

# Visual-JW 2019 & WSE 2019



November 21–22, 2019  
Hotel Hankyu Expo Park, Osaka, Japan

The 5th International Symposium  
on Visualization in Joining & Welding Science through  
Advanced Measurements and Simulation

&

The 8th International Conference  
of Welding Science and Engineering

in conjunction with

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

## FINAL PROGRAM

Organized by Joining and Welding Research Institute, Osaka University

Co-organized by Japan Welding Society

Chinese Welding Society

In the year 2019, the 5<sup>th</sup> International Symposium on Visualization in Joining & Welding Science through Advanced Measurements and Simulation (Visual-JW 2019) and the 8<sup>th</sup> International Conference of Welding Science and Engineering (WSE 2019) in conjunction with the Symposium on the Research Activities of Joint Usage / Research Center on Joining and Welding will be held on 21–22, 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.

## Symposium Committee

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Aiping WU, Tsinghua University, China

Lianyong XU, Tianjin University, China

# SCHEDULE AT A GLANCE

## Registration

Thursday, November 21: 9:00–18:00

Friday, November 22: 8:30–15:00

## Thursday, November 21

Room	SEIUN				
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				
11:30–12:30	Lunch at ORBIT HALL				
Room	A	Room	B	Room	C
Session Name	Visualization of Joining and Welding Process (1)	Session Name	Visualization of Additive Manufacturing (1)	Session Name	WSE Visualization of Joining and Welding Process (1)
12:30–12:50	JWP-1	12:30–12:50	AM-1	12:30–12:50	W-JWP-1
12:50–13:05	JWP-2	12:50–13:05	AM-2	12:50–13:05	W-JWP-2
13:05–13:20	JWP-3	13:05–13:20	AM-3	13:05–13:20	W-JWP-3
13:20–13:35	JWP-4	13:20–13:35	AM-4	13:20–13:35	W-JWP-4
13:35–13:50	JWP-5	13:35–13:50	AM-5	13:35–13:50	W-JWP-5
13:50–14:05	Coffee Break				
Session Name	Visualization of Joining and Welding Process (2)	Session Name	Visualization of Additive Manufacturing (2)	Session Name	WSE Visualization of Joining and Welding Process (2)
14:05–14:25	JWP-6	14:05–14:25	AM-6	14:05–14:25	W-JWP-6
14:25–14:40	JWP-7	14:25–14:40	AM-7	14:25–14:40	W-JWP-7
14:40–14:55	JWP-8	14:40–14:55	AM-8	14:40–14:55	W-JWP-8
14:55–15:10	JWP-9	14:55–15:10	AM-9	14:55–15:10	W-JWP-9
15:10–15:25	JWP-10	15:10–15:25	AM-10	15:10–15:25	
15:25–15:40	Break				
Session Name	Visualization of Joining and Welding Process (3)	Session Name	Visualization of Quality, Safety and Reliability	Session Name	WSE Visualization of Metallurgy in Joining and Welding
15:40–16:00	JWP-11	15:40–16:00	QSR-1	15:40–16:00	W-MTJW-1
16:00–16:15	JWP-12	16:00–16:15	QSR-2	16:00–16:15	W-MTJW-3
16:15–16:30	JWP-13	16:15–16:30	QSR-3	16:15–16:30	W-MTJW-4
16:30–16:45	JWP-14	16:30–16:45	QSR-4	16:30–16:45	W-MTJW-5
16:45–17:00	JWP-15	16:45–17:00	QSR-5	16:45–17:00	
17:00–17:15	Coffee Break				
17:15–18:15	Visual-JW and WSE Poster Session				
18:15–18:30	Break				
18:30–20:30	Banquet at ORBIT HALL				

11:30–18:30 Exhibition by Companies at Lobby (in front of the room for the Plenary Lectures)

Session Name	Visual-JW 2019 session
Session Name	WSE 2019 session

- Paper No. Keynote Lecture (20 min including discussion)
- Paper No. Invited Lecture (15 min including discussion)
- Paper No. General Presentation (15 min including discussion)

