

Tentative Program: Oral Presentations

Last Update: Jul. 22, 2011

- [S01. 16th Symposium on Algorithmic Developments in CFD](#)
- [S02. 6th Symposium on DNS, LES and Hybrid RANS/LES Methods](#)
- [S03. 11th Symposium on Applications in Computational Fluid Dynamics](#)
- [S04. 11th International Symposium on Numerical Methods for Multiphase Flow](#)
- [S05. 12th International Symposium on Advances in Numerical Modeling for Turbomachinery Flow Optimization](#)
- [S06. 7th International Symposium on Pumping Machinery](#)
- [S07. 11th International Symposium on Fluid Power](#)
- [S08. 12th Symposium on Fluid-Structure Interaction and Flow-Induced Noise in Industrial Applications](#)
- [S09. 12th International Symposium on Liquid-Solid Flows](#)
- [S10. 12th International Symposium on Gas-Liquid Two-Phase Flows](#)
- [S11. Symposium on Non-Invasive Measurements in Single and Multiphase Flows](#)
- [S12. 13th International Symposium on Gas-Particle Flows](#)
- [S13. 6th Symposium on Flow Manipulation and Active Control: Theory, Experiments and Implementation](#)
- [S14. 10th Symposium Transport Phenomena in Materials Processing and Manufacturing Processes](#)
- [S15. 5th International Symposium on Flow Applications in Aerospace](#)
- [S16. 9th Symposium on Fundamental Issues and Perspectives in Fluid Mechanics](#)
- [S17. 4th Symposium on Transport Phenomena in Energy Conversion From Clean and Sustainable Resources](#)
- [S18. Computational Fluid Dynamics of Nuclear Engineering Applications and Systems](#)
- [S19. 2nd Symposium on Bio-Inspired Fluid Mechanics](#)
- [S20. Symposium on Development and Applications of Immersed Boundary Methods](#)
- [S21. 4th Symposium on the Transport Phenomena in Mixing](#)
- [S22. 23rd Symposium on Fluid Machinery](#)
- [S23. Symposium on Issues and Perspectives in Ground Vehicle Flows](#)
- [S24. 3rd Symposium on CFD Verification And Validation](#)
- [S25. 2nd International Symposium on Turbulent Flows: Issues and Perspectives](#)
- [S26. 18th Symposium on Industrial and Environmental Applications of Fluid Mechanics](#)
- [F01. Forum on Fluid Measurements and Instrumentation](#)
- [F02. Open Forum on Multiphase Flows: Work in Progress](#)
- [F03. 46th Cavitation and Multiphase Flow Forum](#)
- [F04. Advances in Fluids Engineering Education](#)
- [F06. Microfluidics Summer Forum](#)
- [T01. Technical Flash on Complicated Phenomena in Industry](#)
- [T02. Technical Flash on Progress in CFD Software](#)
- [T03. Technical Flash on Environmental Problems and New Energies](#)
- [T04. Technical Flash on Applications of Nonintrusive Fluid Measurement](#)

S01. 16th Symposium on Algorithmic Developments in CFD

S01-01. 16th Symposium on Algorithmic Developments in CFD (I)

Jul. 27 (Wed.), 11:00 - 13:00, Room #23

Session Chairs:

Prof. C. Kim (Seoul National University)

Prof. S. Yamamoto (Tohoku Univ.)

AJK2011-01001	Assessment of Enhanced Multi-Dimensional Limiting Process for Multi-Dimensional Flows
	K. Kim, J. Park (SNU)
AJK2011-01006	Efficient and Accurate Multi-Dimensional Limiting Strategy for Discontinues Galerkin Methods on Triangular and Tetrahedral Meshes
	J. Park, C. Kim (Seoul National University)
	The Application of Adaptive Wavelet Method to Multi-Dimensional Limiting Process for Enhancement of Computational Efficiency

AJK2011-01009	H. Kang (Advanced Aerodynamics and Structures Department, Korea Aerospace Research Institute), K. Park, D. Lee (School of Mechanical and Aerospace Engineering, Seoul National University), K. Kim (School of Mechanical and Aerospace Engineering, Seoul National University), S. Park (Department of Mechanical Engineering, Hanyang University), D. Lee (Hanyang University)
AJK2011-01013	A Low-Dissipation Optimization-Based Gradient Reconstruction (OGRE) Scheme for Finite Volume Simulations
	N. M. Poe, D. K. Walters (MSU)
AJK2011-01008	Development of a 2-D Flow Solver on Hybrid Unstructured and Adaptive Cartesian Meshes
	M. Jung, O. Kwon (KAIST)
AJK2011-01022	A POD-Based Solver for the Advection-Diffusion Equation
	E. Merzari, W. D. Pointer, P. Fischer (Argonne National Laboratory)

S01-02. 16th Symposium on Algorithmic Developments in CFD (II)

Jul. 27 (Wed.), 16:00 - 18:00, Room #23

Session Chairs:

Prof. D. Lee (Hanyang University)

Prof. M. Yamamoto (Tokyo University of Science)

AJK2011-01018	A Parallelized Algebraic Multi-Grid Matrix Solver
	S. Zhang (ESI-CFD, Inc), X. Zhao (School of Engineering and Technology Alabama A&M University), Z. Yang, C. Chen (Department of Chemical & Materials Engineering The University of Alabama in Huntsville)
AJK2011-01007	Artificial Compressibility Method and Preconditioning Method for Solving Two Dimensional Flows
	H. Lee, E. Kwak, S. Lee (Inha University)
AJK2011-01016	Effect of Axial Flow on Taylor-Couette Stability
	N. Ashrafi (IAU), A. Hazbavi (Islamic Azad University,)
AJK2011-01005	Numerical Simulation of Supercritical Water in T-Shaped Channel Across Critical Point
	T. Furusawa, S. Yamamoto (Tohoku Univ.)
AJK2011-01021	Numerical Experiments of Solving Moderate-Velocity Flow Field using a Hybrid CFD-MD Approach
	S. Ko (NSC), N. Kim, S. Jha (CCT)
AJK2011-01012	Weak Coupling Strategy for Multi-Physics CFD Simulation in Engineering Problems
	M. Yamamoto, M. Suzuki (Tokyo University of Science)

S02. 6th Symposium on DNS, LES and Hybrid RANS/LES Methods

S02-01. 6th Symposium on DNS, LES and Hybrid RANS/LES Methods -1

Jul. 26 (Tue.), 11:00 - 12:40, Room #52

Session Chairs:

Prof. Y. Morinishi (Nagoya Institute of Technology)

Dr. K. Walters (Mississippi State University)

AJK2011-02011	Effect of Small-Amplitude Heaving Oscillations on the Flow Structure above a Low-Aspect Ratio Wing
	M. R. Visbal (Air Force Research Laboratory)
AJK2011-02001	Studies on Flow Transition under Simulated Low Pressure Turbine Conditions based on a High Order LES Model
	D. Biswas, T. Jimbo (Toshiba RDC)
AJK2011-02009	Numerical Simulation of Turbulent Flow Past a Serrated Airfoil
	C. Han, T. Omori, T. Kajishima (Osaka University)
AJK2011-02004	Direct Numerical Simulation for Streamwise Rotating Turbulent Flow through a Square Duct
	M. Okamoto (Shizuoka Univ.)
AJK2011-02020	Flame Brush Structure of H₂-Air Turbulent Premixed Flames at High Reynolds Number
	Y. Shim, S. Tanaka, M. Shimura, N. Fukushima, M. Tanahashi, T. Miyauchi (Tokyo Tech.)

S02-02. 6th Symposium on DNS, LES and Hybrid RANS/LES Methods -2

Jul. 26 (Tue.), 16:00 - 17:20, Room #52

Session Chairs:

Dr. M. R. Visbal (Air Force Research Laboratory)

Dr. M. Okamoto (Shizuoka Univ.)

AJK2011-02013	A New Hybrid RANS/LES Modeling Methodology for CFD Applications
	K. Walters, M. F. Alam, D. Thompson (Mississippi State University)
AJK2011-02012	A Dynamic Procedure for Wall-Modeled Large-Eddy Simulation of High Reynolds Number Flows
	S. Kawai (Stanford University)
AJK2011-02008	A Stable Compact Finite Difference Method with Skew-Symmetric Form for LES of Variable Density Flows
	K. Takeichi, S. Tamano, Y. Morinishi (NIT)

AJK2011-02003	Modeling of a One-Equation LES for Plant Canopy Flows
	H. Hiraoka (Academic Center for Computing and Media Studies, Kyoto University)

S03. 11th Symposium on Applications in Computational Fluid Dynamics

S03-01. Hydraulic Machinery Applications

Jul. 25 (Mon.), 13:30 - 15:10, Room #43

Session Chairs:

Prof. M. Brzoska (Eastern Washington State University)

AJK2011-03003	The Effects of Leakage on Friction Loss over a Rotating Disk
	X. Zhang (school of Mechanical and Electrical Engineering,Guilin University of ElectronicTechnology, Guilin)
AJK2011-03026	Analysis of the Impact of Inducer on Characteristic of High-Speed Centrifugal Pump
	N. Zhang, Z. Zhang, W. Dou, Y. Wu, Z. Zhang (Beijing Aerospace Propulsion Institute)
AJK2011-03037	A Numerical Analysis of the Behavior of Liquid Film between Counter-Rotating Rigid and Deformable Rolls
	S. Lee, M. Lee, N. Hur (Department of Mechanical Engineering, Sogang University), Y. Seo, I. Kim, S. Lee (Rolling Technology Research Group, Posco)
AJK2011-03038	Shear-Thickening Flow between Coaxial Cylinders
	N. Ashrafi (IAU), H. Karimi Haghighi (Department of Mechanical and Aerospace Engineering Science and Research Branch, Islamic Azad University, Tehran)
AJK2011-03049	Numerical Flow Simulation in a Reciprocating Valveless Micropump with Parallel Geometry Nozzle-Diffuser
	J. Fernández (Unex), R. Barrio, E. Blanco, J. Parrondo (Universidad de Oviedo), A. Marcos (Universidad de Extremadura)

S03-02. Flow Phenomena in Industrial Applications - I

Jul. 25 (Mon.), 16:00 - 18:20, Room #43

Session Chairs:

Prof. N. Hur (Department of Mechanical Engineering, Sogang University)

AJK2011-03018	The Study of the Dynamic Switching of Fluidic Component on the Fluidic Sprinkler
	C. Wang, H. Li, C. Chen, Q. Yun (UJS)
AJK2011-03020	CFD Analysis in a Non-Contact Holder
	S. Katsumata, T. Tsukiji (Sophia University)
AJK2011-03021	Numerical Modeling and Experimental Study of the Mechanical Flocculation Process
	B. . Yan (college of Environmental Science & Engineering,yangzhou university), S. Shen Feng (College of Environmental Science and Engineering, YangZho University)
AJK2011-03028	Numerical Prediction of Low Mach Number Jet Noise Ejected from Slit Nozzle
	M. Yamaguchi (Master course student, Ritsumeikan University), S. Akishita (Ritsumeikan University, Faculty of Science and Engineering.), Y. Iwata (Compressor Development & Engineering Group Air Conditioning Manufacturing Division, DAIKIN Industries, ltd), Y. Ogami (Ritsumeikan University, Faculty of Science and Engineering, Computational Fluid Dynamics Laboratory)
AJK2011-03045	Design and Analysis of Nonlinear Viscoelastic Damper
	N. Ashrafi (IAU), M. Eskafi (Department of Mechanical and Aerospace Engineering Science and Research Branch, Tehran)
AJK2011-03015	Thermal Fluid Flow Transport Characteristics in Confined Channels with Two-Dimensional Dual Jet Impingement
	S. Torii, C. Senkal (Kumamoto University)
AJK2011-03023	Modelling Multiphase Jet Flows for High Velocity Emulsification
	D. Ryan, M. Simmons (University of Birmingham), M. Baker (Unilever Research & Development, Port Sunlight)

