), Hitoshi OZAKI (Mie University), Jippe SUZUKI (Mie University)
- AMP-2 "Metals Coatings on Plastics Substrate by Gas Tunnel Type of Plasma Spraying"
Akira KOBAYASHI (Osaka University)
- AMP-3 "Microstructure Analysis of Femtosecond Laser Shock Hardened Pure Iron"
Tomoki MATSUDA, Tomokazu SANO (Osaka University), Kazuto ARAKAWA (Shimane University), Akio HIROSE (Osaka University)
- AMP-4 "A Study of Solid State Bonding Strength of Al/Cu by Using Metal Salt Generation Bonding Method on Al Surface"
Shinji KOYAMA (Gunma University)

13:30-15:10: Visualization of advanced material processing (2) (AMP)

- AMP-5 "Process Development of Thermal Nanoparticles Spraying"
Soshu KIRIHARA (Osaka University)
- AMP-6 "Fabrication of Fine Alumina Coating on Stainless Steel by Using Thermal Nanoparticle Spraying"
Satoko TASAKI, Yusuke ITAKURA, Soshu KIRIHARA (Osaka University)
- AMP-7 "Microstructure and Shear Strength of Mo-Cu/Cr18-Ni8 Vacuum Brazing Joint with Ni-Cr-P Filler Metal"
Juan WANG, Ya Jiang LI, De Shuang ZHENG (Shandong University)
- AMP-8 "Numerical Simulation of Transient Temperature Field and Distortion in Laser Cladding of Thick Plate"
Dean DENG, Ke FENG (Chongqing University), Zhuguo LI (Shanghai Jiaotong University)
- AMP-9 "Simulation of Coating on the Internal Surface of a Cylindrical Cavity Using Friction Stirring"
Abhay SHARMA, Bhoopati Motali KUMAR (Indian Institute of Technology Hyderabad)

15:30-17:30: Visualization of nano & micro joining (1) (NMJ)

- NMJ-1 **Keynote Lecture:** "Interfacial Reactions in the Sn-20wt%In-xwt%(Ag, or Zn)/(Cu, or Ni) Couples"
Sinn-wen CHEN, Ru-bo CHANG, Che-wei HSU, Chia-ming HSU (National Tsing Hua University)
- NMJ-2 **Keynote Lecture:** "Interfacial Reaction of Low-melting Point Lead-free Solder Joints during Thermal Aging"
Zhi-Quan LIU (Institute of Metal Research, Chinese Academy of Sciences)
- NMJ-3 "Effect of Cu Pad on Fracture Behavior of BGA Joints in Impact Test"
Jianxin WANG, Hiroshi NISHIKAWA, Omid MOKHTARI (Osaka University)
- NMJ-4 "Interfacial Reactions in Sn/Ag-Pd Couples"
Xing-fu LIN, Chih-chi CHEN (Chung Yuan Christian University)
- NMJ-5 "Effect of Cu particle additions on the microstructure of Sn-Bi solder alloy"
Omid Mokhtari (Osaka University)
- NMJ-6 "Liquidus Projection of Lead Free Solder Alloys Ag-In-Zn Ternary System"
Jui-Shen CHANG, Sinn-Wen CHEN, Chia-ming HSU (National Tsing Hua University)

Room E

11:00-12:20: International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (1) (IWIS)

- IWIS-1 **Keynote Lecture:** "Ten years of metallurgy with synchrotrons in Delft: probing the evolution of microstructures on the level of individual grains during processing of metals"
Offerman ERIK (Delft University of Technology)
- IWIS-2 **Keynote Lecture:** "In-situ Synchrotron Diffraction Studies on the Kinetics of Bainitic Transformation and Transformation Plasticity in a High Strength Quenched and Tempered Structural Steel"
Rangan DUTTA (Materials innovation institute), Marcel HERMANS (Delft University of Technology), Murugaiyan AMIRTHALINGAM (Materials innovation institute), Ian RICHARDSON (Delft University of Technology)
- IWIS-3 **Keynote Lecture:** "In-situ phase transformation study in fine grained heat affected zone of Grade 91 steels"
Xinghua YU, Suresh Sudarsanam BABU (Ohio State University), Michael SANTELLA, Yukinori YAMAMOTO (Oak Ridge National Laboratory), USA, Hidenori TERASAKI, Yu-ichi KOMIZO (Osaka University)
- IWIS-4 **Keynote Lecture:** "Grain Coarsening of Austenite Studied In-situ Using Synchrotron Radiation"
Hemant SHARMA, S. Erik OFFERMAN, Jilt SIETSMA (Delft University of Technology)

13:30-15:10: International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (2) (IWIS)

- IWIS-5 **Keynote Lecture:** "In-situ Observations of Microstructural Evolution during Annealing or Deformation in an Electro-deposited Fine-grained Iron"
Yuhua SU, Yo TOMOTA (Ibaraki University), Stefanus HARJO (JAEA)
- IWIS-6 **Keynote Lecture:** "In-situ Synchrotron Diffraction Studies on the Formation, Decomposition and Stabilisation of Austenite in TRIP Steels During Simulated Weld Thermal Cycles"
Murugaiyan AMIRTHALINGAM, J.M. Marcel HERMANS, M Richard HUIZENGA, S.E. OFFERMAN, Jilt SIETSMA, M Ian RICHARDSON (Delft University of Technology)
- IWIS-7 **Keynote Lecture:** "In-Situ Stroboscopic Neutron Diffraction Study of Transient Behavior of Energy and Engineering Materials"
Zhili FENG, Zhenzhen YU, Lu CAI, Ken AN, A Stan DAVID, Wei ZHANG, Xun-Li WANG (Oak Ridge National Laboratory)
- IWIS-8 **Keynote Lecture:** "Advanced Facility for Parallel Thermo-mechanical Simulation and Synchrotron X-ray Diffraction"
J Antonio RAMIREZ, Guilherme FARIA, Leonardo WU, C Thais ALONSO (Brazilian Nanotechnology National Laboratory), C Augusta ISAAC, T Regis NEUENSCHWANDER (Brazilian Synchrotron Light Laboratory)
- IWIS-9 "In situ Thermo-Mechanical Study of Shape Memory Stainless Steels"
Guilherme FARIA, Leonardo WU, Daniel SANTOLIN, D Julian ESCOBAR, Thais ALONSO (Brazilian Nanotechnology National Laboratory), H Heide BERNARDI, Jorge OTUBO (Aeronautical Technological Institute), J Antonio RAMIREZ (Brazilian Nanotechnology National Laboratory)

