3rd INTERNATIONAL CONFERENCE ON FRICTION BASED PROCESSES

大阪大学
OSAKA UNIVERSITY

50th 1972 2022 JWRI OSAKA UNIVERSITY

ICFP 2017

Arata Hall, JWRI, Osaka University, Japan
November 22-24, 2017

Organized by:
Osaka University, JWRI, Japan
Indian Institute of Science, India
Tsinghua University, China

SCOPE AND TOPICS

ICFP conference is organized to enhance the fundamental understanding to a variety of friction based processes such as friction stir welding, friction stir processing, friction welding, linear friction welding and many other friction based processes. This conference will provide an excellent opportunity for researchers all over the world who work in these fields to gather, present and discuss the latest research in these fields.

The conference will be broadly focused on the following topics.

- ❑ Fundamentals of friction based processing
- ❑ Processing-Microstructure correlation
- ❑ Microstructure-property correlation

In addition to the formal conference sessions including plenary, invited and contributed presentations, we also hope to provide a platform for informal discussion and social engagements to enhance human interactions within the materials society.

The 1st and 2nd ICFP conference have been successfully held in India and China, respectively and we are honored to be hosting the 3rd ICFP conference in Osaka, Japan. We are looking forward to your active participation to ensure a successful and stimulating scientific conference.

Hidetoshi Fujii
ICPF 2017

CONFERENCE CHAIRMAN:

Hidetoshi Fujii

INTERNATIONAL ADVISORY COMMITTEE

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- ❑ Toru Nagaoka
- ❑ Masaru Sakamura
- ❑ Masakazu Shibahara
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ABSTRACTS

Abstracts with less than 200 words must be sent to liuhh@jwri.osaka-u.ac.jp by email no later than 15th September, 2017. The paper title, author(s) name(s) with their affiliation(s) and the abstract text should be entered. Do not include drawings or photographs in the abstract. Acceptance of an abstract for presentation (oral or poster) will be informed to authors after a rigorous review by 15th September, 2017.

REGISTRATION

Please send an email including name, affiliation, with or without presentation to liuhh@jwri.osaka-u.ac.jp for registration after the abstract acceptance (15th September) and no later than 30th September, 2017 .

REGISTRATION FEE

Delegates:	JPY 10000
Students:	JPY 5000

PAYMENT DETAILS

On-site payments are only acceptable (Payment in advance is not available).

DEADLINES

Deadline for abstract submission:15th September, 2017

Deadline for registration: 30th September, 2017

CONTACT

Organizing Secretary

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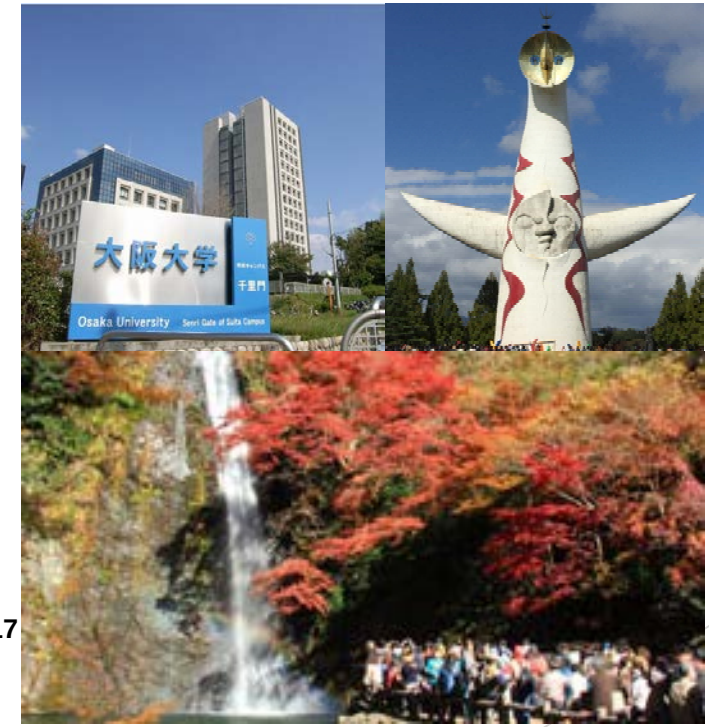

