GCOE
Institute of Fluid Science
TOHOKU
UNIVERSITY

Global COE Program

Sixth International Conference on Flow Dynamics

November 4-6, 2009

Hotel Metropolitan Sendai, Sendai, Japan

Program

Preface

The people living in the 21st century are facing at big risks as global warming, shortage of food and energy, epidemic diseases, local starvation, poverty, and so on. In the mean time, we are always dreaming and making very best efforts for the progress of civilization by realizing higher quality of life and welfare. For those reasons, people are placing high expectations on the technology development in the frontier fields as state-of-the-art medical sciences, life sciences, IT, space technology, aviation technology, oceanology, and so forth.

"Flow Dynamics" is a comprehensive scientific field which deals with the flow and transport phenomena concerning to quantum wave, air, any fluid, any material, energy and information. Research on "Flow Dynamics" is expected to contribute to the society by challenging such crucial and unexplored tasks as above, and, by producing solutions for people's better life and dreams.

"The Sixth International Conference on Flow Dynamics", from 4th to 6th of November in Sendai, is now planned, aiming to explore new science horizon and cutting edge technologies of "Flow Dynamics", and to provide young researchers with unique opportunities of experience and self-development in this very attractive and competitive field of science and technology.

The Conference is comprised of a General Session and 11 Organized Sessions as follows:

General Session

- Current Topics in Flow Dynamics; organized by N. Tomita, H. Yamashita and Z. Fuadi

Organized Sessions

- Hybrid Rocket Propulsion and Related Fluid Dynamics; organized by T. Shimada and K. Sawada
- Functionality Design of the Contact Dynamics; organized by T. Takagi, T. Uchimoto and H. Miki
- Advanced Control of Smart Fluids and Fluid Flows; organized by M. Nakano and Y. Fukunishi
- Energy and Environmental Systems over Nano/Meso/Macro Scales; organized by A. Miyamoto and N. Hatakeyama
- Supersonic Technology Workshop (AFI/TFI-2009); organized by S. Obayashi
- IFS Collaborative Research Forum (AFI/TFI-2009) & IFS Research Exhibition (AFI/TFI-2009) organized by J. Ishimoto, S. Jeong.
- The Fifth International Students/Young Birds Seminar on Multi-scale Flow Dynamics; organized by Y. Saito and H. Takeda, and is supervised by K. Sato, J. Mizusaki and Y. Iga
- The 10th Japan-Korea Students' Symposium–Fast Ion Transport in Solids and Through Interfaces –The Related Materials and Phenomena; organized by E. Niwa and H.S. Kwon, and is supervised by J. Mizusaki and H. I. Yoo
- GCOE, IFS-Tsinghua University Joint Workshop 2009; organized by S. Maruyama, X. Liang and J. Ishimoto
- Liaison Office Session
  Topics: Possibility of International Joint Education for Higher Research; organized by T. Takagi and M. Ohta
- Alumni Session; organized by S. Maruyama

On behalf of the organizing committee of the Sixth International Conference on Flow Dynamics, I express my best wishes for your very enjoyable participation, successful exchanges of fruitful information and interactions among the participants from all over the world.

Dr. Shigenao Maruyama
Distinguished Professor and Program Leader
Tohoku University Global COE Program
"World Center of Education and Research for Trans-disciplinary Flow Dynamics"

Sixth International Conference on Flow Dynamics

Organized and Sponsored by:
The Global COE Program, "World Center of Education and Research for Trans-disciplinary Flow Dynamics"

In cooperation with:
- Aoba Foundation for the Promotion on Engineering
- Atomic Energy Agency of Japan
  Computational Science and Engineering Division
- Brain korea 21, materials education and research division and WCU (world class university)
- Combustion Society of Japan
- Cryogenic Association of Japan
- The Japan Society of Applied Electromagnetics and Mechanics

SCOPE:
We, the people living in the 21st century are now facing at big risks as global warming, shortage of food and energy, epidemic diseases, local starvation, poverty, and so on. In the mean time, we are always dreaming and making very best efforts for the progress of civilization by realizing higher quality of life and welfare. For that reason, people are placing high expectations on the technology development in the frontier fields as state-of-the-art medical sciences, life sciences, IT, space technology, aviation technology, oceanology, and so forth.

"Flow Dynamics" is a comprehensive scientific field which deals with the flow and transport phenomena concerning to quantum wave, air, any fluid, any material, energy and information. "Flow Dynamics" is expected to contribute to the society by challenging such crucial and unexplored tasks as above, and producing solutions for people's better life and dreams.

"The Sixth International Conference on Flow Dynamics", from 4th to 6th of November in Sendai, is now planned, aiming to explore new science horizon and cutting edge technologies of "Flow Dynamics", and to provide young researchers with unique opportunities of experience and self-development in this very attractive and very competitive field of "Flow Dynamics".

We cordially invite you, the researchers and technologists, to participate in this conference.

Organizing Committee Members:

Shigenao Maruyama (General Chair)	Hideyuki Aoki	Keisuke Asai
Yu Fukunishi	Hidetoshi Hashizume	Nozomu Hatakeyama
Yuka Iga	Jun Ishimoto	Takatoshi Ito
Tetsuya Kodama	Atsuki Komiya	Kaoru Maruta
Goro Masuya	Hiroyuki Miki	Hideo Miura
Takatoshi Miura	Akira Miyamoto	Junichiro Mizusaki
Kazuhiro Nakahashi	Masami Nakano	Hideya Nishiyama
Shigeru Obayashi	Taku Ohara	Katsuhide Ohira
Makoto Ohta	Seiji Samukawa	Mamiko Sasao
Kazuhisa Sato	Takehiko Sato	Keisuke Sawada
Toshiyuki Takagi	Yuriko Takeshima	Takashi Tokumasu
Michio Tokuyama	Shigeru Yonemura	Hiroo Yugami

Executive Committee Members:
Junichiro Mizusaki (6th ICFD chair), Shigeru Obayashi (AFI/TFI chair), Toshiyuki Takagi (CEO)
Toshiyuki Hayase (IFS Director)

Conference Secretariat:
COE Building, Institute of Fluid Science, Tohoku University
2-1-1, Katahira, Aoba, Sendai, 980-8577, Japan
Phone&Fax: +81-22-217-5301 E-mail: icfd2009@gcoe.ifs.tohoku.ac.jp

Administrative Staff
Zahrul Fuadi, Natsuko Hatakeyama, Naoko Hosoyachi, Hisanori Masuda, Tomomi Nagayoshi, Fumio Saito, Yuko Sasaki, Yuko Shimokawara, Ryoko Suzuki, Aki Taguchi, Masashi Takeyama, Noriko Tomita, Naoto Wada, Yukie Yamakawa, Hiroshi Yamashita

Plenary Lectures

Rheology for Efficient Energy Production, Transportation, and Conservation

Rongjia Tao (Temple University)

(9:20-10:10, November 4, at Sendai East)

An Odyssey to Experimentally Verify the Onsager Reciprocity in Flow of Charged Particles in Solids

Han-Ill Yoo (Seoul National University)

(10:15-11:05, November 4, at Sendai East)

Ultimate Nanofabrication Technology by Neutral Particle Beam

Seiji Samukawa (Tohoku University)

(11:10-12:00, November 4, at Sendai East)

Sessions

General Session

Current Topics in Flow Dynamics
Organizer: Noriko Tomita, Hiroshi Yamashita and Zahrul Fuadi

Organized Session

Hybrid Rocket Propulsion and Related Fluid Dynamics
Organizer: Toru Shimada, Keisuke Sawada

Functionality Design of the Contact Dynamics
Organizer: Toshiyuki Takagi, Tetsuya Uchimoto and Hiroyuki Miki

Advanced Control of Smart Fluids and Fluid Flows
Organizer: Masami Nakano, Yu Fukunishi