15:30-17:30: International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (3) (IWIS)

- IWIS-10 **Keynote Lecture:** "In-situ Observation of Shear Deformation in Semi-solid Al-Cu Alloys"
Tomoya NAGIRA, Shugo MORITA, Hideyuki YASUDA (Osaka University), Christopher GOURLAY (Imperial College), Akira SUGIYAMA (Osaka Sangyo University), Masato YOSHIYA (Osaka University), Kentarou UESUGI (JASRI), Keiji UMETANI (JASRI)

- IWIS-11 “Application of In-situ Observation to a Macroscopic Model of Semisolid Deformation”
Shugo MORITA, Hideyuki YASUDA, Tomoya NAGIRA (Osaka University), Christopher GOURLAY (Imperial College), Masato YOSHIYA (Osaka University)
- IWIS-12 “In-situ Observation of Solidification in Ni-based Superalloys by X-ray Imaging”
Koshiro YAMANE (IHI Corporation), Hideyuki YASUDA, Masato YOSHIYA, Tomoya NAGIRA (Osaka University), Akihiro SATO (IHI INC)
- IWIS-13 “Estimated Permeability Derived from the Three-dimensional Modeling based on the Transmission Images”
Toshiya KONDO, Hideyuki YASUDA (Osaka University), Akira SUGIYAMA (Osaka Sangyo University), Masato YOSHIYA, Tomoya NAGIRA (Osaka University), Kentaro UESUGI, Keiji UMETANI (JASRI)
- IWIS-14 “Direct Observation of Thermal Stability of Carbides/carbonitrides Using In-situ Synchrotron X-ray Diffraction”
Xin-Fang ZHANG, Yu-ichi KOMIZO (Osaka University)
- IWIS-15 “Investigation of Processes in the Keyhole at Electron-beam Welding by Measuring the Secondary Current Signal in the Plasma”
N. Dmitriy TRUSHNIKOV, E. Valeriy SCHAVLEV (Perm National Research Polytechnic University), Georgy MLADENOV (Institute of Electronics)

Friday 30-November

The research activities of Joint Usage / Research Center on Joining and Welding

Room A

9:00-10:15: The research activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing 1) (RAJU-JW)

RAJU-JW-1**Invited Lecture:** "Contribution for Heat Flux to Anode Affected by Current Transition Time in Pulsed Arc Welding with Iron Vapor"

Toru IWAQ, Taira MOMII (Tokyo City University), Shinichi TASHIRO, Manabu TANAKA (Osaka University) and Motoshige YUMOTO (Tokyo City University)

RAJU-JW-2**Invited Lecture:** "Direct Laser Joining for Metal and Plastic"

Koji NIHIMOTO (Anan National College of Technology), Yousuke KAWAHITO and Seiji KATAYAMA (Osaka University)

RAJU-JW-3**Invited Lecture:** "Development of Laser Beam Welding for Reduced Activation Ferritic Steels and Post Weld Heat Treatment for the Joints"

Hiroaki MORI, Hiroyuki OGIWARA, Yuma SHIRAI and Kazuyoshi SAIDA (Osaka University)

10:30-11:45: The research activities of Joint Usage / Research Center on Joining and Welding (Joining / Welding Processing 2) (RAJU-JW)

RAJU-JW-4**Invited Lecture:** "Dynamic Mechanical Behavior of Sn-Bi Lead-free Solders by Tensile Test under High Strain Rate"

Kiyokazu YASUDA (Osaka University)

RAJU-JW-5**Invited Lecture:** "Fabrication of Functionally Graded Aluminum Foam by Friction Stir Processing Route"

Yoshihiko HANGAI (Gunma University), Takao UTSUNOMIYA (Shibaura Institute of Technology), Osamu KUWAZURU (University of Fukui), Nobuhiro HOSHIKAWA (The University of Tokyo)

RAJU-JW-6**Invited Lecture:** "Fe-7 mass% Al Alloy-based Surface Composites Produced by Friction Stir Processing"

Yoshihisa KIMOTO, Toru NAGAOKA, Hiroyuki WATANABE, Masao FUKUSUMI (Osaka Municipal Technical Research Institute), Yoshiaki MORISADA and Hidetoshi FUJII (Osaka University)

Room B

9:00-10:15: The research activities of Joint Usage / Research Center on Joining and Welding (Visualization & Evaluation 1) (RAJU-VE)

RAJU-VE-1 **Invited Lecture:** “Anti Chipping Treatment of Nitrided High-Speed Steel by Plasma Bombardment”

Masato TSUJIKAWA (Osaka Prefecture University), Takumi SONE (Industrial Technology Support Institute of Higashiosaka City), Motoo EGAWA, Nobuhiro UEDA (Technology Research Institute of Osaka Prefecture), Kenji HIGASHI (University of Osaka Prefecture), Kazuhiro NAKATA (Osaka University)

RAJU-VE-2 **Invited Lecture:** “Effect of ALPS consisting of BWINGS on Mechanical Properties in Steels”

Kiyomichi NAKAI, Tatsuaki SAKAMOTO and Sengo KOBAYASHI (Ehime University)

RAJU-VE-3 **Invited Lecture:** “Fatigue behavior of Extruded AZ31 Magnesium Alloy with Refined Grains via RCP Process”

Yukio MIYASHITA (Nagaoka University of Technology) and Katsuyoshi KONDOH (Osaka University)

10:30-11:20: The research activities of Joint Usage / Research Center on Joining and Welding (Visualization & Evaluation 2) (RAJU-VE)

RAJU-VE-4 **Invited Lecture:** “Diagnostics and Control of High Energy Species in Magnetron Sputter Plasma”

Toyoda HIROHATA (Nagoya University)

RAJU-VE-5 **Invited Lecture:** “Development of Structural Integrity Analysis System for Welded Structures”

Hiroshi OKADA (Tokyo University of Science), Satoyuki TANAKA (Hiroshima University) Toyoyasu NISHIKAWA, Kota SUGAWARA (Tokyo University of Science), Hidekazu MURAKAWA (Osaka University), Masakazu SHIBAHARA, Shinsuke ITOH (Osaka Prefecture University), Hisashi SERIZAWA (Osaka University)

Room C

9:00-10:15: The research activities of Joint Usage / Research Center on Joining and Welding (Smart Processing 1) (RAJU-SP)

RAJU-SP-1 **Invited Lecture:** “10 kW Peak Power Pulse Fiber Laser and the Applications”

Minoru YOSHIDA (Kinki University) and Hisashi SAWADA (Mitsubishi Cable Industries, Ltd.)

