7th ICFD (2010) Time Table

Monday, November 1, 2010

Sessions	Opening Address & Plenary Lectures	GS1 General Session on Multi-Scale Flow Dynamics		OS1 Fluid Dynamics Aspects of Environmentally Advantageous Hybrid Rockets	OS4 Flow Dynamics in Fluid Machinery
ROOM	TACHIBANA	ROOM 5	ROOM 7	SHIRAKASHI 2	SHIRAKASHI 1
8:00					
9:00	9:00-9:20 **Opening Address** @TACHIBANA				
10:00	9:20-10:10 **Plenary Lecture** @TACHIBANA "Hitozukuri and Monozukuri: Centuries' Old Eastern Philosophy to Seek Harmony with Nature" Kozo SAITO (University of Kentucky, USA)				
	BREAK				
11:00	10:15-11:05 **Plenary Lecture** @TACHIBANA "Toward Green IT: Petaflop Supercomputers Cooled with Warm Water Combine Microcooling Technologies with Waste Heat Reuse and Set a New Norm" Dimos POULIKAKOS (ETH Zurich, Switzerland)				
	BREAK				
12:00	11:10-12:00 **Plenary Lecture** @TACHIBANA "Radio Frequency Thermal Plasma: The Cutting Edge Technology in Production of Single-Walled Carbon Nanotubes" Javad MOSTAGHIMI (University of Toronto, Canada)				
13:00		13:00-13:30 GS1-1 Fredrik Lundell (Invited)	13:00-13:20 GS1-16 Shigeru Aso	13:00-13:05 Opening Address	13:00-13:50 OS4-1 Xin Yuan (Invited)
			13:20-13:40 GS1-17 Shinji Ebara	13:05-14:05 OS1-1 Kenneth K. Kuo (Invited)	
		13:30-14:00 GS1-2 Wu-Shung Fu (Invited)	13:40-14:00 GS1-18 Hyonje Cho		BREAK
14:00		14:00-14:20 GS1-3 Yoshinao komatsu	14:00-14:20 GS1-19 Chen-Guang Lai	BREAK	14:00-14:20 OS4-2 Hiroto Kato
		14:20-14:40 GS1-4 Jim C. Chen	BREAK	14:15-14:45 OS1-2 Yuya Nomura	14:20-14:40 OS4-3 Liming Song
		14:40-15:00 GS1-5 Tomoki Kitawaki	14:30-14:50 GS1-20 Michio Sadatomi		14:40-15:00 OS4-4 Liming Song
15:00		15:00-15:30 GS1-6 Francesco dell'Isola (Invited)	14:50-15:10 GS1-21 Hiroaki Tsubone	14:45-15:15 OS1-3 T. H. Chou	15:00-15:20 OS4-5 Ahmad Pirouzmand
			15:10-15:30 GS1-22 Takashi Yabuki	15:15-15:45 OS1-4 Yuki Funami	15:20-15:40 OS4-6 Makoto Yamamoto
		15:30-15:50 GS1-7 Angela Madeo	15:30-15:50 GS1-23 Kiyonobu Ohtani		BREAK
16:00		15:50-16:10 GS1-8 Toru Sato	15:50-16:10 GS1-24 Toshimi Takagi	BREAK	16:00-16:20 OS4-7 Soichiro Tabata
		16:10-16:30 GS1-9 Clement Leroy	BREAK	16:00-17:00 OS1-5 Fulvio Stella (Invited)	16:20-16:40 OS4-8 Kazuya Kusano
		16:30-16:50 GS1-10 Takashi Yamada	16:20-16:40 GS1-25 Deivandren Sivakumar		16:40-17:00 OS4-9 Nam-Chul Paik
17:00		BREAK	16:40-17:00 GS1-26 Noriko Tomita		
		17:00-17:20 GS1-11 Makoto Kurita	17:00-17:20 GS1-27 So Youn Son	BREAK	17:00-17:20 OS4-10 Eitaro Koyabu
		17:20-17:40 GS1-12 Kazuo Matsuura	17:20-17:40 GS1-28 Ahmad Pirouzmand	17:15-17:45 OS1-6 Tatsuya Ide	17:20-17:40 OS4-11 Marco Carriglio
		17:40-18:00 GS1-13 Takeshi Kanda	17:40-18:00 GS1-29 Markus Pastuhoff		17:40-18:00 OS4-12 Yoshiya Shimizu
18:00		18:00-18:20 GS1-14 Ryo Nozawa		17:45-18:15 OS1-7 Keisuke Sawada	
		18:20-18:40 GS1-15 Kazuaki Hatanaka		18:15-18:45 OS1-8 Keiichi Ishiko	
19:00					
20:00					

OS6 Flow Dynamics in Thermal Science & Technology	OS7 The Sixth International Students/ Young Birds Seminar on Multi-scale Flow Dynamics	PS1 Workshop on Sustainable Atomization and Spray Technology (AFI/TFI-2010)	PS4 4th Functionality DEsign of the COntact Dynamics: (DECO2010)	Other	Sessions
ROOM 8	TACHIBANA	HAGI	ROOM 4		ROOM
					8:00
9:00-9:20 **Opening Address** @SENDAI (EAST)					9:00
9:20-10:10 **Plenary Lecture** @TACHIBANA "Hitozukuri and Monozukuri: Centuries' Old Eastern Philosophy to Seek Harmony with Nature" Kozo SAITO (University of Kentucky, USA)					10:00
BREAK					
10:15-11:05 **Plenary Lecture** @TACHIBANA "Toward Green IT: Petaflop Supercomputers Cooled with Warm Water Combine Microcooling Technologies with Waste Heat Reuse and Set a New Norm" Dimos POULIKAKOS (ETH Zurich, Switzerland)					11:00
BREAK					
11:10-12:00 **Plenary Lecture** @TACHIBANA "Radio Frequency Thermal Plasma: The Cutting Edge Technology in Production of Single-Walled Carbon Nanotubes" Javad MOSTAGHIMI (University of Toronto, Canada)					12:00
					13:00
13:00-13:05 Opening Remarks	13:00-13:05 Opening	13:00-13:40 PS1-1 Kenneth G. Kreafle (Invited)		13:00-14:00 Liaison Office Meeting [Closed] @ROOM 3	
13:05-13:45 OS6-1 Gian Piero Celata (Invited)	13:05-14:10 OS7-1 - OS7-22 Session1 -Award Session- *Short Oral Presentation*		13:30-13:55 PS4-1 Pengfei Wang		
13:45-14:05 OS6-2 Katsuyoshi Tanimizu		13:45-14:25 PS1-2 Takehiro Himeno (Invited)	13:55-14:30 PS4-2 Minoru Goto (Invited)	14:00-17:00 **Nature Mini Seminar** @ROOM 2	14:00
14:05-14:25 OS6-3 Hiroki Nagai	14:10-16:40 OS7-1 - OS7-22 *Poster Presentation*				
BREAK		14:30-15:10 PS1-3 Yuji Nakamura (Invited)	14:30-14:55 PS4-3 Hiroyuki Miki		
14:35-14:55 OS6-4 Chaohua Wu			BREAK		15:00
14:55-15:15 OS6-5 Rei-Yu Chein		15:20-16:00 PS1-4 Kazunori Kuwana (Invited)	15:10-15:35 PS4-4 Masanori Iwaki		
15:15-15:35 OS6-6 M. -H. Hu			15:35-16:10 PS4-5 Philippe Kapsa (Invited)		
15:35-15:55 OS6-7 Aki Okaji		16:05-16:45 PS1-5 Takahiro Okamura (Invited)	BREAK		16:00
BREAK			16:20-16:45 PS4-6 Zahrul Fuadi		
16:05-16:25 OS6-8 Leonard Kuo-Liang Shih		16:50-17:10 PS1-6 Cyril Mauger	16:45-17:20 PS4-7 Yun Luo (Invited)		
16:25-16:45 OS6-9 Kazui Fukumoto					17:00
16:45-17:05 OS6-10 Subhash C. Mishra		17:15-17:35 PS1-7 Yujian Zhu		17:00-19:00 **Students / Young Birds Friendship Night** @SAKURA	
17:05-17:25 OS6-11 Hisashi Nakamura					18:00
					19:00
					20:00

Tuesday, November 2, 2010

Sessions	GS1 General Session on Multi-Scale Flow Dynamics		OS1 Fluid Dynamics Aspects of Environmentally Advantageous Hybrid Rockets	OS2 Aviation Research in Aspects of Environment	OS3 Advanced Control of Smart Fluids and Fluid Flows	OS4 Flow Dynamics in Fluid Machinery	OS5 Molecular and Nanoscale Phenomena in Fluids and Interfaces
ROOM	ROOM 5	ROOM 7	SHIRAKASHI 2	ROOM 5	ROOM 1	SHIRAKASHI 1	ROOM 2
8:00							
9:00	9:00-9:30 GS1-30 Fredrik Lundell (Invited)	9:00-9:30 GS1-36 Gabor Vértesy (Invited)	9:00-10:00 OS1-9 Max Calabro (Invited)		9:00-9:20 OS3-1 Kaoru Inoue	9:00-9:20 OS4-13 Takashi Furusawa	9:00-9:40 OS5-1 Philippe Vergne (Keynote)
	9:30-9:50 GS1-31 Takanori Haga	9:30-10:00 GS1-37 Patrick Bourgin (Invited)			9:20-9:40 OS3-2 Simon J. Illingworth	9:20-9:40 OS4-14 B. -R. Gu	
	9:50-10:10 GS1-32 Wakana Iwakami Nakano				9:40-10:00 OS3-3 Chih-Tao Chai	9:40-10:00 OS4-15 Hyun Seok Shin	9:40-10:00 OS5-2 Jean-Paul Rieu
10:00	10:10-10:30 GS1-33 Kota Fukuda	10:00-10:20 GS1-38 Yu-Wen Chen	BREAK		10:00-10:20 OS3-4 Esam M. Alawadhi	10:00-10:20 OS4-16 Thien Xuan Dinh	10:00-10:20 OS5-3 Gyoko Nagayama (Invited)
	10:30-10:50 GS1-34 Mengxuan Song	10:20-10:40 GS1-39 Melanie Kuhn	10:15-10:45 OS1-10 Harunori Nagata		10:20-10:40 OS3-5 Shailendra D. Sharma	BREAK	10:20-10:40 OS5-4 Yasutaka Yamaguchi (Invited)
	10:50-11:10 GS1-35 Kai Chen		10:45-11:15 OS1-11 Koichi Kishida		BREAK	10:40-11:00 OS4-17 Hiroaki Yamamoto	10:40-11:00 OS5-5 Dmitry Nerukh
11:00			11:15-11:45 OS1-12 Koki Kitagawa		10:50-11:20 OS3-6 Louis Cattafesta (Invited)	11:00-11:20 OS4-18 Miralam Mahdi	BREAK
					11:20-11:40 OS3-7 Kouhei Fujita	11:20-11:40 OS4-19 Konstantin A. Finnikov	11:10-11:50 OS5-6 Yukinori Sakiyama (Keynote)
					11:40-12:00 OS3-8 Yosuke Nakanishi		
12:00							
13:00		13:00-13:20 GS1-40 Ching Yen Ho	13:00-14:00 OS1-13 Daniele Pavarin (Invited)	13:00-13:40 OS2-1 Volker Grewe (Invited)	13:00-13:30 OS3-9 Hyung Jin Sung (Invited)		13:00-13:20 OS5-7 Tetsuji Shimizu (Invited)
		13:20-13:40 GS1-41 Tae-Hee Kim			13:30-13:50 OS3-10 Gennady V. Alekseev		13:20-13:40 OS5-8 Xingang Liang (Invited)
		13:40-14:00 GS1-42 C. -T. Hung		13:40-14:20 OS2-2 James Hileman (Invited)	13:50-14:10 OS3-11 Shuntaro Matsuyama		13:40-14:00 OS5-9 Shenghong Ju
14:00		14:00-14:20 GS1-43 K. -M. Lin	BREAK		14:10-14:30 OS3-12 Hiromasa Oe		14:00-14:20 OS5-10 Shuhei Inoue (Invited)
		14:20-14:40 GS1-44 K. -W. Cheng	14:15-15:15 OS1-14 Brian J. Cantwell (Invited)	BREAK	14:30-14:50 OS3-13 Shogo Takai		14:20-14:40 OS5-11 Koji Miyazaki (Invited)
		14:40-15:00 GS1-45 Y. -W. Yang		14:40-15:20 OS2-3 Jinsoo Cho (Invited)	BREAK		14:40-15:00 OS5-12 Yusuke Masao
15:00		15:00-15:20 GS1-46 Y. -M. Chiu	15:15-15:45 OS1-15 Satoshi Hikone	15:20-15:40 OS2-4 Takashi Matsuno	15:10-15:40 OS3-14 Jinhao Qiu (Invited)		BREAK
				15:40-16:00 OS2-5 Hiroshi Onda	15:40-16:00 OS3-15 Tsutomu Natori		15:10-15:50 OS5-13 - OS5-25 *Poster Preview*
			15:45-16:15 OS1-16 Toru Shimada	BREAK	16:00-16:20 OS3-16 Yusuke Tokura		
16:00			16:15-17:00 Forum	16:20-16:40 OS2-6 Liming Song	16:20-16:40 OS3-17 Kosuke Higashi		
				16:40-17:00 OS2-7 Yutaka Kiyamura	16:40-17:00 OS3-18 Hideaki Ogawa		
17:00							
	17:00-18:30 **Liaison Office Session** @ TACHIBANA						
18:00							
19:00	18:30-20:30 **Banquet** @SAKURA						
20:00							
21:00							

OS5 Molecular and Nanoscale Phenomena in Fluids and Interfaces	OS6 Flow Dynamics in Thermal Science & Technology	OS7 The Sixth International Students/ Young Birds Seminar on Multi-scale Flow Dynamics	PS2 Workshop on Functional Plasma Flow Dynamics and its Systems	PS3 International Seminar on Maintenance Science and Technology for Nuclear Power Plants	PS5 IFS Collaborative Research Forum (AFI/TFI-2010)	Other	Sessions
ROOM 3	ROOM 8	TACHIBANA	ROOM 4	SHIRAKASHI 1	HAGI	ROOM 6	ROOM
					8:30-9:30 CRF-1 - CRF20 *Short Oral Presentation*		9:00
	9:00-9:05 Opening Remarks 9:05-9:45 OS6-12 Jaw-Yen Yang (Invited)	9:00-10:00 OS7-23 - OS7-42 Session 2 *Short Oral Presentation*	9:30-9:40 Opening 9:40-10:10 PS2-1 Milan Hrabovsky (Invited)		BREAK 9:40-10:40 CRF-21 - CRF-40 *Short Oral Presentation*		
	9:45-10:05 OS6-13 Subhash C. Mishra		10:10-10:30 PS2-2 Yasunori Tanaka (Invited)				10:00
	10:05-10:25 OS6-14 Subhash C. Mishra	10:00-12:00 OS7-23 - OS7-42 *Poster Presentation*	10:30-10:50 PS2-3 Sooseok Choi (Invited)		BREAK 10:50-12:00 CRF-41 - CRF-61 *Short Oral Presentation*		
	BREAK 10:35-10:55 OS6-15 Yohsuke Matsushita		BREAK 11:00-11:20 PS2-4 He-Ping Li (Invited)				11:00
	10:55-11:15 OS6-16 Kazuo Mimura		11:20-11:40 PS2-5 Shinichi Tashiro (Invited)				
	11:15-11:35 OS6-17 Seong-Oh Jeon		11:40-12:00 PS2-6 Hidemasa Takana				
	11:35-11:55 OS6-18 Yuki Eda						12:00
					BREAK	12:00-13:00 International Scientific Committee Meeting	
				12:45- Opening 12:50-13:00 Welcome Speech	12:30-14:30 CRF-1 - CRF-61 *Poster Session*		
	13:00-13:20 OS6-19 Yoshinori Kojima	13:00-14:15 OS7-43 - OS7-67 Session 3 *Short Oral Presentation*	13:00-13:30 PS2-7 Oleg P. Solonenko (Invited)	13:00-13:30 PS3-1 Jack Grobe			13:00
	13:20-13:40 OS6-20 Subhash C. Mishra		13:30-13:50 PS2-8 Hiroya Abe (Invited)	13:35-14:05 PS3-2 Peter Artuhn			
	13:40-14:00 OS6-21 Ji-Chao Qiao		13:50-14:10 PS2-9 Juyong Jang				
	BREAK 14:10-14:30 OS6-22 Mehdi Aghaei Meybodi	14:15-16:45 OS7-43 - OS7-67 *Poster Presentation*	14:10-14:30 PS2-10 Masaya Shigeta (Invited)	14:10-14:40 PS3-3 Douglas M. Chapin			14:00
	14:30-14:50 OS6-23 Alister Clay		14:30-14:50 PS2-11 Yasutaka Ando (Invited)	14:45-15:15 PS3-4 TBD			
	14:50-15:10 OS6-24 Shunsuke Kuwatani		BREAK 15:05-15:25 PS2-12 Masaaki Okubo (Invited)			15:00-15:50 Special Talk Hui Meng	15:00
	15:10-15:30 OS6-25 Rafat Al-Waked		15:25-15:45 PS2-13 Takayuki Watanabe (Invited)	15:20-15:50 PS3-5 Akira Omoto			
	BREAK 15:40-16:00 OS6-26 Ujjwal K. Saha		15:45-16:05 PS2-14 Hiromichi Kobayashi (Invited)	15:55-16:25 PS3-6 Tang Wenzhong			16:00
15:50-17:00 OS5-13 - OS5-25 *Poster Presentation*	16:00-16:20 OS6-27 Kazuhiro Matsushima		16:05-16:25 PS2-15 Kenichi Kubota (Invited)				
	16:20-16:40 OS6-28 Abbas Abbassi		16:25-16:30 Closing	16:30-17:00 PS3-7 Yong-Moo Cheong			17:00
17:00-18:30 **Liaison Office Session** @ TACHIBANA							18:00
18:30-20:30 Banquet @SAKURA							19:00
							20:00
							21:00