Energy and Environmental Systems over Nano/Meso/Macro Scales
Organizer: Akira Miyamoto, Nozomu Hatakeyama

Supersonic Technology Workshop (AFI/TFI-2009)
Organizer: Shigeru Obayashi

IFS Collaborative Research Forum (AFI/TFI-2009) & IFS Research Exhibition (AFI/TFI-2009)
Organizer: Jun Ishimoto, Shinkyu Jeong

The Fifth International Students/Young Birds Seminar on Multi-scale Flow Dynamics
Organizer: Yasuhiro Saito, Hiroki Takeda
Supervisor: Kazuhisa Sato, Junichiro Mizusaki, Yuka Iga

The 10th Japan-Korea Students' Symposium
–Fast Ion Transport in Solids and Through Interfaces –The Related materials and Phenomena –
Organizer: Eiki Niwa, Hyung-Soon Kwon
Supervisor: Junichiro Mizusaki, Han-Ill Yoo

GCOE, IFS-Tsinghua University Joint Workshop 2009
Organizer: Shigenao Maruyama, X. Liang, Jun Ishimoto

Liaison Office Session
Topic: Possibility of International Joint Education for higher research
Organizer: Toshiyuki Takagi, Makoto Ohta

Alumni Session
Organizer: Shigenao Maruyama

General Information

Registration:

.
8:00 - , Wednesday, November 4
The conference registration desk is located in the lobby, 4th floor in the morning. It will be moved to 3rd floor in the afternoon.

7:30 - , Thursday, November 5
The conference registration desk is located in the lobby, 3rd floor.

8:00 - , Friday, November 6
The conference registration desk is located in the lobby, 3rd floor.

Opening: (at SENDAI (EAST))

9:00- , Wednesday, November 4

Students/Young Birds Friendship Night: (at SAKURA Hall, Tohoku University)

18:00 – 20:00, Wednesday, November 4
All students and young researchers can attend to Students/Young Birds Friendship Night.

Banquet: (at SENDAI (SOUTH WEST))

19:00 – 21:00, Thursday, November 5

Internet access corner

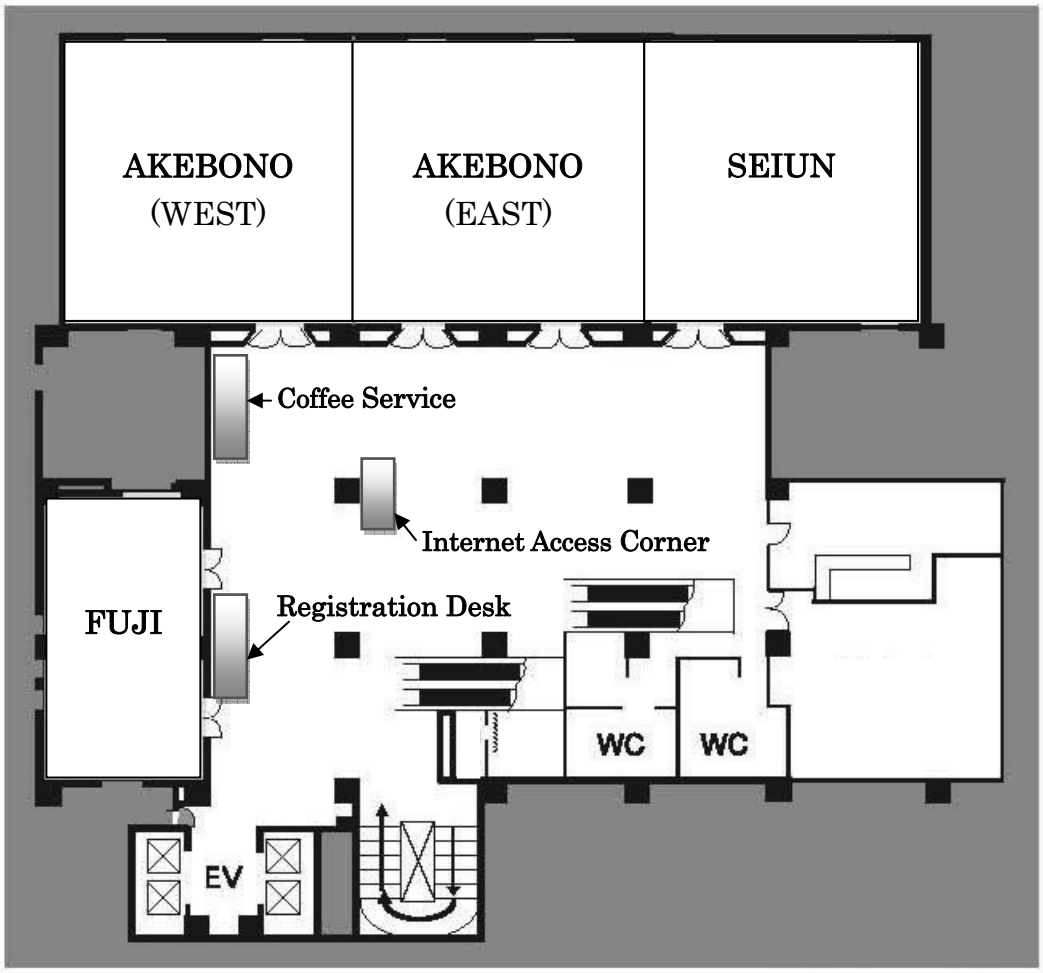
All conference attendees may use internet for free. Free Ethernet access will be possible during the conference at 3rd floor. Standard wired hubs (with RJ45 sockets) will be provided for networking.

Coffee service:

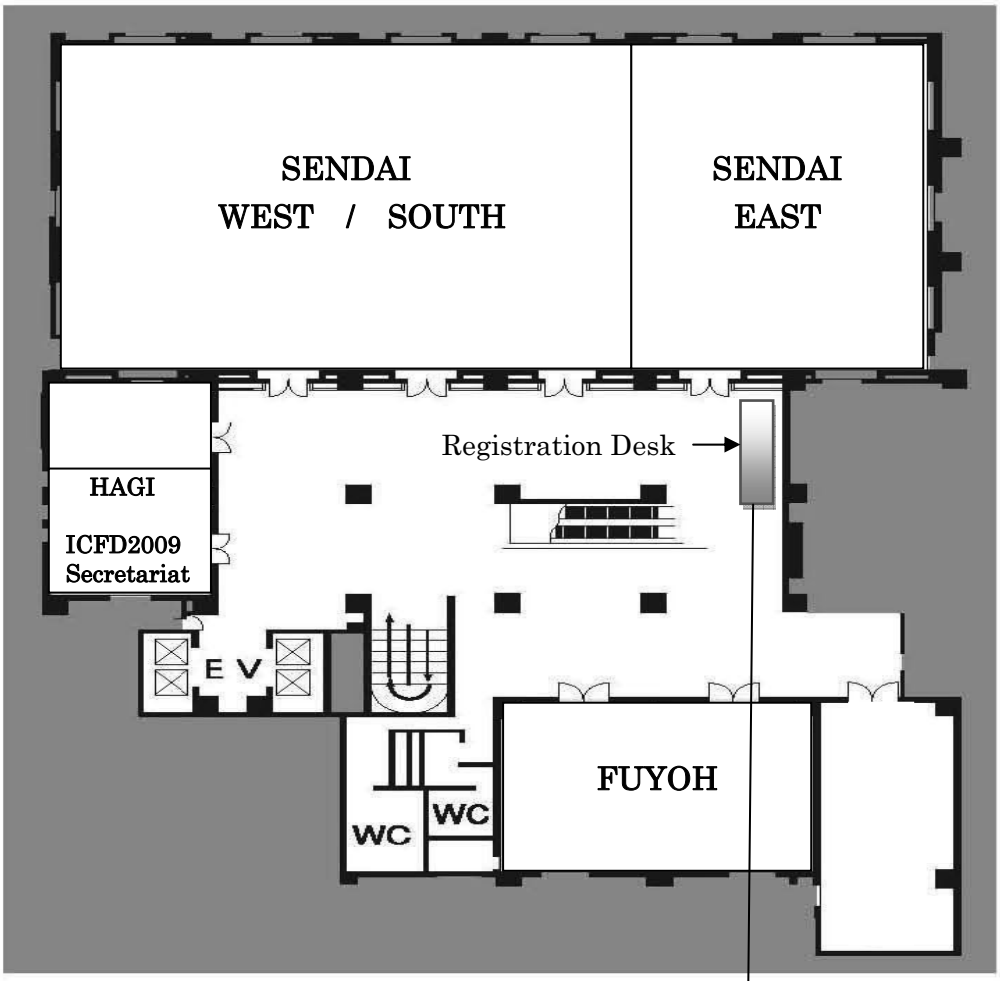
Coffee is served in the lobby, 3rd floor.