RAJU-SP-2 **Invited Lecture:** “Structure Controlled TiO₂-Related Nanomaterials via Various Smart Processing”

Yoshikazu SUZUKI (University of Tsukuba)

RAJU-SP-3 **Invited Lecture:** “Nano & Micro Porous Base-metals Prepared with Dealloying in Molten Metal Baths”

Hidem KATO, Takeshi WADA (Tohoku University)

10:30-11:45: The research activities of Joint Usage / Research Center on Joining and Welding (Smart Processing 2) (RAJU-SP)

RAJU-SP-4 **Invited Lecture:** “Diagnostics and Control of High Energy Species in Magnetron Sputter Plasmas”

Hiroataka TOYODA (Nagoya University)

RAJU-SP-5 **Invited Lecture:** “Effect of Post Heat Treatment on Crystallization of Titanium Oxide Film Deposited on The Low Temperature Condition by Atmospheric TPCVD using Vortex Air Plasma Jet”

Yasutaka ANDO, Sheng-Yuan CHEN, Yoshimasa NODA (Ashikaga Institute of Technology) and Akira KOBAYASHI (Osaka University)

RAJU-SP-6 **Invited Lecture:** “Fabrication of High-quality SiGe-on-Insulator and Ge-on-Insulator Structures by Rapid Melt Growth”

Takayoshi SHIMURA, Chiaki YOSHIMOTO, Tatsuya HASHIMOTO, Shimpei OGIWARA, Yuichiro SUZUKI, Takuji HOSOI, and Heiji WATANABE (Osaka University)

Visualization in Joining & Welding Science through Advanced Measurements and Simulation

Room A

13:00-14:40: Visualization of joining and welding process (4) (JWP)

- JWP-16 **Keynote Lecture:** "Simulation of Resistance Heat Aided Friction Stir Welding"
Jian LUO, Junfeng XIANG, Geng FU (Chongqing University)
- JWP-17 "Experimental Researches of Resistance Heat Aided Friction Stir Welding Light Alloy"
Jian LUO, Fei LI, Wei CHEN (Chongqing University)
- JWP-18 "Investigation on the Particle Agglomeration Behavior in Friction Stir Welding of 2219-T6 Aluminum Alloy"
Ju KANG, Aiping WU, Guisheng ZOU (Tsinghua University), Yanhua ZHAO, Guoqing WANG (Capital Machinery Corporation)
- JWP-19 "Understanding Defect Formation Mechanism during Friction Stir Welding by Three-Dimensional Visualization of Material Flow"
Yoshiaki MORISADA, Takuya IMAIZUMI, Hidetoshi FUJII (Osaka University)
- JWP-20 "Material Flow on Dissimilar Friction Stir Spot Welded Joints of Mg Alloys"
Keiichiro SHIGEMATSU, Motomichi YAMAMOTO, Kenji SHINOZAKI, Kota KADOI (Hiroshima University)

15:00-16:40: Visualization of joining and welding process (5) (JWP)

- JWP-21 "Microstructure and Mechanical Performance of AZ31B Magnesium Alloy / 304 Stainless Steel Dissimilar Lap Joint by the Longitudinal Electromagnetic Hybrid TIG Welding–Brazing Method"
Jian LUO, Xiaoming WANG, Zongxiang YAO, Cong WANG (Chongqing University)
- JWP-22 "Improving the Strength of Invar/SiO₂-BN Brazed Joint with Cu-foil Interlayer"
Zhenwen YANG, Lixia ZHANG, Jicai FENG (Harbin Institute of Technology)
- JWP-23 "Microstructure, Mechanical Properties and Laser-Drilled Strengthening of C/SiC and Nb Brazed Joints"
Xiaoyu TIAN, Lixia ZHANG, Jicai FENG (Harbin Institute of Technology)
- JWP-24 "Research of Wetting Improvement of AgCuZn on TiC/Ni Cermet"
Min LEI, Lixia ZHANG, Jicai FENG (Harbin Institute of Technology)
- JWP-25 "Development of WC Hardface Welding Process using Hot-Wire GTA Welding System"
Gao SHUAI, Hirotaka NAKASHIN, Motomichi YAMAMOTO, Kenji SHINOZAKI, Kota KADOI (Hiroshima University), Hirhoshi WATANABE, Tatsunori KANAZAWA (Bab-Hitachi Industrial Co.)

Room B

13:00-14:40: Visualization of mechanics in joining and welding (4) (MCJW)

- MCJW-16 **Keynote Lecture:** "Characterization of Yielding Behavior of Polycrystalline Metals"
Kenjiro TERADA (Tohoku University), Seiichiro TSUTSUMI (JWRI, Osaka University), Masato TABATA (Tohoku University)
- MCJW-17 **Keynote Lecture:** "Numerical Simulation of Diffusible Hydrogen Distribution in Austenite-Martensite Microstructure"
Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
- MCJW-18 "Simulation Model to Predict the Effect of Micro-Structural Morphology of Two-Phase Steel on Ductile Crack Growth Resistance"
Hiroto SHOJI, Mitsuru OHATA, Fumiyoshi MINAMI (Osaka University)
- MCJW-19 "Analysis of Crack Propagation in Mechanical Components Presenting Multiples Cracks"
Adan VEGA (Technological University of Panama)
- MCJW-20 "Quantification of Cold Cracking Parameters of High Strength Steels by Physical Simulation under Welding Conditions"
Ralf OSSENBRINK, Ossama DREIBATI, Vesselin MICHAILOV (Brandenburg University of Technology Cottbus)

15:00-16:40: Visualization of mechanics in joining and welding (5) (MCJW)