Wednesday, November 3, 2010

Sessions	OS2 Aviation Research in Aspects of Environment	OS3 Advanced Control of Smart Fluids and Fluid Flows	OS5 Molecular and Nanoscale Phenomena in Fluids and Interfaces	OS6 Flow Dynamics in Thermal Science &Technology	OS7 The Sixth International Students / Young Birds Seminar on Multi-scale Flow Dynamics	PS3 International Seminar on Maintenance Science and Technology for Nuclear Power Plants	Sessions
ROOM	ROOM 5	ROOM 1	ROOM 2	ROOM 8	TACHIBANA	SHIRAKASHI 1	ROOM
8:00							8:00
						8:30-9:00 PS3-8 Yutaka Watanabe (Keynote)	
9:00	9:00-9:20 OS2-8 Hiroshi Kato	9:00-9:20 OS3-19 Koji Obara	9:00-9:40 OS5-26 Liviu Movileanu (Keynote)	9:00-9:20 OS6-29 Subhash C. Michra	9:00-10:00 OS7-68 - OS7-86 Session 4 *Short Oral Presentation*		9:00
	9:20-9:40 OS2-9 Yuki Utsumi	9:20-9:40 OS3-20 Mikael A. Langthjem		9:20-9:40 OS6-30 Qi Yang		9:05-9:35 PS3-9 Satish Udpa	
	9:40-10:00 OS2-10 Hiroshi Yamashita	9:40-10:00 OS3-21 Kaname Sato	9:40-10:00 OS5-27 Masaki Sano (Invited)	9:40-10:00 OS6-31 Nickolay A. Lutsenko		9:40-10:10 PS3-10 Jöel Courbon	
10:00	10:00-10:20 OS2-11 Akihiro Sasoh	10:00-10:20 OS3-22 Tameo Nakanishi	BREAK 10:10-10:30 OS5-28 Francesco dell'Isola (Invited)	10:00-10:20 OS6-32 C. Y. Ho	10:00-12:00 OS7-68 - OS7-86 *Poster Presentation*	BREAK	10:00
	10:20-10:40 OS2-12 Shigeru Horinouchi	10:20-10:40 OS3-23 Kazuo Matsuura	10:30-10:50 OS5-29 Bing-Yang Cao	BREAK 10:30-10:50 OS6-33 Arief Setiawan		10:30-11:00 PS3-11 Li Luming	
	BREAK	BREAK 10:50-11:20 OS3-24 Rongjia Tao (Keynote)	10:50-11:10 OS5-30 Olga Volkova	10:50-11:10 OS6-34 Yoshiaki Yamazaki			
11:00	11:00-11:40 OS2-13 Kazuhiro Kusunose (Invited)		11:10-11:30 OS5-31 Akiomi Ushida	11:10-11:30 OS6-35 Zhiguo Sun		11:05-11:35 PS3-12 Sun-Jin Song	11:00
		11:20-11:40 OS3-25 Yosuke Naito		11:30-11:50 OS6-36 Chengxiang Zhu			
	11:40-12:20 OS2-14 Seongim Choi (Invited)	11:40-12:00 OS3-26 Teppei Tsujita				11:40-12:10 PS3-13 Krishnan Balasubramaniam	
12:00							12:00
13:00		13:00-13:30 OS3-27 Miklós Zrínyi (Invited)	13:00-13:20 OS5-32 Mehrzad Shams		13:00-14:10 OS7-87 - OS7-109 Session 5 *Short Oral Presentation*	13:05-13:35 PS3-14 Satoru Nakai	13:00
		13:30-13:50 OS3-28 Katsufumi Tanaka	13:20-13:40 OS5-33 Mehrzad Shams			13:40-14:10 PS3-15 Toshiyuki Takagi (Keynote)	
14:00		13:50-14:10 OS3-29 Daisaku Asano	13:40-14:00 OS5-34 Mehrzad Shams				14:00
		14:10-14:30 OS3-30 Xiao-Dong Niu	14:00-14:20 OS5-35 Mehrzad Shams		14:10-16:40 OS7-87 - OS7-109 *Poster Presentation*	14:15-14:45 PS3-16 Kenrou Takamori	
		BREAK					
15:00		14:50-15:20 OS3-31 Jean-Yves Cavaillé (Invited)				14:50-15:20 PS3-17 Naoto Sekimura	15:00
		15:20-15:40 OS3-32 Naoki Yamamoto				BREAK	
		15:40-16:00 OS3-33 Shinya Yamanaka				15:35- 17:35 *Panerl Discussio*	
16:00		16:00-16:20 OS3-34 Shuichi Akaiwa					16:00
17:00						17:35- Closing	17:00
18:00							18:00
19:00							19:00
20:00							20:00
21:00							21:00

Seventh International Conference on Flow Dynamics

Program

Plenary Lectures

TACHIBANA
November 1, 2010

Chair: Jun Ishimoto (Tohoku University, Japan)

9:20-10:10 **Hitozukuri and Monozukuri: Centuries' Old Eastern Philosophy to Seek Harmony with Nature**
Kozo Saito, A. J. Salazar, K. Kreafle and E. Grulke (University of Kentucky, USA)

Chair: Shigenao Maruyama (Tohoku University, Japan)

10:15-11:05 **Toward Green IT: Petaflop Supercomputers Cooled with Warm Water Combine Microcooling Technologies with Waste Heat Reuse and Set a New Norm**
Dimos Poulikakos (ETH Zurich, Switzerland)

Chair: Hideya Nishiyama (Tohoku University, Japan)

11:10-12:00 **Radio Frequency Thermal Plasma: The Cutting Edge Technology in Production of Single-Walled Carbon Nanotubes**
S. Arabzadeh Esfarjani, Javad Mostaghimi (University of Toronto, Canada), K. S. Kim, A. Shahverdi and G. Soucy (Université de Shrbrooke, Canada)

Special Talk

ROOM 6
November 2, 2010

Chair: Makoto Ohta (Tohoku University, Japan)

15:00-15:50 **Virtual Intervention of Brain Aneurysm**
Hui Meng (The State University of New York Buffalo and Toshiba Stroke Research Center, USA)

GS1: General Session on Multi-Scale Flow Dynamics

ROOM5
November 1, 2010

Numerical Simulation and Theory (1)
Chair: Tetsuya Uchimoto (Tohoku University, Japan)

GS1-1
13:00-13:30
From Multiple Closed Orbits Via Chaos to a Single Periodic Solution: Heavy Triaxial Ellipsoids in Creeping Shear *(Invited)*
Fredrik Lundell (KTH Royal Institute of Technology, Sweden)

GS1-2
13:30-14:00
An Investigation of Turbulent Channel Flow at High Reynolds Number with the Consideration of the Compressibility due to High Temperature *(Invited)*
Wu-Shung Fu, Chung-Gang Li and Yun Huang (National Chiao Tung University, Taiwan)

GS1-3
14:00-14:20
Direct Simulation of Sound Emitted by Plates in Two-Dimensional Jet and the Flow Field
Yoshinao Komatsu (Mitsubishi Heavy Industry, Japan), Roberto Carlos Rojas Molina and Michihisa Tsutahara (Kobe University, Japan)

GS1-4
14:20-14:40
Combined Compact Difference Method for Simulation of Nonlinear Wave Generation, Interaction, and Amplification in Boundary Layer Turbulence Transition
Jim C. Chen and Chen Weijia (Nanyang Technological University, Singapore)

OS1-5
14:40-15:00
The Effect of the Blood Vessel Viscoelasticity on Numerical Analysis of Whole-body Arterial Tree with Multi-scale Modeling of the Human Cardiovascular System.
Tomoki Kitawaki (Okayama University, Japan), Ryutaro Himeno (RIKEN, Japan)

Numerical Simulation and Theory (2)
Chair: Fredrik Lundell (KTH Royal Institute of Technology, Sweden)

GS1-6
15:00-15:30
Rankine-Hugoniot Conditions in Multi-Component Continua *(Invited)*
Francesco dell'Isola (Università di Roma "La Sapienza" and LSMI Fondazione Tullio Levi-Civita, Italy), Angela Madeo (Université de Lyon INSA, France) and Pierre Seppecher (Université de Toulon, France)

GS1-7
15:30-15:50
Permeable Interfaces in Second Gradient Two-Components Continua
Francesco dell'Isola (Università di Roma "La Sapienza" and LSMI Fondazione Tullio Levi-Civita, Italy), Angela Madeo (Université de Lyon INSA, France) and Pierre Seppecher (Université de Toulon, France)

GS1-8
15:50-16:10
Recent Improvements of CO_2 Fate Modelling in the Ocean for Direct Injection and Leakage from Subsea Geological Formation
Toru Sato, Yuki Kano and Semin Joeng (The University of Tokyo, Japan)

GS1-9
16:10-16:30
Two-fluid Cartesian-Grid Finite-Volume Characteristic Flux Model for Marine Applications
Clement Leroy, David Le Touze, Bertrand Alessandrini (Ecole Centrale Nantes / CNRS, France)

GS1-10 16:30-16:50 **A Study on Micromixing Utilizing Gas-liquid Free Interface Applied on Straight-flow Micro Channel**
Takashi Yamada, Naoki Kato, Kazuki Takeda, and Naoki Ono (Shibaura Institute of Technology, Japan)

16:50-17:00 BREAK

Numerical Simulation and Theory (3)
Chair: Toru Sato (The University of Tokyo, Japan)

GS1-11 17:00-17:20 **Direct Simulation of Cavity Tones Related to the Sunroof Buffeting**
Makoto Kurita (Honda R&D Co., Ltd., Japan), Yuki Maeda and Michihisa Tsutahara (Kobe University, Japan)

GS1-12 17:20-17:40 **Direct Numerical Simulation of Instability Processes in a Hole-Tone Feedback System**
Kazuo Matsuura and Masami Nakano (Tohoku University, Japan)

GS1-13 17:40-18:00 **Conservation-Law Approach to Prediction of Length of Boundary Layer Transition Region**
Takeshi Kanda (Japan Aerospace Exploration Agency, Japan)

GS1-14 18:00-18:20 **Three-Dimensional Computations on Aerodynamic Characteristics of Various Airfoils at Low Reynolds Numbers**
Ryo Nozawa, Mitsuhiko Kihira, Jiro Funaki and Katsuya Hirata (Doshisha University, Japan)

OS1-15 18:20-18:40 **Numerical Investigation of Unsteady Flow Field around a Sphere Decelerating at Transonic Speed**
Kazuaki Hatanaka, Tsutomu Saito (Muroran Institute of Technology, Japan), Hiroshi Yamashita, Toshihiro Ogawa, Shigeru Obayashi and Kazuyoshi Takayama (Tohoku University, Japan)

ROOM7
November 1, 2010

Flow Dynamics and Multiphase Flow (1)
Chair: Yuka Iga (Tohoku University, Japan)

GS1-16 13:00-13:20 **A Study on New Swirling Injection method for Polyethylene Fuel and Paraffin Fuel of Hybrid Rocket Engines**
Shigeru Aso, Yasuhiro Tani, Wataru Mitsunaka, Takafumi Matsuzaki, Ryuji Nakawatase, Yoshihide Hirata, Takahiro Hayashida (Kyushu University, Japan)

GS1-17 13:20-13:40 **PIV Measurement for Dual Elbow Flow Using 1/7-Scale Model of Cold-Leg Piping in a Sodium-Cooled Fast Reactor**
Shinji Ebara, Tsukasa Sato, Hidetoshi Hashizume (Tohoku University, Japan), K. Aizawa and H. Yamano (Japan Atomic Energy Agency, Japan)

GS1-18 13:40-14:00 **An Experimental Study on Pattern Formation of the Faraday Wave**
Hyonje Cho, Takaaki Shimonishi, Jiro Funaki and Katsuya Hirata (Doshisha University, Japan)

GS1-19 14:00-14:20 **Influence of Vehicle Rear Shape on Aerodynamic Performance and Wake Structure**
Chen-Guang Lai, Shigeru Obayashi, Yasuaki Kohama and Shinkyu Jeong (Tohoku University, Japan)

Flow Dynamics and Multiphase Flow (2)
Chair: Sivakumar Deivandren (Indian Institute of Science, India)

GS1-20 14:30-14:50 **Washing by Water Jet with Air Bubbles Generated by Multi-Fluid Mixer**
Michio Sadatomi, Akimaro Kawahara, Keisuke Tatsuno and Eichi Sakurai (Kumamoto University, Japan)

GS1-21 14:50-15:10 **Prediction of Gas-Liquid Two-Phase Slug Flow Characteristics in Vertical Small Diameter Pipes by a One-Dimensional Two-Fluids Model**
Hiroaki Tsubone (Ariake National College of Technology, Japan), Akimaro Kawahara and Michio Sadatomi (Kumamoto University, Japan)

GS1-22 15:10-15:30 **Oceanic Productivity Enhanced by Perpetual Salt Fountain during Ocean Experiments -- Estimation Based on Remote Sensing and Numerical Simulation**
Takashi Yabuki, Shigenao Maruyama, Mikihito Watanabe and Atsuki Komiya (Tohoku University, Japan)

GS1-23 15:30-15:50 **Shock Wave Interaction Phenomena with a Single Helium Gas Bubble in Liquid**
Kiyonobu Ohtani (Tohoku University and Japan Association for the Advancement of Medical Equipment, Japan) and Kazuyoshi Takayama (Tohoku University, Japan)

GS1-24 15:50-16:10 **Analysis of the Initial Shape of Liquid Injection into Gas**
Toshimi Takagi, Kikuo Narumiya and Hiroshi Hottori (Osaka Sangyo University, Japan)

16:10-16:20 BREAK

Flow Dynamics and Multiphase Flow (3)
Chair: Michio Sadatomi (Kumamoto University, Japan)

GS1-25 16:20-16:40 **Directional Bulk Drop Movement from Drop Impact onto Dual-Textured Substrates: Experiments and Modeling**
Visakh Vaikuntanathan and Deivandren Sivakumar (Indian Institute of Science, India)

GS1-26 16:40-17:00 **Development of Cell-Matrix Adhesion Techniques on Transparent PVA-H for Vessel Biomodeling**
Noriko Tomita, Hiroyuki Kosukegawa and Makoto Ohta (Tohoku University, Japan)

GS1-27 17:00-17:20 **Numerical Study on Impinging Droplet Spreading Motion Considering Dynamic Contact Angle with CIP(Cubic Interpolated Pseudo-particle) Method**
So Youn Son (Chung - Ang University, Korea) , Gwon Hyun Ko (Dongyang University, Korea) and Hong Sun Ryou (Chung - Ang University, Korea)

GS1-28 17:20-17:40 **Engineering of Nonlinearity Characteristic Compensation for Turbine Control Valve**
Burhanuddin Halimi, Ahmad Pirouzmand and Kune Yull Suh (Seoul National University, Korea)

GS1-29 17:40-18:00 **Dynamic Calibration of Polymer/Ceramic Pressure Sensitive Paint Using a Shock Tube**
Markus Pastuhoff, Nils Tillmark and P. H. Alfredsson (KTH Royal Institute of Technology, Sweden)

ROOM5
November 2, 2010

Numerical Simulation Method
Chair: Wu-Shung Fu (National Chiao Tung University, Taiwan)

GS1-30 9:00-9:30 **Measurement-Integrated Simulations Applied to a Co-Flowing Jet *(Invited)***
Gabriele Bellani, Fredrik Lundell, Outi Tammisola (Royal Instiute of Technology, Sweden), Kentaro Imagawa (Japan Aerospace Exploration Agency, Japan), Hiroshi Higuchi (Syracuse University, USA) and Toshiyuki Hayase (Tohoku University, Japan)

GS1-31 9:30-9:50 **Efficient Solution Techniques for the Unifying Discontinuous CPR Method on Hybrid Anisotropic Meshes**
Takanori Haga, Haiyang Gao and Z.J. Wang (Iowa State University, USA)

GS1-32 9:50-10:10 **A Study of Volume Penalization Method Applied to High-Order Accurate Schemes**
Wakana Iwakami Nakano, Nozomu Hatakeyama and Yuji Hattori (Tohoku University, Japan)

GS1-33 10:10-10:30 **Grid-Free Simulation of Turbulent Pipe Flow using a GPU-Accelerated Vortex Method**
Kota Fukuda (Japan Aerospace Exploration Agency, Japan)

GS1-34 10:30-10:50 **Bionic Optimization for Wind Farm Micro-Siting Based on CFD Calculations**
Mengxuan Song, Kai Chen, Xing Zhang and Jun Wang (Tsinghua University, China)

GS1-35 10:50-11:10 **Mass Diffusive Wake Model for Micro-sitting Optimization of Wind Farm**
Kai Chen, Mengxuan Song, Xing Zhang, Jun Wang (Tsinghua University, China)

ROOM7
November 2, 2010

Material Processes
Chair: Toshiyuki Takagi and Hiroyuki Miki (Tohoku University, Japan)

GS1-36 9:00-9:30 **Complex Characterization of Ferromagnetic Material's Degradation by Magnetic Adaptive Testing *(Invited)***
Gabor Vértesy (Research Institute for Technical Physics and Materials Science, Hungary), Ivan Tomáš (Institute of Physics, Czech Republic), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)

GS1-37
9:30-10:00
Effect of the Viscoelasticity on the Polymer Crystallization Kinetics *(Invited)*
M'hamed Boutaous, Matthieu Zinet, Rabie El-Otmani (Université de Lyon, France)and Patrick Bourgin (Ecole Centrale de Lyon, France)

GS1-38
10:00-10:20
Methanol Tolerance PdCo-based DMFC Cathode Catalysts
Yu-Wen Chen (National Central University, Taiwan), Manying Lo (Industrial and Technology Research Institute, Taiwan) and Yuan-Jyh Huang (National Central University, Taiwan)

GS1-39
10:20-10:40
Oxygen Nonstoichiometry in $La_{0.6}Sr_{0.4}Co_{1-y}Fe_yO_{3-\delta}$ Perovskite-Type Oxides: A Prerequisite to Understand Oxygen Ion Transport Properties and Material Stability
Melanie Kuhn, Shinichi Hashimoto, Yasuhiro Fukuda, Kazuhisa Sato, Keiji Yashiro and Junichiro Mizusaki (Tohoku University, Japan)

Plasma Processes
Chair: Hiroto Ohtake (Tohoku University, Japan)