S03-03. Flow Phenomena in Industrial Applications - II

Jul. 26 (Tue.), 08:30 - 10:30, Room #43

Session Chairs:

Prof. X. Wang (Oakland University)

AJK2011-03061	Flow Field Investigation in a Water Treatment Reactor using Computational Fluid Dynamics
	S. -. Ahmed (CQU)
AJK2011-03062	Numerical Simulation of Flow in a Photocatalytic Reactor Containing Baffles
	S. -. Ahmed (CQU)
AJK2011-03074	Turbulent Impinging Jet into a Rigid Porous Layer
	M. J. De Lemos (ITA)
AJK2011-03079	Numerical Simulation of Porous Medium Internal Combustion Engine
	A. Mohammadi (KNTToosi)
AJK2011-03005	Simulation of Flow through Conical Diffusers with and without Inlet Swirl using CFD
	S. Yavuzkurt, S. Dhiman, H. Foroutan (PENN STATE)
	Assessment of Various Inviscid-Wall Boundary Conditions; Applications to NACA65 Compressor

AJK2011-03007	Blade
	H. Khazaei (Turbotech company), A. Madadi, M. J. Kermani (AUT)
S03-04. Medical Applications and General Thermal Hydraulics Jul. 26 (Tue.), 11:00 - 12:40, Room #43 Session Chairs: Prof. W. Park (Pusan National University)	
AJK2011-03054	Calculation of Nano-Sized Particle Catcher by Ultrasonic Vibration
	S. Nishino (Department of Mechanical Engineering, Graduate School of Science and Technology, Nihon University), K. Kofu, M. Ochi (Department of Mechanical Engineering, College of Science and Technology, Nihon University)
AJK2011-03057	An Approach of Computational Hemodynamics for Cardiovascular Flow Simulation
	J. L. Liu (Center for Advanced Biomedical Sciences, TWIns, Waseda University, Tokyo, Japan), Y. Qian (1. Australian School of Advanced Medicine, Macquarie University, Sydney, Australia 2. Center for Advanced Biomedical Sciences, TWIns, Waseda University, Tokyo, Japan), K. Itatani (1. Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; 2. School of Medicine, Kitasato University, Kanagawa, Japan.), T. Miyakoshi (Center for Advanced Biomedical Sciences, TWIns, Waseda University, Tokyo, Japan.), A. Murakami, M. Ono (Graduate School of Medicine, The University of Tokyo, Tokyo, Japan.), R. Shiurba (Center for Advanced Biomedical Sciences, TWIns, Waseda University, Tokyo, Japan.), K. Miyaji (School of Medicine, Kitasato University, Kanagawa, Japan), M. Umezu (Center for Advanced Biomedical Sciences, TWIns, Waseda University, Tokyo, Japan)
AJK2011-03073	CFD Simulation in Arterial Bifurcations with Multiple Stenoses
	M. Renganathan (VIT UNIVERSITY)
AJK2011-03080	Lattice Boltzmann Simulations of Flow in Two-Dimensional Lid-Driven Semi-Circular Cavity
	F. Yang (SEPE, USST), L. Liu, X. Shi, X. Guo ((SEPE, USST))
AJK2011-03044	A Parametric Study of the Effect of Wall-Shape on Laminar Flow in Corrugated Pipes
	P. Rosen Esquivel, J. Ten Thijs Boonkamp (TU/e), J. Dam (Imtech), R. Mattheij (TU/e)
S03-05. Turbulent Flow Analysis and LES Jul. 26 (Tue.), 16:00 - 17:40, Room #43 Session Chairs: Prof. X. Sun (OSU)	
AJK2011-03012	A Robust and Simple Low-Mach Number Solver for Flapping-Wing Simulations
	J. Hu (Shu-Te University), Y. Niu (Chung Hua University)
AJK2011-03022	Applicability of Turbulence Models on Characteristics Prediction of Centrifugal Pumps
	Y. Wang, H. L. Liu, S. Q. Yuan, M. G. Tan, M. H. Shu (Research Center of Fluid Machinery Engineering and Technical, Jiangsu University)
AJK2011-03055	Numerical & Experimental Study of the Influence of Damage on the Aerodynamic Characteristics of a Finite Wing
	S. Abdolahi-pour, M. Mani, G. Molla Ahmadi Dehaghi (AUT)
AJK2011-03059	Study on General Wall Damping Functions Definition: A Low Reynolds Number Bounded Flows Validation
	M. Pellegrini (TIT), H. Endo (JNES), H. Ninokata (TITech)
AJK2011-03083	A Numerical Investigation of the Effects of Flow Pulsations on the Drag Force over a Cylinder
	E. J. D'herde, L. Guessous (OU)
S03-06. Heat Transfers and Heat Exchangers - I Jul. 27 (Wed.), 08:30 - 10:30, Room #43 Session Chairs: Prof. T. Okawa (Osaka University)	
AJK2011-03027	Numerical Analysis of Flow Distribution for Combined Weapon System in Environmental Tester
	S. Kim, D. Lee (Sungkyunkwan University), S. Baek, J. Lee (ADD), S. Park (Chungnam National University), C. Kim, H. Ko (Sungkyunkwan University)
AJK2011-03035	Modeling of Pin Fin Heat Sinks based on Volume Averaging Theory
	F. Zhou, G. W. DeMoulin, D. J. Geb, I. Catton (UCLA)
AJK2011-03084	Numerical Simulation of the Flow in a Toroidal Thermosiphon
	E. Merzari (Argonne National Laboratory), H. Ninokata (Tokyo institute of technology), P. Fischer (Argonne National Laboratory)
AJK2011-03036	A Numerical Analysis for the Flow and the Heat Transfer in a Large Plate Heat Exchanger by using a Porous Medium Approach
	M. Lee, J. Jung, N. Hur (Department of Mechanical Engineering, Sogang University)
AJK2011-03047	Flow Characteristics of a Single and Two-Adjacent Natural Draft Dry Cooling Towers under Cross Wind Condition
	M. Soleimani, A. Mekanik (Bu-Ali Sina university), B. Sajadi (Sharif university of technology), H. Ahmadikia (Bu-Ali Sina University)
AJK2011-03052	Numerical Study of a Compact Wavy Heat Exchanger
	R. Mereu, E. Colombo, F. Inzoli (polimi)

S03-07. Heat Transfers and Heat Exchangers - II

Jul. 27 (Wed.), 11:00 - 12:40, Room #43

Session Chairs:

Prof. H. Ninokata (Tokyo Institute of Technology)

AJK2011-03058	Subchannel Analysis of Single-Phase Flow Sodium Tests with Non-Uniform Radial Power Distributions
	S. Pramuditya, H. Ninokata (Tokyo Institute of Technology)
AJK2011-03024	Effects of Interfacial Forces on the Radial Phase Distribution of Cap-Bubbly Two-Phase Flows
	X. Wang, X. Sun (OSU)
AJK2011-03034	Parametric Investigation on the Effect Factors for Liquid Droplet Impingement Erosion
	R. Li, H. Ninokata (Research Laboratory for Nuclear Reactors, Tokyo Institute of Technology), M. Mori (TEPCO)
AJK2011-03051	Numerical Investigation of Countercurrent Two-Phase Flows using Three-Dimensional Volume-of-Fluid Simulations
	G. Guedon, E. Colombo, F. Inzoli (Polimi)
AJK2011-03075	Application of an Arbitrary Langrangian Eulerian Method to Describe High Velocity Gas-Particle Flow Behavior
	D. Fox (U.S. Army Research Laboratory), J. Lee (Yonsei University)

S04. 11th International Symposium on Numerical Methods for Multiphase Flow**S04-01. Interface Tracking Method**

Jul. 27 (Wed.), 11:00 - 13:00, Room #44

Session Chairs:

Prof. A. Tomiyama (Kobe University)

Prof. M. Sommerfeld (MLU-Halle)

AJK2011-04004 (Keynote)	Multiscale Issues in DNS of Multiphase Flows
	B. Aboulhasanzadeh (WPI), S. Thomas (ASCOMP), J. Lu (WPI), G. Tryggvason (Notre Dame)
AJK2011-04011	Numerical Simulation of the Formation and Breakup of a Compound Jet by Front Tracking/Finite Difference Method.
	T. V. Vu, H. Takakura, J. C. Wells (Rits), S. Homma (Saitama University), G. Tryggvason (ND)
AJK2011-04007	Interface Tracking Simulation of Mass Transfer from a Dissolving Bubble
	K. Hayashi, A. Tomiyama (Kobe University)
AJK2011-04019	Numerical Simulation of Bubbles Contaminated with Soluble Surfactant
	R. Kurimoto, K. Hayashi, A. Tomiyama (Kobe University)
AJK2011-04032	Numerical Simuation of Multiphase Flows with Material Interface on Unstructured Grid System
	H. Myong (Kookmin University)

S04-02. LBM and Particles

Jul. 27 (Wed.), 16:00 - 17:40, Room #44

Session Chairs:

Dr. M. J. Andrews (Los Alamos National Laboratory)

Dr. T. Seta (University of Toyama)

AJK2011-04033 (Keynote)	Application of the Lattice-Boltzmann-Method in Two-Phase Flow Studies: From Point-Particles to Fully Resolved Particles
	M. Dietzel, M. Ernst, M. Sommerfeld (MLU-Halle)
AJK2011-04008	Particulate Flow Simulation by the Immersed Boundary Lattice Boltzmann Method
	T. Seta (University of Toyama)
AJK2011-04020	Numerical Simulations of Droplets on Porous Structures by using of Lattice Boltzmann Method
	Y. Matsukuma, G. Inoue (Kyushu University), M. Minemoto (Department of Chemical Engineering, Faculty of Engineering, Kyushu University)
AJK2011-04018	Two Dimensional Droplet Deformation on Moving Wall in a Channel
	H. R. Kim (School of Mechanical Engineering, Pusan National University), H. S. Yoon (Advanced Ship Engineering Research Center, Pusan National University), H. K. Jeong (Technical Research Laboratories, POSCO, Pohang, Korea), M. Y. Ha (PNU)

S04-03. Various Advanced Methods

Jul. 28 (Thu.), 08:30 - 10:30, Room #44

Session Chairs:

Prof. G. Tryggvason (Notre Dame)

Prof. F. Battaglia (Virginia Tech)

AJK2011-04027 (Keynote)	Application of an Improved Ghost Fluid Method to the Collapse of Non-Spherical Bubbles in a Compressible Liquid
	H. Takahira, Y. Jinbo (Osaka Pref. Univ.)
AJK2011-04029	Numerical Study of Advection Schemes for Interface Capturing in a Volume of Fluid Method on Unstructured Meshes
	H. Shan (Naval Surface Warfare Center – Carderock), S. Kim (Naval Surface Warfare Center

	Carderock Division)
AJK2011-04001	A Full Eulerian Finite Difference Method for Hyperelastic Particles in Fluid Flows
	K. Sugiyama, S. Ii (Department of Mechanical Engineering, School of Engineering, The University of Tokyo), S. Takeuchi (Department of Mechanical Engineering, School of Engineering, Osaka University), S. Takagi, Y. Matsumoto (Department of Mechanical Engineering, School of Engineering, The University of Tokyo)
AJK2011-04014	A Numerical Study on the Entry Problem of an Elastic Body using Level Set Method and Combined Formulation
	H. Choi (Seoul National University of Technology)
AJK2011-04034	Modeling of Taylor Flows in T-Junction Microchannel with Mixing Chambers
	S. B. Pidugu (UALR), T. Abdel-Salam (ECU)