- MCJW-21 **Keynote Lecture:** "Clinched Joint Strength Estimation under Lap-Shear Loading by FEM"
Jian LIN, Yongping LEI (Beijing University of Technology), Peichung WANG (General Motors)
- MCJW-22 **Keynote Lecture:** "Investigations of the Buckling Behaviors in Thin Plate Joints Induced by Arc Welding"
Dean DENG, Yijun ZHOU (Chongqing University)
- MCJW-23 "Theoretical Analysis on Buckling Behavior of Welded Structure Assembled by Thin Plate"
Jiangchao WANG (Osaka University), Xian Qing YIN (XJTU), Sherif RASHED, Hidekazu MURAKAWA (Osaka University)
- MCJW-24 "Dynamic Recovery of Strain Hardening Behavior and Its Influence on Residual Stress Modeling of Dissimilar Weld in Nuclear Piping Systems"
Dongxiao QIAO, Wei ZHANG, Yanli WANG (Oak Ridge National Laboratory), Paul CROOKER (EPRI), Zhili FENG (Oak Ridge National Laboratory)
- MCJW-25 "Theoretical Prediction of Thermal Cycles and Hardness of HAZ due to Twin Wire Submerged Arc Welding"
Xiao LI (Xi'an Shiyu University), Ninshu MA (JSOL Corporation), Xueli XU (Xi'an Shiyu University), Hidekazu MURAKAWA (Osaka University)

Room C

13:00-14:40: Visualization of joining and welding process (7) (JWP)

- JWP-32 **Keynote Lecture:** “Coaxial Visual Monitoring of Keyhole in CW Nd:YAG Laser Deep Penetration Welding”
Guoliang QIN (Shandong University), Shangyang LIN (Harbin Welding Institute), Chuan Song WU (Shandong University)
- JWP-33 “Visualization Technique for Quantitative Evaluation in Laser Welding Processes”
Tomonori YAMADA, Takahisa SHOBU, Susumu YAMASHITA, Akihiko NISHIMURA, Toshiharu MURAMATSU (Japan Atomic Energy Agency), Yu-ichi KOMIZO (Osaka University)
- JWP-34 “In-Situ Temperature Measurement using Monochrome High-speed Image Sensors during Laser Welding”
Shotaro YAMASHITA, Akira FUJINAGA, Motomichi YAMAMOTO, Kenji SHINOZAKI, Kota KADOI (Hiroshima University), Kenji MITSUI (Mitsui Optonics Ltd.), Hiroyuki USUI (Nobby Tech. Ltd)
- JWP-35 “Development of Heat Source Model for Narrow Gap Hot-wire Laser Welding Method”
Rittichai PHAONAIM, Masayuki YAMAMOTO, Motomichi YAMAMOTO, Kota KADOI (Hiroshima University)
- JWP-36 “Development of High Efficient Hot Wire-Laser Welding for Narrow Gap Joint”
Rittichai PHAONIAM, Masayuki YAMAMOTO, Kenji SHINOZAKI, Motomichi YAMAMOTO, Kota KADOI, Akito NISHIJIMA, Shoko TSUCHIYA (Hiroshima university)

15:00-16:40: Visualization of joining and welding process (8) (JWP)

- JWP-37 “Deformation Simulation of Laser Welding 304 Stainless Steel Thin Plate on the Bulging Process for Manufacturing New Ice Machine”
Ying WANG, Jian LUO, Keliang XUE, Jie CHEN (Chongqing University)
- JWP-38 “Laser Weldability of Dissimilar Ti and Al Welding at Ultra-High Welding Speed”
Su-Jin LEE, Hiroshi NAKAMURA, Yousuke KAWAHITO, Seiji KATAYAMA (Osaka University)
- JWP-39 “Comparison of CFRP Cutting Quality with Three Different Lasers”
Kwang-Woon JUNG, Yousuke KAWAHITO, Seiji KATAYAMA (Osaka University)
- JWP-40 “Control of Electron Beam Focus Regime and Monitoring of the Keyhole Shape at Electron Beam Welding”
Dmitriy N. TRUSHNIKOV, Vladimir Ya. BELENKIY (Perm National Research Polytechnic University), Georgy MLADENOV (Bulgarian Academy of Sciences)
- JWP-41 “Multi-Sensing of High-power Disk Laser Welding Process”
Deyong YOU, Xiangdong GAO (Guangdong University of Technology), Seiji KATAYAMA (Osaka University)

Room D

13:00-14:40: Visualization of nano & micro joining (2) (NMJ)

- NMJ-7 “Cu wirebond on Oxide and Low-k Wafer Technologies”
Toyohiro AOKI, Yasuharu YAMADA, Takashi HISADA, Tsutomu NAKAE, Toshiharu AKIMOTO, Katsuyuki YONEHARA, Hiroji YAMAMOTO, Sayaka NISHI, Yasushi TEKAOKA (IBM Japan, Ltd)
- NMJ-8 “A Study of Bonding Strength of Al/Cu by Metal Salt Generation Bonding Method”
S. K. TING (Gunma University)
- NMJ-9 “Selection of particle size and solvent for reducing applied pressure in metal-to-metal bonding using silver nanoparticle paste”
Tomo OGURA, Yosuke KONAKA (Osaka University), Eichirō IDE, Toshiaki MORITA (Hitachi Ltd.), Akio HIROSE (Osaka University)
- NMJ-10 “Interfacial Reactions between Molten Au-Ge Eutectic Alloy and Cu Substrate at 400°C”
Bo-Hsun HSU, Shih-kang LIN (National Cheng Kung University)
- NMJ-11 “Ga-based Cu-to-Cu transient liquid phase bonding at 160°C”
Cheng-liang CHO, Shih-kang LIN (National Cheng Kung University)

15:00-16:40: Visualization of metallurgy in joining and welding (3) (MTJW)