GS1-40
13:00-13:20
Distributions of Potential and Ion Density in Free Thermal Expansion Plasma Induced by Elecron Beam
Ching Yen Ho, Yu-Hsiang Tsai (Hwa Hsia Institute of Technology, Taiwan) , Mao Yu Wen (Cheng Shiu University, Taiwan) and J. T. Zou (National Formosa University, Taiwan)

GS1-41
13:20-13:40
Simulation on Preparation of Metal Nitride Particle by Thermal Plasma
Tae-Hee Kim (NHA University, Korea) , Sooseok Choi (Seoul National University, Korea) , Dong-Wook Kim and Dong-Wha Park (NHA University, Korea)

GS1-42
13:40-14:00
Parallel Fluid Modeling of Plasma-Enhanced Chemical Vapor Deposition for Amorphous Silicon (a-Si) Thin Film Growth
C.-T. Hung, M.-H. Hu, Y.-M. Chiu and J.-S. Wu (National Chiao Tung University, Taiwan)

GS1-43
14:00-14:20
One-dimensional Fluid Modeling of Helium/Oxygen Dielectric Barrier Discharge Driven by a Nearly Sinusoidal AC Power Source
K.-M. Lin, C.-T. Hung (National Chiao Tung University, Taiwan) , M.R. Smith (National Center for High-Performance Computing, Taiwan) and J.-S. Wu (National Chiao Tung University, Taiwan)

GS1-44
14:20-14:40
Numerical Investigation of Effects of Oxygen Addition on a Nitrogen-based Dielectric Barrier Discharge
K.-W. Cheng, C.-T. Hung, Y. –M. Chiu and J.-S. Wu (National Chiao Tung University, Taiwan)

GS1-45
14:40-15:00
Two-Step Atmospheric-Pressure Plasma Jet Treatment for Improving Biocompatibility of Polylactide Surface
Y.-W. Yang, C.-L. Kuo (National Chiao Tung University, Taiwan), C. –C. Wen, J. –Y. Wu (Da Yeh University, Taiwan), H.-Y. Huang, M.-H. Chiang and J.-S. Wu (National Chiao Tung University, Taiwan)

GS1-46
15:00-15:20

Development of Parallel Fluid Modeling for Non-equilibrium Inductively Coupled Plasma

Y.-M. Chiu, C.-T. Hung, J.-S. Wu (National Chiao Tung University, Taiwan)and Feng-Nan Hwang (National Central University, Taiwan)

OS1: Fluid Dynamics Aspects of Environmentally Advantageous Hybrid Rockets

SHIRAKASHI 2
November 1, 2010

13:00-13:05 **Opening Address**
Toru Shimada (Japan Aerospace Exploration Agency, Japan)

Chair: Keisuke Sawada (Tohoku University, Japan)

OS1-1
13:05-14:05 **Attractive Features of Hybrid Rockets and Theoretical/Numerical Simulation Challenges of its Combustion Processes *(Invited)***
Kenneth K. Kuo (The Pennsylvania State University, USA)

14:05-14:15 BREAK

Chair: Harunori Nagata (Hokkaido University, Japan)

OS1-2
14:15-14:45 **Combustion Characteristics of Hybrid Rocket Motor Using GAP as a Solid Fuel**
Keiichi Hori, Yuya Nomura, Tsuyoshi Yagishita, Katsuya Hasegawa, Kiyokazu Kobayashi (ISAS/ Japan Aerospace Exploration Agency, Japan), Yutaka Wada (Akita University, Japan) and Motoyasu Kimura (NOF Corporation, Japan)

OS1-3
14:45-15:15 **Real-Fluid Combustion Modeling of Hybrid Rocket Motors**
Yen-Sen Chen (National Space Organization, Taiwan) T. H. Chou, B. R. Gu, J. S. Wu (National Chiao Tung University, Taiwan), Bill Wu, Y. Y. Lian and Luke Yang (National Space Organization, Taiwan)

OS1-4
15:15-15:45 **Combustion Flow Simulation with the Melt Layer Effect of Paraffin-based Fuel**
Yuki Funami (The University of Tokyo, Japan) and Toru Shimada (ISAS/ Japan Aerospace Exploration Agency, Japan)

15:45-16:00 BREAK

Chair: Toru Shimada (Japan Aerospace Exploration Agency, Japan)

OS1-5
16:00-17:00 **Enhanced Vortex Structure Generation in Hybrid Motors: Parametric Study *(Invited)***
Fulvio Stella (University of Rome "La Sapienza", Italy), Daniele Barbagallo (ESA ESRIN Frascati, Italy), Marilena Giangi and Fabio Nardecchia (University of Rome "La Sapienza", Italy)

17:00-17:15 BREAK

Chair: Ichiro Nakagawa (Tokai University, Japan)

OS1-6
17:15-17:45 **Visualization and Emission Spectra of Flames in Combustion Chamber of Swirling-Oxidizer-Flow-Type Hybrid Rocket Engines**
Tatsuya Ide, Miho Masugi, Saburo Yuasa, Takashi Sakurai, and Noriko Shiraishi (Tokyo Metropolitan University, Japan) and Toru Shimada (ISAS/ Japan Aerospace Exploration Agency, Japan)

OS1-7
17:45-18:15 **Computation of Swirling Injection Flowfield in Combustion Chamber Using High-Order Unstructured NS Solver**
Keisuke Sawada, Takaya Kouda (Tohoku University, Japan) and Kanako Yasue (Japan Aerospace Exploration Agency, Japan)

OS1-8 **Three-dimensional Unsteady Simulation of Non-premixed Flames in Turbulent**
18:15-18:45 **Boundary Layer**
Keiichi Ishiko (Japan Aerospace Exploration Agency, Japan), Vasily Novozhilov (University of Ulster, United Kingdom) and Toru Shimada (Japan Aerospace Exploration Agency, Japan)

November 2, 2010

Chair: Toru Shimada (Japan Aerospace Exploration Agency, Japan)
OS1-9 **Hybrid Propulsion: The Challenges *(Invited)***
9:00-10:00 Max Calabro (The Inner Arch, France)

10:00-10:15 BREAK

Chair: Keiichi Hori (Japan Aerospace Exploration Agency, Japan)
OS1-10 **Development of 5000 N Thrust Class CAMUI Type Hybrid Rocket**
10:15-10:45 Harunori Nagata, Masashi Wakita, Tsuyoshi Totani (Hokkaido University, Japan) and Tsutomu Uematsu (Camuispaceworks Co. Ltd., Japan)

OS1-11 **2-scholar Flamelet Approach for the Heat Releasing Chamber**
10:45-11:15 Koichi Kishida, Nobuyuki Oshima (Hokkaido University, Japan) and Yu Daimon (Japan Aerospace Exploration Agency, Japan)

OS1-12 **Feasibility Study of Air-Launch Hybrid Rocket to Launch Micro-Satellites**
11:15-11:45 Koki Kitagawa and Toru Shimada (Japan Aerospace Exploration Agency, Japan)

11:45-13:00 LUNCH BREAK

Chair: Keisuke Sawada (Tohoku University, Japan)
OS1-13 **CFD Simulation in Support of SPARTAN Research Program *(Invited)***
13:00-14:00 Daniele Pavarin (Center of Studies and Activities for Space CISAS G. Colombo, Italy), Mario Pessana (Thales Alenia Space, Italy), A.Bettella, M.Manente, M.Lazzarin, F.Barato, N.Bellomo (Center of Studies and Activities for Space CISAS G. Colombo, Italy)

14:00-14:15 BREAK

OS1-14 **Hybrid Propulsion for In-space Applications *(Invited)***
14:15-15:15 Brian J. Cantwell and Arif Karabeyoglu (Stanford University, USA)

OS1-15 **The Study on Regression Characteristics of Paraffin Fuel Using Swirl GOX**
15:15-15:45 Satoshi Hikone, S. Maruyama, T. Ishiguro and Ichiro Nakagawa (Tokai University, Japan)

OS1-16 **Introduction to Activities of Hybrid Rocket Research Working Group**
15:45-16:15 Toru Shimada (Japan Aerospace Exploration Agency, Japan)

Chair: Toru Shimada (Japan Aerospace Exploration Agency, Japan)
16:15-17:00 **Forum** (discussion & wrap up)

OS2: Aviation Research in Aspects of Environment

ROOM 5
November 2, 2010

Chair: Shigeru Obayashi (Tohoku University, Japan)

OS2-1 13:00-13:40 **Aviation and Climate *(Invited)***
Volker Grewe (DLR-Oberpfaffenhofen, Germany)

OS2-2 13:40-14:20 **Subsonic Civil Transport Aircraft for 2035 *(Invited)***
James Hileman and E. Dela Rosa Blanco (Massachusetts Institute of Technology, USA)

14:20-14:40 BREAK

Chair: Keisuke Asai (Tohoku University, Japan)

OS2-3 14:40-15:20 **Development of the Green BWB UAV Platform using Distributed Propulsion System *(Invited)***
Jinsoo Cho (Hanyang University, Korea)

OS2-4 15:20-15:40 **Development of Plasma Flow Control Actuator for Aerodynamic Drag Reduction**
Takashi Matsuno, Kentaro Ota, Mikimasa Kawaguchi, Yoshinobu Matsuo, Goji Yamada and Hiromitsu Kawazoe (Tottori University, Japan)

OS2-5 15:40-16:00 **Aeroacoustic Sound Analysis around JAXA Landing Gear Model by Building-Cube Method**
Hiroshi Onda, Ryotaro Sakai, Daisuke Sasaki and Kazuhiro Nakahashi (Tohoku University, Japan)

16:00-16:20 BREAK

Chair: Hiroshi Yamashita (Tohoku University, Japan)

OS2-6 16:20-16:40 **Simulations of Unsteady Flow around Tandem Cylinders Using Building-Cube Method**
Liming Song, Shigeru Obayashi, Kazuhiro Nakahashi and Daisuke Sasaki (Tohoku University, Japan)

OS2-7 16:40-17:00 **Design Exploration of a Transonic Aircraft Based on Efficient Airframe Geometry Representation**
Yutaka Kiyamura, Masahiro Kanazaki (Tokyo Metropolitan University, Japan) and Mitsuhiro Murayama (Japan Aerospace Exploration Agency, Japan)

November 3, 2010

Chair: Liming Song (Tohoku University, Japan)

OS2-8 9:00-9:20 **Integration of Experiment and Numerical Simulation based on Ensemble Kalman Filter**
Hiroshi Kato and Shigeru Obayashi (Tohoku University, Japan)

OS2-9 **Supersonic Biplane Wing Design and Optimization**
9:20-9:40 Yuki Utsumi and Shigeru Obayashi (Tohoku University, Japan)

OS2-10 **Atmospheric Absorption Effect on Sonic Boom Waveform during Its Propagation**
9:40-10:00 Hiroshi Yamashita and Shigeru Obayashi (Tohoku University, Japan)

OS2-11 **Fly By Light Power: Improvement of Supersonic Flight Performance Using Laser Power**
10:00-10:20 Akihiro Sasoh, Takaharu Sakai, Yasuhiko Sakai, Koji Nagata (Nagoya University, Japan) and Atsushi Matsuda (Meijo University, Japan)

OS2-12 **Future Supersonic Transport with LH2 Fuel**
10:20-10:40 Shigeru Horinouchi (Japan Aerospace Exploration Agency, Japan)

10:40-11:00 BREAK

Chair: Shigeya Watanabe (Japan Aerospace Exploration Agency, Japan)

OS2-13 **The Challenge of Supersonic-biplane Transports *(Invited)***
11:00-11:40 Kazuhiro Kusunose (Japan Aerospace Exploration Agency, Japan)

OS2-14 **Helicopter Rotor Design Optimization Using Time-Spectral and Adjoint-Based Method *(Invited)***
11:40-12:20 Seongim Choi, Ki H. Lee (Korea Advanced Institute of Science and Technology, Korea) and Juan J. Alonso (Stanford University, USA)

OS3: Advanced Control of Smart Fluids and Fluid Flows

ROOM1
November 2, 2010

Chair: Masaharu Matsubara (Shinshu University, Japan)

OS3-1 9:00-9:20 **Control of a Flow around a Circular Cylinder using Plasma Actuators**
Kaoru Inoue and Koji Fukagata (Keio University, Japan)

OS3-2 9:20-9:40 **Feedback Control of the Cylinder Wake Using Balanced Reduced Order Models**
Simon J. Illingworth, Hiroshi Naito and Koji Fukagata (Keio University, Japan)

OS3-3 9:40-10:00 **Cancelled**

OS3-4 10:00-10:20 **Laminar Forced Convection Flow Past a Rotationally-Oscillating Elliptical Cylinder**
Esam M. Alawadhi (Kuwait University, Kuwait)

OS3-5 10:20-10:40 **Flow over Circular Cylinder with Vorticity Management in One of the Separated Shear Layers**
Shailendra D. Sharma and A. Harsha (I.I.T. Bombay, India)

10:40-10:50 BREAK

Chair: Katsuya Hirata (Doshisha University, Japan)

OS3-6 10:50-11:20 **Experimental Study of Adaptive Control of High-Speed Flow-Induced Cavity Oscillations *(Invited)***
Hidemi Takahashi, Fei Liu, Miguel Palaviccini, Matias Oyarzun, Lawrence Ukeiley and Louis Cattafesta, (University of Florida, USA)

OS3-7 11:20-11:40 **Three Dimensional Direct Numerical Simulations of Control of Self-Sustained Oscillating Flows over Cavity using Moving Bottom Wall**
Kouhei Fujita, Takashi Yoshida, Junpei Inamura (Shinshu University, Japan) and Takashi Watanabe (Nagoya University, Japan)

OS3-8 11:40-12:00 **Numerical Analysis of Control of Self-Sustained Oscillating Flows over Cavity using Suction and Blowing**
Yosuke Nakanishi, Takashi Yoshida (Shinshu University Japan) and Takashi Watanabe (Nagoya University, Japan)

12:00-13:00 BREAK

Chair: Koji Fukagata (Keio University, Japan)

OS3-9 13:00-13:30 **PIV Measurement of Flow around an Arbitrarily Moving Body *(Invited)***
Young Jeon Jeon and Hyung Jin Sung (Korea Advanced Institute of Science and Technology, Korea)

OS3-10 13:30-13:50
Suppression of Vortices and Flow Separation by the Velocity and Temperature Controls
Gennady V. Alekseev (Vladivostok State University of Economics and Service, Russia) and Dmitry A. Tereshko (Institute of Applied Mathematics FEB RAS, Russia)

OS3-11 13:50-14:10
Aerodynamic Optimization of an Airfoil for Mild-stall and Efficient General Aviation
Shuntaro Matsuyama, Daisuke Sasaki and Kazuhiro Nakahashi (Tohoku University, Japan)

OS3-12 14:10-14:30
Passive Control of Oscillating and Separating Flow
Hiromasa Oe, Shota Teramoto, Masaya Shigeta, Seiichiro Izawa and Yu Fukunishi.(Tohoku University, Japan)

OS3-13 14:30-14:50
Influence of Free Stream Turbulence Intensity on Non-Modal Growth in a Flat Plate Boundary Layer
Shogo Takai, J. Fujimaki and Masaharu Matsubara (Shinshu University, Japan)

14:50-15:10 BREAK

Chair: Seiichiro Izawa (Tohoku University, Japan)

OS3-14 15:10-15:40
Numerical Simulation on Drag and Flow-Induced Noise Reduction of Turbulent Flow Based on the Smart Skin Technique *(Invited)*
Peisi Song and Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China)

OS3-15 15:40-16:00
Experimental Investigation of a Relaminarizing Channel Flow
Tsutomu Natori, Kenta Watanabe, Daisuke Seki and Masaharu Matsubara (Shinshu University, Japan)

OS3-16 16:00-16:20
Direct Numerical Simulation of Impinging Shock Wave/Transitional Boundary Layer Interaction at M＝2.0
Yusuke Tokura and Hiroshi Maekawa (The University of Electro-Communications, Japan)

OS3-17 16:20-16:40
Simultaneous Control for Friction Drag Reduction and Heat Transfer Augmentation by Traveling Wave-Like Blowing/suction
Kosuke Higashi, Hiroya Mamori and Koji Fukagata (Keio University, Japan)

OS3-18 16:40-17:00
Numerical Investigation of Turbulence Effects on Boundary Layer Separation in Axisymmetric Scramjet Inlets via Design Optimisation
Hideaki Ogawa and Russell R. Boyce (The University of Queensland, Australia)

November 3, 2010

Chair: Seiichi Sudo (Akita Prefectural University, Japan)

OS3-19 9:00-9:20 **Faraday Experiment in a Vessel with Plural Tubes**
Koji Obara, Masanao Goumon (Doshisha University, Japan), Hirochika Tanigawa (Maizuru Nat. Coll. Tech., Japan), Jiro Funaki and Katsuya Hirata (Doshisha University, Japan)

OS3-20 9:20-9:40 **The Influence of a Closed Cavity and a Tailpipe on the Hole-Tone Feedback Cycle**
Mikael A. Langthjem (Yamagata University, Japan) and Masami Nakano (Tohoku University, Japan)

OS3-21 9:40-10:00 **Performance of Controllable Air-bubbles Size Generator**
Kaname Sato (Ichinoseki National College of Technology, Japan)

OS3-22 10:00-10:20 **Influences of Nozzle Shape and Ink Viscosity on Droplet Patterns from a Continuous Inkjet**
Tameo Nakanishi (Yamagata University, Japan), Masami Nakano (Tohoku University, Japan) and Hinoki Tunokake (Yamagata University, Japan)

OS3-23 10:20-10:40 **Sensing-Based Smart Ventilation Control of Leakage Hydrogen Jet in a Partially Open Space**
Kazuo Matsuura, Masami Nakano and Jun Ishimoto (Tohoku University, Japan)

10:40-10:50 BREAK

Chair: Miklós Zrínyi (Semmelweis University, Hungary)

OS3-24 10:50-11:20 **Reducing Blood Viscosity with Pulsed Magnetic Field *(Keynote)***
Rongjia Tao (Temple University, USA) and Ke Huang (Thomas Jefferson University, USA)

OS3-25 11:20-11:40 **A Study on Behavior Analysis of ER-gel under an Electric Field**
Yosuke Naito, Yasuhiro Kakinuma and Tojiro Aoyama (Keio University, Japan)