ICFD2009 Secretariat: (at Hagi, 4th floor)

3rd floor (AKEBONO, SEIUN, FUJI)



4th floor (SENDAI, FUYOH, HAGI)



The conference registration desk is located in the lobby, on 4th floor in the morning of November 4. Then, it will be moved to 3rd floor in the afternoon onwards.

6th ICFD (2009) Time Table

Wednesday, November 4, 2009

OS	Opening Address Plenary Lectures	Hybrid Rocket Propulsion and Related Fluid Dynamics	Energy and Environmental Systems over Nano/Meso/Macro Scales	Supersonic Technology Workshop (AFI/TFI-2009)
ROOM	SENDAI (EAST)	FUJI	FUYOH	AKEBONO (EAST)
8:00				
9:00	9:00-9:20 **Opening Address** @SENDAI (EAST)			
10:00	9:20-10:10 **Plenary Lecture** @SENDAI (EAST) "Rheology for Efficient Energy Production, Transportation, and Conservation" Rongjia Tao (Temple University, USA)			
	BREAK			
11:00	10:15-11:05 **Plenary Lecture** @SENDAI (EAST) "An Odyssey to Experimentally Verify the Onsager Reciprocity in Flow of Charged Particles in Solids" Han-Ill Yoo (Seoul National University, KOREA)			
	BREAK			
12:00	11:10-12:00 **Plenary Lecture** @SENDAI (EAST) "Ultimate Nanofabrication Technology by Neutral Particle Beam" Seiji Samukawa (Tohoku University, JAPAN)			
13:00		13:00-13:40 2-1 Keynote Lectures Daniele Barbagallo (Invited)		13:00-13:40 SST-1 Mikhail S. Ivanov (Invited)
14:00		13:40-14:20 2-2 Keynote Lectures Fulvio Stella (Invited)		13:45-14:05 SST-2 Shunsuke Shimizu
		BREAK		14:05-14:25 SST-3 Kazuaki Hatanaka
		14:30-14:50 2-3 Harunori Nagata		BREAK
15:00		14:50-15:10 2-4 Ichiro Nakagawa		14:45-15:30 SST-4 Domenico Quagliarella (Invited)
		15:10-15:30 2-5 Seungwon Ha		
		15:30-15:50 2-6 Masami Tomita	15:30-15:45 5-1 Seigo Sakai (Invited)	15:30-15:50 SST-5 Yusuke Naka
16:00		BREAK	15:45-16:00 5-2 Sudarshan Kumar (Invited)	15:50-16:10 SST-6 Takeharu Sakai (Invited)
		16:00-16:20 2-7 Rajesh K. Sharma	16:00-16:15 5-3 Wenguang Zhang (Invited)	16:10-16:30 SST-7 Hiroshi Yamashita
		16:20-16:40 2-8 Fulvio Stella (Invited)	16:15-16:30 5-4 Jafar Ali	BREAK
		16:40-17:00 2-9 Nobuyuki Tsuboi	16:30-16:45 5-5 Yuko Amo	16:50-17:10 SST-8 Chae-hyoung Kim
17:00		17:00-17:20 2-10 Keiichi Ishiko	BREAK	17:10-17:30 SST-9 Takashi Matsuno
		BREAK	17:00-17:15 5-6 Sergey Minaev	17:30-17:50 SST-10 Atsushi Matsuda (Invited)
		17:30-17:50 2-11 Kazuki Yoshimura	17:15-17:30 5-7 Roman Fursenko	17:50-18:10 SST-11 Atsushi Matsuda (Invited)
18:00		17:50-18:10 2-12 Mikiro Motoe	17:30-17:45 5-8 Nickolay A. Lutsenko	18:10-18:30 SST-12 Atsushi Toyoda
		18:10-18:30 2-13 Yuki Funami	17:45-18:00 5-9 Nickolay A. Lutsenko	
19:00				
20:00				

The Fifth International Students/Younb Birds Seminar on Multi-scale Flow Dynamics	The 10th Japan-Korea Students' Symposium -Fast Ion Transport in Solids and Through Interfaces - The Related Materials and Phenomena -	Current Topics in Flow Dynamics	Students /Young Birds Friendship Night	OS
AKEBONO (WEST)	SEIUN	FUYOH	SAKURA HALL(Katahira, Tohoku Univ.)	ROOM
				8:00
9:00-9:20 **Opening Address** @SENDAI (EAST)				9:00
9:20-10:10 **Plenary Lecture** @SENDAI (EAST) "Rheology for Efficient Energy Production, Transportation, and Conservation" Rongjia Tao (Temple University, USA)				10:00
BREAK				
10:15-11:05 **Plenary Lecture** @SENDAI (EAST) "An Odyssey to Experimentally Verify the Onsager Reciprocity in Flow of Charged Particles in Solids" Han-Ill Yoo (Seoul National University, KOREA)				11:00
BREAK				
11:10-12:00 **Plenary Lecture** @SENDAI (EAST) "Ultimate Nanofabrication Technology by Neutral Particle Beam" Seiji Samukawa (Tohoku University, JAPAN)				12:00
				13:00
13:00-13:05 Opening 13:05-13:41 9-1 - 9-9 Session1 -Award Session- *Short Oral Presentation*	13:00-13:20 10-1 N. -J. Heo	13:00-13:20 11-1 Wu-Shung Fu (Invited)		
	13:20-13:40 10-2 H. -S. Kwon	13:20-13:40 11-2 Koutaro Tsubaki (Invited)		
13:41-14:20 9-1 - 9-9 *Poster Presentation*	13:40-14:00 10-3 E. Niwa	13:40-14:00 11-3 Gota Kikugawa		
	14:00-14:20 10-4 H. Jang	14:00-14:20 11-4 Jongsoo Ha		14:00
BREAK	BREAK	14:20-14:40 11-5 Jinhao Qiu (Invited)		
	14:30-14:50 10-5 S. Nakayama	14:40-15:00 11-6 Gabor Vértesy (Invited)		
	14:50-15:10 10-6 Y. Kim			
15:00-15:36 9-10 - 9-18 Session2 -Award Session- *Short Oral Presentation*	15:10-15:30 10-7 S. Yuyama			15:00
15:36-16:16 9-10 - 9-18 *Poster Presentation*	15:30-15:50 10-8 Mohd. Ashrol Bin Haji Ini			
	BREAK			
	16:00-16:20 10-9 H. Watanabe			16:00
	16:20-16:40 10-10 Y. Chen			
	16:40-17:00 10-11 S. Osugi			
	17:00-17:20 10-12 I. Nakano			17:00
	BREAK			
	17:30-17:50 10-13 C. -H. Kim			
	17:50-18:10 10-14 S. Nakagawa			18:00
	18:10-18:30 10-15 S. Nam		18:00-20:00 Students / Young Birds Friendship Night @SAKURA HALL, Katahira, Tohoku University	
	18:30-18:50 10-16 A. Suzuki			19:00
				20:00