S04-04. Simulation of Practical Problems

Jul. 28 (Thu.), 11:00 - 13:00, Room #44

Session Chairs:

Prof. H. Choi (Seoul National University of Technology)

Prof. Y. Matsukuma (Kyushu University)

AJK2011-04036	Full Scale Simulations of the Bubbly Flow around the Research Vessel Athena with Incoming Waves and Discretized Propeller
	A. M. Castro, P. M. Carrica (IIHR, UI)
AJK2011-04009	An Adaptive Moving-Mesh Relaxation Scheme for Compressible Two-Phase Barotropic Flow with Cavitation
	K. Shyue (NTU)
AJK2011-04006	Multi-Scale Liquid Mixing in a Bubble Column
	N. Shimada, R. Saiki, A. Dhar (Sumitomo Chemical Co. Ltd.), A. Tomiyama (Graduate School of Engineering, Kobe University)
AJK2011-04038	Two Phase Flow Simulation for Boiling Heat Transfer Calculation in Water Jacket of Diesel Engine
	A. Mohammadi (KNTToosi)
AJK2011-04015	An Accurate Low-Mach Scheme for Two-Phase Interfacial Flows
	N. Grenier, P. Villedieu (ONERA), J. Vila (INSA)
AJK2011-04005	Numerical Simulation of Low-Speed Two-Phase Flows based on Preconditioning
	Y. Niu (CHU)

S05. 12th International Symposium on Advances in Numerical Modeling for Turbomachinery Flow Optimization

S05-01. Numerical Modeling for Turbomachinery Flow Optimization -1

Jul. 28 (Thu.), 08:30 - 10:10, Room #21

Session Chairs:

Dr. Y. Lee (NSWCCD)

Dr. A. Goto (Ebara Corporation)

AJK2011-05020 (Keynote)	Experimental and Numerical Study toward Optimum Configuration of Circumferential Grooves in Transonic Compressor Rotors
	C. Hah (NASA/Glenn)
AJK2011-05018	Development of High Efficiency Propeller Fan for Heat Pump Unit by CFD and Numerical Optimization
	H. Yamakawa (Hitachi, Ltd)
AJK2011-05013	Sensitivity Analysis of a Centrifugal Compressor using the Linearization Method
	M. Asli, A. M. Tousi (AUT)
AJK2011-05007	Robust Shape Optimization of Uncertain Dense Gas Flows through a Plane Turbine Cascade
	S. J. Hercus, P. Cinnella (DynFluid Lab, Paris)

S05-02. Numerical Modeling for Turbomachinery Flow Optimization -2

Jul. 28 (Thu.), 11:00 - 12:40, Room #21

Session Chairs:

Dr. A. Goto (Ebara Corporation)

Dr. C. Hah (NASA/Glenn)

AJK2011-05015 (Keynote)	OpenFOAM Turbo Tools: From General Purpose CFD to Turbomachinery Simulations
	H. Jasak (Wikki), M. Beaudoin (Hydro Quebec)
AJK2011-05014	Numerical Simulation of the Flow in a Centrifugal Pump with a Vaned Diffuser
	W. Segala, H. Stel, V. Hungria, R. E. Morales (UTFPR), S. C. Vicent (UJI), A. Bannwart (UNICAMP), C. O. Negrão (UTFPR)
AJK2011-05019	Design Optimization of Strongly Interacting Diffuser Pump Stage
	M. Zangeneh (UCL), K. Daneshkhah (Advanced Design Technology Ltd)
AJK2011-05010	Design Optimization of Cryogenic Pump Inducer Considering Suction Performance and Cavitation Instability
	H. Watanabe (Ebara Corporation Fluid Machinery & Systems Company), H. Tsukamoto (Kitakyushu

S05-03. Numerical Modeling for Turbomachinery Flow Optimization -3

Jul. 28 (Thu.), 15:40 - 17:20, Room #21

Session Chairs:

Dr. C. Hah (NASA/Glenn)

Dr. Y. Lee (NSWCCD)

AJK2011-05016 (Keynote)	Twenty Five Years of Mesh Generation: a Personal Perspective W. N. Dawes (CUED)
AJK2011-05002	Numerical Study of Cavitating Turbulent Flow around Propellers: Relationship of Cavity Volume Evolution and Pressure Fluctuation B. Ji (State Key Laboratory of Hydrosience and Engineering, Tsinghua University), X. Luo (Tsinghua University), X. Peng (CSSRC), Y. Wu, H. Xu (State Key Laboratory of Hydrosience and Engineering, Tsinghua University)
AJK2011-05009	Numerical Simulation of Unsteady Flows through a Francis Turbine Runner using Vortex Methods B. Zhu (State Key Laboratory of Hydrosience and Engineering Department of Thermal engineering, Tsinghua University), L. Wang, J. Zhai, S. Cao (State Key Laboratory of Hydrosience and Engineering, Department of Thermal Engineering, Tsinghua University)
AJK2011-05011	Three Dimensional Optimum Design of a Steam Turbine Stage with NURBS Curves T. Tejima, Y. Niizeki, N. Shibukawa, A. Onoda, S. Watanabe (Toshiba Corporation), X. Yuan, Z. Lin, X. Zhu (Tsinghua University)

S06. 7th International Symposium on Pumping Machinery**S06-01. Design and Optimization**

Jul. 25 (Mon.), 13:30 - 15:50, Room #41

Session Chairs:

Mr. B. Schiavello (Flowserve Corporation)

Dr. M. Nohmi (Ebara Corporation)

AJK2011-06006	Design and Experimental Research of Self-Suction Sprinkler Irrigation Jet Pump J. Liu, X. He, W. Shi (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University), Q. Su (Gree Electric Appliances, Inc. of Zhuhai)
AJK2011-06002	Optimum Network Sizing for Delivering Different Media L. Xia, S. Deng, M. Chan (PolyU)
AJK2011-06083	Direct Optimisation for Impeller Design S. Krueger, W. Maurer (Sulzer Pumps Ltd.)
AJK2011-06018	New Centrifugal Pump in Very Low Specific Speed Range S. Kagawa (EBARA CORPORATION Fluid Machinery & Systems Company), J. Kurokawa (Yokohama National University)
AJK2011-06077	Hydrodynamic Design of the Volute of a Centrifugal Pump using CFD R. Torabi (EBARA), A. Nourbakhsh (UT)
AJK2011-06010	Optimum Design of Open Sump Intakes based on CFD Calculations L. Cheng, C. Xu, C. Liu, C. Luo (Yangzhou University)
AJK2011-06031	Strength Calculation Software Development and Finite Element Analysis of Pump Shaft W. Li (Research Center of Fluid Machinery Engineering and Technology)

S06-02. Design and Performance

Jul. 25 (Mon.), 16:00 - 18:20, Room #41

Session Chairs:

Dr. S. Krueger (Sulzer Pumps Ltd.)

Dr. K. N. Chung (HHI)

AJK2011-06063	Computational Fluid Dynamics Analyses of a Micro Pediatric Ventricular Assist Blood Pump X. Yang (School of Jet Propulsion, Beijing University of Aeronautics and Astronautics, Beijing; Aeroengine Numerical Simulation Research Center, Beijing University of Aeronautics and Astronautics, Beijing), Y. Zhang (Department of Cardiovascular Surgery, Fuwai Hospital, Beijing), X. Gui (School of Jet Propulsion, Beijing University of Aeronautics and Astronautics, Beijing; Aeroengine Numerical Simulation Research Center, Beijing University of Aeronautics and Astronautics, Beijing), S. Hu (Department of Cardiovascular Surgery, Fuwai Hospital, Beijing)
AJK2011-06030	Three-Dimensional Blade Design of Helico-Axial Multiphase Pump Impeller based on Numerical Solution of Meridian Flow Net and Blade Mean Camber Lines J. Zhang, H. Zhu, H. Wei (China University of Petroleum-Beijing)
AJK2011-06015	Injury and Mortality to Fish Passing through Pumping Stations B. V. Esch (TUE)
AJK2011-06081	Analysis of Static Characteristics of Pressure Seal in Actual High Pressure Pump I. Hagiya, K. Kobayashi (merl), Y. Chiba, T. Yoshida, A. Arai (Hitachi Plant Technologies, Ltd.)
AJK2011-06005	Performance Improvement of a Mixed-Flow Pump by Optimization Techniques

	J. Kim, C. Jin, K. Kim (Inha University)
AJK2011-06041	Experimental and Numerical Investigation of Blades Effect on Aerodynamic Performance of Small Axial Flow Fan
	Z. Li, Y. Jin (zst)
AJK2011-06091	Study on the Aerodynamic Performance of Small Axial Flow Counter-Rotating Fans
	P. Liu, Y. Z. Jin, Y. P. Wang, H. Y. Qian, L. Zhang (Zhejiang Sci-Tech University)
S06-03. Performance and Internal Flow (I) Jul. 26 (Tue.), 08:30 - 10:30, Room #41 Session Chairs: Dr. B. V. Esch (TUE) Prof. K. Kim (Inha University)	
AJK2011-06003	Guide Vanes Influence on Hydraulic Characteristics of Tubular Pump
	Y. Jin, C. Liu (YZU), T. Tanaka (Kobe University)
AJK2011-06051	Numerical Analysis of Design and Off-Design Performance of High Specific Speed Mixed Flow Pumps
	Y. Sekino, Y. Tanabe (EBARA)
AJK2011-06053	A Numerical Study of Pump Characteristics of a Concrete Volute Pump with Various Types of Volute
	J. Y. Kim, K. N. Chung, Y. K. Kim (HHI)
AJK2011-06067	Complete Pump Characteristics and 4-Quadrants Representation Investigated by Experimental and Numerical Approaches
	L. Gros, A. Couzinet, L. Landry, D. Pierrat (CETIM)
AJK2011-06062	Numerical Simulation and Stereo PIV Test of Inner Flow in a Double Blades Pump
	K. Wang, H. Liu, S. Yuan, M. Tan, Y. Wang, L. Dong (Jiangsu University)
AJK2011-06050	Flow Measurements in a Transparent Centrifugal Pump by using of 3-D PIV Technique
	H. Yang (Energy and Power Engineering College, Yangzhou University)
S06-04. Performance and Internal Flow (II) Jul. 26 (Tue.), 11:00 - 13:00, Room #41 Session Chairs: Prof. G. Bois (ARTS et METIERS PARISTECH) Prof. S. Liu (Dept. of Thermal Engineering, Tsinghua University)	
AJK2011-06017	Blade Outlet Angle Effect on Inner Flow Field of Chemical Pump Transporting Sodium Sulfate Solution
	D. Liu, C. Wang, M. Yang (School of Energy and Power Engineering, Jiangsu University)
AJK2011-06035	Influence of Blade Outlet Angle and Blade Thickness on Performance and Internal Flow of Mini Centrifugal Pump
	T. Shigemitsu, J. Fukutomi, K. Kaji (The University of Tokushima)
AJK2011-06048	Effects of Swirl Brakes on the Leakage Flow between the Casing and the Shroud of a Centrifugal Impeller
	T. Kimura, S. Kawasaki, M. Shimagaki, M. Uchiumi (JAXA)
AJK2011-06008	Numerical Simulation of Three Dimensional Flow in Large Mixed-Flow Pump System
	F. Yang, C. Liu, F. Tang (Yangzhou University)
AJK2011-06052	Three-Dimensional Structure and Turbulence within the Tip Leakage Vortex of an Axial Waterjet Pump
	R. L. Miorini, H. Wu, D. Y. Tan, J. Katz (JHU)
AJK2011-06064	Numerical Simulation of the Internal Flow of a New-Type Shaft Tubular Pumping System
	H. Zhu (Yangzhou University), L. Dai (Yancheng Surveying & Design Institute of Water Resources), R. Zhang (Jiangsu Surveying & Design Institute of Water Resources Co., Ltd.), G. Zhu (Yancheng Water Conservancy Project Administration Department), L. Yao (Jiangsu Surveying & Design Institute of Water Resources Co., Ltd.), J. Luo (Agricultural Machinery Safety Monitoring Institute of Weiyang District)
S06-05. Internal Flow and Cavitation/Two-Phase Flow Jul. 26 (Tue.), 16:00 - 18:00, Room #41 Session Chairs: Mr. P. Cooper (Fluid Machinery Research Inc.) Dr. Y. Wu (Tsinghua University)	
AJK2011-06024	Computational Investigation of the Flow Field Inside an Submersible Tubular Pump
	Y. Jin, C. Liu, J. Zhou, F. Tang (Yangzhou University)
AJK2011-06093	Testing & Performance Modeling of Large-Scale ESP with High Viscosity Fluids and Gas
	L. Barrios, S. Scott, C. Deuel (Shell Oil), K. Sheth, M. Fox, L. Wilson, B. Brookbank (BHI)
AJK2011-06089	Identification of Francis Turbine Helical Vortex Rope Excitation by CFD Simulation and Resonance Simulation with the Hydraulic System.
	S. Alligne (EPFL-LMH), C. Nicolet (Power Vision Engineering sàrl), F. Avellan (EPFL - LMH)
	Industry-University Collaborative Project on Numerical Predictions of Cavitating Flows in