OS3-26 11:40-12:00 **Braille Display System Driven by Micro-Diaphragm ER Actuators**
Teppei Tsujita, Keisuke Yoshida and Masami Nakano (Tohoku University, Japan)

12:00-13:00 BREAK

Chair: Rongjia Tao (Temple University, USA)

OS3-27 13:00-13:30 **Development of Micro-motor for MEMS Utilizing Novel Smart Polymers II From Single Particle Rotation to Rotating Polymer Disk *(Invited)***
Miklós Zrínyi, Mrudul Gadhvi (Semmelweis University, Hungary), Masami Nakano and Teppei Tsujita (Tohoku University, Japan)

OS3-28
13:30-13:50 **Flow Behavior and Microstructure of Electro-Rheological Nano-Suspensions based on Titanium Dioxide Nano-Particles**
Katsufumi Tanaka, Ryuichi Akiyama (Kyoto Institute of Technology, Japan) and Masami Nakano (Tohoku University, Japan)

OS3-29
13:50-14:10 **Surface Disintegration of Magnetic Fluid Adsorbed to Small Magnet in Alternating Magnetic Field**
Seiichi Sudo, Daisaku Asano (Akita Prefectural University, Japan), and Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

OS3-30
14:10-14:30 **Natural Convection of Temperature Sensitive Magnetic Fluids in An Enclosure with Porous Media**
Xiao-Dong Niu and Hiroshi Yamguchi (Doshisha University, Japan)

14:30-14:50 BREAK

Chair: Masami Nakano (Tohoku University, Japan)

OS3-31
14:50-15:20 **Magneto - and Electro-Striction of Soft Polymers Based Composites *(Invited)***
Jean-Yves Cavaillé (INSA-Lyon & CNRS, France)

OS3-32
15:20-15:40 **Research on Magnification Factor of Acceleration and Displacement Amplitude of Magnetic Responsive Materials**
Naoki Yamamoto and Katsuaki Sunakoda (Akita University, Japan)

OS3-33
15:40-16:00 **Magnetorheological Response of Colloidal Dispersion with Iron Fine Particles**
Shinya Yamanaka, Hiroya Abe, Makio Naito (Osaka University, Japan), Junichi Noma, Yuya Ueshima and Takehisa Fukui (Kurimoto, LTD., Japan)

OS3-34
16:00-16:20 **Development of MR Fluid Brake Using Fe Nanoparticles**
Shuichi Akaiwa, Junichi Noma, Takehisa Fukui (Kurimoto, Ltd., Japan), Hiroya Abe (Osaka University, Japan), Takehito Kikuchi (Yamagata University, Japan) and Junji Furusho(Fukui University of Technology, Japan)

OS4: Flow Dynamics in Fluid Machinery

SHIRAKASHI 1
November 1, 2010

Chair: Satoru Yamamoto (Tohoku University, Japan)

OS4-1 13:00-13:50 **Research of Flow Mechanism and Design Optimization in Turbomachinery *(Invited)***
Xin Yuan (Tsinghua University, China)

13:50-14:00 BREAK

OS4-2 14:00-14:20 **Numerical Study of Unsteady 3-D Condensate Flows in Steam Turbine Multistage**
Hiroto Kato, Yasuhiro Sasao and Satoru Yamamoto (Tohoku University, Japan)

OS4-3 14:20-14:40 **Numerical Investigations on the Aerodynamic Performance of Throttle Governing Stage for Large Power Steam Turbines**
Jun Li, Yong Jiang, Xin Yan, Liming Song and Zhenping Feng (Xi'an Jiaotong University, China)

OS4-4 14:40-15:00 **Effect of Cell Diameter and Depth on the Leakage Flow Characteristics of Honeycomb Seals**
Jun Li, Zhigang Li, Xin Yan, Liming Song and Zhenping Feng (Xi'an Jiaotong University, China)

OS4-5 15:00-15:20 **Engineering of Control Valve Mass Flow Rate in Steam Turbine System**
Ahmad Pirouzmand, B. Halimi and Kune Yull Suh (Seoul National University, Korea)

OS4-6 15:20-15:40 **Numerical Investigation of Tip Leakage Control with Jet Injection from Turbine Blade Tip**
Naoto Miyama, Masaya Suzuki and Makoto Yamamoto (Tokyo University of Science, Japan)

15:40-16:00 BREAK

Chair: Motohiko Nohmi (Ebara Corporation, Japan)

OS4-7 16:00-16:20 **Aerodynamic Blade Design for Wind-Lens Turbine**
Soichiro Tabata, Masato Furukawa, Shinpei Kojima and Nobuhito Oka (Kyushu University, Japan)

OS4-8 16:20-16:40 **Unsteady Flow Phenomena Dominating Aerodynamic Noise in a Half Ducted Propeller Fan**
Kazuya Kusano, Jae-ho Jeong and Masato Furukawa (Kyushu University, Japan)

OS4-9 16:40-17:00 **Effects of Vortex Generator on the Performance of a Small-hydro Power**
Nam-Chul Paik, S. –S. Byeon (Sungkyunkwan University, Korea), Joon-sik Park (Daeyang Electricity Machinery Co., Korea) and Y. –J. Jim (Sungkyunkwan University, Korea)

OS4-10 17:00-17:20 **Studies on the Unsteady Boundary Layer Transition of Flat-Plate Subjected to Incident Wakes**
Eitaro Koyabu, Satoshi Imada, Susumu Fujimoto, and Tetsuhiro Tsukiji (Tomakomai National College of Technology, Japan)

OS4-11 17:20-17:40 **Design of Tridimensional Flow Separators by Optimization Techniques**
Marco Carriglio, Valentino Pediroda, Carlo Poloni (University of Trieste, Italy)

OS4-12 17:40-18:00 **Flow around a Rotating Disk in a Closed Cavity as a Model of the Wafer Cleaning Chamber**
Yoshiya Shimizu, Susumu Goto, Shinichiro Yanase (Okayama University, Japan)

November 2, 2010

Chair: Satoru Yamamoto (Tohoku University, Japan)

OS4-13 9:00-9:20 **Supersonic Flow Simulation of Supercritical Fluids near the Critical Point**
Takashi Furusawa, Ryo Anan, Ryo Matsuzawa and Satoru Yamamoto (Tohoku University, Japan)

OS4-14 9:20-9:40 **Three-Dimensional Simulation of Metal Organic Chemical Vapor Deposition Process**
B.-R. Gu, R.-S. Chen and J.-S. Wu (National Chiao Tung University, Taiwan)

OS4-15 9:40-10:00 **Experimental Study of the Oil Behavior in Air-Conditioning Systems with Various Operating Conditions**
Hyun Seok Shin and Youn Jae Kim (Sungkyunkwan University, Korea)

OS4-16 10:00-10:20 **Analysis of Valveless Electromagnetic Micropump by a Dynamic Model**
Thien Xuan Dinh and Yoshifumi Ogami (Ritsumeikan University, Japan)

10:20-10:40 BREAK

Chair: Toshiaki Ikohagi (Tohoku University, Japan)

OS4-17 10:40-11:00 **Underwater Micro-shock Focusing by Small Reflector and Body Tissue Damage**
Hiroaki Yamamoto (Japan Association for the Advancement of Medical Equipment, Japan), Kazuyoshi Takayama (Tohoku University, Japan), Masateru Kondo, Koji Fukuda and Hiroaki Shimokawa (Tohoku University Hospital, Japan)

OS4-18
11:00-11:20

Numerical Analysis of a Spherical, Cylindrical and Axial Cloud Cavitation Collapses

Miralam Mahdi, Mehrzad Shams and Reza Ebrahimi (K.N.Toosi University of Tecchnology, Iran)

OS4-19
11:20-11:40

To the Question of Estimation of Cavitation Erosion Rate on the Base of Nonstationary Flow Simulation

Konstantin A. Finnikov (Siberian Federal University, Russia) and Andrey A. Gavrilov (Institute of Thermophysics, Russia)

OS5: Molecular and Nanoscale Phenomena in Fluids and Interfaces

ROOM2
November 2, 2010

Chair: Takashi Tokumasu (Tohoku University, Japan)

OS5-1 9:00-9:40 **The Role of Interfaces in the Molecular Dynamics Simulation of Molecular Lubrication *(Keynote)***
Hassan Berro, Nicolas Fillot and Philippe Vergne(Université de Lyon, France)

OS5-2 9:40-10:00 **Biolubrication from Phospholipid Membranes**
Fairouz Dekkiche (Université de Lyon, France / Université Mentouri Constantine, Algérie), Magdalena C. Corneci, Ana-Maria Trunfio-Sfarghiu, B. Munteanu, Yves Berthier and Jean-Paul Rieu (Université de Lyon, France)

OS5-3 10:00-10:20 **Effect of Nanostructures on Solid-liquid Interfacial Boundary Condition in Nanoflow *(Invited)***
Gyoko Nagayama, Kosuke Yanai and Takaharu Tsuruta (Kyushu Institute of Technology, Japan)

OS5-4 10:20-10:40 **MD Analysis on the Local Dynamic Properties of Water Molecules in a Droplet through Rotational Diffusion *(Invited)***
Yasutaka Yamaguchi, Donatas Surblys, Satoshi Nakaoka (Osaka University, Japan), Koji Kuroda, Tadashi Nakajima and Hideo Fujimura (Dai-Nippon Printing Co., Ltd., Japan)

OS5-5 10:40-11:00 **Multiscale Hydrodynamics - Molecular Dynamics Modelling of Liquids**
Sergey Karabasov (University of Cambridge, UK) and Dmitry Nerukh (Aston University, UK)

11:00-11:10 BREAK

Chair: Taku Ohara (Tohoku University, Japan)

OS5-6 11:10-11:50 **Ambient Gas Plasmas in Medicine and Biology: Toward Understanding of Plasma-Biomaterial Interactions *(Keynote)***
Yukinori Sakiyama, N. Ning and D. B. Graves (University of Califorunia, USA)

11:50:13:00 LUNCH

Chair: Masahiko Shibahara (Osaka University, Japan)

OS5-7 13:00-13:20 **Atmospheric Plasma for Medicine and Hygiene *(Invited)***
Tetsuji Shimizu, Julia Zimmermann and Gregor Morfill (Max Planck Institute for Extraterrestrial Physics, Germany)

OS5-8 13:20-13:40 **Molecular Dynamics Simulation on the Thermal Conductivity of Dielectric Nanopolycrystalline Materials *(Invited)***
Xingang Liang and Shenghong Ju (Tsinghua University, China)

OS5-9 13:40-14:00 **Investigation of Grain Boundary Thermal Resistance in Silicon by Molecular Dynamics Simulation**
Shenghong Ju and Xingang Liang (Tsinghua University, China)

OS5-10 14:00-14:20 **MD Study for Functionalized Single-Walled Carbon Nanotube *(Invited)***
Shuhei Inoue and Yukihiko Matsumura (Hiroshima University, Japan)

OS5-11 14:20-14:40 **ZT Enhancement of Porous Bismuth Telluride *(Invited)***
Koji Miyazaki (Kyushu Institute of Technology, Japan)

OS5-12 14:40-15:00 **DSMC Scheme to Study the Nonlinear Boltzmann Transport Equation for Phonons**
Yusuke Masao and Mitsuhiro Matsumoto (Kyoto University, Japan)

15:00-15:10 BREAK

ROOM 2

Chair: Taku Ohara (Tohoku University, Japan)
15:10-15:50 **Poster Preview**

OS5-13 **Effects of the Nanostructural Geometry at a Liquid-Solid Interface on the Interfacial Thermal Resistance and Liquid Molecular Non-Equilibrium Behaviors**
Masahiko Shibahara (Osaka University, Japan) and Taku Ohara (Tohoku University, Japan)

OS5-14 **Molecular Momentum Transfer Characteristics of Lipid Bilayers in Shear Flows**
Takeo Nakano, Gota Kikugawa and Taku Ohara (Tohoku University, Japan)

OS5-15 **Heat Transfer Characteristics at the Interface of Self-Assembled Monolayer with Hydrophobic and Hydrophilic Termini and Solvent**
Gota Kikugawa, Taku Ohara (Tohoku University, Japan), Toru Kawaguchi, Ikuya Kinefuchi and Yoichiro Matsumoto (The University of Tokyo, Japan)

OS5-16 **Molecular Dynamics Modeling of Carbon Nanoparticle Aggregation on a Surface**
Takuya Matsumoto, Masahiko Shibahara and Mariko Nakamura (Osaka University, Japan)

OS5-17 **A Molecular Dynamics Study on the Effects of Nanoparticle Adhesion on a Liquid-Solid Interfacial Thermal Resistance**
Satoshi Miyanaga and Masahiko Shibahara (Osaka University, Japan)

OS5-18 **Effect of the Residence Time in High Temperature Reaction Field on the Fullerene and PAH Formation Mechanism**
Youhei Sakita, Tatsuya Saika and Masahiko Shibahara (Osaka University, Japan)

OS5-19 **Effect of Configuration of Fine Structure on Sliding Surface on Micro-/Nanoscale Gas-Film Lubrication**
Susumu Isono, Masashi Yamaguchi, Shigeru Yonemura, Takanori Takeno, Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)

OS5-20 **Analysis of Proton Transferring Property including Grotthus Mechanism in Polymer Electrolyte Membrane**
Taiki Yoshida and Takashi Tokumasu (Tohoku University, Japan)

OS5-21 **Transport Phenomena of Water Droplet in a Slit Pore**
Yohinobu Hamada and Takashi Tokumasu (Tohoku University, Japan)

OS5-22 **Molecular Dynamics Study of Oxygen Permeation to Catalytic Metal Covered with Polyelectrolyte Membrane**
Kiminori Sakai and Takashi Tokumasu (Tohoku University, Japan)

OS5-23 **Molecular Dynamics Study on Evaporation Coefficient of Biodiesel Fuel**
Hirotaka Mizuguchi, Gyoko Nagayama and Takaharu Tsuruta (Kyushu Institute of Technology, Japan)

OS5-24 **Effect of Functional Surface Wettability on Single-phase Convective Heat Transfer in Microchannels**
Kazuma Aoyama, Gyoko Nagayama and Takaharu Tsuruta (Kyushu Institute of Technology, Japan)

OS5-25 **Water-droplet Evaporation of Nano-cornical Structure Surface**
Shin-ichi Satake, Jun Taniguchi, Yukihiro Yonemoto and Tadashi Kikuchi (Tokyo University of Science, Japan)

ROOM 3
15:50-17:00 **Poster Presentation**

ROOM 2
November 3, 2010

Chair: Makoto Ohta and Noriko Tomita (Tohoku University, Japan)
OS5-26 **Single-Molecule Science with a Nanopore: Inspiration from Nature *(Keynote)***
9:00-9:40 David J. Niedzwiecki and Liviu Movileanu (Syracuse University, USA)

OS5-27 **Micromanipulation of Colloids and Biological Cells based on Nanoscale Hydrodynamic Effects *(Invited)***
9:40-10:00 Masaki Sano, Hong-Ren Jiang (The University of Tokyo, Japan), Hirofumi Wada and Natsuhiko Yoshinaga (Kyoto University, Japan)

10:00-10:10 BREAK

Chair: Gota Kikugawa (Tohoku University, Japan)
OS5-28 **Spherical Shell-Like Interfaces by Second Gradient Theory *(Invited)***
10:10-10:30 Francesco dell'Isola (Università di Roma "La Sapienza" and Fondazione Tullio Levi-Civita, Italy)

OS5-29 **Superhydrophobicity of Self-Organized Surfaces of Polymer Nanowires Arrays Fabricated by a Nano-Injection Moulding Technique**
10:50-11:10 Bing-Yang Cao, Yuan-Wei Li (Tsinghua University, China), Jie Kong, Heng Chen (Northwestern Polytechnical University, China), Yan Xu and Kai-Leung Yung (The Hong Kong Polytechnic University, China)

OS5-30 **Spin Liquid Behavior in Low-Dimensional Magnetic Systems**
10:50-11:10 Olga Volkova, I. Morozov, V. Shutov (Moscow State University, Russia), Hiroyuki Miki (Tohoku University, Japan), P. Sindzingre (Université Pierre-et-Marie-Curie, France), O. Cepas (Université Joseph Fourier, France), M. Yeihia, V. Kataev, R. Klingeler, B. Büchner (Leibniz Institute for Solid State and Materials Research, Germany) and A. Vasiliev (Moscow State University, Russia)

OS5-31 **Flow Properties of Liquids Flowing Through Micro-Orifices**
11:10-11:30 Akiomi Ushida, Tomiichi Hasegawa, Hiroshige Uchiyama and Takatsune Narumi (Niigata University, Japan)

11:30-13:00 LUNCH

Chair: Masahiko Shibahara (Osaka University, Japan)

OS5-32 **Numerical Simulation of Rarefied Flow Through Aerodynamic Lenses**
13:00-13:20 Mehdi Nazari Gigloo, Reza Ebrahimi and Mehrzad Shams (K.N.Toosi University of Technology, Iran)

OS5-33 **Spherical Nanoparticle Focusing Using Aerodynamic Lenses in Slip Wall Regime**
13:20-13:40 Mehdi Nazari Gigloo, Reza Ebrahimi and Mehrzad Shams (K.N.Toosi University of Technology, Iran)

OS5-34 **The Effect of Porosity on Gas Transport in High Vacuum Systems**
13:40-14:00 Mehrzad Shams, Yunes Shafaat Gharamaleki , Reza Ebrahimi, Majid Bazargan (K.N.Toosi University of Technology, Iran)

OS5-35 **The Effect of Surface Roughness on Gas Flow in Channels of High Vacuum Systems**
14:00-14:20 Mehrzad Shams, Yunes Shafaat Gharamaleki, Reza Ebrahimi, Majid Bazargan (K.N.Toosi University of Technology, Iran)

OS6: Flow Dynamics in Thermal Science & Technology

ROOM 8
November 1, 2010

13:00-13:05 **Opening Remarks**

Chair: Masud Behnia (The University of Sydney, Australia)

OS6-1
13:05-13:45 **Single- and Two-Phase Flow Heat Transfer in Microchannels *(Invited)***
Gian Piero Celata (ENEA, Italy)

OS6-2
13:45-14:05 **Parametric Studies of a Nanofluid-Microchannel Heat Exchanger for Plant Applications**
Katsuyoshi Tanimizu and Kamel Hooman (The University of Queensland, Australia)