- MTJW-10 “Stress Effect on the Kinetics of Intermetallic Phase Precipitation on UNS S32205 Duplex Stainless Steel”
Guilherme FARIA, Leonardo WU, Daniel SANTOLIN, C Thais ALONSO, Maysa TERADA, J Antonio RAMIREZ (Brazilian Nanotechnology National Laboratory)
- MTJW-11 “Prediction of σ -phase precipitation in type 316FR weld metal”
Eun Joon CHUN, Hayato BABA, Koji TERASHIMA (Osaka University), Kazutoshi NISHIMOTO (Fukui University of Technology), Kazuyoshi SAIDA (Osaka University)
- MTJW-12 “Neural Network-based Hardness and Toughness Prediction in HAZ of Temper Bead Welding Repair Technology”
Lina YU, Kazutoshi NISHIMOTO, Masato SASA, Kenta OHNISHI (Osaka University, Japan), Masashi KAMEYAMA (Japan Power Engineering and Inspection Corporation), Shinro HIRANO, Naoki CHIGUSA, Takehiko SERA (The Kansai Electric Power Co., Inc.), Kazuyoshi SAIDA, Masahito MOCHIZUKI (Osaka University)
- MTJW-13 “Microstructure Development and Mechanical Properties of AZ31B Mg Alloy during Double-sided Friction Stir Welding”
Juan CHEN, Hidetoshi FUJII, Yufeng SUN, Yoshiaki MORISADA (Osaka University)
- MTJW-14 “Microstructural Control of Friction Stir Welded Pure Copper Joints by Rapid Cooling”
Nan XU, Yoshiaki MORISADA, Yufeng SUN, Hidetoshi FUJII (Osaka University)

Room E

13:00-14:40: International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (4) (IWIS)

- ISW-16 **Keynote Lecture:** "Stress / Strain Measurement using synchrotron radiation facility SPring-8"
Takahisa SHOBU (Japan Atomic Energy Agency)
- ISW-17 **Keynote Lecture:** "High-energy Synchrotron Study of the Stress-strain Behavior of Hydrogen-charged High Strength Steels"
Arne KROMM (BAM Federal Institute for Materials Research and Testing)
- ISW-18 **Keynote Lecture:** "Residual Stresses and Multiaxial Fatigue"
Majid FARAJIAN (Institute of Joining and Welding)
- ISW-19 "Characterization of Stress Partitioning in Martensite/Austenite Multilayered Steels using In Situ Neutron Diffraction"
Mayumi OJIMA, Junya INOUE, Shoichi NAMBU (The University of Tokyo), Pingguang XU, Koichi AKITA, Hiroshi SUZUKI (Japan Atomic Energy Agency), Toshihiko KOSEKI (The University of Tokyo)
- ISW-20 "In-situ observation of microstress and solid state transformation in low temperature transformation weld metal by synchrotron radiation X-rays"
Shuoyuan ZHANG (Japan Atomic Energy Agency), TERASAKI Hidenori, Yu-ichi KOMIZO (Osaka University)

15:00-16:40: International Workshop "In-situ Studies with Photons, Neutrons and Electrons Scattering" (5) (IWIS)

- ISW-21 "In-situ Observation of Void Growth and Coalescence in Free-cutting Steel Using Synchrotron X-ray Microtomography"
Dowon SEO, H. TODA, K. KAWAKAMI, M. KOBAYASHI (Toyohashi University of Technology), K. UESUGI, A. TAKEUCHI, Y. SUZUKI (Japan Synchrotron Radiation Research Institute)
- ISW-22 "Influence of Stress Relief Annealing on Residual Stress Distribution of Cr-Mo-V Steel"
Mitsuyoshi NAKATANI (Osaka University (Hitachi Zosen Corporation)), Masamitsu ABE (Hitachi Zosen Corporation), Keiji NAKACHO (Osaka University)
- ISW-23 "Assessment of Fatigue Crack Propagation Behavior in Aluminum Alloy by In-situ High-resolution Synchrotron X-ray Microtomography"
Hui LI, Hiroyuki TODA, Yasuharu MIZUSEKI (Toyohashi University of Technology), Kentaro UESUGI, Akihisa TAKEUCHI, Yoshio SUZUKI (Japan Synchrotron Radiation Research Institute), Masakazu KOBAYASHI (Toyohashi University of Technology)
- ISW-24 "Residual Compressive Stress of Welded Joints with Low Temperature Transformation Weld Metal in High-strength Steel"
Chiaki SHIGA, Eiichi MURAKAWA, Yuki MATUO, Kazuo HIRAOKA (Osaka University)
- ISW-25 "Analysis of Critical Condition of Cold Cracking in High Strength Steel Weld by Neutron Diffraction Measurement"
Hitoshi SUEYOSHI, Nobuyuki ISHIKAWA (JFE Steel Corporation)

TECHNICAL PROGRAM

-Poster Presentation-

Thursday 29-November

Room F

17:30-18:30: Poster (PT)

- PT-1 "Visualization of Metal Flow in Friction Stir Spot Welding using Translucent Materials"
Takeshi YAMANE, Kazuki NAGASE, Hirokazu WATANABE, Toshiya SHIBAYANAGI, Masamichi YOSHIDA (University of Toyama)
- PT-2 "In Situ Observation of Phase Transformation in 2.25Cr1Mo0.25V Steel during Thermal Cycle"
Hu CHUANSHUN (Liaoning Shihua University)
- PT-3 "Light Intensity Analysis of Arc Plasma for Thermal Barrier Coating Preparation"
Kazuo KOIKE, Norifumi ONO (Tohoku Gakuin University), Akira KOBAYASHI (Osaka University)
- PT-4 "Observation of Laser Cladding Process Using Synchrotron Radiation to Develop a Plant Maintenance Device"
Takaya TERADA, Tomonori YAMDA, Takahisa SHOBU, Akihiko NISHIMURA (Atomic Energy Agency)
- PT-5 "A New Welding Process Simulation using Hybrid Particle and Grid Method with Explicit MPS"
Nobuhisa OCHI, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)
- PT-6 "Image Processing of the Weld Pool in Robotic Plasma Welding System"
H SUZUKI, J TOMA, T GODO, S YAMANE (Saitama University), K HOSOYA, T NAKAJIMA, H YAMAMOTO (Hitachi Construction Machinery Co.Ltd.)
- PT-7 "Spot Friction Stir Welding of Low Carbon Steel Plates Preheated by High Frequency Induction"
Yufeng SUN (Osaka University)
- PT-8 "Laser Brazing of Alumina to WC-Co Alloy using Ag-Cu-Ti Activated Filler Metal"
Shoichiro YOSHIDA (Osaka University)
- PT-9 "Dissimilar Metal Lap Joining of Ti Alloy and Steel by Friction Spot Joining"
Toshiki ONODA, Takuya TUSMURA, Kazuhiro NAKATA (Osaka University)
- PT-10 "Joining and Mechanical Properties of Dissimilar Brass/Steel Lap Joints by Friction Stir Welding"
Toshikazu MATSUYAMA, Kazuhiro NAKATA, Takuya TSUMURA (Osaka University)
- PT-11 "Direct Joining of Al Alloy and Plastic Sheets by Friction Lap Joining Process"
Keisuke IKEHATA (Osaka University)
- PT-12 "Numerical Model of Multi-pass Repair Process by Temper Bead Welding"
Hiroki MURAKAMI, Shigetaka OKANO (Osaka University), Masashi KAMEYAMA (Power Engineering and Inspection Corporation), Takehiko SERA (Kansai Electric Power Company), Masahito MOCHIZUKI (Osaka University)
- PT-13 "Synchronous Acquisition of Metal Transfer Images and Electrical Parameters in CO₂ Arc Welding"
Maoai CHEN (Shandong University)
- PT-14 "Effect of Flux on Depth of Penetration in GTAW"
Mohammed ZUBER (Institute for Plasma Research TBM)
- PT-15 "Numerical Analysis of Arc Plasma to Weld Pool Formation by a Tandem TIG Arc"
Yosuke OGINO, Junichi KAWATA, Yoshinori HIRATA, Kazufumi NOMURA (Osaka University)
- PT-16 "3D Temperature Measurement of a Tandem TIG Arc Plasma"
Kazufumi NOMURA (Osaka University)
- PT-17 "Research of Controlled Micro-Discharge at Atmospheric Pressure"