### Changes

No Presentation: W-JWP-10

Moved: W-MTJW-2 to November 22

# Friday, November 22

Room	A	Room	B	Room	C	Room	D
Session Name	Visualization of Joining and Welding Process (4)	Session Name	Visualization of Metallurgy in Friction Stir Welding	Session Name	WSE Visualization of Joining and Welding Process (3)	Session Name	Visualization of Nano and Micro Materials Processing
9:00–9:20	JWP-16	9:00–9:20	MTFSW-1	9:00–9:20	W-MTJW-2	9:00–9:20	NM-1
9:20–9:35	JWP-17	9:20–9:35	MTFSW-2	9:20–9:35	W-JWP-12	9:20–9:35	NM-2
9:35–9:50	JWP-18	9:35–9:50	MTFSW-3	9:35–9:50		9:35–9:50	NM-3
9:50–10:00	Break						
Session Name	Visualization of Advanced Material Processing	Session Name	Visualization of Metallurgy in Joining and Welding (1)	Session Name	WSE Visualization of Mechanics in Joining and Welding (1)	Session Name	Research Activities of Joint Usage / Research Center on Joining and Welding (1)
10:00–10:20	AMP-1	10:00–10:20	MTJW-1	10:00–10:20	W-MCJW-1	10:00–10:05	Opening Remark
10:20–10:35	AMP-2	10:20–10:35	MTJW-2	10:20–10:35	W-MCJW-2	10:05–10:25	RAJU-1
10:35–10:50	AMP-4	10:35–10:50	MTJW-3	10:35–10:50	W-MCJW-3	10:25–10:45	RAJU-2
10:50–11:05	AMP-5	10:50–11:05	MTJW-4	10:50–11:05	W-MCJW-4	10:45–11:05	RAJU-3
11:05–11:20		11:05–11:20	MTJW-5	11:05–11:20	W-MCJW-5	11:05–11:25	RAJU-4
11:20–11:35	Coffee Break					11:25–11:35	Coffee Break
Session Name	Visualization of Joining and Welding Process (5)	Session Name	Visualization of Metallurgy in Joining and Welding (2)	Session Name	WSE Visualization of Joining and Welding Process (4)	Session Name	Research Activities of Joint Usage / Research Center on Joining and Welding (2)
11:35–11:55	JWP-19	11:35–11:55	MTJW-6	11:35–11:55	W-JWP-14	11:35–11:55	RAJU-5
11:55–12:10	JWP-20	11:55–12:10	MTJW-7	11:55–12:10	W-JWP-15	11:55–12:15	RAJU-6
12:10–12:25	JWP-21	12:10–12:25	MTJW-8	12:10–12:25		12:15–12:35	RAJU-7
12:25–12:40	JWP-22	12:25–12:40	MTJW-9	12:25–12:40			
12:40–13:40	Lunch at SEIUN						
Session Name	Visualization of Joining and Welding Process (6)	Session Name	Visualization of Mechanics in Joining and Welding (1)	Session Name	WSE Visualization of Quality, Safety and Reliability (1)	Session Name	WSE Visualization of Additive Manufacturing (1)
13:40–14:00	JWP-23	13:40–14:00	MCJW-1	13:40–14:00	W-QSR-1	13:40–14:00	W-AM-1
14:00–14:15	JWP-24	14:00–14:15	MCJW-2	14:00–14:15	W-QSR-2	14:00–14:15	W-AM-2
14:15–14:30	JWP-25	14:15–14:30	MCJW-3	14:15–14:30	W-QSR-3	14:15–14:30	W-AM-3
14:30–14:40	Break						
Session Name	Visualization of Joining and Welding Process (7)	Session Name	Visualization of Mechanics in Joining and Welding (2)	Session Name	WSE Visualization of Mechanics in Joining and Welding (2)	Session Name	WSE Visualization of Quality, Safety and Reliability (2)
14:40–15:00	JWP-26	14:40–15:00	MCJW-4	14:40–15:00	W-MCJW-6	14:40–15:00	W-QSR-4
15:00–15:15	JWP-27	15:00–15:15	MCJW-5	15:00–15:15	W-MCJW-7	15:00–15:15	W-QSR-6
15:15–15:30	JWP-28	15:15–15:30	MCJW-6	15:15–15:30	W-MCJW-8	15:15–15:30	W-QSR-7
15:30–15:45	JWP-29	15:30–15:45	MCJW-7	15:30–15:45	W-MCJW-9	15:30–15:45	W-QSR-8
15:45–16:00	JWP-30	15:45–16:00	MCJW-8	15:45–16:00	W-MCJW-10	15:45–16:00	
16:00–16:15	Coffee Break						
Session Name	Visualization of Joining and Welding Process (8)	Session Name	Visualization of Mechanics in Joining and Welding (3)	Session Name	WSE Visualization of Advanced Material Processing	Session Name	WSE Visualization of Additive Manufacturing (2)
16:15–16:35	JWP-31	16:15–16:35	MCJW-9	16:15–16:35	W-AMP-1	16:15–16:35	W-AM-4
16:35–16:50	JWP-32	16:35–16:50	MCJW-10	16:35–16:50	W-AMP-2	16:35–16:50	W-AM-5
16:50–17:05	JWP-33	16:50–17:05	MCJW-11	16:50–17:05	W-AMP-3	16:50–17:05	W-AM-6