Thursday, November 5, 2009

OS	Functionality Design of the Contact Dynamics	Advanced Control of Smart Fluids and Fluid Flows	IFS Collaborative Research Forum (AFI/TFI-2009) & IFS Research Exhibition (AFI/TFI-2009)	The Fifth International Students/Younb Birds Seminar on Multi-scale Flow Dynamics
ROOM	FUJI	FUJI	AKEBONO (EAST)	FUYOH
8:00				
			8:30-9:30 CRF-1 - CRF-16 *Short Oral Presentation*	
9:00	9:00-9:35 3-1 Keynote Lecture Staffan Jacobson (Invited)			9:00-9:36 9-19 - 9-27 Session3 *Short Oral Presentation*
	9:35-10:00 3-2 Boyko Stoimenov (Invited)		BREAK	9:36-10:16 9-19 - 9-27 *Poster Presentation*
10:00	10:00-10:15 3-3 Zahrul Fuadi		9:40-11:00 CRF-17 - CRF-37 *Short Oral Presentation*	
	BREAK			BREAK
	10:25-10:50 3-4 Julien Fontaine (Invited)			10:30-11:06 9-28 - 9-36 Session4 *Short Oral Presentation*
11:00	10:50-11:15 3-5 Koji Matsumoto (Invited)		BREAK	
	11:15-11:40 3-6 Minoru Goto (Invited)		11:10-12:00 CRF-38 - CRF-42 REX-1 - REX-9 *Short Oral Presentation*	11:06-11:46 9-28 - 9-36 *Poster Presentation*
	BREAK			
12:00	11:50-12:15 3-7 Sung-Jin Song (Invited)		BREAK	
	12:15-12:30 3-8 Hiroyuki Miki		12:20-14:30 CRF-1 - CRF-42 REX-1 - REX-9 *Poster Session*	
13:00		13:00-13:05 Opening Address Masami Nakano 13:05-13:45 4-1 Keynote Lecture Seung-Bok Choi (Invited)		13:00-13:40 9-37 - 9-46 Session5 *Short Oral Presentation*
		13:45-14:15 4-2 Miklós Zrínyi (Invited)		13:40-14:20 9-37 - 9-46 *Poster Presentation*
14:00		14:15-14:35 4-3 Takahiro Murakami		
		14:35-14:55 4-4 Hiroshi Kobayashi		BREAK
15:00		14:55-15:15 4-5 Xiao-Dong Niu		15:00-15:40 9-47 - 9-56 Session6 *Short Oral Presentation*
		15:20-15:50 4-6 Hitoshi Ishikawa (Invited)		15:40-16:20 9-47 - 9-56 *Poster Presentation*
16:00		15:50-16:20 4-7 Hiroshi Higuchi (Invited)		
		16:20-16:40 4-8 Tameo Nakanishi		
17:00		16:40-17:00 4-9 Mikael A. Langthjem		
	Liaison Office Session @ SENDAI (EAST) 17:00-17:20 State and Plan of International Education in Tohoku University Goro Masuya (Tohoku University) 17:20-19:00 Part1：Panel Discussion Part2：Questions and Discussion			
18:00				
19:00				
20:00	19:00-21:00 **Banquet** @SENDAI (SOUTH WEST)			
21:00				

The 10th Japan-Korea Students' Symposium -Fast Ion Transport in Solids and Through Interfaces - The Related Materials and Phenomena -	Current Topics in Flow Dynamics	GCOE, IFS-Tsinghua University Joint Workshop 2009	Liaison Office Session	OS
SEIUN	AKEBONO (WEST)	AKEBONO (WEST)	SENDAI (EAST)	ROOM
		8:00-8:24 12-1 Xingang Liang (Invited)		
8:10-8:30 10-17 S. Jung		8:24-8:48 12-2 Li Luming (Invited)		
8:30-8:50 10-18 T. Lee		8:48-9:12 12-3 Guo Yincheng (Invited)		9:00
8:50-9:10 10-19 J. I. Yeon		9:12-9:36 12-4 Xu Xianghua (Invited)		
BREAK		9:36-10:00 12-5 Ke-Qin Zhu (Invited)		
9:30-9:50 10-20 Y. Mori		10:00-10:24 12-6 Zhang Huiqiang (Invited)		10:00
9:50-10:10 10-21 M. -S. Lee				
10:10-10:30 10-22 T. -H. Kwon		10:30-10:43 12-7 Yuji Hattori 10:43-10:56 12-8 Weiming Song 10:56-11:09 12-9 Hideaki Kobayashi 11:09-11:22 12-10 Hisashi Nakamura 11:22-11:35 12-11Quan-Wen Hou 11:35-11:48 12-12 Taku Ohara 11:48-12:01 12-13 Takashi Tokumasu		11:00
BREAK				
10:40-11:00 10-23 Y. Park				
11:00-11:20 10-24 Y. Oh				
11:20-11:40 10-25 W. -S. Chang				
11:40-12:00 10-26 Y. Hwa				12:00
				13:00
13:00-13:20 10-27 H. -I. Ji		13:00-13:24 12-14 Bing Wang (Invited)		
13:20-13:40 10-28 K. Nagao		13:24-13:37 12-15 Shigeru Yonemura 13:37-13:50 12-16 Jing-Bo Huang 13:50-14:03 12-17 Genki Yamamoto		
13:40-14:00 10-29 Y. Goya		BREAK		14:00
14:00-14:20 10-30 M. Y. Oh		14:08-14:21 12-18 Atsuki Komiya 14:21-14:34 12-19 Xue-Wei Sun 14:34-14:47 12-20 Kazuo Matsuura 14:47-15:00 12-21 Jun Ishimoto		
14:20-14:40 10-31 T. Izumi				
14:40-15:00 10-32 D. -R. Jung				15:00
15:00-15:20 10-33 Y. Nagara	15:00-15:20 11-7 Andrew J. Meade (Invited)			
15:20-15:40 10-34 K. -R. Lee	15:20-15:40 11-8 Viren Menezes			
BREAK	15:40-16:00 11-9 Lucia Parussini (Invited)			16:00
16:00-16:20 10-35 Y. Takeyama	16:00-16:20 11-10 Chih-Yung Huang (Invited)			
16:20-16:40 10-36 H. Ito	16:20-16:40 11-11 Thilanka Munasinghe			
16:40-17:00 10-37 T. Kushi	16:40- 17:00 11-12 Jamese W. Gregory (Invited)			17:00
Liaison Office Session @ SENDAI (EAST) 17:00-17:20 State and Plan of International Education in Tohoku University Goro Masuya (Tohoku University) 17:20-19:00 Part1：Panel Discussion Part2：Questions and Discussion				18:00 19:00
19:00-21:00 **Banquet** @SENDAI (SOUTH WEST)				20:00 21:00