Osaka University Suita Campus

1-1, Yamadaoka, Suita, Osaka 565-0871, Japan

Program of 3rd International Conference on Friction Based Process

Wednesday 22th November

09:00-10:00	Registration		
10:00-10:20	Opening Ceremony		
Time	Author (s)	Affiliation	Title
Session 1	**Friction Stir Welding-1**	**Chairman: Zongyi Ma**	
10:20-11:00 Plenary Talk 1	Yutaka S. Sato, Tomoko Miyamori, Hitomichi T. Fujii, Hiroyuki Kokawa	Tohoku Univ.	Effect of underwater operation and rust layer on friction stir weldability of medium carbon steel
11:00-11:40 Plenary Talk 2	Xueqi Lv, ChuanSong Wu, Girish Kumar Padhy	Shandong Univ.	Microstructure and mechanical properties of Al/Mg alloy joints in ultrasonic vibration enhanced FSW
11:40-12:20 Plenary Talk 3	Toshiaki Yasui, Daichi Sugimoto, Masahiro Fukumoto	Toyohashi Univ. of Technology	Direct observation of material flow in friction stir welding of dissimilar materials by simulation experiment
12:20-13:40	Lunch Break		
Session 2	**Friction Stir Welding-2**	**Chairman: Qingyu Shi**	
13:40-14:00	Yeong-seok Lim[1,2], Kwang-jin Lee[2], Sang-don Moon[1]	[1]Chonbuk National Univ. [2]Korea Institute of Industrial Technology	Formation behavior of strengthening γ' precipitates during post weld heat treatment of friction stir welded Cu-Be alloy
14:00-14:20	Tianbo Zhao[1], Yutaka Sato[1], Hiroyuki Kokawa[1], Kazuhiro Ito[2]	[1]Tohoku Univ. [2]JWRI, Osaka Univ.	Effect of Welding Heat-input on Mechanical Properties of Friction Stir Welded Aluminum Alloy 6063
14:20-14:40	Huihong Liu, Hidetoshi Fujii	JWRI, Osaka Univ.	Elucidation of microstructural evolution of friction stir welded beta-type titanium alloy joint by using liquid CO_2 cooling
14:40-15:00	M. Sakamura[1], Y. Takeyasu[1], H. Fujii[2]	[1]Hiroshima Prefectural Technology Research Institute [2]JWRI, Osaka Univ.	Strength of dissimilar three-lapped spot welds of Al alloy, steel and steel by friction stirring
15:00-15:20	Masakatsu Maeda, Takamasa Ozawa, Kazuyoshi Katoh	Nihon Univ.	Friction stir lap welding of thermoplastic materials with 3003 aluminum alloy
15:20-15:40	Tea Break		

Session 3	**Friction Stir Welding of Steel**	**Chairman: Yutaka S. Sato**	
15:40-16:00	Toru Nagaoka[1], Marie-Noëlle Avettand-Fènoël[2], Hidetoshi Fujii[3], Roland Taillard[2]	[1]Osaka Research Institute of Industrial Science and Technology [2]Université Lille [3]JWRI, Osaka Univ.	Friction stir lap welding of WC-12Co cermet and carbon steel
16:00-16:20	Yasuyuki Miyano[1], Hidetoshi Fujii[2], Yufeng Sun[2], Yasuyuki Katada[3], Osamu Kamiya[1]	[1]Akita Univ. [2]JWRI, Osaka Univ. [3]National Institute for Materials Science	Mechanical properties and microstructure of friction stir butt welds of high nitrogen-containing austenitic stainless steel
16:20-16:40	Yufeng Sun[1], Hidetoshi Fujii[1], Toshio Murakami[2]	[1]JWRI, Osaka Univ. [2]Kobe Steel Ltd.	Friction stir welding of 1.5GPa high strength TRIP steels
16:40-17:00	Seung-Joon Lee, Yufeng Sun, Hidetoshi Fujii	[1]JWRI, Osaka Univ.	Stacking-fault energy, mechanical twinning and strain hardening of Fe-18Mn-0.6C-(0, 1.5)Al twinning-induced plasticity steels during friction stir welding
17:30-19:30	Banquet		