AJK2011-06084	Hydraulic Machinery -Part1: Benchmark Test on Cavitating Hydrofoils-
	C. Kato (The University of Tokyo)
AJK2011-06040	Experimental Study of Mechanism of Silt Abrasion Influenced by Cavitation in Hydraulic Machinery
	T. Zhang, C. Chen, D. Li, D. Lv (SWPU)
AJK2011-06066	Numerical Analysis of Influence of Pipe Length on Cavitation Surge
	Y. Iga, H. Nishitanaka (Institute of Fluid Science, Tohoku University), Y. Yoshida (JAXA)
S06-06. Cavitation Jul. 27 (Wed.), 08:30 - 10:30, Room #41 Session Chairs: Prof. F. Avellan (EPFL - LMH) Prof. C. Kato (The University of Tokyo)	
AJK2011-06046	A Novel Approach to Simplification of NPSH(r) CFD Calculation
	M. P. Strongin (ITT)
AJK2011-06070	Experimental Study on Cavitating Flow in Impeller of Axial-Flow Pump
	Z. Li, M. Yang, C. Kang, B. Gao, K. Ji (jiangsu university)
AJK2011-06065	Research on Cavaiaon Induced Noise in a Centrifugal Pump
	B. Gao, M. Yang, Z. Li, C. Kang (Jiangsu University)
AJK2011-06023	Numerical Prediction of Pump Performance Drop and Erosion Area due to Cavitation in a Double-Suction Centrifugal Feedpump
	M. Miyabe (Torishima Pump Mfg. Co., Ltd.), H. Maeda (Torishima Pump Mfg. Co., Ltd)
AJK2011-06025	Thermodynamic Effect and Cavitation Performance of a Cavitating Centrifugal Pump
	T. Tanaka (KNCT)
AJK2011-06055	Effect of Leading Edge Sweep on Cavitation Performance of Two-Bladed Flat Plate Inducer
	T. Igoshi, Y. Uchinono, E. Koroitamana (Graduate School of Engineering, Kyushu University), K. Ishizaka, S. Watanabe, A. Furukawa (Department of Mechanical Engineering, Kyushu University)
S06-07. Cavitation and Fluid Forces Jul. 27 (Wed.), 11:00 - 13:00, Room #41 Session Chairs: Prof. A. Acosta (California Institute of Technology) Dr. A. Guinzburg (The Boeing Company)	
AJK2011-06092 (Keynote)	Reduction of Cavitation Damage in a High-Energy Water Injection Pump
	P. Cooper (Fluid Machinery Research Inc.), R. Ungewitter (CRAFT Tech), R. Farooqi (Flowserve Corporation), J. McKenzie (Tern Technologies), B. Schiavello (Flowserve Corporation), W. Robinson (Tern Technologies)
AJK2011-06012	Analysis of Pressure Loading on Inducer Blades
	Y. Wu, H. Huang (NERCSPV)
AJK2011-06043	Experimental Characterization of Thermal Cavitation Effects on Space Rocket Axial Inducers
	A. Pasini, L. Torre, A. Cervone (Alta S.p.A.), L. D'Agostino (University of Pisa)
AJK2011-06027	Internal Flow and Axial Thrust Balancing of a Rocket Pump
	T. Shimura, S. Kawasaki, M. Uchiumi (JAXA), J. Matsui (Yokohama National University)
AJK2011-06042	Continuous Spectrum of the Rotordynamic Forces on a Four Bladed Inducer
	L. Torre, A. Pasini, A. Cervone (Alta S.p.A.), L. D'Agostino (University of Pisa)
S06-08. Fluid Forces Jul. 27 (Wed.), 16:00 - 18:00, Room #41 Session Chairs: Dr. M. Uchiumi (JAXA) Mr. A. Cervone (Alta S.p.A.)	
AJK2011-06039	Study on Radial Forces of Centrifugal Pumps with Various Collectors
	Z. Pan (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University), J. Li, S. Li (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University Zhenjiang, Jiangsu Province, P R China), S. Yuan (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University)
AJK2011-06011	Radial Thrust of Single-Blade Centrifugal Pump
	Y. Nishi (Department of Mechanical Engineering, Ibaraki University), J. Fukutomi (Department of Mechanical Engineering, the University of Tokushima), R. Fujiwara (the University of Tokushima)
AJK2011-06004	Fluid Dynamic Forces Acting on the Rotor of a Shaft-Less Miniature Pump
	B. Zhuang, X. Luo, X. Wang, B. Ji, H. Xu (Tsinghua University)
AJK2011-06085	Fluid-Induced Forces in Pump Liquid Seals with Large Aspect Ratio
	A. Untaroiu (UVA), V. Hayrapetian (Flowserve Corporation), C. D. Untaroiu, P. Allaire, H. G. Wood (UVA), B. Schiavello, J. McGuire (Flowserve Corporation)
AJK2011-06022	The Effects of Casing Geometry and Flow Instability on Rotordynamic Fluid Forces on a Closed Type Centrifugal Impeller in Whirling Motion
	S. Hata (Graduate School of Engineering Science, Osaka University), J. Richert, Y. Nishiyama, H.

	Horiguchi, Y. Tsujimoto (Osaka University)
AJK2011-06014	Experimental Investigation of Relationship between Pressure Fluctuations and Vibrations for a Double-Suction Centrifugal Pump
	Z. Yao, F. Wang, R. Xiao, C. He, Z. Liu (CAU)

S06-09. Unsteady Flows (I)

Jul. 28 (Thu.), 08:30 - 10:30, Room #41

Session Chairs:

Dr. F. C. Visser (FSG Pumps)

Prof. S. Watanabe (Department of Mechanical Engineering, Kyushu University)

AJK2011-06016	Unstable Operation of a Mixed-Flow Pump and the Influence of Tip Clearance
	B. V. Esch (TUE), L. Cheng (Yangzhou University)
AJK2011-06057	Experimental and Numerical Analysis of Pressure Pulsations and Mechanical Deformations in a Centrifugal Pump Impeller
	S. Berten (SULZER), S. Hentschel (Karlsruher Institut für Technologie (KIT)), K. Kieselbach, P. Dupont (Sulzer Pumps Ltd.)
AJK2011-06071	Effects of the Pump-Circuit Acoustic Coupling on the Blade-Passing Frequency Perturbations
	J. Keller, R. Barrio, J. Parrondo (Universidad de Oviedo), J. Pérez (Siemens), J. Fernández (UNEX)
AJK2011-06090	Hydrodynamics of a Pump-Turbine at Off-Design Operating Conditions: Numerical Simulation
	V. Hasmatuchi, S. Roth, F. Botero, M. Farhat, F. Avellan (EPFL)
AJK2011-06028	Characteristic Study of Pressure Fluctuation in Centrifugal Pump
	Y. Zhang, Z. Zhu (Zhejiang University), B. Cui, Y. Li (Zhejiang Sci-Tech University)
AJK2011-06075	A Test System for Pressure Pulsation and Hydrodynamic Noise in Centrifugal Pump based on Virtual Instrument Technology
	Y. Luo (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University,), S. Yuan (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang , China), Y. Tang (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University), J. Yuan, J. Zhang (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang , China)

S06-10. Unsteady Flows (II)

Jul. 28 (Thu.), 11:00 - 13:00, Room #41

Session Chairs:

Dr. G. Ciatelli (Flowserve Corporation)

Prof. Y. Tsujimoto (Osaka University)

AJK2011-06019	Investigations of Unsteady Flow Field Characters in Axial Flow Pump based on Numerical Simulation
	D. Zhang, W. Shi, X. Guan, J. Yao (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University)
AJK2011-06058	Streamlines in Mixed-Flow Impeller Deduced by Solving Partial Differential Equations and Visualized via CFD/PIV
	K. Qian (Jiangsu Univ.)
AJK2011-06087	A New High-Precision Solver to Predict Pressure Fluctuations in Centrifugal Pumps
	M. Solis coaguila, S. Khelladi, F. Bakir (Arts et Metiers ParisTech)
AJK2011-06059	Transient Behavior of a Radial Vaneless Diffuser
	A. Dazin (AMPT - LML), P. Dupont (Univ Lille Nord de France), G. Caignaert, G. Bois (Arts et Métiers ParisTech, Laboratoire de Mécanique de Lille, UMR CNRS 8107)
AJK2011-06068	Flow Field in the Vaned Diffuser of a Centrifugal Pump at Different Vane Setting Angles
	A. Boccazzi (IENI-CNR), R. Sala (Università di Pavia), P. Gaetani (Politecnico di Milano, Dip. Energia)
AJK2011-06073	Control of Unstable Flow in a Radial Diffuser using Rough Surfaces
	S. A. Ahmed (AUS)

S07. 11th International Symposium on Fluid Power

S07-01. Water Turbine

Jul. 26 (Tue.), 16:00 - 18:20, Room #54

Session Chairs:

Prof. A. Furukawa (Kyushu University)

Prof. S. Liu (Dept. of Thermal Engineering, Tsinghua University)

AJK2011-07006	Experimental Study on Performance of Darrieus-Type Open Hydro Turbine with Inlet Nozzle in Low Downstream Water Level Conditions
	K. Hirowatari, A. Furukawa, S. Watanabe, K. Okuma, K. Shimokawa, S. Iwamoto (Kyushu University)
AJK2011-07020	Experimental Investigation of Helical Cross-Flow Axis Hydrokinetic Turbines, Including Effects of Waves and Turbulence
	P. Bachant, M. Wosnik (UNH)
	Analytical and Numerical Modeling of Performance Characteristics of Cross-Flow Axis Hydrokinetic Turbines