- Mingon PARK, Tatsumasa URABE, Yoshinori HIRATA (Osaka University)
- PT-18 “Investigation of Fume Formation Mechanism in Gas Shield Arc Welding”
Sho MATSUI, Shinichi TASHIRO, Manabu TANAKA (Osaka University)
- PT-19 “Dynamically Plasma Diagnostics in MIG Welding of Aluminum”
Yoshihiro TSUJIMURA, Shota NAKANISHI, Bruce Anthony MURPHY (CSIRO), Manabu TANAKA (Osaka University)
- PT-20 “Numerical Analysis of Anode Heat Transfer in Gas Tungsten Arc Welding with Metal Vapor”
Shinji KODAMA (Nippon Steel Corporation Welding & Joining Research Center), Kazuki SUGIURA, Shota NAKANISHI, Yoshihiro TSUJIMURA, Manabu TANAKA, Tadashi KASUYA (Osaka University)
- PT-21 “Numerical Simulation on Plasma Property in TIG-MIG Hybrid Welding Process”
Hisashi MISHIMA, Shinichi TASHIRO (Osaka University), Shuhei KANEMARU, Tomoaki SASAKI, Toyoyuki SATO (Taiyo Nippon Sanso Corporation), Manabu TANAKA (Osaka University)
- PT-22 “Microstructure and Mechanical Properties of Diffusion Bonded Aluminum Joints with Zn-Based Alloy Insert”
Masaki YAMAMOTO, Tomo OGURA, Akio HIROSE (Osaka University)
- PT-23 “Formation Mechanism of Interfacial Microstructure and Thermal Reliability in Ultrasonic Bonded Cu/Ni Joint”
Yo TANAKA, Tomo OGURA, Tomokazu SANO (Osaka University)
- PT-24 “Improvement of Stability of Ar-MIG Welding using K-REM Coaxial Multilayer Solid Wire.”
Terumi NAKAMURA (National Institute for Materials Science), Kazuo HIRAOA (Osaka University)
- PT-25 “Dynamic Behavior of Metal Vapor during Gas Tungsten Arc Welding”
Shota NAKANISHI (Osaka University), Shinji KODAMA (Nippon Steel corporation Welding & Joining Research Center), Manabu TANAKA (Osaka University)
- PT-26 “Numerical Analysis of Fume Formation Mechanism”
Shinichi TASHIRO, Sho MATSUI, Manabu TANAKA (Osaka university)
- PT-27 “Numerical Modeling of Nitrogen Absorption during Gas Tungsten Arc Welding”
Kazuki SUGIURA (Osaka University), Shinji KODAMA (NIPPON STEEL CORPORATION Welding & Joining Research Center), Manabu TANAKA (Osaka University)
- PT-28 “X-ray Transmission Real-Time Observation of Porosity Evolution during Laser Welding of Magnesium Alloys”
Mohamed WAHBA, Seiji KATAYAMA ((Osaka University)
- PT-29 “Semi-Destructive Method for Evaluation of Local Mechanical Properties in Notch-Tip Region using Indentation Technique”
Misa MIYABE, Muneyoshi IYOTA, Shigetaka OKANO, Masahito MOCHIZUKI (Osaka University)
- PT-30 “Effects of Welding Condition on Controlling Residual Stress in Resistance Spot Welds”
Muneyoshi IYOTA, Masahito MOCHIZUKI (Osaka University)
- PT-31 “Modelling of Damage at Grain Boundary in Ni Base Alloy Welds Based on Microscopic Stress Simulation”
Takahiro SAKAI, Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
- PT-32 “Effect of Microscopic Distribution of Strength Property and Residual Stress Caused by Martensitic Transformation on Stress Distribution around Crack”
Naoki YABUUCHI, Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University), Hiroshi SHIMANUKI (Nippon Steel Corporation)
- PT-33 “Measurement and Numerical Simulation of Weld Distortion in Multi-pass Weld of Heavy Section Plate”
Asahi SUGAHARA, Shigetaka OKANO (Osaka University), Satoshi TADANO, Yuujiro NAKATANI, Akira TANAKA (Toshiba Corporation), Masahito MOCHIZUKI (Osaka University)
- PT-34 “Investigation on Welding Residual Stress and Distortion in Magnesium Alloy and Comparison with Stainless Steel and Low Carbon Steel”
Yijun ZHOU, Dean DENG (Chongqing University)
- PT-35 “Experimental Study on Effects of Root Gap and Fillet Size of Welds on Joint Strength”
Daisuke SUGITANI (Osaka university)
- PT-36 “Visualization of Machining and Welding Residual Stress Variations by Numerical Simulation in Austenitic Stainless Steel”
Ryohei IHARA, Shigetaka OKANO (Osaka University), Tadafumi HASHIMOTO (Hashimoto Iron Works CO., LTD.), Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
- PT-37 “Heat Conduction Analysis of Welding Using Idealized Explicit FEM”