OS6-3
14:05-14:25 **Characteristics of Start-up Behavior of Loop Heat Pipe for Various Sink Temperature**
Hiroki Nagai, Hiromichi Tamamura (Tohoku University, Japan), Hiroyuki Ogawa (ISAS/Japan Aerospace Exploration Agency, Japan) and Hosei Nagano (Nagoya University, Japan)

14:25-14:35 BREAK

Chair: Gian Piero Celata (ENEA, Italy)

OS6-4
14:35-14:55 **Heat Flux Measurements Using Phosphor Thermography**
Chaohua Wu, Shunguang Han, Zhixian Bi, Jian Gong and Ruiqu Li (China Academy of Aerospace Aerodynamics, China)

OS6-5
14:55-15:15 **Numerical Simulation of Methanol-Steam Reforming Performance in Double-pipe Reformers**
Rei-Yu Chein (National Chung-Hsing University, Taiwan), Yen-Cho Chen (National United University, Taiwan), Hung-Jang Zhu (National Chung-Hsing University, Taiwan) and J. N. Chung (University of Florida, USA)

OS6-6
15:15-15:35 **Compressible-flow Simulation of Conjugate Heat Transfer of a Heated Block in a Cavity with Mixed Convection**
M.-H. Hu, J.-S. Wu (National Chiao Tung University, Taiwan) and Y.-S. Chen (National Applied Research Laboratories, Taiwan)

OS6-7
15:35-15:55 **Influence of Amplitude upon the Thermal Convection in a Forcedly – Oscillating Cube**
Aki Okaji, Satoshi Fujita (Doshisha University, Japan), Hirochika Tanigawa (Maizuru National College of Technology, Japan), Jiro Funaki and Katsuya Hirata (Doshisha University, Japan)

15:55-16:05 BREAK

Chair: Rei-Yu Chein (National Chung-Hsing University, Taiwan)

OS6-8 16:05-16:25 **The Simulation of Spray Impingement Inside a GDI Engine Combustion Chamber**
Leonard Kuo-Liang Shih and Tien-Chiu Hsu (National Yunlin University of Science and Technology, Taiwan)

OS6-9 16:25-16:45 **Simulation of CO-H_2-Air Turbulent Non-Premixed Flame Using Combustion Model Based on Chemical Equilibrium Method and Eddy Dissipation Concept Model**
Kazui Fukumoto and Yoshifumi Ogami (Ritsumeikan University, Japan)

OS6-10 16:45-17:05 **A Numerical Study on Burning Characteristics of Laminar Preheated Premixed Propane/ Air Flame**
Monikankana Sharma (Indian Institute of Technology Guwahati, India), Makihito Nishioka (University of Tsukuba, Japan), Subhash C. Mishra and Pinakeswar Mahanta (Indian Institute of Technology Guwahati, India)

OS6-11 17:05-17:25 **Simple Numerical Modeling for Repetitive Ignition and Stabilized Multi-stage Oxidation in a Micro Flow Reactor with a Controlled Temperature Profile**
Hisashi Nakamura, Akira Yamamoto, Mikito Hori, Takuya Tezuka, Susumu Hasegawa and Kaoru Maruta (Tohoku University, Japan)

November 2, 2010

9:00-9:05 **Opening Remarks**

Chair: Subhash C. Mishra (Indian Institute of Technology Guwahati, India)

OS6-12 9:05-9:45 **A New Semiclassical Lattice Boltzmann Method for Three-Dimensional Flow Problems *(Invited)***
Jaw-Yen Yang and Li-Hsin Hung (National Taiwan University, Taiwan)

OS6-13 9:45-10:05 **Numerical Study of the Dynamics of an Evaporating Bubble Using Lattice Boltzmann Method**
Arup K. Das, Ajinkya A. Vaidya, Pramod K. Patil and Subhash C. Mishra (Indian Institute of Technology Guwahati, India)

OS6-14 10:05-10:25 **3-D Lattice Boltzmann Model for Asymmetric Taylor Bubble and Taylor Drop in an Inclined Channel**
Arup K. Das, Pramod K. Patil, Himanshu Poonia and Subhash C. Mishra (Indian Institute of Technology Guwahati, India)

10:25-10:35 BREAK

Chair: Hideyuki Aoki (Tohoku University, Japan)

OS6-15 10:35-10:55 **Outflow Boundary Condition in Finite Volume Method for Unsteady-state, Change in Density, Incompressible Fluid Flow Calculation**
Yohsuke Matsushita (Kyushu University, Japan)

OS6-16 10:55-11:15 **Low order Chaos in Real Fluid with Infinite Degree of Freedom**
Kazuo Mimura (Tokai University, Japan)

OS6-17 11:15-11:35 **Performance Improvement of the Cooling System in an Alkaline Water Ionizer**
Seong-Oh Jeon (Sungkyunkwan University, Korea), Seong-Kwan Park (Winia Mando Inc, Korea) and Youn-Jae Kim (Sungkyunkwan University, Korea)

OS6-18 11:35-11:55 **Observation of Marangoni Flow near the Artificial Air Bubble on Heated Surface in Using Alcohol Aqueous Solution**
Yuki Eda, Kentaro kawai and Naoki Ono (Shibaura Institute of Technology, Japan)

11:55-13:00 LUNCH

Chair: Takashi Tokumasu (Tohoku University, Japan)

OS6-19 13:00-13:20 **Comparison of SMAC and SIMPLE for Unsteady Flow with Heat Transfer**
Yoshinori Kojima, Yasuhiro Saito, Ryuichi Sagawa, Masakazu Shoji (Tohoku University, Japan), Yohsuke Matsushita (Kyushu University, Japan), Hideyuki Aoki and Takatoshi Miura (Tohoku University, Japan)

OS6-20 13:20-13:40 **Analysis of a Combined Mode Conduction and Radiation Transport in a 2-D Rectangular Enclosure Using the Lattice Boltzmann Method**
Subhash C. Mishra, Himanshu Poonia, Ajinkya A. Vadiya, Arup K. Das (Indian Institute of Technology Guwahati, India) and Pietro Asinari (Politecnico di Torino, Italy)

OS6-21 13:40-14:00 **Comparative Analysis of Thermal Stability for Different Based Bulk Metallic Glasses**
Ji-Chao Qiao and Jean-Marc Pelletier (Université de Lyon, France)

14:00-14:10 BREAK

Chair: Hiroki Nagai (Tohoku University, Japan)

OS6-22 14:10-14:30 **Optimum Gas Turbine Nominal Power in CHP Systems**
Mehdi Aghaei Meybodi and Masud Behnia (The University of Sydney, Australia)

OS6-23 14:30-14:50 **A Simple, Low Cost, Micro Gas Turbine Recuperator**
Alister Clay and Geoff D. Tansley (Aston University, UK)

OS6-24 14:50-15:10 **Basic Development of a Mini-tube Separator Utilizing Soret Effect**
Shunsuke Kuwatani, Hirofumi Ozeki, Yuki Koike (Shibaura Institute of Technology, Japan), Shinya Watanabe (Ibaraki University, Japan) and Naoki Ono (Shibaura Institute of Technology, Japan)

OS6-25 15:10-15:30 **Indoor Air Quality Simulations of a Construction Site**
Rafat Al-Waked (Prince Mohammad Bin Fahd University, Saudi Arabia), M. Nasif (Opus International Consultants, New Zealand), N. Groenhout (AECOM Buildings Group, Australia) and Masud Behnia (The University of Sydney, Australia)

15:30-15:40 BREAK

Chair: Jong- Shinn Wu (National Chiao Tung University, Taiwan)

OS6-26 15:40-16:00 **Effect of Tank Excitation Frequency on Air-Water Interface Dynamics in a Rectangular Tank**
M. Eswaran and Ujjwal K. Saha (Indian Institute of Technology Guwahati, India)

OS6-27 16:00-16:20
Rossby Wave in a Rotating Water Tank Experiment with Hemispheric Baroclinicity
Kazuhiro Matsushima and Kazuo Mimura (Tokai University, Japan)

OS6-28 16:20-16:40
Numerical Study of the Influence of Bulk Temperature on Acoustic Streaming Velocity of Nonlinear Ultrasonic Waves in Water Inside a Cylindrical Enclosure
Behnaz Tajik, Abbas Abbassi, Majid Saffar-Avval, Amir Abdullah (Amirkabir University of Technology, Iran)

November 3, 2010

Chair: Jaw-Yen Yang (National Taiwan University, Taiwan)

OS6-29 9:00-9:20
Numerical Investigation of Coupled Heat and Mass Transfer in Mg_2Ni Based Hydrogen Storage Reactor
A. Anbarasu, P. Muthukumar and Subhash C. Mishra (Indian Institute of Technology Guwahati, India)

OS6-30 9:20-9:40
Diamond Deposition in High Speed and Carbon Nitride Particle Synthesis by Nitrogen Addition to Working Gas in Combustion Flame Method
Qi Yang and Y. Ando (Ashikaga Institute of Technology, Japan)

OS6-31 9:40-10:00
On Mathematical Modeling of Self-Heating Solid Waste Dump
Nickolay A. Lutsenko and Vladimir A. Levin (FEB RAS, Russia)

OS6-32 10:00-10:20
Thermal Analysis for Laser-Assisted Machining of Mullite
C. Y. Ho (Hwa Hsia Institute of Technology, Taiwan), J. T. Zou (National Formosa University, Taiwan), Y. H. Tsai (Hwa Hsiwa Institute of Technology, Taiwan) and M. Y. Wen (Cheng Shiu University, Taiwan)

10:20-10:30 BREAK

Chair: Goro Masuya (Tohoku University, Japan)

OS6-33 10:30-10:50
Pore-Scale Visualization of Imbibition Process in Porous Media by Using X-Ray CT Scanner
Arief Setiawan, Nomura Hidenori and Suekane Tetsuya (The University of Tokushima, Japan)

OS6-34 10:50-11:10
The Effect of Metallic Iron Catalyst on Coke Microscopic Factor after Coke Gasification
Yoshiaki Yamazaki, Kenichi Hiraki, Tetsuya Kanai, Xiaoqing Zhang, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki and Takatoshi Miura (Tohoku University, Japan)

OS6-35 11:10-11:30
Study of Water-Droplet Impingement Characteristics on Wingbody Surfaces
Zhiguo Sun, Chengxiang Zhu, Bin Fu and Chunling Zhu (Nanjing University of Aeronautics and Astronautics, China)

OS6-36 11:30-11:50
Effects of Meteorological Parameters on the Shadow Height at the Ice Detector Location
Chengxiang Zhu, Zhiguo Sun, Bin Fu and Chunling Zhu (Nanjing University of Aeronautics and Astronautics, China)

OS7: The Sixth International Students/ Young Birds Seminar on Multi-scale Flow Dynamics

TACHIBANA
November 1, 2010

13:00-13:05	**Opening**
Session 1	**-Award Session -**
13:05-14:10	**Short Oral Presentation** (2 min for Short Oral Presentation without PC preparation)
OS7-1	**Development of membrane model by using Level-Set method** Shuichi Tamura and Koji Fukagata (Keio University, Japan)
OS7-2	**Control By Convection-Diffusion-Reaction Processes** I.S. Vakhitov, O. V. Soboleva and A. V. Lutsenko (Far Eastern National University, Rusia)
OS7-3	**The Application of CFD in Computing Jet Flow's Aeroacoustics** Wu-Shung Fu, Chung-Gang Li (National Chiao Tung University, Taiwan)
OS7-4	**Numerical and Experimental Predictions of Fluidic Thrust Vectoring Performance** Li Li (Dalian Jiaotong University, China and Muroran Institute of Technology, Japan), Tsutomu Saito, Mitsutomo Hirota (Muroran Institute of Technology, Japan)
OS7-5	**The Effect of Capillary Tube on Cooling Performance of Ultrafine Cryoprobe** Junnosuke Okajima, Atsuki Komiya, Shigenao Maruyama (Tohoku University, Japan)
OS7-6	**Numerical Study of Boundary Layer Receptivity to Outer Disturbances** Shuta Noro, Masaya Shigeta, Seiichiro Izawa and Yu Fukunishi (Tohoku University, Japan)
OS7-7	**Diagnostics of Ultra-lean Hydrocarbon Premixed Flames via Acetone-OH Simultaneous PLIF Method** Yuichiro Yamada, Yuji Nakamura (Hokkaido University, Japan), Mitutomo Hirota, Tutomu Saito (Muroran Institute of Technology, Japan)
OS7-8	**Comparison of SMAC and SIMPLE for Unsteady-state Fluid Flow over a Square Cylinder** Y. Saito, Y. Kojima, K. Yasumura, M. Shoji (Tohoku University, Japan), Y. Matsushita (Kyushu University, Japan), H. Aoki, T. Miura (Tohoku University, Japan), S. Ogasawara, M. Daikoku (Hachinohe Institute of Technology, Japan), M. Shirota and T. Inamura (Hirosaki University, Japan)

OS7-9 **Fracture Analysis in Diametral-Compression Test of Coke using Rigid Bodies-Spring Model**
Kenichi Hiraki, Hideyuki Hayashizaki, Yoshiaki Yamazaki, Tetsuya Kanai, Zhang Xiaoping, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki, Takatoshi Miura (Tohoku University, Japan)

OS7-10 **Numerical Investigation of Heat Transfer and Fluid Flow in Emulsified Fuel Droplet**
Yoshiyuki Suzuki, Haruyuki Kamata, Takuji Harada, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki and Takatoshi Miura (Tohoku University, Japan)

OS7-11 **Combustion Characteristics of the Water/Kerosene Emulsified Fuel**
Satoshi Niiyama, Haruyuki Kamata, Yoshiyuki Suzuki, Yoshinori Kojima, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki, Takatoshi Miura (Tohoku University, Japan)

OS7-12 **Soot and Soot Precursor Formation Characteristics in a Micro Flow Reactor with a Controlled Temperature Profile**
Ryu Tanimoto, Takuya Tezuka, Susumu Hasegawa, Hisashi Nakamura, Kaoru Maruta (Tohoku University, Japan)

OS7-13 **Numerical Study of a Transitional Natural Ventilation Flow Driven by a Line Source Plume with Varied Reynolds Number and Prandtl Number**
Tae Hattori, Steven W. Armfield, Michael P. Kirkpatrick (The University of Sydney, Australia), Shigenao Maruyama and Atsuki Komiya (Tohoku University, Japan)

OS7-14 **Estimation of Vitiation Effects in Direct Connect Dual-mode Combustor**
Junji Noda (Tohoku University, Japan), Sadatake Tomioka, Muneo Izumikawa (JAXA, Japan), Christopher P. Goyne, R. D. Rockwell, Jr. (University of Virginia, USA) and Goro Masuya (Tohoku University, Japan)

OS7-15 **Conceptual Design of Aerial Exploration System for Mars**
Koji Fujita (Tohoku University, Japan), Remi Luong (International Space University, France), Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-16 **A Numerical Study on Near-limit Flame Ball and Low-stretched Counterflow Flame under the CO_2 Ambient**
Koichi Takase, Hisashi Nakamura and Kaoru Maruta (Tohoku University, Japan)

OS7-17 **Conceptual Design of a Functional Alternative to Human Puborectalis and Its Characteristic Evaluation**
Yue Wu and Yun Luo (Shanghai Jiao Tong University, China)

OS7-18 **Stereoscopic PIV Measurement of Supersonic Boundary Layer**
Shohei Uramoto, Shinichiro Tsuru, Toshinori Kouchi and Goro Masuya (Tohoku University, Japan)

OS7-19 **Fabrication of Carbon Nanotube Micro Composite based on Micromolding and Pyrolysis**
Liang He, Masaya Toda, Yusuke Kawai, Chuanyu Shao, Mamoru Omori, Toshiyuki Hashida, Takahito Ono (Tohoku University, Japan)

OS7-20 **Experimental and Numerical Study of Water Jet induced by Underwater Explosion**
Taketoshi Koita, Yujian Zhu, Mingyu Sun (Tohoku University, Japan)

OS7-21 **Numerical Simulation of Particle Motion in Electrostatic Precipitator**
Kei Ikeuchi, Masashi Kajiyama, Msakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki, Takatoshi Miura(Tohoku University, Japan), Kazutaka Suzuki, Kotaro Aoyama, Hiroki Ando, Masaki Hayatsu (Hitachi Plant Technologies Ltd., Japan)

OS7-22 **Evaluation of adhesive strength of tungsten-containing diamond-like carbon films On NiTi shape memory alloy using film-cracking technique**
Francisco Palazon (Ecole Centrale Lyon, France), Takanori Takeno, Hiroyuki Miki, Toshiyuki Takagi (Tohoku University, Japan), Yun Luo (Shanghai Jiao Tong University, China)

14:10-16:40 **Poster Presentation**

November 2, 2010

Session 2
9:00-10:00 **Short Oral Presentation**
(2 min for Short Oral Presentation)

OS7-23 **Experimental Study on Start-up Behavior of Loop Heat Pipes through Visualization of Internal Flow**
Hiromichi Tamamura, Hiroki Nagai(Tohoku University, Japan), Hiroyuki Ogawa(JAXA, Japan), Hosei Nagano(Nagoya University, Japan)

OS7-24 **Optimization of Racecar Wings for Lap-time and Fuel Efficiency**
Youngho Gang, Koji Shimoyama, Shinkyu Jeong (Tohoku University, Japan), Yoshihiro Yamaguchi, Toshiyuki Arima (Honda R&D Co., Ltd., Japan)

OS7-25 **Characteristics of Velocity Fluctuations in a Boundary Layer Excited by a Piezo Actuator Driven with Two Different Signals**
Hajime Okawa, Shigenori Kondo, Masaya Shigeta, Seiichiro Izawa, Yu Fukunishi (Tohoku University, Japan)

OS7-26 **Reynolds-Number Effects on Spatially Advancing Turbulent Flow and Heat Transfer in Two-Dimensional Curved Channel**
Makoto Takeda, Koji Matsubara, Takahiro Miura and Atsushi Sakurai (Niigata University, Japan)

OS7-27 **Large-Eddy Simulation of Compressible Mixing Layers**
Junya Watanabe, Toshinori Kouchi, Kenichi Takita and Goro Masuya (Tohoku University, Japan)