Friday, November 6, 2009

OS	Advanced Control of Smart Fluids and Fluid Flows		The Fifth International Students / Young Birds Seminar on Multi-scale Flow Dynamics	The 10th Japan-Korea Students' Symposium -Fast Ion Transport in Solids and Through Interfaces - The Related Materials and Phenomena -	Alumni Session	OS
ROOM	FUJI	FUYOH	FUYOH	SEIUN	AKEBONO (WEST)	ROOM
8:00						8:00
9:00	9:00-9:30 4-10 Deivandren Sivakumar (Invited)		9:00-9:40 9-57 - 9-66 Session7 *Short Oral Presentation*	9:00-9:20 10-38 Y. Fukuda	9:00-9:05 Opening Address	9:00
	9:30-10:00 4-11 Katsufumi Tanaka (Invited)			9:20-9:40 10-39 M. -B. Choi	9:05-10:45 Session1-1 *Introduction of Institution and Research* (14-1 - 14-15)	
10:00	10:00-10:20 4-12 Sanjeev Sharma		9:40-10:20 9-57 - 9-66 *Poster Presentation*	9:40-10:00 10-40 M. Nagai		10:00
	10:25-10:55 4-13 Hyung Jin Sung (Invited)		BREAK	10:00-10:20 10-41 S. -Y. Jeon		
			10:30-11:10 9-67 - 9-76 Session8 *Short Oral Presentation*	10:20-10:40 10-42 M. Shimizu		
11:00	10:55-11:25 4-14 Fredrik Lundell (Invited)			BREAK	10:45-12:00 Session1-2 *Poster Presentation* (14-1 - 14-15)	11:00
	11:25-11:45 4-15 Yusuke Tokura		11:10-11:50 9-67 - 9-76 *Poster Presentation*	11:00-11:20 10-43 E. -C. Shin		
	11:45-12:05 4-16 Yusuke Suzuki			11:20-11:40 10-44 D. Kim		
12:00				11:40-12:00 10-45 Y. Iwai		12:00
13:00		13:00-13:45 4-17 - 4-25 *Short Oral Presentation*		13:00-13:20 10-46 J. Chun	13:00-13:54 Session2-1 *Introduction of Institution and Research* (14-16 - 14-24)	13:00
				13:20-13:40 10-47 H. Takahashi		
		13:50-14:40 4-26 - 4-35 *Short Oral Presentation*		13:40-14:00 10-48 T. Nakamura		
14:00				14:00-14:20 10-49 H. -S. Kim	13:54-15:00 Session2-2 *Poster Presentation* (14-16 - 14-24)	14:00
		BREAK		14:20-14:25 Closing Remark		
15:00		14:50-15:50 4-17 - 4-35 *Poster Presentation*			15:00-16:00 Alumni Reunion Session	15:00
16:00						16:00
17:00						17:00
18:00						18:00
19:00						19:00
20:00						20:00
21:00						21:00

Sixth International Conference on Flow Dynamics

Program

Plenary Lectures

SENDAI (EAST)
November 4, 2009

Hybrid Rocket Propulsion and Related Fluid Dynamics

FUJI
November 4, 2009

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

Regression Rate and Ablation
Chair: Keisuke Sawada (Tohoku University, Japan)

15:50-16:00 BREAK

Simulation I
Chair: Harunori Nagata (Hokkaido University, Japan)

Functionality Design of the Contact Dynamics

FUJI
November 5, 2009

Chair: Julien Fontaine (Ecole Centrale de Lyon, France)

Advanced Control of Smart Fluids and Fluid Flows

FUJI
November 5, 2009

FUJI
November 6, 2009

Chair: Hidemasa Takana (Tohoku University, Japan)

Chair: Yu Fukunishi (Tohoku University, Japan)

FUYOH
November 6, 2009

Chair: Kazuo Matsuura (Tohoku University, Japan)

13:00-13:45 **Short Oral Presentation**
(4 min for Short Oral Presentation)

Energy and Environmental Systems over Nano/Meso/Macro Scales

FUYOH
November 4, 2009

Supersonic Technology Workshop (AFI/TFI-2009)

AKEBONO (EAST)
November 4, 2009

SST-1 13:00-13:40	**Hysteresis of the Transition between Regular and Mach Reflections of Steady Shock Waves** ***(Invited)*** Mikhail S. Ivanov, Dmitry V. Khotyanovsky and Alexey N. Kudryavtsev (Siberian Branch of the Russian Academy of Sciences, Russia)
13:40-13:45	BREAK
SST-2 13:45-14:05	**A Study based on Shock Dynamics for the Generation of Secondary Shock Wave in Shock-Vortex Interaction** Shunsuke SHIMIZU (Private,Japan)
SST-3 14:05-14:25	**Computations of Unsteady Flow Field around an Accelerating Sphere in the Transonic Flow Velocity Region** Kazuaki Hatanaka, Tsutomu Saito (Muroran Institute of Technology, Japan), Hiroshi Yamashita, Toshihiro Ogawa, Shigeru Obayashi and Kazuyoshi Takayama (Tohoku University, Japan)
14:25-14:45	BREAK
SST-4 14:45-15:30	**Evolutionary Optimization of Natural Laminar Flow Wing in Supersonic Regime** ***(Invited)*** E. Iuliano and Domenico Quagliarella (CIRA, Italy)
SST-5 15:30-15:50	**Fundamental Finite Element Analysis of Building Vibration Induced by Sonic Boom** Yusuke Naka (Japan Aerospace Exploration Agency, Japan)
SST-6 15:50-16:10	**CFD Simulation of Weak Shock Wave Propagation in an Atmosphere** ***(Invited)*** Takeharu Sakai (Nagoya University, Japan)
SST-7 16:10-16:30	**Global Sonic Boom Overpressure Variation under Realistic Meteorological Condition** Hiroshi Yamashita and Shigeru Obayashi (Tohoku University, Japan)
16:30-16:50	BREAK
SST-8 16:50-17:10	**Development of New Supersonic Mixer for Enhancement of Scramjet Engine** Chae-hyoung Kim, In-Seuck Jeung (Seoul National University, Korea), Byungil Choi, Yoshinori Matsubara, Toshinori Kouchi and Goro Masuya (Tohoku University, Japan)
SST-9 17:10-17:30	**An Application of DBD Plasma Actuator to Shock Wave Mitigation** Takashi Matsuno, Takashi Kanatani, Hiromitsu Kawazoe (Tottori University, Japan) and Shigeru Obayashi (Tohoku University, Japan)

SST-10
17:30-17:50

Preliminary Study of Interaction between Weak Shock Wave and Turbulent Flow *(Invited)*

Atsushi Matsuda, Daisuke Takagi, J. Kim, Akihiro Sasoh, Shigeyoshi Ito, Koji Nagata and Yasuhiko Sakai (Nagoya University, Japan)

SST-11
17:50-18:10

Three Dimensional Free Flight Experiment Using Square Bore Ballistic Range *(Invited)*

Atsushi Matsuda, Katsuya Shimizu, Kosuke Kikuchi, Kakuei Suzuki and Akihiro Sasoh (Nagoya University, Japan)

SST-12
18:10-18:30

Numerical and Experimental Analysis on Shock Wave Interaction of the Supersonic Biplane Model

Atsushi Toyoda, Masayuki Okubo and Shigeru Obayashi (Tohoku University, Japan), Katsuya Shimizu, Atsushi Matsuda and Akihiro Sasoh (Nagoya University, Japan)

IFS Collaborative Research Forum (AFI/TFI-2009)
& IFS Research Exhibition (AFI/TFI-2009)

AKEBONO (EAST)

November 5, 2009

Chair: Shinkyu Jeong (Tohoku University, Japan)

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

CRF-1 **Blade Shape Optimization and Data mining for HSI Noise and Aerodynamics Performances of Helicopter**
Shinkyu Jeong, Toru Sasaki (Tohoku University, Japan), Sanghyun Chae, Kwanjung Yee (Pusan National University, Korea), and Takashi Aoyama(Japan Aerospace Exploration Agency, Japan)

CRF-2 **Thermo-Fluid Characteristics of Boiling Liquid Nitrogen Flowing in a Horizontal Pipe**
Ryo Shimizu, Katsuhide Ohira, Koichi Takahashi (Tohoku University, Japan), Hiroaki Kobayashi, Hideyuki Taguchi, Takayuki Kojima and Motoyuki Hongo (Japan Aerospace Exploration Agency, Japan)

CRF-3 **Experimental Study on Aerodynamic Characteristics of a Silent Supersonic Aircraft in Low Speed Flight**
Hiromitsu Kawazoe, Takashi Matsuno (Tottori University, Japan), Shigeru Obayashi and Shinkyu Jeong (Tohoku University, Japan)