- Kazuki IKUSIMA, Shinsuke ITOH, Masakazu SHIBAHARA (Osaka Prefecture University)
- PT-38 “The Process Optimization of the Pulling-back Stage in Refilling Friction Stir Welding for 2219 Aluminum Alloy
Hao LU (Shanghai Jiaotong University)
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Uwe REISGEN (Aachen University)
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Junme CHEN (Shanghai Jiaotong University)
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Xin-Fang ZHANG, Hidenori TERASAKI, Yu-ichi KOMIZO (Osaka University)
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Yuu IGUCHI, Kazuhiro ITO, Makoto TAKAHASHI (Osaka University), Toshiya SHIBAYANAGI (University of Toyama)
- PT-43 “Hydrogen Absorption and Diffusion Behavior during Phase Transformation in Steel”
Yuji SAKIYAMA (Osaka University)
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Tomoharu SHIGETA (Osaka University)
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Atsushi TAKADA, Hidenori TERASAKI, Yu-ichi KOMIZO (Osaka University)
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Sho KATSUKI, Hidenori TERASAKI, Atsushi TAKADA, Yu-ichi KOMIZO (Osaka University)
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Shigeki KIKIUCHI, Shogo TOMIDA, YAMAGISHI, Hideki YAMAGISHI (Toyama Industrial Technology Center), Takashi YONEDA (Yoneda Advanced Casting Co., Ltd, Takaoka,), Kazuhiro NAKATA (Osaka University)
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Bunpei TAKAHASHI (Ehime University), Tadahisa TSUYAMA (KAWADA INDUSTRIES, INC.), Akiyama Mei AKIYAMA, Nakai Kiyomichi NAKAI, Tatsuaki SAKAMOTO, Sengo KOBAYASHI (Ehime University)
- PT-51 “Phase Equilibria in the Sn-Bi-Au Ternary System at 150oC”
Yi-Pin WU (National Taiwan University of Science and Technology)
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Wan-Ching CHEN (National Taiwan University of Science and Technology)
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Keisuke NAKAI, Kiyomichi NAKAI, Tatsuaki SAKAMOTO, Sengo KOBAYASHI (Ehime University), Masahiko HAMADA (Pipe & Tube Company, Sumitomo Metal Industries, Ltd), Yu-ichi KOMIZO (Osaka University)
- PT-54 “Improvement of Mechanical Properties of Weld Metal Formed with Hot-wire Welding in a Steel
Mei AKIYAMA (Ehime University), Tadahisa TSUYAMA (KAWADA INDUSTRIES, INC.), Bunpei TAKAHASHI, Kiyomichi NAKAI, Tatsuaki SAKAMOTO, Sengo KOBAYASHI (Ehime University)
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Riddhideep MANDAL, Yasumi KAWAMURA (Yokohama National University)
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Keiji ITO, Takeshi MIYASAKA, Katsuo ASATO, Kazuki SHIMIZU (Gifu University)
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Seiichiro TSUTSUMI (Osaka University), Naoyuki YAMATO (Nippon Steel Co.), Koji GOTOH (Kyushu University), Fionn DUNNE (University of Oxford)
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Jun ETO, Yuichi KOMIO (Osaka University), Ken YAMASHITA, Mikihiro SAKATA, Kenji KUBO (KOBE STEEL)
- PT-59 “Real Time Quality Assessment in Resistance Spot Welding Process”
Hideyuki KIHARA, Hidenori TERASAKI, Yu-ichi KOMIZO (Osaka University)

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Takehiko SERA (KANSAI Electric Power Co., INC.), Shigetaka OKANO, Masahito MOCHIZUKI, Kazuyoshi SAIDA (Osaka University), Shinro HIRANO, Naoki CHIGUSA (KANSAI Electric Power Co., INC.), Kazutoshi NISHIMOTO (Fukui University of Technology),
- PT-61 “Novel Mechanochemical Synthesis of Carbon Nanomaterials by a High-Speed Ball-Milling Process”
Satoshi OHARA, Zhenquan TAN, Kazuhiro YAMAMOTO, Takeshi HASHISHIN (Osaka University)
- PT-62 “Reduction of Process Temperature and Time for Producing Low-resistivity and Excellent-adhesion Cu Interconnects on Glass Substrates using Cu(Mg) Alloy Films”
Keiji HAMASAKA (Kyoto University), Kazuhiro ITO (Osaka University), Yasuharu SHIRAI (Kyoto University), Masanori MURAKAMI (The Ritsumeikan Trust)
- PT-63 “Estimation of Three-dimensional Microscopic Strain Component by Digital Image Correlation and Crystal Orientation Analysis”
Kazuo ODA, Yoshiki MIKAMI, Masahito MOCHIZUKI (Osaka University)
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- PT-65 “Reduction of Contact Resistance for Cu(Ti)/ITO Interface”
Kazuhiro ITO (Osaka University), Wataru NAKAGAWA (Kyoto University), Yasuharu SHIRAI (Kyoto University), Masanori MURAKAMI (The Ritsumeikan Trust)
- PT-66 “Application of Silver Nanoparticle for Low-energy Resistance Spot Welding”
Yuichiro SUZUKI, Tomo OGURA, Akio HIROSE (Osaka University)
- PT-67 “Interfacial Microstructure between Copper Ribbon and Nickel-coated Copper Plate Formed by Ultrasonic Bonding”
Masakatsu MAEDA, Daisuke YAGI, Yasuo TAKAHASHI (Osaka University)
- PT-68 “Interfacial Microstructure in Aluminum and Copper Bonding using Silver Nanoparticles Derived from Silver Oxide”
Shinya TAKATA, Tomo OGURA, Akio HIROSE (Osaka University)
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Makoto TAKAHASHI (Osaka University)
- PT-70 “Double-diffusive Convection during Crystal Growth in a Supersaturated Solution”
Takeshi YAMANE, Masamichi YOSHIDA, Toshiya SHIBAYANAGI (University of Toyama)
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Kimiaki NAGATSUKA, Shoichiro YOSHIDA (Osaka University), Yoshihisa SECHI (Kagoshima Prefectural Institute of Industrial Technology), Ninshu MA (JSOL Corporation), Kazuhiro NAKATA (Osaka University)
- PT-72 “Wormhole Defects in the Friction Stir Welding Joints of Invar 36 Alloy with PCBN Tool”
Aiping WU, Yue ZHAO (Tsinghua University), Yutaka S. SATO (Tohoku University), Guisheng ZOU (Tsinghua University), Hiroyuki KOKAWA (Tohoku University)
- PT-73 “Properties of Polyurethane Based Electrically Conductive Adhesive Prepared with Different Tertiary Amines”
Li Ngee HO, Hiroshi NISHIKAWA (Osaka University)
- PT-74 “Dissimilar Laser Brazing of Binder-less Cubic Boron Nitride and Tungsten Carbide”
Yoshihisa SECHI (Kagoshima Prefectural Institute of Industrial Technology), Kimiaki NAGATSUKA, Kazuhiro NAKATA (Osaka University)
- PT-75 “Formation of Periodic Microstructures by Nanosecond Fiber Laser Irradiation on Ti-6Al-4V Alloy for Improving Biofunction”
Daichi TANIGAWA, Masahiro TSUKAMOTO, Togo SHINONAGA, Kennjiro TAKAHASHI, Shinnichiro MASUNO (Osaka,), Akiko NAGAI, Kimihiro YAYMASHITA, Takao HANAWA (Tokyo Medical and Dental University), Nobuyuki ABE (Osaka University)
- PT-76 “Material Behavior on Heat Loading and Hydrogen Penetration of Vacuum Plasma Spray Tungsten Coatings on Reduced Activation Ferritic/martensitic Steel”
Kazutoshi TOKUNAGA (Kyushu University), Koichiro EZATO, Satoshi SUZUKI, Mikio ENOEDA, Masato AKIBA (Atomic Energy Agency), Takuya NAGASAKA (National Institute for Fusion Science), Ryuta KASADA, Akihiko KIMURA (Kyoto University), Tomohiro HOTTA, Teppei OTUSKA (Kyushu University), Akira