OS7-28 **Evaluation of Wall Shear Stress on Carotid Artery with Ultrasonic-Measurement-Integrated Simulation**
Takaumi Kato, Kenichi Funamoto, Toshiyuki Hayase (Tohoku University, Japan), Masafumi Ogasawara, Takao Jibiki, Hiroshi Hashimoto and Koji Miyama (GE Healthcare Japan, Japan)

OS7-29 **Airfoil Testing in a Mars Wind Tunnel at Low Reynolds Number and High Subsonic Flow**
Kei Nose, Masayuki Anyoji, Shingo Ida, Daiju Numata, Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-30 **Numerical Analysis of First and Second Collapse Behavior of a Bubble near Wall Boundary**
Naoya Ochiai, Yuka Iga (Tohoku University, Japan), Motohiko Nohmi (EBARA Corporation, Japan) and Toshiaki Ikohagi (Tohoku University, Japan)

OS7-31 **Effect of Throat Diameter on Cavitation of Subcooled Liquid Nitrogen Flow through a C-D Nozzle**
Tadashi Nakayama, Takayoshi Nagai, Koichi Takahashi and Katsuhide Ohira (Tohoku University, Japan)

OS7-32 **Dynamics of Simple Liquids with Different Soft-Core Potentials**
Tatsuo Moriki, Michio Tokuyama and Yayoi Terada (Tohoku University, Japan)

OS7-33 **Liquid Decomposition Characteristics by Activated Air Microbubble Jet with Photochemical Reaction**
Tomohiro Shibata, Akira Ozaki, Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

OS7-34 **Analysis of Chemical Species Transport in an Air-water Plasma Flow**
Yutaka Iwafuchi (Tohoku University, Japan), Tetsuji Shimizu, Gregor E. Morfill (Max Planck Institute for Extraterrestrial Physics, Germany)and Takehiko Sato (Tohoku University, Japan)

OS7-35 **A Numerical Study of Suction Performance of Inducer with Different Inlet Shapes**
Hongyun So and Hyun Gi Yoon (KAIST, Korea)

OS7-36 **Leading Edge Receptivity to Periodic Disturbances Generated by Oscillating Wings**
Yu Nishio, Masaya Shigeta, Seiichiro Izawa and Yu Fukunishi (Tohoku University, Japan)

OS7-37 **Unsteady Pressure Measurement in Low-speed Flow Using Pressure-Sensitive Paint**
Tamao Sugimoto, Daisuke Yorita, Daijyu Numata, Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-38 **Aerodynamic Experiment of Thin Airfoils at Low Reynolds Number in a Mars Wind Tunnel**
Shingo Ida, Masayuki Anyoji, Kei Nose, Daiju Numata, Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-39 **Experimental Study of Nonlinear Aerodynamic Characteristics of an NACA 0012 Wing at Low Reynolds Number**
Chikara Ogita, Daisuke Yorita, Daiju Numata, Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-40 **Flow Measurements in Vibrating Flow Pump with Jellyfish Valve**
Naozumi Okura and Satoyuki Kawano (Osaka University, Japan)

OS7-41 **Numerical Modeling of Stress Corrosion Cracking for Depth Sizing by Eddy Current Testing**
Keitaro Ohtaki, Tetsuya Uchimoto, Toshiyuki Takagi, Noritaka Yusa and Yoichi Takeda (Tohoku University, Japan)

OS7-42 **Cancelled**

10:00-12:00 **Poster Presentation**

Session 3
13:00-14:15 **Short Oral Presentation**
(2 min for Short Oral Presentation)

OS7-43 **Analyzing Blood Flow in Bifurcated Artery with Cerebral Aneurysm Using Two Stents**
Hitomi Anzai, Toshio Nakayama (Tohoku University, Japan), Keiko Irie (Fujita Health University, Japan) and Makoto Ohta(Tohoku University, Japan)

OS7-44 **Development of PVA-H Stenosis Model for PIV Measurement**
Yasutomo Shimizu, Kei Ozawa, Yoko Hashida and Makoto Ohta (Tohoku University, Japan)

OS7-45 **Theoretical Design of High Efficient Mediator for Biofuel Cell Anode**
Hiroshi Kobayashi, Donghyun Kim, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-46 **Computational Study on the Mass Spectrometric Fragmentation of Oligosaccharide**
Xiaolei Wang, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo,(Tohoku University, Japan), Junko Amano (Tohoku University and The Noguchi Inst., Japan)and Akira Miyamoto (Tohoku University, Japan)

OS7-47 **Tracking and Autofocusing Microscope**
Takeshi Obara and Koichi Hashimoto (Tohoku University, Japan)

OS7-48 **A Reaction-Diffusion Model for DNA Self-Assembled Networks on Solid Surfaces**
Yukihiro Toyokita, Kentaro Doi and Satoyuki Kawano (Osaka University, Japan)

OS7-49 **Theoretical Study of Triple Phase Boundary of the Cathode Catalyst Layer of PEFCs**
Donghyun Kim, Hiroshi Kobayashi, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-50 **Mechanical Properties and Microstructure of Injected Biomodeling**
Kei Ozawa (Tohoku University, Japan), Yuji Katakura, Yukihiko Shibata (TECNO CAST), Toshio Nakayama, Yoko Hashida and Makoto Ohta (Tohoku University, Japan)

OS7-51 **Ni/YSZ Nanoparticle Sintering Process in Solid Oxide Fuel Cell Based on Molecular Dynamics Simulation**
Jingxiang Xu, Ryota Sakanoi, Takeo Matsuyama, Miho Nakamura, Nobuki Ozawa, Tomomi Shimazaki, Momoji Kubo (Tohoku University, Japan)

OS7-52 **PIV Measured Hemodynamic Study With and Without Stent in Cerebral Silicone Aneurysm Model**
Chang-Ho Yu, Shuya Shida and Makoto Ohta (Tohoku University, Japan)

OS7-53 **Fourier Analysis on Self-assembled Structures of Poly(dA)・Poly(dT) DNA on Gold Surfaces**
Toshiya Kakizaki, Kentaro Doi and Satoyuki Kawano (Osaka University, Japan)

OS7-54 **Development of a Design Method of Vibrating Flow Pump for Fontan Circulation**
Naoki IKUHARA, Satoyuki KAWANO (Osaka University, Japan)

OS7-55 **A Multi-Scale Simulation for Dye-Sensitized Solar Cells Including TCO/TiO_2 Interface Effect in Photoelectrode**
Mari Onodera, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-56 **Predicting Lithium-Air Battery's Performance with Computational Chemistry Approach**
Tomomi Shimo, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-57 **A Multi-Scale Simulation on the Purification of Automotive Emissions**
Sunho Jung, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-58 **Theoretical Study on Carrier Transfer in Quantum Dot Solar Cells and Its Relationship with Defect Structures**
Sho Hirose, Itaru Yamashita, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-59 **Stability of $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ for SOFC Cathode**
Mi young Oh, Atsushi Unemoto, Koji Amezawa and Tatsuya Kawada (Tohoku University, Japan)

OS7-60 **Study on Li-ion Diffusion Simulation of Ti-doped $LiFePO_4$ by Using UA-QCMD**
Yang Liu, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-61 **Thermal Properties of Perovskite-type $La_{0.6}Sr_{0.4}Co_{1-x}Fe_xO_{3-\delta}$**
Shin YuCheol, Atsushi Unemoto, Koji Amezawa and Tatsuya Kawada (Tohoku University, Japan)

OS7-62 **Biped Walking of a Humanoid Robot on Sand**
Shunsuke Komizunai, Atsushi Konno, Satoko Abiko and Masaru Uchiyama (Tohoku University, Japan)

OS7-63 **Relation between Cell Adhesion and Cell Migration: Modeling and Experiments Using Dictyostelium**
Laurent Gole , Charlotte Riviere and Jean-Paul Rieu (LPMCN, Université Claude Bernard Lyon, France)

OS7-64 **Brain Surgery Simulation using FEM**
Masano Nakayama, Satoko Abiko, Xin Jiang, Atsushi Konno and Masaru Uchiyama (Tohoku University, Japan)

OS7-65 **Spectral Radiative Properties of a Polymer Coating Containing Nano-Micro Bubbles**
Mehdi Baneshi, Shigenao Maruyama and Atsuki Komiya (Tohoku University, Japan)

OS7-66 **The Thermal Equilibrium Criteria Based on Entransy**
X. T. Cheng and X. G. Liang(Tsinghua University, China)

OS7-67 **Dynamics of Rupture at Frictional Bi-material Interfaces**
M. Di Bartolomeo (University of Rome 'La Sapienza', Italy and INSA- Lyon, France), F. Massi (INSA-Lyon, France), A. Meziane (Université de Bordeaux 1, France), L. Baillet (Joseph Fourier University, France), A Culla (University of Rome 'La Sapienza', Italy)

14:15-16:45 **Poster Presentation**

November 3, 2010

Session 4

9:00-10:00 **Short Oral Presentation**
(2 min for Short Oral Presentation)

OS7-68 **Experimental Study on Effect of Direction of Endothelial Cells' Orientation on Motion of HL60 Cells**
Haruka Uranuma, Atsushi Shirai and Toshiyuki Hayase (Tohoku University, Japan)

OS7-69 **Investigation of Mixed Convection Heat Transfer with Insertion of a Moving Block in a 3-D Channel**
Jieh-Chau Huang and Wu-Shung Fu (National Chiao Tung University, Taiwan)

OS7-70 **The Effect of the Height on Natural Convection in Two-dimensional Horizontal Plates**
Wei-Hsiang Wang and Wu-Shung Fu (National Chiao Tung University, Taiwan)

OS7-71 **Evaluation of Radiative Transfer Models for Coupled Analysis with the Direct Numerical Simulation of Turbulent Natural Convection**
Ryo Kanbayashi, Atsushi Sakurai and Koji Matsubara(Niigata University, Japan)

OS7-72 **Numerical Prediction of Cooled Turbine Blade Thermal Load Using Conjugate Heat Transfer**
Tetsuya Yoshiara, Daisuke Sasaki and Kazuhiro Nakahashi (Tohoku University, Japan)

OS7-73 **Numerical Study of Natural Convection Taking Into Account Radiation Between Walls**
Khosro Lari (Shabid Bahonar University, Iran), Mehdi Baneshi, Atsuki Komiya and Shigenao Maruyama (Tohoku University, Japan)

OS7-74 **Simulation of Thermal Conductivity of Nanocomposite Using an Efficient Lattice Boltzmann Method**
Chia-Li Hu, Chung-Dao Chen and Jaw-Yen Yang (National Taiwan University, Taiwan)

OS7-75 **Application of Thermal Radiation Control by Surface Gratings to Advance Cooling System for Electronic Devices**
Makoto Shimizu and Hiroo Yugami(Tohoku University, Japan)

OS7-76 **Turbulent Burning Velocity and Flame Structure of $CO/H_2/CO_2$ Premixed Flames in a High Pressure Enviroment**
Y. Otawara, Y. Ichikawa, J.H. Wang, Y. Ogami, T. Kudo, M. Okuyama and H. Kobayashi (Tohoku University, Japan)

OS7-77 **Effect of Pressure on Premixed Flame Propagation Mode in a Packed Pebble Bed Reactor**
Masaki Okuyama, Takuro Suzuki, Yasuhiro Ogami, Manabu Kumagami and Hideaki Kobayashi (Tohoku University, Japan)

OS7-78 **Weak Flame Response to Various Octane Numbers of PRF/air Mixture in a Micro Flow Reactor with a Controlled Temperature Profile**
Mikito Hori, Akira Yamamoto, Hisashi Nakamura, Takuya Tezuka, Susumu Hasegawa and Kaoru Maruta (Tohoku University, Japan)

OS7-79 **The Analysis of Structural Phase Transition of $Nd_2NiO_{4+\delta}$ by Scanning Thermal Measurement under Controlled Oxygen Partial Pressure**
Eiki Niwa (Nihon University, Japan), Takashi Nakamura, Junichiro Mizusaki (Tohoku University, Japan) and Takuya Hashimoto (Nihon University, Japan)

OS7-80 **Air Friction Model for Two-Dimensional Comb-Drive Micro-Scanner**
Hoang Manh Chu, Toshiyuki Takagi and Kazuhiro Hane (Tohoku University, Japan)

OS7-81 **Pressure Dependence of Three-stage Oxidation of n-Heptane in a Micro Flow Reactor with a Controlled Temperatue Profile**
Akira Yamamoto, Hiroshi Oshibe, Hisashi Nakamura, Takuya Tezuka, Susumu Hasegawa and Kaoru Maruta (Tohoku University, Japan)

OS7-82 **Fundamental Study of Light Scattering by a Nano/Micro Particle using Finite Difference Time Domain Method**
Shouta Hanashima, Atsushi Sakurai and Koji Matsubara (Niigata University, Japan)

OS7-83 **The Effects of Wall Thinning Shapes on Microwave Testing for Piping**
Yasutomo Sakai, Noritaka Yusa and Hidetoshi Hashizume (Tohoku University, Japan)

OS7-84 **Energy Harvesting from Mechanical Vibration for Powering Micro Electronic Device**
Jinya Zhang, Ziping Cao and Hiroki Kuwano (Tohoku University, Japan)

OS7-85 **Development of Bionic Auditory Membrane Equipped with Electrical Circuits for Stimulating Cochlear Ganglion Cells**
Masahide Hayashi, Hirofumi SHINTAKU, Satoyuki KAWANO(Osaka University, Japan)

OS7-86 **Dynamic Strain Measurements using a Novel Metal-containing Amorphous Carbon Sensor**
Takeshi Ohno (Tohoku University, Japan), Yecheng Wang (Xi'an Jiaotong University, China), Takanori Takeno, Hiroyuki MikiI and Toshiyuki Takagi (Tohoku University, Japan)

10:00-12:00 **Poster Presentation**

Session 5 **Short Oral Presentation**
13:00-14:10 (2 min for Short Oral Presentation)

OS7-87 **A Computational Chemistry Study on Emission and Excitation Wavelength of Eu^{2+}-doped Phosphors**
Hiroaki Onuma, Itaru Yamashita, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-88 **Evaluation of Temperature-Sensitive-Paint Composed of Thermographic Phosphor for High-temperature**
Ryosuke Sawamura, Hiroki Nagai and Keisuke Asai (Tohoku University, Japan)

OS7-89 **Ultra-accelerated Quantum Chemical Molecular Dynamics Study to Investigate CO Oxidation and NO Reduction on MgO (100) Supported Pd Cluster**
Farouq Ahmed, M.K. Alam, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-90 **Study on Flow Dynamics of Electrons in Light-Emitting Polymer/Cathode Interface by using Luminescence Computational Chemistry**
Itaru Yamashita, Hiroaki Onuma, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo, Akira Miyamoto (Tohoku University, Japan)

OS7-91 **Numerical Analysis of Carbon Black Production in Benzene Pyrolysis Using Detailed Reaction Mechanism and Discrete-Sectional Model**
Sho Tanaka, Kiminori Ono, Keisuke Watanabe, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki, Takatoshi Miura (Tohoku University, Japan), Okiteru Fukuda, Togo Yamaguchi (Asahi Carbon Co., Ltd., Japan) and Hiroshi Yamada (Bridgestone Corporation, Japan)

OS7-92 **A Numerical Investigation of the Dominating Factor of Decreasing Transfer Efficiency with High Speed Rotary Bell-cup Atomizer**
Kotaro Yasumura, Yasuhiro Saito, Masakazu Shoji, Yohsuke Matsushita, Hideyuki Aoki, Takatoshi Miura(Tohoku University, Japan), Shin Ogasawara, Masatoshi Daikoku(Hachinohe Institute of Technology, Japan), Minori Shirota and Takao Inamura(Hirosaki University, Japan)

OS7-93 **Group Theoretical Approach to Characterize Sulfonated Poly(ether ether ketone) (SPEEK)**
Keigo Kato, Kentaro Doi and Satoyuki Kawano (Osaka University, Japan)

OS7-94 **Computational Chemistry and Experimental Approaches on Boundary Friction Mechanism of Nano-carbon Materials and Their Derivatives**
Tasuku Onodera, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba (Tohoku University, Japan), Christine Matta, Michel Belin (Ecole Centrale de Lyon, France), Momoji Kubo (Tohoku University, Japan), Jean-Michel Martin (Ecole Centrale de Lyon, France) and Akira Miyamoto (Tohoku University, Japan)

OS7-95 **Evaluation of Internal Stress in FeBNbNd Metallic Glass Thin Films**
Tuan Anh Phan (Tohoku University, Japan), Hiroshi Okamoto(Akita Prefectural University, Japan), Ziping Cao and Hiroki Kuwano (Tohoku University, Japan)

OS7-96 **Quantum Chemical Molecular Dynamics Simulation on Fluorine-Terminated Diamond-Like Carbon Analyzing Low Friction Mechanism**
Shandan Bai, Tasuku Onodera, Ryo Nagumo, Ryuji Miura, Ai Suzuki, Hideyuki Tsuboi, Nozomu Hatakeyama, Akira Endou, Hiromitsu Takaba, Momoji Kubo and Akira Miyamoto (Tohoku University, Japan)

OS7-97 **Simulation Study of Composition Dependence of Structures and Dynamics in $Cu_{100-x}Zr_x$**
Yuto Kimura and Michio Tokuyama (Tohoku University, Japan)

OS7-98 **Fabrication of Asymmetric Gate-oxide Thickness Four-terminal FinFETs using Neutral-Beam Oxidation Process**
Akira Wada(Tohoku University, Japan), Kazuhiko Endo, Meishoku Masahara (National Institute of Advanced Industrial Science and Technology, Japan) and Seiji Samukawa (Tohoku University, Japan)

OS7-99 **Error Motion Measurement of a Precision Hydrostatic Bearing Stage**
JungChul Lee, Wei Gao, Young Jin Noh (Tohoku University, Japan), Joo Ho Hwang, Jeoung Seok Oh, Chun Hong Park (Korea Institute of Machinery and Materials, South Korea)

OS7-100 **Ultra Accelerated Quantum Chemical Molecular Dynamics Study of Sintering Dynamics of Pt/CeO2**
Md. K. Alam, F. Ahmed, R. Nagumo, R. Miura, A. Suzuki, H. Tsuboi, N. Hatakeyama, A.Endou, H. Takaba, M. Kubo and A. Miyamoto (Tohoku University, Japan)