9:00–14:00 Exhibition by Companies at Lobby (in front of the room for the Plenary Lectures)

Session Name	Visual-JW 2019 session
Session Name	WSE 2019 session
Session Name	Symposium on Research Activities of Joint Usage / Research Center on Joining and Welding

Paper No. Keynote Lecture (20 min including discussion)

Paper No. Invited Lecture (15 min including discussion)

Paper No. General Presentation (15 min including discussion)

Paper No. Lecture on Research Activities of Joint Usage / Research Center on Joining and Welding (20 min including discussion)

### Changes

No Presentation: W-JWP-11, W-JWP-13, W-JWP-16, W-QSR-5

Moved: W-MTJW-2 from November 21

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

— Oral Presentation —

Friday, November 22

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## Room D

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### 10:00–11:25 Research Activities of Joint Usage/Research Center on Joining and Welding (1) (RAJU)

Chair Person: Masaya SHIGETA (Osaka University)

- RAJU-1 **Invited Lecture:** “Longer-lived Chemistry and Antimicrobial Activity of Plasma Activated Water”  
Jun-Seok OH (Osaka City University), Naoyuki IWATA, Giichiro UCHIDA (Meijo University), Kosuke TAKENAKA, Yuichi SETSUHARA (Osaka University), Mineo HIRAMATSU, Masafumi ITO (Meijo University)
- RAJU-2 **Invited Lecture:** “Study on Penetration Control of the Arc Welding Using External Magnetic Field –Influence of External Magnetic Field on Arc Shape and Heat Input–”  
Shoichi MATSUDA (University of the Ryukyus), Manabu TANAKA (Osaka University), Yasushi TANAHARA (Okinawa Industrial Technology Center)
- RAJU-3 **Invited Lecture:** “Uniform Laser-Induced Periodic Surface Structures on Titanium Irradiated with a Two-Color Femtosecond Double-pulse Laser Beam”  
Masaki HASHIDA, Yuki FURUKAWA, Shunsuke INOUE, Shuji SAKABE (Kyoto University), Shiuchiro MASUNO (Osaka University), Mitsuhiro KUSABA (Osaka Sangyo University), Hitoshi SAKAGAMI (National Institute for Fusion Science), Masahiro TSUKAMOTO (Osaka University)
- RAJU-4 **Invited Lecture:** “Creation of Functional Surfaces and Application for Joints”  
Shinji KOYAMA, Takako MURAOKA (Gunma University), Kohei OZAWA (Gunma University, DNP Co., Ltd.)

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

Chair Person: Soshu KIRIHARA (Osaka University)

- RAJU-5 **Invited Lecture:** “Nanocrystals Technologies for Energy and Environmental Applications”  
Kazuyoshi SATO, Naokatsu KANNARI (Gunma University), Takeshi HASHISHIN (Kumamoto University), Hiroya ABE (Osaka University)
- RAJU-6 **Invited Lecture:** “Influence of Surface Oxide Film on Surface Activated Bonding for Dissimilar Metallic Materials”  
Kazuhiro OGAWA, Yudai TERUI, Yuji ICHIKAWA (Tohoku University)
- RAJU-7 **Invited Lecture:** “Numerical Simulation for Analysis and Design of Powder Processing”  
Junya KANO, Kizuku KUSHIMOTO, Shingo ISHIIHARA (Tohoku University), Akira KONDO, Takahiro KOZAWA, Makio NAITO (Osaka University)
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