AJK2011-07021	A. Johnston, M. Wosnik (UNH)
AJK2011-07022	Numerical Investigation on Channel Vortices in a Francis Turbine M. Zhang, S. Liu, Y. Wu, D. Liu (DTE,THU), L. Zhang (Hydroelectric equipment of state key laboratory, Harbin)
AJK2011-07023	Counter-Rotating Type Hydroelectric Unit (Effects of Blade Numbers on On-Cam Operations) T. Suzuki, G. Takano, Y. Nakamura, T. Kanemoto (Kyushu Institute of Technology)
AJK2011-07027	A New Methodology for Suppressing Pressure Pulsation in a Draft Tube by Grooved Runner Cone T. Sano (MHI), M. Ookawa, H. Watanabe, N. Okamoto, H. Yano (YONDEN), N. Fukuda, M. Maekawa, K. Miyagawa (MHI)
AJK2011-07037	Study on Open Cross-Flow Runner for Environmentally Friendly Nano-Hydraulic Turbine Utilizing Waterfall (Influence of Waterfall Thickness on the Runner Performance) M. Yamazaki (Graduate School of Shinshu University), S. Ooike (The Tokyo Electric Generation Company), S. Iio, T. Ikeda (Faculty of Eng., Shinshu University)

S07-02. Wind Turbine • Wave Power Turbine

Jul. 27 (Wed.), 08:30 - 10:50, Room #54

Session Chairs:

Prof. T. Kanemoto (KIT)

Prof. Y. Hasegawa (NIT)

AJK2011-07001	Flapwise and Edgewise Blade Loads Analysis of HAWT Rotor by using Fluid-Oscillation Coupled Calculation Model Y. Hasegawa (NIT), Y. Takagi (Nagoya Univ.), J. Murata (Mie Univ.), K. Kikuyama (Nagoya Sangyo Univ.)
AJK2011-07002	Velocity Field Measurements in Wake of a Straight-Bladed Vertical Axis Wind Turbine Y. Hara, T. Suzuki, Y. Ochiai (Tottori Univ.), T. Hayashi (NISRI)
AJK2011-07009	Performance and Flow Condition of Cross-Flow Wind Turbine with a Symmetrical Casing J. Fukutomi, T. Shigemitsu, M. Toyohara (The University of Tokushima)
AJK2011-07010	Aerodynamic Analysis for Camber Effect in Vertical Wind Turbine System J. Kim, S. Kim, J. Han, D. Lee (Hanyang University)
AJK2011-07024	Floating Type Ocean Wave Power Station (Unieque Work of Oscilating Platform) T. Otsubo, M. Orita, T. Kinoshita, T. Kanemoto, K. Kokubu (Kyushu Institute of Technology)
AJK2011-07029	Experimental Study on a Twin Unidirectional Impulse Turbine for Wave Energy Conversion M. Takao (Matsue College of Technology), M. Alam, T. Setoguchi (Saga University), V. Jayashankar (IIT Madras)
AJK2011-07035	Fluidic Components for Oscillating Water Column Based Wave Energy Plants. J. Venkataraman, S. Kedar (IIT Madras), P. Dudhgaokar, P. Jalihal (NIOT), M. Takao (Matsue college of technology), T. Setoguchi, K. Toyota, S. Nagata (Saga University)

S07-03. Fluid Power Equipment

Jul. 27 (Wed.), 11:00 - 13:00, Room #54

Session Chairs:

Prof. J. Bayandor (Virginia Tech)

Dr. T. Shigemitsu (The University of Tokushima)

AJK2011-07003	The Research to Hydro-Cyclone Separator of Sand Removing based on Crude Oil D. Feng, X. Chang, X. Zhang, S. Li, C. Ruan, Y. Xie (School of Mechanical Engineering, Yangtze University)
AJK2011-07008	Numerical Simulation of Underwater Propulsor using an Unstructured Overset Mesh Technique S. An, O. Kwon (KAIST)
AJK2011-07019	An Experimental Study on Opening Delay of a Reed Valve for Reciprocating Compressors F. Yoshizumi, Y. Kondoh, K. Yoshida (TOYOTA CENTRAL R&D LABS., INC.), T. Moroi, M. Obayashi, N. Kimura (Toyota Industries Corporation), S. Tamano, Y. Morinishi (Nagoya Institue of Technology)
AJK2011-07028	Diesel Engine Performance with Variable Operating Parameters by using Waste Plastic Fuel S. Agung (University Malaysia Pahang Faculty of Mechanical Engineering), H. Fujita (Kobe University, Maritime Sciences Faculty), A. Ismail (University Malaysia Pahang)
AJK2011-07033	Open Loop Dynamic Performance of Series Hydraulic Hybrid System with Hydrostatic Regenerative Braking R. Ramachandran, S. S Hiremath, S. Makaram (IITM)
AJK2011-07034	Influence of Surge Tank and Relief Valve on Transient Flow Behavior in Hydropower Stations A. Riasi, N. Nourbakhsh (University of Tehran)

S08. 12th Symposium on Fluid-Structure Interaction and Flow-Induced Noise in Industrial Applications

S08-01. Sound

Jul. 26 (Tue.), 11:00 - 13:00, Room #21

Session Chairs:

Dr. R. E. Gordnier (AFRL) Prof. M. Ha (Pusan National University)	
AJK2011-08007 (Keynote)	A Formula for Prediction of Frequency of Tonal Sound in Cavity Flows with Acoustic Resonance H. Yokoyama, K. Terao, T. Suzuki, A. Iida (Toyohashi University of Technology)
AJK2011-08005	Effect of Helical Strakes around a Finned Tube on Aeolian Tone H. Hamakawa, Y. Ito, R. Kamo (Oita University), E. Nishida (Shonan Institute of Technology)
AJK2011-08011	Numerical Study on Air-Reed Instruments with LES K. Takahashi, M. Miyamoto, Y. Ito (Kyushu Institute of Technology), T. Takami, T. Kobayashi, A. Nishida, M. Aoyagi (Kyushu University)
AJK2011-08034	Direct Numerical Simulation of Global Instability in a Hole-Tone Feedback System K. Matsuura (International Advanced Research and Education Organization), M. Nakano (Institute of Fluid Science, Tohoku University)
AJK2011-08039	Numerical Analysis of Wing-Tip Flows and Aerodynamic Sound Generated from the Flows K. Yamasari (Graduate School of Science and Technology, Nihon University), Y. Suzuki (College of Science and Technology, Nihon University), C. Kato (Institute of Industrial Science, the University of Tokyo), M. Ohnishi (Graduate school student, University of Tokyo), K. Yatuduka, T. Taira (Graduate school student, Nihon University), H. Fujita (College of Science and Technology, Nihon University)
S08-02. Cylinder Jul. 26 (Tue.), 16:00 - 17:20, Room #21 Session Chairs: Prof. K. Tanaka (Kyushu Institute of Technology) Prof. A. Iida (Toyohashi University of Technology)	
AJK2011-08001	Investigation of Rod Vibrations in Droplet Two-Phase Flows Y. Komuro, Z. Kawara, T. Kunugi (Kyoto University)
AJK2011-08002	Flow Characteristics of Freely Rotating Rectangular Cylinders with Different Width to Height Ratios Y. G. Park, H. S. Yoon, M. Y. Ha (PNU)
AJK2011-08014	Fluid-Structure Interaction of Circular Cylinders with Elastic Surface E. M. Sharify, N. Arai, . Takahashi (TUAT)
AJK2011-08017	Three-Dimensional Measurement of Interaction between a Circular Cylinder and Surrounding Flow by Digital Holographic Particle Tracking Velocimetry Y. Tanaka, S. Murata (KIT)
S08-03. Machine, Heat, Noise Jul. 27 (Wed.), 08:30 - 10:30, Room #21 Session Chairs: Prof. M. Ha (Pusan National University) Prof. K. Tanaka (Kyushu Institute of Technology)	
AJK2011-08003	Particle Behavior in a Vertical Channel with Thermal Convection in the Low Grashof Number Regime Y. Lee, D. Y. Kim (Pusan National University School of Mechanical Engineering), H. S. Yoon (Pusan National University, Advanced Ship Engineering Research Center), M. Y. Ha (PNU)
AJK2011-08006	Experimental Study on Low-Noise Design of an Axial Cooling Fan in a Refrigerator F. Guo, S. Heo, C. Cheong (amancl)
AJK2011-08012	Experimental Visualization of Sound Pressure Level and Vibration around a Soundproof Barrier F. Shimizu, K. Tanaka (Kyushu Institute of Technology), K. Yamamoto (TADANO Co.), H. Shigefuji (TOTO LTD.)
AJK2011-08015	Cooling & Dehumidification Characteristics of Desiccant Cooling System in a Residential Environment C. Yun (Graduate School, Kookmin Univ.,Korea), J. Ahn, B. Kang (School of Mechanical Engineering, Kookmin Univ.)
AJK2011-08022	Torque Converter Stress Analysis by Transient FSI Technique T. Yamaguchi (Aisin AW Co.,Ltd.), A. Okumura (AW Engineering Co.,Ltd.)
AJK2011-08040	Oscillation Caused by Vortex Cavitation in a Double-Suction Volute Pump T. Satou (Hirachi Plant Technologies,Ltd), T. Nagahara (Hitachi Plant Technologies,Ltd), K. Tanaka (Kyushu Institute of Technology), M. Fuchiwaki (Department of Mechanical Information Science and Technology, Kyushu Institute of Technology)
S08-04. Wing, Boundary Layer (1) Jul. 27 (Wed.), 11:00 - 12:40, Room #21 Session Chairs: Prof. A. Iida (Toyohashi University of Technology) Prof. P. J. Attar (OU)	
AJK2011-08028	Effects of Sway Motion and Flow-Induced Vibration on Vortex Structure Behind Flexible Rectangular Plate M. Yonekura, K. Watanabe, H. Ishikawa (Tokyo University of Science), S. Yamada (National Defence

	Academy)
AJK2011-08021	Vortex Structure Rolled Up from Elastic Thin Film by Fluid Structure Interaction Simulation
	T. Nagata (12th Symposium on Fluid-Structure Interaction and Flow-Induced Noise in Industrial Applications)
AJK2011-08030	Fluid-Structure Interaction for Flutter Predictions in Transonic and Supersonic Flows
	S. Zhang (ESI-CFD, Inc), Z. Yang (Department of Chemical & Materials Engineering The University of Alabama in Huntsville), C. Chen (Department of Chemical & Material Engineering The University of Alabama in Huntsville), X. Zhao (School of Engineering and Technology Alabama A&M University)
AJK2011-08032	Composite Material Delta Wing Flutter and LCO Analysis using a Reduced Order System ID Approach
	P. J. Attar, K. Sapkal (OU)
AJK2011-08004	A Pressure Correction Method for Simulating Solid-Fluid Mixture Flow
	S. Lin (NCKU), Y. Chin (OCU), Y. Chen (NCKU)

S08-05. Wing, Boundary Layer (2)

Jul. 27 (Wed.), 16:00 - 17:20, Room #21

Session Chairs:

Dr. R. E. Gordnier (AFRL)

Dr. M. Fuchiwaki (Kyushu Institute of Technology)

AJK2011-08020	Wake Structure around Moving Elastic Airfoils with Projections and Their Characteristics of Dynamic Forces by Fluid Structure Interaction Simulation
	A. Junchangpood, M. Fuchiwaki, K. Tanaka (KIT)
AJK2011-08018	Time Resolved Measurements of the Pressure Field Generated by Vortex-Corner Interactions in a Cavity Shear Layer
	X. Liu, J. Katz (Johns Hopkins University Department of Mechanical Engineering)
AJK2011-08036	The Growth of Vorticity in the Vicinity of a Wall of an Elastic Moving Airfoil and Their Developing Process
	T. Kurinami, M. Fuchiwaki, K. Tanaka (KIT)
AJK2011-08008	Implicit LES Simulations for an Aspect Ratio Two Flexible Membrane Wing
	R. E. Gordnier (AFRL), P. J. Attar (The University of Oklahoma School of Aerospace and Mechanical Engineering)

S09. 12th International Symposium on Liquid-Solid Flows

S09-01. Discrete Particles

Jul. 25 (Mon.), 13:30 - 15:30, Room #54

Session Chairs:

Prof. V. Matousek (Czech Technical University in Prague)

Prof. H. Ko (Sungkyunkwan University)

AJK2011-09021 (Keynote)	Motion of Descending Solid Particles and Local Flow around the Particles in Downward Turbulent Water Duct Flow (Keynote)
	Y. Hagiwara, H. Fujii, K. Sakurai, T. Kuroda, A. Kitagawa (Kyoto Institute of Technology)
AJK2011-09024	Critical Liquid Velocities for Low Concentration Sand Transport
	A. Hill (University of Tulsa Mechanical Engineering Department), B. Arevalo (Dresser-Rand), B. McLaury (University of Tulsa Mechanical Engineering Department), F. M. Almutahar (Saudi Aramco)
AJK2011-09004	Interfacial Instability of Particulate Suspension in Narrow Channel
	K. Watanabe, T. Shiotani, M. Kondo, K. Sato, S. Harada (Hokkaido Univ.)
AJK2011-09012	Influence of Water Splash Formation by a Hydrophilic Body Plunging into Water
	Y. Kubota, O. Mochizuki (Toyo Univ.)
AJK2011-09019	Simulation of Solid-Fluid Interaction in Presence of a Free Surface
	I. Mirzaii, M. Passandideh-Fard (Ferdowsi University of Mashhad)

S09-02. Slurry and Erosion

Jul. 25 (Mon.), 16:00 - 18:00, Room #54

Session Chairs:

Prof. Y. Kang (School of Bioenergy and Chemical Engineering, Chungnam National University)

Prof. J. C. Wells (Ritsumeikan University Dept. of Civil and Environmental Engineering)

AJK2011-09002	Direct Simulations of Incipient Erosion of Solid Particle Beds due to Shear Flow
	J. Derksen (University of Alberta)
AJK2011-09009	Solids Shear Stress in Sheet Flow above Eroded Plane Bed
	V. Matousek (Czech Technical University in Prague)
AJK2011-09023	Effects of Viscosity, Particle Size, and Particle Shape on Erosion in Gas and Liquid Flows
	R. Okita, Y. Zhang, B. McLaury, S. Shirazi (The University of Tulsa), E. Rybicki (The University of Tulsa)
AJK2011-09017	Experiments on Cake Development in Cross-Flow Filtration for High Level Waste
	M. R. Duignan, C. A. Nash (SRNL)
	Friction Coefficient Analysis of Mud Slurry Flow in Spiral Pipe

AJK2011-09011	Budiarso, Ridwan, Yanuar (University of indonesia)
AJK2011-09010	Rheological Properties of Nanofluid in a Spiral Pipe
	Y. A. Yanuar, N. Putra (UI)

S09-03. Applications

Jul. 26 (Tue.), 08:30 - 10:30, Room #54

Session Chairs:

Prof. S. Harada (Hokkaido University)

Dr. S. A. Shirazi (The University of Tulsa)

AJK2011-09015	Orbits of Small Spherical Tracers in Monodisperse Particle Beds. Liquid- Versus Air-Filled Rotating Tumblers
	J. C. Wells (Ritsumeikan University Dept. of Civil and Environmental Engineering), T. B. Nguyen (Department of Transportation Mechanical Engineering, Danang University of Technology.), A. V. Nguyen (Dept. of Civil and Environmental Engineering Ritsumeikan University)
AJK2011-09014	Formation of Sedimentary Ripples in a Cylindrical Rotating Tank
	Y. Cui (Ritsumeikan University), J. C. Wells (Dept. of Science & Engineering, Ritsumeikan University)
AJK2011-09016	Development of a Lagrangian-Lagrangian Coupling Method in Solid-Liquid Flows Involving Free Surface
	Y. Yamada, M. Sakai, S. Mizutani, S. Koshizuka (Department of Systems Innovation, School of Engineering, The University of Tokyo), T. Nonoue, K. Takahashi (JGC Corporation)
AJK2011-09020	Finite Element Simulation of Blood Flow in a Flexible Carotid Artery Bifurcation
	S. H. Lee (SNU), H. G. Choi (SNUST), J. Y. Yoo (SNU)
AJK2011-09025	Study on Droplet Formation with Surface Tension for Electrohydrodynamic Inkjet Nozzle
	S. Lee, N. Hung, H. Ko (SungKyunKwan Univ.)
AJK2011-09006	Immersed Heater-to Bed Heat Transfer in Liquid-Solid Circulating Fluidized Beds with Low Surface Tension Media
	D. Lim, J. Jang (School of chemical Engineering Chungnam National University), H. Jin, H. Lim (School of chemical Engineering Chungnam, National University), Y. Kang (School of Bioenergy and Chemical Engineering, Chungnam National University), H. Lee, H. Jung (Korea Energy Research Institute)

S10. 12th International Symposium on Gas-Liquid Two-Phase Flows

S10-01. Atomization and jet with droplets

Jul. 25 (Mon.), 13:30 - 15:10, Room #22

Session Chairs:

Prof. D. E. Nikitopoulos (Louisiana State Univ.)

Prof. M. Sadatomi (Kumamoto University)

AJK2011-10033	CFD Analysis to Study Evaporation of a Single Ethanol/Iso-Octane Binary Mixture Droplet
	R. Banerjee (IIT Hyderabad), R. Gopinath (IITH)
AJK2011-10036	Thermo-Fluid Dynamic Behavior of Water Droplets Injected into Air Stream
	A. Suryan, J. K. Lee (ANU), C. K. Kim, D. S. Kim (Daejoo), H. D. Kim (ANU)
AJK2011-10038	A Turbulence Model of Bi-Component Fuel Droplet for Atomizing Sprays
	O. Samimi Abianeh, C. Chen (UAH)
AJK2011-10021	Study on the Collapse of Water Jet
	R. Ikuta, Y. Koizumi (Shinshu University), H. Yoshida, K. Takase (Japan Atomic Energy Agency)
AJK2011-10010	Formation of a Hollow Jet and Its Breakup in the Ambient Air
	T. V. Vu, H. Takakura, J. C. Wells, T. Minemoto (Rits)

S10-02. Micro bubble, cavitation, nozzle flow

Jul. 25 (Mon.), 16:00 - 18:00, Room #22

Session Chairs:

Dr. T. J. O'Hern (Sandia National Lab)

Prof. Y. Matsumoto (The University of Tokyo)

AJK2011-10024	Study on Bubble Breakup Mechanism in a Venturi Tube
	Y. Nomura, A. Kaneko, S. Uesawa, Y. Abe (University of Tsukuba)
AJK2011-10014	Fluctuation of Void Fraction in the Microbubble Generator with a Venturi Tube
	S. Uesawa, A. Kaneko, Y. Nomura, Y. Abe (University of Tsukuba)
AJK2011-10035	Influence of Dissolved Gas Concentration on Diameter and Number Density of Micro-Bubbles
	Y. Maeda (Faculty of Engineering, Kobe University), C. Taya (Faculty of Engineering, Kobe University), S. Hosokawa, A. Tomiyama (Faculty of Engineering, Kobe University), Y. Ito, N. Shibata (Panasonic Electric Works Co., Ltd.)
AJK2011-10043	Investigation on Oscillating Behavior of Laser-Induced Cavitation Bubble near Wall in Room Temperature Water and Cryogenic Liquid
	T. Yamaguchi, Y. Oshida (Chiba university graduate school of engineering), S. T. Wong (Chiba university Faculty of engineering), K. Maeno, M. Ota (Chiba university graduate school of engineering)
AJK2011-10006	Combined Numerical and Experimental Study on Drag Torque in a Wet Clutch

	Y. Takagi, Y. Okano (Osaka Univ.), M. Miyagawa, N. Katayama (F.C.C.)
AJK2011-10017	High-Speed Gas-Liquid Two-Phase Nozzle Flow for CO₂ (Effect of Inlet Temperature)
	Y. Kinoue, N. Shiomi, T. Setoguchi (Saga University)
S10-03. Bubble formation and behavior Jul. 26 (Tue.), 08:30 - 09:50, Room #22 Session Chairs: Prof. Y. Abe (University of Tsukuba) Dr. U. Rohatgi (Brookhaven National Lab)	
AJK2011-10016	Numerical Study of Bubble Growth on a Micro-Finned Surface
	W. Lee (Department of Mechanical engineering, Sogang University), G. Son (Sogang University)
AJK2011-10031	Correlation between a Local Void Fraction and Dissolved Gas Concentration in a Bubble Column by using a Newly Developed Photoelectric Optical Fiber Probe.
	M. Yamada, T. Saito (Shizuoka Univ.)
AJK2011-10026	The Motion of a Bubble Swarm in Decaying Oscillating-Grid Turbulence and the Modulation of the Liquid-Phase Motion
	Y. Nagami (Shizuoka Univ.), T. Saito (Graduate School of Science and Technology, Shizuoka University)
AJK2011-10003	Analysis of Turbulence Structure and Void Fraction Distribution in Gas-Liquid Two-Phase Flow under Bubbly and Churn Flow Regime
	I. Kataoka, K. Yoshida (Department of Mechanical Engineering, Osaka University), G. Ishikawa (Department of Mechanical Engineering), K. Kondo (Department of Marine Engineering, Marine Technica College)
S10-04. Nano-, micro- and medium-sized channels Jul. 26 (Tue.), 11:00 - 13:00, Room #22 Session Chairs: Prof. M. Kim (Pohang University of Science and Technology) Prof. I. Kataoka (Osaka Univ.)	
AJK2011-10011	Investigation of Characteristics of Gas-Liquid Two-Phase Flows in a Rectangular Microchannel with Return Bends
	A. Kawahara, M. Sadatomi (Kumamoto University), H. Matsuo (Mitsubishi Heavy Industries, Ltd.), S. Shimokawa (Kumamoto University)
AJK2011-10015	Effect of Channel Wetting Properties on Flow Characteristics of Gas-Liquid Two-Phase Flow in a Microchannel
	H. Ide, R. Kimura (Kagoshima Univ.), M. Kawaji (City College of New York)
AJK2011-10044	Visualization Study on Gas Bubble Break-Up and Transport Phenomena in Microchannels
	D. Yim (SNU), J. Sung (SNUT), J. Yoo (SNU)
AJK2011-10045	Numerical Simulation of Gas - Liquid Slug Flow along Vertical Pipes using the Slug Tracking Model
	R. E. Morales (UTFPR)
AJK2011-10008	A Newly Developed Technique for Detection of a Contact Position in Bubble Measurements by a Single-Tip Optical Fiber Probe
	Y. Mizushima (Shizuoka Univ.), T. Saito (Graduate School of Science and Technology, Shizuoka University)
AJK2011-10001	Comparison of Two-Phase Friction Factors using Reynolds Equivalent Number Model during Annular Laminar Flow of R134a in a Vertical Tube at High Mass Flux
	A. S. Dalkilic (YTU), S. Wongwises (King Mongkut's University of Technology Thonburi)
S10-05. Modeling with and without heat transfer Jul. 26 (Tue.), 16:00 - 18:00, Room #22 Session Chairs: Prof. M. Lance (Ecole Central de Lyon) Prof. G. Son (Sogang University)	
AJK2011-10002	Studies on the Hydrodynamic Phenomena in Frosting and Defrosting
	I. Kataoka, K. Yoshida (Department of Mechanical Engineering, Osaka University), K. Mizutani, H. Nishiguchi (KEPCO)
AJK2011-10032	Application of Level Set /Immersed-Boundary Method to Simulate Fluid-Fluid and Fluid-Solid Problems
	C. H. Yu, W. H. Sheu (NTU)
AJK2011-10019	Numerical Study on Bubble Departing Behavior from Heated Surface in Subcooled Pool Boiling
	Y. Ose, Z. Kawara, T. Kunugi (Kyoto University)
AJK2011-10013	Modelling Two-Phase Heat Exchanger Performance in the Annular-Mist Flow Regime Considering Entrainment and Deposition Phenomena
	J. C. Pacio, C. Dorao (NTNU)
AJK2011-10040	Encapsulation and Disintegration of a Gas-Cored Annular Liquid Jet
	T. Yoshinaga (Osaka Univ.)