OS7-101 **Physics Mining for Unsteady Flow Field in a Hard Disk Drive**
Seiichiro Morizawa, Koji Shimoyama, Shinkyu Jeong and Shigeru Obayashi (Tohoku University, Japan)

OS7-102 **Parallel Calculations of Gas Cooling of Porous Objects with Heat Sources**
Taisia Miroshnichenko (Far Eastern Branch of Russian Academy of Sciences, Russia)

OS7-103 **Theoretical and Numerical Analysis of MHD Extremum Problems**
Alexander Shaturin (Far Eastern National University, Russia) and Roman Brizitskiy (Far Eastern Branch of Russian Academy of Sciences, Russia)

OS7-104 **Collision Avoidance for Mobile Robot in Consideration with Motion Pattern of Moving Obstacles**
Takeshi Ohki, Keiji Nagatani and Kazuya Yoshida(Tohoku University, Japan)

OS7-105 **A Runtime Task Reallocation Library for Heterogeneous Computational Environments**
Katsuto Sato, Kazuhiko Komatsu, Hiroyuki Takizawa and Hiroaki Kobayashi (Tohoku University, Japan)

OS7-106 **Data Compression Method for Flow Computation Data Using Discrete Wavelet Transform**
Ryotaro Sakai, Hiroshi Onda, Daisuke Sasaki and Kazuhiro Nakahashi (Tohoku University, Japan)

OS7-107 **Development of Efficient Simulation Solver for Pulsed Eddy Current Testing Method**
Shejuan Xie, Toshiyuki Takagi, Tetsuya Uchimoto (Tohoku University, Japan) and Zhenmao Chen (Xi' an Jiaotong University, China)

OS7-108 **Shared Autonomy System for Tracked Vehicles to Traverse Rough Terrain Based on Continuous Three-Dimensional Terrain Scanning**
Yoshito Okada, Keiji Nagatani, Kazuya Yoshida (Tohoku University, Japan), Tomoaki Yoshida and Eiji Koyanagi (Chiba Institute of Technology, Japan)

OS7-109 **Effect of Sliding Speed and Microscopic Structured Surface on Friction Properties of Poly-Crystalline Diamond Films**
Atsushi Tsutsui, Hiroyuki Miki, Takanori Takeno and Toshiyuki Takagi (Tohoku University, Japan)

14:10-16:40 **Poster Presentation**

PS1: Workshop on Sustainable Atomization and Spray Technology (AFI/TFI-2010)

HAGI
November 1, 2010

Chair: Jun Ishimoto (Tohoku University, Japan)

PS1-1
13:00-13:40
Lean Product Development *(Invited)*
Kenneth G. Kreafle (University of Kentucky, USA)

PS1-2
13:45-14:25
Study on Free-surface Flows in Aerospace Propulsion Systems *(Invited)*
Takehiro Himeno, Chihiro Inoue and Toshinori Watanabe (The University of Tokyo, Japan)

PS1-3
14:30-15:10
Microflame; As A Model of Droplet/Spray Combustion *(Invited)*
Yuji Nakamura (Hokkaido University, Japan) and Taro Hirasawa (Chubu University, Japan)

PS1-4
15:20-16:00
Scale Effect of Hydrodynamic Instability of Premixed Flame *(Invited)*
Kazunori Kuwana and Yukari Wada (Yamagata University, Japan)

PS1-5
16:05-16:45
Laminar-turbulent Transition and Interfacial Structures Induced by Thermohydraulic Instabilities in Natural Convection Near the Critical Point *(Invited)*
Takahiro Okamura (High Energy Accelerator Research Organization, Japan)

PS1-6
16:50-17:10
Experimental Investigation of Roughness Effects on Cavitating Flow in Diesel Injectors
Cyril Mauger, Loïc Méès (Ecole Centrale de Lyon, INSA de Lyon and Université Claude Bernard, France), Stéphane Valette (Ecole Centrale de Lyon, France) and Alexandre Azouzi (Ecole Centrale de Lyon, INSA de Lyon and Université Claude Bernard, France)

PS1-7
17:15-17:35
Numerical Simulaton of Cavitation with Two-Fluid Method
Yujian Zhu and Mingyu Sun (Tohoku University, Japan)

PS2: Workshop on Functional Plasma Flow Dynamics and its Systems

ROOM4
November 2, 2010

9:30-9:40 **Opening**
Hideya Nishiyama (Tohoku University, Japan)

Functional Plasma Flow Dynamics 1
Chair: Hideya Nishiyama (Tohoku University, Japan)

PS2-1
9:40-10:10 **Steam Plasma Flows Generated in Gerdien Arc: Enviroment for Energy Gas Production from Organics and for Surface Coatings *(Invited)***
Milan Hrabovsky (Institute of Plasma Physics, Czech Republic)

PS2-2
10:10-10:30 **Quasi-Direct Control on the Temperature of Modulated Induction Thermal Plasmas *(Invited)***
Yasunori Tanaka, Yosuke Uesaka, Y. Tsubokawa and Yoshihiko Uesugi (Kanazawa University, Japan)

PS2-3
10:30-10:50 **Effects of Constrictor Geometry, Arc Current and Gas Flow Rate on Thermal Plasma Characteristics in a Segmented Arc Heater *(Invited)***
Sooseok Choi (Seoul National University, Korea), Jin Myung Park (Oak Ridge National Laboratory, USA), Won Tae Ju (Plasnix Co., Ltd., Korea) and Sang Hee Hong (Seoul National University, Korea)

10:50-11:00 BREAK

Functional Plasma Flow Dynamics 2
Chair: Masaaki Okubo (Osaka Prefecture University, Japan)

PS2-4
11:00-11:20 **Studies on the Characteristics of Atmospheric-Pressure Gas Discharges *(Invited)***
He-Ping Li, Pei-Si Le, Nan Ge, Gui-Qing Wu, Guo-Xu Chen, Zhi-Bin Wang, Zhe Wang, Bing-Bing Wang, Ling-Bo Kou and Cheng-Yu Bao (Tsinghua University, China)

PS2-5
11:20-11:40 **Visualization of Fume Generation Process in Helium TIG Welding with Numerical Simulation *(Invited)***
Shinichi Tashiro, Tasuku Zeniya, Manabu Tanaka, Kazuhiro Nakata (Osaka University, Japan), Anthony B. Murphy (CSIRO, Australia), Eri Yamamoto, Kei Yamazaki and Keiichi Suzuki (Kobe Steel, Ltd., Japan)

PS2-6
11:40-12:00 **Chemical Kinetic Study of Methane-Air Plasma Flow at High Pressure**
Hidemasa Takana (Tohoku Univerisity, Japan), Yasunori Tanaka (Kanazawa University, Japan) and Hideya Nishiyama (Tohoku University, Japan)

12:00-13:00 LUNCH

Particle and Coating Processes
Chair: Takayuki Watanabe (Tokyo Institute of Technology, Japan)

PS2-7
13:00-13:30 **Thermal Plasma Processes of Hollow Spherical Powders Production: Theory and Experiment *(Invited)***
Oleg P. Solonenko, Andrey V. Smirnov and Igor P. Gulyaev (SB RAS, Russia)

PS2-8 **Thermal Pinching for Arc Plasma for Nanoparticle Generation *(Invited)***
13:30-13:50 Hiroya Abe (Osaka University, Japan), Junichi Noma, Yuya Ueshima, Takehisa Fukui (Kurimoto Ltd., Japan), Manabu Tanaka and Makio Naito (Osaka University, Japan)

PS2-9 **Advancement of Powder Spheroidization Process Using a Small Power DC-RF**
13:50-14:10 **Hybrid Plasma Flow System by Helium Mixture and Sinusoidal Gas Injection**
Juyong Jang, Hidemasa Takana (Tohoku University, Japan), Oleg P. Solonenko (SB RAS, Russia) and Hideya Nishiyama (Tohoku University, Japan)

Chair: Yasunori Tanaka (Kanazawa University)

PS2-10 **Numerical Investigation of Binary Alloy Nanopowder Growth in Thermal**
14:10-14:30 **Plasma Synthesis *(Invited)***
Masaya Shigeta (Tohoku University, Japan) and Takayuki Watanabe (Tokyo Institute of Technology, Japan)

PS2-11 **Zinc Oxide Film Deposition by Atmospheric Solution Precursor Plasma Spray**
14:30-14:50 **Using Air Working Gas *(Invited)***
Yasutaka Ando (Ashikaga Institute of Technology, Japan)

14:50-15:05 BREAK

Environmental and Energy Systems

Chair: Yoshihiro Okuno (Tokyo Institute of Technology, Japan)

PS2-12 **Demonstration of Near-Zero Emission Biofuel Boiler System with**
15:05-15:25 **Plasma-Chemical Hybrid Exhaust Aftertreatment *(Invited)***
Hidekatsu Fujishima, Yusuke Yoshioka, Tomoyuki Kuroki (Osaka Prefecture University, Japan), Atsushi Tanaka, Keiichi Otsuka (Takao Iron Works Co., Ltd., Japan) and Masaaki Okubo (Osaka Prefecture University, Japan)

PS2-13 **Water Plasma Geneartion for Hazardous Waste Decomposition *(Invited)***
15:25-15:45 Takayuki Watanabe (Tokyo Institute of Technology, Japan)

Chair: Hidemasa Takana (Tohoku University, Japan)

PS2-14 **Advanced MHD Electrical Power Generation with Pure Inert Gas Plasma**
15:45-16:05 ***(Invited)***
Hiromichi Kobayashi (Keio University, Japan) and Yoshihiro Okuno (Tokyo Institute of Technology, Japan)

PS2-15 **Plasma Flow Behavior and Performance of Magnetoplasmadynamic Thruster**
16:05-16:25 ***(Invited)***
Kenichi Kubota, Ikkoh Funaki (Japan Aerospace Exploration Agency, Japan) and Yoshihiro Okuno (Tokyo Institute of Technology, Japan)

16:25-16:30 **Closing**
Hideya Nishiyama (Tohoku University, Japan)

PS3: International Seminar on Maintenance Science and Technology for Nuclear Power Plants

SHIRAKASHI1
November 2, 2010

12:45- **Opening**

12:50-13:00 **Welcome Speech**
Kenzo Miya (Japan Society of Maintenology, Japan)

Special Speech: The Balance between Plant Safety and Availability

PS3-1 13:00-13:30 **U. S. Regulatory Perspective on the Relationship of Safety to Online Maintenance**
Jack Grobe (U.S. Nuclear Regulatory Commission, USA)

PS3-2 13:35-14:05 **Balancing the Risk between Outage and On-Line Maintenance**
Peter Arthur (Institute of Nuclear Power Operations, USA)

Session 1: Expectation for International Collaboration on Maintenance Science & Technology

PS3-3 14:10-14:40 **Is a High Level of Safety Consistent with High Levels of Availability in Nuclear Power Plants?**
Douglas M. Chapin (MPR, USA)

PS3-4 14:45-15:15 **TBD**
TBD (France)

PS3-5 15:20-15:50 **International Collaboration for Maintenance Science and Technology**
Akira Omoto (The University of Tokyo, Japan)

PS3-6 15:55-16:25 **Maintenance Management for the Conventional Island of Third Qinshan Nuclear Power Plant**
Tang Wenzhong (Datang International Power Generation Co. Ltd., China)

PS3-7 16:30-17:00 **Status of ISI Technology and NDE R&D Programs for Nuclear Power Plants in KOREA**
Yong-Moo Cheong, Hyun Kyu Jung and Young Sang Joo (Korea Atomic Energy Research Institute, Korea)

November 3, 2010

Session 2: Inspection / Material Technology as One of the Most Important Maintenance Technologies and Necessity of International R&D Collaboration

PS3-8 8:30-9:00 **Potential Importance of Microstructural Aspects for Better Understanding of SCC Behaviors in Stainless Steels *(Keynote)***
Yutaka Watanabe (Tohoku University, Japan)

PS3-9 9:05-9:35 **Advances in Automatic Analysis of Eddy Current Steam Generator Tube Inspection Data**
Lalita Udpa and Satish Udpa (Michigan State University, USA)

PS3-10 9:40-10:10 **Propagation of Ultrasonic Waves in Coarse-Grain Steel and Application to NDE**
Ph. Guy (Université de Lyon, France), B. Chassignole (EDF R&D, France), M. A. Ploix (Université de Lyon and LCND, France), P. A. Bodian and Joël Courbon (Université de Lyon, France)

10:10-10:25 BREAK

PS3-11 10:30-11:00 **Evaluation of Stress Concentration using Magnetic Testing-Progress, Challenges and Perspectives**
Li Luming and Zhong Liqiang (Tsinghua University, China)

PS3-12 11:05-11:35 **Modeling Approaches for Improvement of Ultrasonic Inspection of Austenitic Steel Weldments**
Sun-Jin Song (Sungkyunkwan University, Korea)

PS3-13 11:40-12:10 **HOMC Guided Ultrasonic Waves for Maintenance of Components in Process Industries**
Krishnan Balasubramaniam (Indian Institute of Technology Madras, India)

12:10-13:05 LUNCH

Special Speech: The Current Status of EBR "Monju"

PS3-14 13:05-13:35 **Current Status of FBR "Monju" -From the View Point of Maintenance for Restart of Long-term Shut-down Plant -**
Satoru Nakai (Japan Atomic Energy Agency, Japan)

Session 3: Perspectives on Maintenance Science & Technology

PS3-15 13:40-14:10 **Proposal for an International Forum on Maintenance Science and Technology *(Keynote)***
Toshiyuki Takagi (Tohoku University, Japan)

PS3-16 14:15-14:45 **Maintenance and Corrosion Monitoring of Electric Power Systems**
Kenrou Takamori (Tokyo Electric Power Company, Japan)

PS3-17 14:50-15:20 **Ageing Management and Knowledge Management for Safe Long Term Operation of Light Water Reactors in Japan**
Naoto Sekimura (The University of Tokyo, Japan)

15:20-15:35 BREAK

Panel Discussion

15:35-17:35 **Panel Discussion for the Establishment of the International Conference Focused on Plant Maintenance**

17:35 **Closing**

PS4: 4th Functionality DEsign of the COntact Dynamics: (DECO2010)

ROOM4
November 1, 2010

Chair: Julien Fontaine (LTDS, France)

PS4-1 13:30-13:55 **Effect of Pre-sliding on Friction and Wear of Carbon Nitride Coatings in Different Gas Environments**
Pengfei Wang and Koshi Adachi (Tohoku University, Japan)

PS4-2 13:55-14:30 **Tribological Behavior of DLC Against Several Kinds of Metals: Towards Slide Bearing Application *(Invited)***
Minoru Goto, Keisuke Matsumoto, Hitoo Tokunaga (Ube National College of Technology, Japan), Takayuki Tokoroyama and Noritsugu Umehara (Nagoya University, Japan)

PS4-3 14:30-14:55 **Tribological Behaviour of Nanocluster Silicon-Containing Diamond-like Carbon Coatings under Different Load Conditions**
Hiroyuki Miki, T. Sugawara (Tohoku University, Japan), Maxime Ruet (Ecole Centrale Lyon, France), Kosuke Ito (Nihon University, Japan), Takanori Takeno (Tohoku University, Japan), Julien Fontaine (Ecole Centrale Lyon, France), Michel Belin (Ecole Centrale Lyon, France) and Toshiyuki Takagi (Tohoku University, Japan)

14:55-15:10 BREAK

Chair: Toshiyuki Takagi (Tohoku University, Japan)

PS4-4 15:10-15:35 **Concurrent Use of Diamond-like Carbon Coating and Multiply-alkylated Cyclopentane for Vacuum Lubrication**
Masanori Iwaki (Tohoku University/Japan Aerospace Exploration Agency, Japan), Shingo Obara (Japan Aerospace Exploration Agency, Japan), Shuichi Watanabe (Nippon Institute of Technology, Japan), Takahiro Takeno, Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)

PS4-5 15:35-16:10 **Surface Damage of Carbonaceous Materials Sliding in Diesel Oil for Automotive Fuel Pump DC Motor *(Invited)***
Philippe Kapsa and Romain Charpenay (Ecole Centrale de Lyon, France)

16:10-16:20 BREAK

Chair: Hiroyuki Miki (Tohoku University, Japan)

PS4-6 16:20-16:45 **On the Role of Asperity Impact on Frictional Sound Generated in Rubbing**
Zahrul Fuadi, Toshiyuki Takagi, Hiroyuki Miki and Koshi Adachi (Tohoku University, Japan)

PS4-7 16:45-17:20 **Preliminary Study of a Magnetically Driven Agonist-antagonist Actuator System *(Invited)***
Quanchao Ma and Yun Luo (Shanghai Jiao Tong University, China)

PS5: IFS Collaborative Research Forum (AFI/TFI-2010)

HAGI
November 2, 2010

Chair: Jun Ishimoto (Tohoku University, Japan)

8:30-9:30 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-1 **Investigation of Hypersonic Flows about Leading Edges of Small Bluntness**
Mikhail Ivanov (Khristianovich Institute of Theoretical and Applied Mechanics, Russia),Shigeru Yonemura (Tohoku University, Japan), Yevgeniy Bondar and Dmitry Khotyanovsky (Khristianovich Institute of Theoretical and Applied Mechanics, Russia)

CRF-2 **Rotor Blade Shape Design Using MDO Platform – MEDOC**
Sanghyun Chae, Kwanjung Yee (Pusan National University, Korea), Shigeru Obayashi and Shinkyu Jeong (Tohoku University, Japan)

CRF-3 **Computations of Flow Field around an Object Decelerating from Supersonic to Subsonic Velocity**
Kazuaki Hatanaka, Tsutomu Saito (Muroran Institute of Technology, Japan), Hiroshi Yamashita, Toshihiro Ogawa, Shigeru Obayashi and Kazuyoshi Takayama (Tohoku University, Japan)

CRF-4 **Unsteady Aerodynamics of a Supersonic Silent Biplane at Low Speed Flight**
Hiromitsu Kawazoe (Tottori University, Japan), Shinji Abe (Churyo Engineering, Co., Ltd., Japan), Takashi Matsuno, Goji Yamada (Tottori University, Japan) and Shigeru Obayashi (Tohoku University, Japan)