Thursday 23th November

Session 4	**Friction Stir Welding Simulation**	**Chairman: ChuanSong Wu**	
09:30-10:10 Plenary Talk 4	Shuai Zhang, Gao-qiang Chen, Yucan Zhu, Qingyu Shi	Tsinghua Univ.	Recent progress on numerical simulation of the material flow during friction stir welding for predicting the tunnel-defects
10:10-10:30	K. Mitsufuji, F. Miyasaka	Osaka Univ.	Numerical Analysis for Material Flow Characteristics in FSW of Stainless Steel
10:30-10:50	Seiichiro Tsutsumi, Moe Sano, Murshid Imam, Yufeng Sun, Hidetoshi Fujii, Ninshu Ma	JWRI, Osaka Univ.	Localized elasto-plastic deformation and serration characteristics of 20mm A5083-O FSW joint
10:50-11:10	Ninshu Ma, Hidekazu Murakawa, Seiichiro Tsutsumi,Murshid Imam, Yufeng Sun, Hidetoshi Fujii	JWRI, Osaka Univ.	Rotational distortion prevention and residual stress measurement in FSW butt joint of thick aluminum plates
11:10-11:30	Hisashi Serizawa[1], Fumikazu Miyasaka[2]	[1]JWRI, Osaka Univ. [2]Osaka Univ.	Development of Coupled Method of MPS and FEM for Demonstrating Heterogeneous Behavior in Friction Stir Processing

11:30-13:00	Lunch Break		
Session 5	**Friction Stir Processing & Other Friction Based Welding**	**Chairman: Toshiaki Yasui**	
13:00-13:40 Plenary Talk 5	Z.Y. Ma, H. Zhang, D. Wang	Institute of Metal Research, Chinese Academy of Sciences	Improving comprehensive properties of high nitrogen stainless steel by application of force-cooling friction stir processing
13:40-14:20 Plenary Talk 6	H. C. Madhu, V. Kailas Satish	Indian Institute of Science	Development of Polymer Derived Ceramic based Aluminium Foam through Friction Stir Processing
14:20-14:40	Yoshihiko Hangai[1], Takao Utsunomiya[2], Nobuhiro Yoshikawa[3]	[1]Gunma Univ. [2]Shibaura Institute of Technology [3]The Univ. of Tokyo	Fabrication of aluminum foam using friction stir processing
14:40-15:00	Tomo Ogura, Takahiro Matsumura, Tomoya Imai, Keisuke Miyoshi, Kazuyoshi Saida	Osaka Univ.	Dissimilar friction welding of titanium alloy to nickel based alloy using insert metals
15:00-15:20	Toshiya Shibayanagi, Syuhei Hirose, Norihiro Tajiri, Masaru Ishihara	Univ. of Toyama	Development of Disc Friction Joining and its Application to Dissimilar Joining
15:20-15:40	Takuya Miura, Masaaki Otsu, Masato Okada	Univ. of Fukui	Dissimilar joining of magnesium alloy and pure aluminum sheets by friction stir incremental forming
15:40-16:00	Sungook Yoon, Yasuhiro AOKI, Hidetoshi Fujii	JWRI, Osaka Univ.	Effect of process parameters on linear friction welding of medium carbon steel plates
16:00-16:20	Tea Break		
Session 6	**Fatigue Property Improvement**	**Chairman: V. Kailas Satish**	
16:20-16:40	Kazuhiro Ito, Hajime Yamamoto, Makoto Takahashi, Kazuyuki Kohama, Hidetoshi Fujii	JWRI, Osaka Univ.	Application of friction stir processing to high-tensile-steel welds
16:40-17:00	Masaaki Nakai[1], Mitsuo Niinomi[2, 3, 4, 5], Huihong Liu[6], Hidetoshi Fujii[6]	[1]Kindai Univ. [2]Tohoku Univ. [3]Osaka Univ. [4]Meijyo Univ. [5]Nagoya Univ. [6]JWRI, Osaka Univ.	Effect of solution treatment and aging on fatigue strength of friction stir welded Ti-6Al-4V alloy butt joint
17:00-17:20	Tomokazu Sano[1], Takayuki Eimura[1],	[1]Osaka Univ. [2] JWRI, Osaka Univ.	Improvement of fatigue properties of friction stir welded 2024 aluminum

	Akio Hirose[1], Seiichiro Tsutsumi[2], Kiyotaka Masaki[3], Ayumi Shiro[4], Takahisa Shobu[5], Hisashi Hori[6]	[3]National Institute of Technology, Okinawa College [4]National Institutes for Quantum and Radiological Science and Technology [5]Japan Atomic Energy Agency [6]Nippon Light Metal Company, Ltd.	alloy using femtosecond laser peening

Friday 24th November

10:00~	Tour
	(The tour will only be open when participants request. Therefore, please select “attend” or “not attend” a tour at registration desk.)