AJK2011-10042	Numerical Study of Pressure Drop Oscillations in Parallel Channels.
	E. Manavela Chiapero, M. Fernandino, C. A. Dorao (Norwegian University of Science and Technology)

S11. Symposium on Non-Invasive Measurements in Single and Multiphase Flows

S11-01. Sensing of Dispersion and Molecular Flows

Jul. 25 (Mon.), 13:30 - 15:50, Room #44

Session Chairs:

Prof. Y. Murai (Hokkaido University)

Ms. J. A. Bamberger (PNNL)

AJK2011-11009 (Keynote)	Developing Tracer Particles for X-Ray Particle Tracking Velocimetry
	J. B. Drake, A. L. Kenney, T. B. Morgan, T. J. Heindel (ISU)
AJK2011-11029	The Experimental Study of Impinging Interaction of Rarefied Gas Jet with Plane Wall using LIF Method
	S. Yamazaki, A. Yanagi (Graduate school of engineering, Chiba University), Y. Tanaka (Under graduate students, Chiba University), M. Ota, K. Maeno (Graduate school of engineering, Chiba University)
AJK2011-11017	Non Intrusive Devices Applied to Sedimentation and Consolidation
	D. Pham Van Bang (LHSV)
AJK2011-11018	Study on the New Fine Particle Size Measurement Technique with Laser Interference Fringes
	H. Sakaki, A. Kaneko, Y. Abe (University of Tsukuba), M. Ike (Apptex LLC)
AJK2011-11031	Experimental Investigation of Intermittent Gas-Liquid Flows on Solid Particle Transportation in Inclined Pipelines
	L. Wang (China University of Petroleum - Beijing), A. Goharzadeh, P. Rodgers (The Petroleum Institute)
AJK2011-11001	Inhomogeneous Structure in High-Speed and High-Number-Density Sprays
	N. Kawaharada, D. Sakaguchi (Graduate school of Engineering Nagasaki University), K. Komada (School of Engineering Nagasaki University), H. Ueki, M. Ishida (Graduate School of Engineering Nagasaki University)

S11-02. Applied Optics to Transport Phenomena

Jul. 25 (Mon.), 16:00 - 18:20, Room #44

Session Chairs:

Prof. T. J. Heindel (ISU)

Prof. K. Kim (Pusan National University)

AJK2011-11013	Quantitative Measurement of Temperature Gradient in Natural Heat Convection using Color-Stripe Background Oriented Schlieren (CSBOS) Technique and Computed Tomography (CT) Method
	M. F. Zeb (C.U.), M. Ota, K. Maeno (CU)
AJK2011-11014	Dynamics of Cell Pattern Formation in Internally Heated Convection Viewed from Local to Global Particle Image Thermometry Measurements
	R. Abe, Y. Tasaka, I. Kumagai, Y. Murai (Hokkaido Uni), T. Yanagisawa (JAMSTEC)
AJK2011-11016	Visualization of a Single Boiling Bubble Dynamics in a DC Electric Field
	F. Chen (TSU,UH), D. Liu (UH), Y. Song (Tsinghua University), Y. Peng (University of Texas at Austin)
AJK2011-11019	Experimental Investigation of Turbulence Transition of Natural Convection Boundary Layer along a Vertical Plate in Water with Sub-Millimeter-Bubble Injection
	A. Kitagawa, H. Endo, Y. Hagiwara (Kyoto Institute of Technology)
AJK2011-11028	Heat Transfer Enhancement of Natural Convection along a Vertical Heated Plate by Microbubble Injection
	K. Yamamoto, A. Kitagawa, Y. Hagiwara (Kyoto Institute of Technology)
AJK2011-11027	Dissoved Oxygen Concentration Field Measurement in Microfluidics using PtOEP/PS Film Sensor
	S. Yi (Pusan National University), D. Song (The University of Tokyo), K. Kim (Pusan National University)
AJK2011-11020	Development of Dual-Layer PSP/TSP System for Pressure and Temperature Measurements in Low-Speed Flow Field
	K. Moon, H. Mori, Y. Ambe, H. Kawabata (Kyushu univ.)

S11-03. Imaging of Bubble and Free Surface Flows

Jul. 26 (Tue.), 08:30 - 10:30, Room #44

Session Chairs:

Dr. B. Khalighi (General Motors R&D Center)

Prof. H. Kim (GNU)

AJK2011-11007	Velocity and Concentration Field Measurements in Bubble-Driven Turbulent Liquid Flows using PIV/PLIF Techniques
	W. Jeong, S. Yi, H. Kim (Pusan National University), S. Kim (Doosan Heavy Industry), K. Kim (Pusan National University)

AJK2011-11006	Self Organized Structure of Microbubble Plume in a Thin Fluid Layer
	Y. Miyagishima, T. Watamura, Y. Tasaka, Y. Murai (Hokkaido Uni)
AJK2011-11011	Three-Dimensional Synthetic Aperture Imaging and Resolution of Multiphase Flows
	J. Belden, S. Ravela (MIT), T. T. Truscott (BYU), A. H. Techet (MIT)
AJK2011-11010	A Relationship between the Motion of a Zigzagging Bubble and Its Surrounding Liquid Motion
	R. Tachibana, T. Saito (Shizuoka Univ.)
AJK2011-11015	Liquid Entrainment by Round Turbulent Gas Jets Submerged in Water
	B. Drew, J. Charonko, P. Vlachos (VT)
AJK2011-11022	Turbulent Free-Surface Flow Behind a Surface Piercing Body - Towed PIV Measurements
	J. H. Seo, D. M. Seol, S. H. Rhee (SNU)

S11-04. Non-Invasive Velocimetry

Jul. 26 (Tue.), 11:00 - 13:00, Room #44

Session Chairs:

Prof. H. Kawai (JSME)

Prof. Y. Hassan (Texas A&M University)

AJK2011-11023	Study on Flow Rate Monitoring at High Reynolds Number using Ultrasonic Velocity Profile Method
	S. Wada, T. Endo, K. Tezuka, T. Nagano (TEPCO), N. Furuichi (AIST, NMIJ)
AJK2011-11021	Effect of Frequency Analysis Algorithms on Velocity Data using Ultrasonic Doppler Method
	R. Sakagami, H. Murakawa, K. Sugimoto, N. Takenaka (Kobe University)
AJK2011-11005	Echo PIV Measurement around the Pump System in the Nuclear Reactor
	X. Tu (GNU), J. Cha (KAERI), H. Kim (GNU)
AJK2011-11003	Flow of a Viscoelastic Fluid around a Falling Sphere
	T. Shiratori (Hokkaido Univ.), Y. Tasaka, Y. Murai (Faculty of Engineering Hokkaido University), K. Oyama (Graduate School of Engineering Hokkaido University), I. Kumagai (Faculty of Engineering Hokkaido University), Y. Takeda (Swiss Federal Institute of Technology)
AJK2011-11030	Measurements of the Vorticity behind a Circular Cylinder in a Uniform Stream
	Y. Inoue, N. Suwa, S. Yamashita (Gifu University)
AJK2011-11026	Spectrum Analysis of the Taylor Vortex Flow with a Short Annulus using the Ultrasonic Velocity Profiler
	H. Kawai, Y. Honma, H. Kikura (JSME)

S12. 13th International Symposium on Gas-Particle Flows

S12-01. Modeling and simulation

Jul. 26 (Tue.), 16:00 - 18:40, Room #44

Session Chairs:

Prof. T. Tanaka (Osaka University)

Prof. M. Sommerfeld (MLU-Halle)

AJK2011-12025	Modelling Agglomeration and the Fluid Dynamic Behaviour of Agglomerates
	S. Stübing, M. Dietzel, M. Sommerfeld (MLU-Halle)
AJK2011-12019	Vortex Simulation for Behavior of Solid Particles Falling in Air
	H. Yagami (Mie University), T. Uchiyama (Nagoya University)
AJK2011-12006	Stochastic Large Eddy Simulation of Bluff-Body Two-Way-Coupled Gas-Particle Turbulent Flow
	A. S. Berrouk (PI), D. Laurence (UM)
AJK2011-12007	Large-Eddy Simulation on a Pulverized Coal Combustion Furnace with a Complex Swirl Burner
	H. Watanabe, K. Tanno (CRIEPI), R. Kurose, S. Komori (Kyoto Univ.)
AJK2011-12010	Numerical Study on Deformation Behaviour of Fluid Particle under Shear Flow
	Y. Suh (Department of Computational Science and Engineering, Yonsei University), C. Lee (Yonsei University)
AJK2011-12013	Effect of Particle Size on Feedback in an Idealized Annular Flow
	Y. Mito, K. Kawamoto (Kitami Institute of Technology)
AJK2011-12021	Kinetic Approach for Solid Inertial Particle Deposition in Turbulent Boundary Layers : Lattice Boltzmann Based Numerical Resolution
	E. Diounou, P. Fede (IMFT), S. Blanco, R. Fournier (LAPLACE), O. Simonin (IMFT)
AJK2011-12017	PIV Experiment on the Gas-Solid Multiphase Flow Relevant to Wind-Blown Sand: Comparison of Velocity Fields of Sand Particles and Air Flow by Simultaneous Measurement
	K. Otakeguchi, D. Aoshima, Y. Sakamoto, T. Tsukahara, Y. Kawaguchi, M. Yamamoto (Tokyo University of Science)

S12-02. Fluidized bed, pneumatic conveying

Jul. 27 (Wed.), 08:30 - 10:50, Room #44

Session Chairs:

Prof. C. Lee (Yonsei University)

Prof. O. Simonin (IMFT)

AJK2011-12016	3D Numerical Simulation of Polydispersed Pressurized Gas-Solid Fluidized Bed
	P. Fede, O. Simonin (IMFT), I. Ghouila (INEOS)
AJK2011-12014	Numerical Study on Coarse Grain Modeling of the DEM for Industrial Scale Gas-Solid Flow Systems
	M. Sakai, Y. Yamada, Y. Shigeto, S. Mizutani, S. Yang, K. Shibata, S. Koshizuka (Department of Systems Innovation, School of Engineering, The University of Tokyo)
AJK2011-12011	DEM-CFD Coupling Simulation of Fluidized Behavior of Geldart's Group a Particles - A Contact Force Model for Expressing Adhesion Force -
	T. Kobayashi, N. Shimada (Sumitomo Chemical Co., Ltd.), T. Tanaka (Department of Mechanical Engineering, Osaka University)
AJK2011-12023	Motion and Temperature of Individual Particles in Two-Dimensional Fluidized Bed with Heat Transfer
	T. Miyauchi, S. Oh, T. Tsuji, T. Tanaka (Department of Mechanical Engineering, Osaka University)
AJK2011-12012	Influence of Fluidizing Velocity on Fluidized Powder Conveying in a Horizontal Rectangular Channel
	K. Ogata, T. Furukawa, Y. Yamamoto (Oshima College of Maritime Technology)
AJK2011-12024	Influence of Wall Pressure on Power Reduction of Plug Transportation by Ultra Sonic.
	Y. Koike (Department of Mechanical Engineering, Graduate School of Science and Technology, Nihon University), K. Kofu, M. Ochi (Department of Mechanical Engineering, College of Science and Technology, Nihon University)
AJK2011-12029	Numerical Study of Horizontal Pneumatic Conveying of Powder in Different Gravitational Environments
	S. Lain (UAO), M. Sommerfeld (MLU), L. Botina (UAO)