CRF-4 **Numerical Simulations of Flow Field Around an Object Decelerating from Supersonic to Subsonic Velocity**
Kazuaki Hatanaka, Tsutomu Saito (Muroran Institute of Technology, Japan) and Hiroshi Yamashita, Toshihiro Ogawa, Shigeru Obayashi, Kazuyoshi Takayama (Tohoku University, Japan)

CRF-5 **Investigation of Hypersonic Flows about Leading Edges of Small Bluntness *(Invited)***
Mikhail Ivanov (ITAM, Russia), Shigeru Yonemura (Tohoku University, Japan), Yevgeniy Bondar and Dmitry Khotyanovsky (ITAM, Russia)

CRF-6 **Study of Unstable Phenomena of Film Boiling in Superfluid Helium**
Masakazu Nozawa (Tohoku University, Japan), Nobuhiro Kimura (High Energy Accelerator Research Organization, Japan), Shinichi Chiba and Katsuhide Ohira (Tohoku University, Japan)

CRF-7 **Modelling of Supersonic and Turbulent Hybrid Arc for Biomass Gasification *(Invited)***
Jiri Jeništa (Institute 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-8 **Computational Simulation of Highly Reactive Air Plasma Jet under High Pressure Conditions**
Hidemasa Takana (Tohoku University, Japan), Yasunori Tanaka (Kanazawa University, Japan) and Hideya Nishiyama (Tohoku University, Japan)

CRF-9 **Dynamics of Premixed Flames Propagating in Non-Uniform Velocity Fields: Combined Effects of Intrinsic Instability and Radiation**
Satoshi Kadowaki, Hidekazu Takahashi (Nagaoka University of Technology, Japan) and Hideaki Kobayashi (Tohoku University, Japan)

CRF-10 **Investigations of Reacting Flow in Micro Channels Directed to Development of Eco-Friendly Technologies of Energy Conversion**
Sergey Minaev (ITAM SB RAS, Russia), Kaoru Maruta (Tohoku University, Japan)

CRF-11 **Use of Fluid Inclusions in Sludge Sample for the Estimation of Thermal History of Geothermal Fields**
Kotaro Sekine (Tohoku University, Japan), Masaho Adachi, Hitoshi Ozeki (Okuaizu Geothermal Co., Ltd,, Japan), and Brian Rusk (James Cook University, Australia)

CRF-12 **Distinct Element Modeling for Hydraulic Fracturing in Unconsolidated Sands**
Hiroyuki Shimizu, Sumihiko Murata (Kyoto University, Japan), Takatoshi Ito (Tohoku University, Japan), Tsuyoshi Ishida (Kyoto University, Japan)

CRF-13 **The Effects of Radiative Heat Transfer in a Turbulent Channel Flow *(Invited)***
Atsushi Sakurai, Kenji Takakuwa, Koji Matsubara (Niigata University, Japan) and Shigenao Maruyama (Tohoku University, Japan)

CRF-14 **Magnetic Dynamic Process of Magnetic Layers in Grain Boundary due to Fatigue for Material Degradation**
Katsuhiko Yamaguchi, Kenji Suzuki, Osamu Nittono (Fukushima University, Japan), Tetsuya Uchimoto and Toshiyuki Takagi (Tohoku University, Japan)

CRF-15 **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-16 **Development of Nondestructive Evaluation Method for Characterization of Surface/Sub-surface Material Properties *(Invited)***
Hak-Joon Kim (Sungkyunkwan University, Korea), Ho-Sang Shin (Korea Institute of Nuclear Safety, Korea), Dong-Yeol Kim, Sung-Jin Song (Sungkyunkwan University, Korea), Sung-Duk Kwon (Andong National University, Korea), Toshiyuki Takagi and Tetsuya Uchimoto (Tohoku University, Japan)

9:30-9:40 BREAK

9:40-11:00 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-17 **Mechanism of Radical Generation and Sterilization by a Plasma Flow at Atmospheric Pressure**
Takashi Miyahara (Shizuoka University, Japan), Shiroh Ochiai and Takehiko Sato (Tohoku University, Japan)

CRF-18 **Research on Deep Brain Magnetic Stimulation**
Toshihiko Abe, Toshiaki Ichihara, Kazumi Yashima (IFG., Ltd,, Japan) and Toshiyuki Takagi (Tohoku University, Japan)

CRF-19 **Atrial Vortex**
Muneichi Shibata, Hisao Ito (Miyagi Cardiovascular and Respiratory Center, Japan), Tomoyuki Yambe, Ryo Koizumi, Kenichi Funamoto and Toshiyuki Hayase (Tohoku University, Japan)

CRF-20 **Analysis of Reactive Species in a Plasma Flow for Medical Treatment**
Tetsuji Shimizu (Max-Planck Institute for Extraterrestrial Physics, Germany), Takehiko Sato (Tohoku University, Japan), Gregor E. Morfill (Max-Planck Institute for Extraterrestrial Physics, Germany)

CRF-21 **Development of Stent for Cerebral Aneurysm**
Toshio Nakayama (Tohoku University, Japan), Karkenahalli Srinivas (The University of Sydney, Australia), Makoto Ohta (Tohoku University, Japan)

CRF-22 **Fundamental Study of Convection-Enhanced Delivery Simulation in Rat Brain**
Joshua H. Smith (Lafayette College, USA), Kenichi Funamoto (Tohoku University, Japan), Martin V. Racenis (Lafayette College, USA), and Toshiyuki Hayase (Tohoku University, Japan)

CRF-23 **Convection-enhanced Delivery of ACNU Under MRI Monitoring Against Recurrent Gliomas-Development of Computational Simulation of Drug Distribution**
Ryuta Saito, Yukihiko Sonoda, Toshihiro Kumabe, Ken-ichi Funamoto, Toshiyuki Hayase and Teiji Tominaga (Tohoku University, Japan)

CRF-24 **Impact and Solidification of Molten Metal Droplets on Stainless Steel Surfaces Patterned with Unidirectional Parallel Microgrooves *(Invited)***
Deivandren Sivakumar (Indian Institute of Science, India), Kazunari Katagiri, Tomoki Nakajima, Hidemasa Takana and Hideya Nishiyama (Tohoku University, Japan)

CRF-25 **Bio-templated Nanostructure Fabrication with Neutral Beam**
Ichiro Yamashita (Nara Institute of Science and Technology, Japan), Seiji Samukawa and Tomohiro Kubota (Tohoku University, Japan)

CRF-26 **Impact and Formation Mechanism of Line Edge Roughness(LER) for Advanced Interconnect**
Shuichi Saito, Eiichi Soda (Semiconductor Leading Edge Technologies, Inc., Japan), Butsurin Jinnai, Koji Koyama and Seiji Samukawa (Tohoku University, Japan)

CRF-27 **Development and Flow Evaluation of Electro-Rheological Nano-Suspensions**
Katsufumi Tanaka, Masashi Komeda, Nozomi Nakagawa, Ryuichi Akiyama (Kyoto Institute of Technology, Japan), Masami Nakano and Teppei Tsujita (Tohoku University, Japan)

CRF-28 **Transport Phenomena at Nano-Structured Interfaces**
Taku Ohara (Tohoku University, Japan), Masahiko Shibahara (Osaka University, Japan), and Gota Kikugawa (Tohoku University, Japan)

CRF-29 **Numerical Studies of the Reacting Rarefied Flows in Tubes**
Yevgeniy Bondar (ITAM, Russia), Kaoru Maruta (Tohoku University, Japan), and Mikhail Ivanov (ITAM, Russia)

CRF-30 **Fabrication of Composite Material by Compression Shearing Method under Room Temperature**
Noboru Nakayama (Shinshu University, Japan), Hiroyuki Miki (Tohoku University, Japan) and Hiroyuku Takeishi (Chiba Institute of Technology, Japan)