KOBAYASHI (Joining and Welding Research Institute, Osaka University Joining and Welding Research Institute), Kuniaki ARAKI, Yoshio MIYAMOTO, Tadashi FUJIWARA, Makoto HASEGAWA, Kazuo NAKAMURA (Kyushu University)

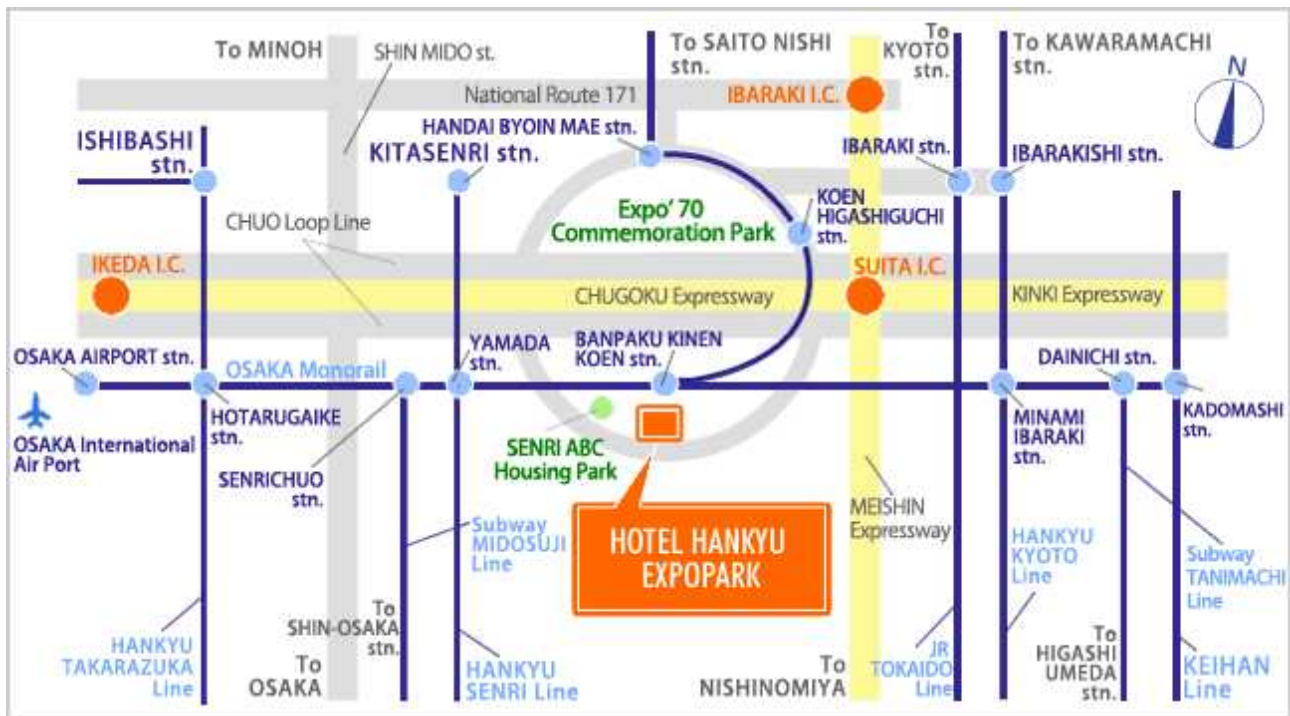
PT-77 “Plasma-Assisted Mist CVD for Formation of Zinc Oxide Film as Transparent Conducting Oxide”

Kosuke TAKENAKA, Yuichi SETSUHARA (Osaka University)

PT-78 “Visualization of Temperature Distribution in Ultrasonic Spot Welding of Aluminum Sheets”

Yansong ZHANG (Shanghai Jiao Tong University)

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 Midosuji 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 International Airport

Take the Osaka Monorail and get off at Bampaku Kinen Koen Station. The hotel is a five-minute walk away.

From Kyoto Station

- Take the JR Tokaido Honsen line and get off at Ibaraki Station. The hotel is a 10-minute bus or taxi ride away.
- Take the Hankyu Kyoto Line 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 here.

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