CRF-5 **Shuttlecock Aerodynamics and Dynamic Behavior Just after Impact**
Seigo Kitta, Hiroaki Hasegawa (Akita University, Japan), Shigeru Obayashi (Tohoku University, Japan) and Masahide Murakami (University of Tsukuba, Japan)

CRF-6 **Two-phase Pressure Drop and Heat Transfer for Boiling Liquid Nitrogen Flow in a Horizontal Pipe**
Takayoshi Nagai, Ryo Shimizu, Katsuhide Ohira, Koichi Takahashi (Tohoku University, Japan), Hiroaki Kobayashi, Hideyuki Taguchi, Takayuki Kojima, and Motoyuki Hongo (Japan Aerospace Exploration Agency, Japan)

CRF-7 **Low Boom Characteristic of Supersonic Biplane with Sears-Haack Fuselage**
Atsushi Toyoda, Shigeru Obayashi(Tohoku University, Japan), Atsushi Matsuda (Meijo University, Japan), Kakuei Suzuki, Katsuya Shimizu and Akihiro Sasoh (Nagoya University, Japan)

CRF-8 **Parallel Computations on the Base of GPU for Modeling of Flame Balls Dynamics**
Roman Fursenko, Sergey Minaev (SB RAS, Russia), Kaoru Maruta and Hisashi Nakamura (Tohoku University, Japan)

CRF-9 **The Effect of Micro-Cavitation on Interfacial Phenomena and Vortex Structure of Atomizing Flow in Gasoline Injector Nozzle**
Jun Ishimoto (Tohoku University, Japan) and Kozo Saito (University of Kentucky, USA)

CRF-10 **Investigation of Supersonic Hybrid-Stabilized Argon-Water Arc for Biomass Gasification: A Comparative Numerical Study**
Jiri Jeništa (Insititute of Plasma Physics AS CR, Czech Republic), Hidemasa Takana, Hideya Nishiyama (Tohoku University, Japan) and Milan Hrabovský (Institute of Plasma Physics AS CR, Czech Republic)

CRF-11 **Fundamental Study of Methane-Air Plasma Flow at High Pressure**
Hidemasa Takana (Tohoku University, Japan), Yasunori Tanaka (Kanazawa University, Japan) and Hideya Nishiyama (Tohoku University, Japan)

CRF-12 **Intrinsic Instability of High-Temperature Premixed Flames: Formation of Cellular Flame Fronts**
Satoshi Kadowaki, Masafumi Yahata (Nagaoka University of Technology, Japan) and Hideaki Kobayashi (Tohoku University, Japan)

CRF-13 **Diatoms, Diffusion and Membranes**
Gary Rosengarten (University of New South Wales, Australia) and Atsuki Komiya (Tohoku University, Japan)

CRF-14 **On Location of a Load in a Radiant Furnace for Uniform Thermal Conditions Using REM² and Micro-Genetic Algorithm**
Ramchandra P. Chopade, Subhash C. Mishra, P. Mahanta (Indian Institute of Technology Guwahati, India), Shigenao Maruyama and Atsuki Komiya (Tohoku University, Japan)

CRF-15 **Inertial Effects in Nonlinear Models of Flame Front Evolution**
Sergey Minaev, Roman Fursenko (SB RAS, Russia) and Kaoru Maruta (Tohoku University, Japan)

CRF-16 **Direct Numerical Simulation of Turbulence-Radiation Interaction in a Turbulent Channel Flow**
Atsushi Sakurai, Koji Matsubara (Niigata University, Japan) and Shigenao Maruyama (Tohoku University, Japan)

CRF-17 **Nondestructive Methods for Evaluation of Surface or Subsurface Area**
Hak-Joon Kim, Sung-Jin Song (Sungkyunkwan University, Korea), Sung-Duk Kwon (Andong National University, Korea), Toshiyuki Takagi, Tetsuya Uchimoto and Hiroyuki Miki (Tohoku University, Japan)

CRF-18 **Viscosity Reduction of Diesel Fuel for Improving Fuel Atomization and Engine Efficiecy**
Rongjia Tao (Temple University, USA) and Masami Nakano (Tohoku University, Japan)

CRF-19 **Energy Transfer Simulation and Analysis on Mega-scale Environment**
Noboru Yamada (Nagaoka University of Technology, Japan), Atsushi Sakurai (Niigata University, Japan), Atsuki Komiya and Shigenao Maruyama(Tohoku University, Japan)

CRF-20 **Local Magnetization Process of Cr Depression Area for Sensitized Alloy600**
Katsuhiko Yamaguchi, Kenji Suzuki, O. Nittono (Fukushima University, Japan) , Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)

9:30-9:40 BREAK

9:40-10:40 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-21 **New Rehabilitation Equipment Using a Magnetic Stimulation Triggered by Electromyographic Activities**
Toshihiko Abe (IFG., Ltd, Japan), Toshiyuki Takagi, Shin-ichi Izumi (Tohoku University, Japan), Toshiaki Ichihara and Kazumi Yashima (IFG.,Ltd, Japan)

CRF-22 **Fluid Analysis of the Mechanism of Fetal Brain Hemorrhage**
Takuya Ito, Kenichi Funamoto, Kiyoe Funamoto, Kaori Tanabe, Ai Nakamura, Toshiyuki Hayase and Yoshitaka Kimura (Tohoku University, Japan)

CRF-23 **Detection of Microcalcification in Soft Tissue**
Lei Liu, Masafumi Ogasawara (GE Healthcare, Japan), K. Ozawa, Kenichi Funamoto, Makoto Ohta and Toshiyuki Hayase (Tohoku University, Japan)

CRF-24 **Bench Top Animal Model for Blast-Induced Traumatic Brain Injury Using Microexplosives: Difference of Pathology by the Presence of the Skull**
Atsuhiro Nakagawa (Tohoku University, Japan), Tatsuhiko Arafune (AIST, Japan), Miki Fujimura (Kohnan Hospital, Japan), Kiyonobu Ohtani, Hiroaki Yamamoto, Tadao Matsunaga (Tohoku University, Japan), Toshikatsu Washio (AIST, Japan), Akira Tsukamoto (National Defense Academy of Japan, Japan), Tohru Nakano, Masaaki Nakai, Masato Yamada, Chiaki Sato (Tohoku University, Japan), Takeshi Goda (University of California, USA), Yoshikazu Ogawa (Kohnan Hospital, Japan), Shukichi Miyazaki, Mingyu Sun, Toshihiro Kumabe (Tohoku University, Japan), Bahram Jalali (University of California, USA), Yoichi Haga (Tohoku University, Japan), Takashi Ushida (The University of Tokyo, Japan), Kazuyoshi Takayama (Tohoku University, Japan), Seiji Nishino (Stanford University, USA) , Mitsuo Niinomi (Tohoku University, Japan), Ichiro Sakuma (The University of Tokyo, Japan) and Teiji Tominaga (Tohoku University, Japan)

CRF-25 **Development of Stent for Cerebral Aneurysm based on Optimization**
Toshio Nakayama, Shinkyu Jeong (Tohoku University, Japan), Karkenahalli Srinivas (The University of Sydney, Australia) and Makoto Ohta (Tohoku University, Japan)

CRF-26 **Friction Properties of PVA-H for Biomodel and Steel Ball for Medical Devices**
Makoto Ohta, Hiroyuki Kosukegawa (Tohoku University, Japan) , Vincent Fridrici and Philippe Kapsa (Ecole Centrale de Lyon, France)

CRF-27 **Water Quality Change Induced by Plasma Formation in Water**
Takashi Miyahara (Shizuoka University, Japan), Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Technologies Co., Ltd., Japan)

CRF-28 **Development of Next-Generation Plasma Autoclave**
Takehiko Sato (Tohoku University, Japan), Kei Igarashi (Hirayama Manufacturing Co., Japan) and T. Furui (Tohoku University, Japan)

CRF-29 **Analysis of Plasma Flow at Gas-Liquid Interface for Biological Interaction**
Tetsuji Shimizu (Max-Planck Institute for Extraterrestrial Physics, Germany), Yutaka Iwafuchi (Tohoku University, Japan), Gregor E. Morfill (Max-Planck Institute for Extraterrestrial Physics, Germany) and Takehiko Sato (Tohoku University, Japan)

CRF-30 **Left Atrial Appendage**
Muneichi Shibata (Miyagi Cardiovascular and Respiratory Center and Tohoku University, Japan), Tomoyuki Yambe (Tohoku University, Japan), T. Yamaguchi (Tohoku Kousei Nenkin Hospital, Japan), Ryo Koizumi, Kenichi Funamoto and Toshiyuki Hayase (Tohoku University, Japan)

CRF-31 **Considerations for Simulations of Infusion in Realistic Animal Brain Geometries**
Joshua H. Smith (Lafayette College, USA), Kenichi Funamoto (Tohoku University, Japan), Kathleen Starkweather (Lafayette College, USA) and Toshiyuki Hayase (Tohoku University, Japan)

CRF-32 **Computer Simulation Predicts the Convective Drug Distribution in the Primate Brainstem**
Shin-ichiro Sugiyama, Ryuta Saito, Kenichi Funamoto, Yukihiko Sonoda, Toshihiro Kumabe, Toshiyuki Hayase and Teiji Tominaga (Tohoku University, Japan)

CRF-33 **Characterization of γ-Hemolysin on Liposome**
Noriko Tomita (Tohoku University, Japan), Yoshiyuki Kamio (Shokei Gakuin University, Japan) and Makoto Ohta (Tohoku University, Japan)

CRF-34 **Numerical Studies of the Reacting Rarefied Flows in Tubes**
Yevgeniy Bondar (ITAM, Russia), Kaoru Maruta (Tohoku University, Japan) and Mikhail Ivanov (ITAM, Russia)

CRF-35 **Investigation on Splats Formed from the Impact of Molten Tin Drops on Grooved Surfaces**
Deivandren Sivakumar (Indian Institute of Science, India), Kazunari Katagiri, Tomoki Nakajima, Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

CRF-36 **Tribological Behavior and Electrical Contact Resistance of Metal-Containing DLC Coating for Electrically Conductive Tribo-Elements**
Julien Fontaine, Michel Belin (Ecole Centrale de Lyon, France), Toshiyuki Takagi, Hiroyuki Miki, Koshi Adachi, Takanori Takeno (Tohoku University, Japan) , Minoru Goto (Ube National College of Technology, Japan) and Kosuke Ito (Ecole Centrale de Lyon, France and Nihon University, Japan)

CRF-37 **Proton Transport in Hydrogen Bond Network of Confined Water**
Nobuya Miyoshi, Ikuya Kinefuchi (The University of Tokyo), Takashi Tokumasu (Tohoku University, Japan), Shu Takagi and Yoichiro Matsumoto (The University of Tokyo, Japan)

CRF-38 **Fundamental Study on Spiking Neuron Devices**
Takashi Morie, Yilai Sun, Haichao Liang, Kazuki Nakada (Kyushu Institute of Technology, Japan), Makoto Igarashi, Chi-Hsien Huang and Seiji Samukawa (Tohoku University, Japan)

CRF-39 **A Molecular Study on the Thermodynamic Properties of Cryogenic Hydrogen**
Hiroki Nagashima (Aoyama Gakuin University, Japan), Takashi Tokumasu (Tohoku University, Japan), Shinichi Tsuda (Shinshu University, Japan), Nobuyuki Tsuboi (Kyushu Institute of Technology, Japan) and A. Koichi Hayashi (Aoyama Gakuin University, Japan)

CRF-40 **Optimization of Nozzle Shape and Ink Viscosity Toward Uniform Droplet Formation of a Continuous Inkjet**
Masami Nakano (Tohoku University, Japan), Tameo Nakanishi and Hinoki Tunokane (Yamagata University, Japan)

10:40-10:50 BREAK

10:50-12:00 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-41 **Consolidation of Ti Powder by a Compression Rotation Shearing Method under Room Temperature**
Sou Kato, Noboru Nakayama (Shinshu University, Japan), Hiroyuki Miki (Tohoku University, Japan) and Hiroyuku Takeishi (Chiba Institute of Technology, Japan)

CRF-42 **Reliability Verification of Edge-element FEM Code for ECT Simulation of Steam Generator Tube**
Jun Cheng, Jinhao Qiu (Nanjing University of Aeronautics & Astronautics, China), Toshiyuki Takagi and Tetsuya Uchimoto (Tohoku University, Japan)

CRF-43 **Residual Microbubbles after Collapse of Discharge-Induced or Laser-Induced Bubbles in Water**
Marc Tinguely (Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland), Masanobu Oizumi, Takehiko Sato (Tohoku University, Japan), Mohamed Farhat (Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland)

CRF-44 **Transport Phenomena at Nano-structured Interfaces**
Taku Ohara, Gota Kikugawa (Tohoku University, Japan) and Masahiko Shibahara (Osaka University, Japan)

CRF-45 **Analysis of Tunneling Potential Structure of Si SETs Formed by Pattern-Dependent Oxidation**
Yuki Kato, Mingyu Jo, Masashi Arita (Hokkaido University, Japan), Akira Fujiwara, Yukinori Ono, Katsuhiko Nishiguchi (NTT Basic Research Laboratories, Japan), Hiroshi Inokawa (Shizuoka University, Japan) and Yasuo Takahashi (Hokkaido University, Japan)

CRF-46 **Development and Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Takanobu Hira, Ryuichi Fukui, Nozomi Nakagawa, Ryuichi Akiyama (Kyoto Institute of Technology, Japan), Masami Nakano, Keisuke Yoshida and Teppei Tsujita (Tohoku University, Japan)

CRF-47 **Assessment of Different Thermostating Techniques in the Simulation of Molecular Lubrication**
H. Berro (Université de Lyon, France), Takashi Tokumasu, Taku Ohara, Gota Kikugawa (Tohoku University, Japan), N. Fillot and Philippe Vergne (Université de Lyon, France)

CRF-48 **Self-Assembled Bio-Conjugates Nano-Masks for Sub-10nm Ultra-Fine Nano-Etching**
Rikako Tsukamoto, Ichiro Yamashita (Nara Institute of Science and Technology, Japan) and Seiji Samukawa (Tohoku University, Japan)

CRF-49 **Study on Micro-motor Utilizing Quincke Rotation of Novel Smart Polymers**
Miklós Zrínyi, Mrudul Gadhvi (Semmelweis University, Hungary), Masami Nakano and Teppei Tsujita (Tohoku University, Japan)

CRF-50 **Design of Version Tree Operators for Sophisticated Visualization Provenance**
Issei Fujishiro (Keio University, Japan), Yuriko Takeshima (Tohoku University, Japan), Yuusuke Seshita (Keio University, Japan) and Toshiyuki Hayase (Tohoku University, Japan)

CRF-51 **Normal-Mode Stability Analysis of a Helical Vortex Tube**
Yasuhide Fukumoto (Kyushu University, Japan) and Yuji Hattori (Tohoku University, Japan)

CRF-52 **Entropy Change in Heusler Alloys under Influence of a Magnetic Field**
Vladimir Khovaylo (National University of Science and Technoly "MISiS", Russia), Konstantin Skokov (Tver State University and Institute for Metallic Materials, Russia), Yuri Koshkid'ko (Tver State University, Russia), Ekaterina Avilova (National University of Science and Technology "MISiS", Russia), Vasiliy Buchelnikov, Sergey Taskaev (Chelyabinsk State University, Russia), Oliver Gutfleisch (Institute for Metallic Materials, Germany), Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)

CRF-53 **Numerical and Experimental Research on Active Control of the Hole-Tone Feedback Problem**
Mikael A. Langthjem (Yamagata University, Japan) and Masami Nakano (Tohoku University, Japan)

CRF-54 **Simulations on a Radio-Frequency, Atmospheric-Pressure Glow Discharge Using an Integrated Kinetic-Fluid Model**
Pei-Si Le, Zhi-Bin Wang, He-Ping Li, Cheng-Yu Bao (Tsinghua University, China), Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

CRF-55 **Axisymmetric Steady Magnetic Vortices with Swirl**
Stefan G. Llewellyn Smith (UCSD, USA) and Yuji Hattori (Tohoku University, Japan)

CRF-56 **Instantaneous and Remote Flow Measurement using Laser-Induced Thermal Acoustics**
Toshiharu Mizukaki (Tokai University, Japan)

CRF-57 **Direct Numerical Simulation on the Effects of Free-stream Turbulence on an Isothermal Turbulent Boundary Layer**
Kouji Nagata, Yasuhiko Sakai, Hiroki Suzuki (Nagoya University, Japan) and Toshiyuki Hayase (Tohoku University, Japan)

CRF-58 **Observation of Streamer and Bubble Generation by Plasma**
Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Techonologies Co., Ltd., Japan),

CRF-59 **Surface Oscillations of Magnetic Fluid Droplet Adsorbed to Magnetized Needlepoint in Alternating Magnetic Field**
Seiichi Sudo, Sohta Inomata, Daisaku Asano (Akita Prefectural University, Japan), Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

CRF-60 **Kinetic Force Method with Quasiparticle Pairs for Numerical Modeling Micro Gas Flow in a Vacuum Pump**
Vladimir L. Saveliev (Institute of Ionosphere, Kazakhstan), Svetlana A. Filko (Insitute of Ionosphere and Zhetysu State University, Kazakhstan), Ko Tomarikawa and Shigeru Yonemura (Tohoku University, Japan)

CRF-61 **Drag Crisis of a Hard Baseball**
Kensuke Uchizono, Tkayuki Fukujyu, Takeshi Miyazaki (University of Electro-Communications, Japan), Ryutaro Himeno (RIKEN, Japan) and Shigeru Obayashi (Tohoku University, Japan)

12:00-12:30 BREAK

12:30-14:30 **Poster Session**

PS6: Liaison Office Session

TACHIBANA
November 2, 2010

17:00-18:30

1. State of International collaborative Education (5 min from each office)

This meeting is to inform and modify the international education projects such as summer school or double degree for RA

Masud Behnia (The University of Sydney)
Victoria Timchenko (The University of New South Wales)
Alexander Vasiliev (Moscow State University)
Jae-Hung Han (KAIST)
Hiroshi Higuchi (Syracuse University)
Joël Courbon (INSA-Lyon)
Fredrik Lundell (KTH Royal Institute of Technology)
Toshiyuki Takagi (Tohoku University)

2. Panel Discussion with Students