CRF-31 **Molecular Dynamics Study about Lubrication Phenomena of Liquid Bridges**
Takashi Tokumasu (Tohoku University, Japan), Marie-Helene Meurisse, Nicolas Fillot and Philippe Vergne (INSA-Lyon, France)

CRF-32 **Mechanism of Bubble Generation and Disappearance by Plasma**
Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan), Marc Tinguely, Mohamed Farhat (EPFL, Switzerland)

CRF-33 **Production of Complex Plasma at Atmospheric Pressure**
Takehiko Sato, Yutaka Iwafuchi (Tohoku University, Japan), Tetsuji Shimizu and Gregor E. Morfill (Max Planck Institute for Extraterrestrial Physics, Germany)

CRF-34 **Optimization of Droplet Formation of Continuous Inkjet**
Masami NAKANO (Tohoku University, Japan), Tameo NAKANISHI and Masafumi YOKOYAMA (Yamagata University, Japan)

CRF-35 **A Molecular Study on the Thermodynamic and Transport Properties of Liquid Hydrogen**
Hiroki Nagashima (Aoyama Gakuin University, Japan), Takashi Tokumasu (Tohoku University, Japan), Shinichi Tsuda (Japan Aerospace Exploration Agency, Japan), Nobuyuki Tsuboi (Kyusyu Institute of Technology, Japan) and K. A. Hayashi (Aoyama Gakuin University, Japan)

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

CRF-37 **Fundamental Study on Spiking Neuron Devices**
T. Morie, Y. Sun, H. Liang (Kyushu Institute of Technology, Japan), M. Igarashi, C. Huang, and S. Samukawa (Tohoku University, Japan)

11:00-11:10 BREAK

11:10-12:00 **Short Oral Presentation**
(3 min for Short Oral Presentation)

CRF-38 **Development of Bubble Generation Method by Plasma**
Takehiko Sato, Masanobu Oizumi (Tohoku University, Japan), Takashi Miyahara (Shizuoka University, Japan) and Tatsuyuki Nakatani (Toyo Advanced Technologies Company, Ltd., Japan)

CRF-39 **Kinetic Force Method for Rarefied Gas flows**
Vladimir L. Saveliev (NCSRT, Institute of Ionosphere, Kazakhstan), S.A. Filko (Zhetysu State University, Kazakhstan), K. Tomarikawa and S. Yonemura (Tohoku University, Japan)

CRF-40 **Realizing Scalable Visualization Through Hierarchical Provenance Management**
Issei Fujishiro (Keio University, Japan), Yuriko Takeshima, Shigeru Obayashi and Toshiyuki Hayase (Tohoku University, Japan)

CRF-41 **Numerical and Experimental Analysis of the Hole-Tone Feedback Problem**
Mikael A. Langthjem (Yamagata University, Japan) and Masami Nakano (Tohoku University, Japan)

CRF-42 **Direct Numerical Simulation on the Effects of Free-stream Turbulence on Neutral, Stably and Unstably Stratified Turbulent Boundary Layers**
Kouji Nagata, Yasuhiko Sakai, Hiroki Suzuki (Nagoya University, Japan) and Toshiyuki Hayase (Tohoku University, Japan)

REX-1 **Meteorological Influence on Sonic Boom**
Hiroshi Yamashita, Shinkyu Jeong and Shigeru Obayashi (Tohoku University, Japan)

REX-2 **In Situ Observation and Remote Sensing during Ocean Experiments of Perpetual Salt Fountain**
Takashi Yabuki, Shigenao Maruyama, Mikihito Watanabe and Atsuki Komiya (Tohoku University, Japan)

REX-3 **Assessment of Volume Penalization Method for Direct Numerical Simulation of Incompressible Flows**
Yuji Hattori (Tohoku University, Japan)

REX-4 **Chemistry Validation Using Simplified Modeling of Autoignition in Micro Flowreactor with Controlled Temperature Profile**
Hisashi Nakamura, Hiroshi Oshibe, Kaoru Maruta(Tohoku University, Japan)

REX-5 **Blood Flow Analysis by Measurement-Integrated Simulation**
Kenichi Funamoto and Toshiyuki Hayase (Tohoku University, Japan)

REX-6 **Computational and Experimental Studies on Supersonic Particulate Jet Process for Cavity Filling**
Hidemasa Takana, HongYang Li, Kazuhiro Ogawa, Tsunemoto Kuriyagawa and Hideya Nishiyama (Tohoku University, Japan)

REX-7 **Mechanism of a Molecular Gas-Film Lubrication of Micro-Structured Surface**
Shigeru Yonemura, Susumu Isono, Masashi Yamaguchi, Takanori Takeno, Hiroyuki Miki and Toshiyuki Takagi (Tohoku University, Japan)

REX-8 **Influence of Inlet and Outlet Pipe Lengths on Cavitation Surge**
Yuka Iga (Tohoku University, Japan), Yoshiki Yoshida (Japan Aerospace Exploration Agency, Japan) and Toshiaki Ikohagi (Tohoku University, Japan)

REX-9 **Topologically-Accentuated Realization of Wake Turbulence Datasets**
Yuriko Takeshima, Yosuke Hoshi, Yuichi Maki (Tohoku University, Japan), Issei Fujishiro (Keio University, Japan), Shigeo Takahashi (The University of Tokyo, Japan), Takashi Misaka and Shigeru Obayashi (Tohoku University, Japan)

12:00-12:20 BREAK

12:20-14:30 **Poster Session**

The Fifth International Students/ Young Birds Seminar on Multi-scale Flow Dynamics

AKEBONO (WEST)
November 4, 2009

13:00-13:05	**Opening**	
Session 1 13:05-13:41	**-Award Session -** **Short Oral Presentation** (4 min for Short Oral Presentation including PC preparation)	
9-1	**Effect of Confinement on Wake Instability : Comparison of Local, Global Linear and Nonlinear Methods** Outi Tammisola, Fredrik Lundell, Daniel Söderberg (KTH Royal Institute of Technology, Sweden), Matthew Juniper (Cambridge University, UK), P. Schlatter (KTH Institute of Technology, Sweden)	208
9-2	**Carbon Particle Formation in Micro Flowreactor with Controlled Temperature Profile** Ryu Tanimoto, Takuya Tezuka, Susumu Hasegawa, Hisashi Nakamura, Kaoru Maruta (Tohoku University, Japan)	210
9-3	**An Infinite Elastic Plate Model of Atherosclerotic Plaque Rupture by Nonlinear Particle/Matrix Interfacial Decohesion** Chien M. Nguyen, Alan J. Levy (Syracuse University, USA)	212
9-4	**The Investigation into the Effect of Using Different Nano-micro Metallic Powders on Sunlight Reflectivity of Pigmented Coatings** Mehdi Baneshi, Shigenao Maruyama, Atsuki Komiya (Tohoku University, Japan)	214
9-5	**Magnetorheological Effect in Shear Mode of MR Rubber Composite** Yutaka Takano, Masami Nakano, Masashi Imai and Teppei Tsujita (Tohoku University, Japan)	216
9-6	**Investigation of the Effects of Cavitation on Atomization of a High Speed Liquid Jet** Cameron Stanley, Gary Rosengarten and Tracie Barber, B. Milton (UNSW, Australia)	218
9-7	**Numerical Study of Three-shock Intersection at Von Neumann Paradox Conditions** Georgy V. Shoev, Dmitry V. Khotyanovsky, Yevgeny A. Bondar, Alexey N. Kudryavtsev, and Mikhail S. Ivanov (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Russia)	220
9-8	**Application of a Nagative Capacitance Circuit in Synchronized Switch Damping Techniques for Vibration Suppression** Hongli Ji, Jinhao Qiu, and Jun Cheng (Nanjing University of Aeronautics and Astronautics, China)	222

