



6th International Conference on Flow Dynamics

Tohoku University Global COE Program “World Center of Education and Research for Trans-disciplinary Flow Dynamics” (hereafter the GCOE) held **The 6th International Conference on Flow Dynamics (hereafter the ICFD2009)** on November 4th through 6th, 2009 at Hotel Metropolitan Sendai, Sendai, Japan. Educationists, researchers and students from all over the world gathered together in Sendai, presented and discussed on the most advanced topics and leading edge technologies in Trans-disciplinary Flow Dynamics. Total of 448 people, out of which 157 from abroad, attended the conference.

After the opening ceremony, where the welcome messages from Professor Toshiyuki Hayase, Director of Institute of Fluid Science of Tohoku University, Professor Junichiro Mizusaki, Chair of ICFD2009, Professor Toshiyuki Takagi, CEO of ICFD2009, Professor Shigeru Obayashi, Chair of AFI/TFI, and Professor Shigenao Maruyama, Program Leader of the GCOE were addressed, started the ICFD2009 with the three plenary lectures. Professor Rongjia Tao, Temple University, presented “Rheology for Efficient Energy Production, Transportation and Conservation”. Professor Han-Il Yoo, Seoul National University, presented “An Odyssey to Experimentally Verify the Onsager Reciprocity in Flow of Charged Particles in Solids”. Professor Seiji Samukawa, Tohoku University, presented “Ultimate Nanofabrication Technology by Neutral Particle Beam”.

The ICFD2009 was 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 and 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

At both of “The Fifth International Students/Young Birds Seminar” and “The 10th Japan-Korea Students' Symposium”, doctoral course students from Japan and Korea took important role for organizing the sessions. Many students from Japan, Korea, and other countries presented and discussed on papers and exchanged Qs and As.

As to the “GCOE, IFS-Tsinghua University Joint Workshop”, this is the second time of this kind of workshop, following the first one held in Beijing last year, seven professors and 4 students participated in this workshop from Tsinghua University. 21 Papers were presented by Tsinghua University and Tohoku University professors and students.

At the “Liaison Office Session”, representatives of the seven universities where Tohoku University locates Liaison Offices, The University of Sydney, The University of New South Wales of Australia, Moscow State University, KAIST, Syracuse University, INSA-Lyon, Royal Institute of Technology, Sweden, and Professor Maruyama of Tohoku University presented the history and activities of each university. The experience from “Tohoku – Lyon Summer School” opened in September 2009 were introduced. All the representatives expressed high level of interest in the “Summer School 2010 in Sendai”, which is now under planning, by sending students to participate in.

At the “Alumni Session”, the first project of this kind at ICFD, 23 alumni of The Institute of Fluid Science, Tohoku University, gathered together from Japan and abroad, presented papers and exchanged opinions and information.

At the ICFD2009 Banquet in the evening of November 5, Thursday, more than 300 attendants rejoiced at reunion. The people also enjoyed the attraction of Kamo-Tsunamura drum beat.

The ICFD next year — ICFD2010, is planned to be held on November 1 through 3, at Sendai International Center Hall, and on November 4, at the Institute of Fluid Science, Tohoku University.



A session scenerary



Banquet



Discussion at a poster