FUYOH
November 5, 2009

Session 3

FUYOH
November 6, 2009

Session 7
9:00-9:40 **Short Oral Presentation**
(4 min for Short Oral Presentation including PC preparation)

The 10th Japan-Korea Students' Symposium
-Fast Ion Transport in Solids and Through Interfaces
-The Related Materials and Phenomena-

SEIUN
November 4, 2009

Chair: H. S. Kim (Seoul National University, Korea) and Y. Fukuda (Tohoku University, Japan)

Chair: W. S. Chang (Seoul National University, Korea) and Y. Goya (Tohoku University, Japan)

Chair: D. R. Jung (Seoul National University, Korea) and Y. Iwai (Tohoku University, Japan)

SEIUN
November 5, 2009

SEIUN
November 6, 2009

Chair: Y. Hwa (Seoul National University, Korea) and T. Izumi (Tohoku University, Japan)

Chair: H. Watanabe (Tohoku University, Japan) and M. S. Lee (Seoul National University, Korea)

10-43 11:00-11:20 **Characterization of TiO_2 Photoanodes in Non-immersion Type in a Miniature PEC Cell** 506
E.-C. Shin, D. L. Cho, J.-H. Kim (Chonnam National University, Korea), E.-Y. Jun, T.-J. Chung, K.-S. Oh (Andong National University, Korea), M. Lerch (Technical University Berlin, Germany), and J.-S. Lee (Chonnam National University, Korea)

10-44 11:20-11:40 **Using Computational Chemistry Method Predict the Platinum Redistribution in PEFC** 508
D. Kim, B. Kim, A. Suzuki, H. Tsuboi, N. Hatakeyama, A. Endou, H. Takaba, M. Kubo, and A. Miyamoto (Tohoku University, Japan)

10-45 11:40-12:00 **NMR Imaging of ^7Li and ^1H in Lithium-Ion Battery** 510
Y. Iwai, D. Ohno and J. Kawamura (Tohoku University, Japan)

Chair: T. Lee (Seoul National University, Korea) and Y. Mori (Tohoku University, Japan)

10-46 13:00-13:20 **Suppression of Electronic Conductivity of CeO_2-based Electrolytes by Electron Traps** 512
J. Chun and H.-I. Yoo (Seoul National University, Korea)

10-47 13:20-13:40 **Controal of Mixed Protonic and Electronic Conductivity by Mixing Rare-Earth Ortho-Borates** 516
H. Takahashi (Tohoku University, Japan)

10-48 13:40-14:00 **Crystal Structure, Oxygen Nonstoichiometry, and Electronic Structure of $La_{2-x}Sr_xNiO_{4+\delta}$** 520
T. Nakamura, K. Yashiro, K. Sato, and J. Mizusaki (Tohoku University, Japan)

10-49 14:00-14:20 **Degeneracy Effect in Thermoelectric Power of Undoped $La_2NiO_{4+\delta}$** 524
H.-S. Kim, and H.-I. Yoo (Seoul National University, Korea)

14:20-14:25 Closing Remark
Hyung-Soon Kwon (Seoul National University, Korea)

Current Topics in Flow Dynamics

FUYOH
November 4, 2009

Chair: Shigeru Maruyama (Tohoku University, Japan)

Chair: Tetsuya Uchimoto (Tohoku University, Japan)

AKEBONO (WEST)
November 5, 2009

Chair: Michiko Furudate (Tohoku University, Japan)

GCOE, IFS-Tsinghua University Joint Workshop 2009

AKEBONO (WEST)
November 5, 2009

Chair: Shigenao Maruyama (Tohoku University, Japan)

Chair: Xin-Gang Liang (Tsinghua Univesrity, China)

Liaison Office Session

SENDAI (EAST)

November 5, 2008

17:00-17:20 State and Plan of International Education in Tohoku University
Goro Masuya (Tohoku University, Japan) Chair: Toshiyuki Takagi

17:20-19:00 Part 1: Panel Discussion on Education System to Joint Education and International Summer School, Chair: Toshiyuki Takagi
Masud Behnia (The University of Sydney)
Alexander Vasiliev (Moscow State University)
Hyung jin Sung (KAIST)
Hiroshi Higuchi (Syracuse University)
Joël Courbon (INSA-Lyon)
Fredrik Lundell (KTH Royal Institute of Technology)
Shigenao Maruyama (Tohoku University)

Part 2: Questions and Discussion

Alumni Session

AKEBONO (WEST)
November 6, 2009

Chair: Shigenao Maruyama (Tohoku University, Japan)

9:00~9:05	**Opening Address** Shigenao Maruyama (Tohoku University, Japan)
9:05~10:45	***Session1-1 Introduction of Institution and Research(14-1~14-15)***
14-1 9:05~9:11	Goro Obinata (Nagoya University, Japan) *(Invited)*
14-2 9:11~9:17	Wu-Shung Fu (National Chiao Tung University, Taiwan) *(Invited)*
14-3 9:17~9:23	Shigeo Fujikawa (Hokkaido University, Japan) *(Invited)*
14-4 9:23~9:29	Hideyuki Tanno (Japan Aerospace Exploration Agency, Japan) *(Invited)*
14-5 9:29~9:35	Yasuhiro Egami (Nagoya University, Japan) *(Invited)*
14-6 9:35~9:41	Vladimir Khovaylo (Moscow Institute of Steels and Alloys, Russia) *(Invited)*
14-7 9:41~9:47	Satoyuki Kawano (Osaka Univeristy, Japan) *(Invited)*
14-8 9:47~9:53	Xing-Rong Zhang (Peking University, China) *(Invited)*
9:53~10:03	BREAK
14-9 10:03~10:09	Seigo Sakai (Yokohama National University,Japan) *(Invited)*
14-10 10:09~10:15	Tsutomu Saito (Muroran Institute of Technology, Japan) *(Invited)*
14-11 10:15~10:21	Yun Luo (Shanghai Jiao Tong University, China) *(Invited)*
14-12 10:21~10:27	James W. Gregory (Ohio State University, USA) *(Invited)*
14-13 10:27~10:33	Deivandren Sivakumar (Indian Institute of Science, India) *(Invited)*
14-14 10:33~10:39	Nam Il Kim (Chung-Ang University, Korea) *(Invited)*

14-15 10:39~10:45	Chih-Yung Huang (National Tsing Hua University, Taiwan) *(Invited)*
10:45~12:00	***Session1-2 Poster presentation (14-1~14-15)***
12:00~13:00	LUNCH
13:00~13:54	***Session2-1 Introduction of Institution and Research(14-16~14-24)***
14-16 13:00~13:06	Mikhail Ivanov (Siberian Branch of the Russian Academy of Sciences, Russia) *(Invited)*
14-17 13:06~13:12	Sudarshan Kumar (Indian Institute of Technology Bombay, India) *(Invited)*
14-18 13:12~13:18	Hamid Hosseini (Kumamoto University, Japan) *(Invited)*
14-19 13:18~13:24	Atsushi Sakurai (Niigata University, Japan) *(Invited)*
14-20 13:24~13:30	Yoshio Wakamatsu (Japan Aerospace Exploration Agency, Japan) *(Invited)*
14-21 13:30~13:36	Jinhao Qiu (Nanjing University of Aeronautics and Astronautics, China) *(Invited)*
14-22 13:36~13:40	Kosuke Ito (Nihon University, Japan) *(Invited)*
14-23 13:42~13:48	Takeshi Yokomori (Keio University, Japan) *(Invited)*
14-24 13:48~13:54	Koutaro Tsubaki (Saga University, Japan) *(Invited)*
13:54~15:00	***Session2-2 Poster presentation(14-16~14-24)***
15:00~16:00	***Alumni Reunion Session***