S13. 6th Symposium on Flow Manipulation and Active Control: Theory, Experiments and Implementation

S13-01. Active Control

Jul. 28 (Thu.), 11:00 - 13:20, Room #53

Session Chairs:

Prof. S. Mochizuki (YU)

Prof. Y. Fukunishi (Tohoku University)

AJK2011-13004	A PID Control of Flow over a Circular Cylinder
	D. Son, S. Jeon, H. Choi (Seoul National University)
AJK2011-13015	Wake Structure behind Circular Cylinder by Plasma Actuators
	S. Yamada (NDA), K. Shibata, H. Yanagihara, T. Doi, H. Ishikawa (Tokyo University of Science), T. Segawa (Agency of Industrial Science and Technology)
AJK2011-13016	Effect of DBD Plasma Jet on the Flow around a Circular Cylinder
	Y. Kozato, S. Kikuchi, S. Imao (Department of Mechanical and Systems Engineering, Gifu University)
AJK2011-13010	Active Control of Flow Separation over a NACA0024 Airfoil by DBD Plasma Actuator and FBG Sensor
	S. Walker, T. Segawa, T. Jukes, H. Furutani, N. Iki (National Institute of Advanced Industrial Science and Technology), S. Takekawa (Powers System Integrate Inc. (PSI))
AJK2011-13006	Applications of AFC to Wind Turbines
	A. Seifert (TAU)
AJK2011-13002	Numerical Study of Impulse Actuation for Stall Control
	S. Jee (NASA Ames Research Center), O. D. Lopez (Universidad de los Andes, Mechanical Engineering Department), R. D. Moser (Institute for Computational Engineering and Sciences and Department of Mechanical Engineering, University of Texas at Austin)
AJK2011-13020	Direct Actuation of Small-Scale Motions for Enhanced Heat Transfer in Heated Channels
	P. Hidalgo, A. Glezer (Woodruff School of Mechanical Engineering Georgia Institute of Technology)

S13-02. Flow Manipulation

Jul. 28 (Thu.), 15:40 - 17:40, Room #53

Session Chairs:

Prof. A. Glezer (Woodruff School of Mechanical Engineering Georgia Institute of Technology)

Dr. T. Segawa (AIST)

AJK2011-13018	Generation of Velocity Fluctuations in a Boundary Layer by a Piezoelectric Actuator
	H. Okawa, S. Kondo, M. Shigeta, S. Izawa, Y. Fukunishi (Department of Mechanical Systems and Design, Graduate School of Engineering, Tohoku University)
AJK2011-13003	Effects of Rough Wall in Fully Developed Turbulent Pipe Flow
	A. T. Win (Yamadai), S. Mochizuki, T. Kameda (YU)
AJK2011-13009	Effects of Reynolds Number on Drag Reduction in T-Junction Pipes due to Small Obstacles
	T. Ando, T. Shakouchi, Y. Suzuki, K. Tsujimoto (Graduate School of Engineering, Mie University)
AJK2011-13014	Investigation on Circular and Chevron Impinging Jets by IR Thermography and Time-Resolved Tomographic PIV
	D. Violato (TUDelft), A. Ianaro, G. Cardone (University of Naples Federico II), F. Scarano (TUDelft)

AJK2011-13019	Analysis of a Subsonic Expansion Jet under the Influence of a Finite Wall at the Exit
	V. Shukla, A. Kushari (IITK)
AJK2011-13005	Lattice Boltzmann Method Used to Simulate an Unsteady Flow around an Obstacle in Laminar Regime
	W. Abassi, F. Aloui, J. Legrand (LUNAM, GEPEA), S. Ben nasrallah (LESTE)

S14. 10th Symposium Transport Phenomena in Materials Processing and Manufacturing Processes

S14-01. Transport Phenomena in Materials Processing and Manufacturing Processes (1)

Jul. 27 (Wed.), 08:30 - 10:30, Room #52

Session Chairs:

Dr. T. Hasegawa (Niigata University)

Prof. T. Takahashi (Nagaoka University of Technology)

AJK2011-14014	Influence of Shear Rate History on Generation of Shear-Induced Structure of Wormlike Micelles Solutions
	S. Chiba, M. Ito, S. Fujii, T. Takahashi (Nagaoka University of Technology)
AJK2011-14008	Numerical Analysis of Three-Dimensional Flows of Wormlike Micelles Solutions through Abrupt Contraction using a Modified Bautista-Manero Model
	T. Yamamoto (Osaka Univ)
AJK2011-14020	Influence of Counter-Ion Concentration on the Impinging Jet of Surfactant Solutions
	T. A. Nguyen, H. Mizunuma (TMU)
AJK2011-14013	Effect of the Ice Thickness on the Performance of the Medicated Water Electrolysis Apparatuses
	Y. Kim (Sungkyunkwan University), S. Jeon, S. Lee (Graduate School of Mechanical Engineering, Sungkyunkwan University)
AJK2011-14015	Numerical Study on the Thermal Characteristics of Large Sized Silicon Polycrystal Growth by DS Method
	Y. Kim (Sungkyunkwan University), H. Seo (Graduate School of Mechanical Engineering, Sungkyunkwan University)
AJK2011-14006	Flow and Thermal Effects on the Crystallites Size and Repartition in Thermoplastic Polymers
	M. Boutaous (INSA Lyon), M. Zinet, F. Rousset (INSA Lyon), P. Bourgin (Ecole centrale Lyon)

S14-02. Transport Phenomena in Materials Processing and Manufacturing Processes (2)

Jul. 27 (Wed.), 11:00 - 13:00, Room #52

Session Chairs:

Prof. Y. Kim (Sungkyunkwan University)

Dr. P. Bourgin (Ecole Centrale de Lyon)

AJK2011-14002	Anomalous Decrease in Flow Rates of Micro-Orifice Flows of Water with Increasing the Elapsed Time After Inception of the Flow
	T. Hasegawa (Niigata University), A. Ushida (Venture Business Labolatory, Niigata University), H. Uchiyama (Graduate School of Science and Technology, Niigata University), T. Narumi (Faculty of Engineering, Niigata University)
AJK2011-14003	Flow Properties for Several Kinds of Liquid Flows through Micro-Orifice
	A. Ushida (Niigata University), T. Hasegawa, H. Uchiyama, T. Narumi (Niigata University)
AJK2011-14021	Flow Induced Crystallization of Colloidal Dispersion
	S. Toga (Toyama National College of Technology), T. Narumi (Faculty of Engineering, Niigata University)
AJK2011-14009	Numerical Analysis of Two-Phase Flow in Fluidized Bed Reactor with Jet Nozzle for Poly-Silicon Growth
	H. Kim, H. Lee, J. Song, H. Moon, H. Cho (Department of mechanical engineering, Yonsei University), Y. Park, Y. Chung (SILICONVALUE LLC.)
AJK2011-14010	Mechanical Properties of Complex Structure Formed from Electroconvection State of Smectic Liquid Crystal
	T. Narumi (Faculty of Engineering, Niigata University), H. Hoshi, T. Muraki (Graduate School of Science and Technology, Niigata University), T. Hasegawa (Faculty of Engineering, Niigata University)
AJK2011-14018	Driving Performance of Liquid Crystalline Actuators
	Y. Zhou, T. Tsuji, S. Chono (KUT)

S14-03. Transport Phenomena in Materials Processing and Manufacturing Processes (3)

Jul. 27 (Wed.), 16:00 - 17:00, Room #52

Session Chairs:

Prof. S. Chono (Kochi University of Technology)

Prof. T. Narumi (Faculty of Engineering, Niigata University)

AJK2011-14004	Rheo-Optic Stress Measurement between Small Bubbles under Pressure-Oscillating Field
	S. Iwata, A. Aritake, H. Mori (Department of Material Engineering, Nagoya Institute of Technology), T. Takahashi (Department of Mechanical Engineering, Nagaoka University of Technology)
AJK2011-14019	Further Developments in Heat Transfer Asymptote in Laminar Tube Flow of Non-Linear Viscoelastic Fluids
	D. A. Siginer (PI), M. F. Letelier (USACH)

AJK2011-14011	Influence of Acoustic Pressure and Flexural Vibration on Friction Reduction Effect by Ultrasonic
	T. Nakayama (Department of Mechanical Engineering, Graduate School of Science and Technology, Nihon University), M. Ochi, K. Kofu (Department of Mechanical Engineering, College of Science & Technology, Nihon University)

S15. 5th International Symposium on Flow Applications in Aerospace

S15-01. Numerical approach to flow physics

Jul. 27 (Wed.), 16:00 - 18:00, Room #43

Session Chairs:

Prof. O. Kwon (Korea Advanced Institute of Science and Technology)

Dr. T. Nonomura (ISAS/JAXA)

AJK2011-15009 (Keynote)	Application of a High-Resolution Compact Finite Difference Method to Computational Aeroacoustics of Compressible Flows
	H. Maekawa, Z. Zuo (UEC)
AJK2011-15008	Numerical Assessment of Turbulent Models at a Critical Regime on Unstructured Meshes
	J. You, O. Kwon (KAIST)
AJK2011-15014	Performance Evaluation of Two-Equation Turbulence Models for 3D Wing-Body Configuration
	E. Kwak, S. Park, N. Lee, S. Lee (Inha University)
AJK2011-15024	Comparison Study of RANS CFD Simulations for Subsonic Civil Aircraft Configurations
	M. Murayama, K. Yamamoto (JAXA APG), K. Tanaka (Ryoyu Systems)
AJK2011-15026	Computational Study of Flow Characteristics of Thick and Thin Airfoil with Implicit Large-Eddy Simulation at Low Reynolds Number
	R. Kojima (University of Tokyo), T. Nonomura, A. Oyama, K. Fujii (ISAS/JAXA)

S15-02. Supersonic flows

Jul. 28 (Thu.), 08:30 - 10:10, Room #43

Session Chairs:

Dr. R. E. Gordnier (AFRL)

Prof. K. Hiraki (Kyushu Institute of Technology)

AJK2011-15002	Drag Reduction Performance due to Repetitive Laser Pulses on the Blunt Body
	J. Kim (Department of Aerospace Engineering, Nagoya University, JAPAN), A. Sasoh (Nagoya University)
AJK2011-15007	High-Speed Visualization of the Oscillatory Supersonic Flow over a Rectangular Cavity
	T. Handa (Kyushu University), H. Miyachi (Mitsubishi Heavy Industries), H. Kakuno, T. Ozaki (Kyushu University)
AJK2011-15015	Supersonic Wind Tunnel Experiment on Aerodynamic Characteristics and Winglets Effects of the Tapered Supersonic Biplane
	T. Fujisono, H. Yamashita, A. Toyoda (IFS), H. Nagai, K. Asai (Department of Aerospace Engineering, Tohoku University), T. Matsuno, H. Kawazoe (Department of Mechanical and Aerospace Engineering, Tottori University), S. Jeong, S. Obayashi (Institute of Fluid Science, Tohoku University)
AJK2011-15021	Performance Improvement of an Ejector-Diffuser System using Shock Generator
	L. Vincent, H. D. Kim (ANU), T. Setoguchi (Department of Mechanical Engineering Saga University, Japan)
AJK2011-15004	Effects of Vibrational Relaxation on Weak Shock Wave Structure in Air
	T. Sakai (Nagoya University), Y. Makino, Y. Naka, A. Murakami (Japan Aerospace Exploration Agency)

S15-03. Aerodynamic performance enhancement

Jul. 28 (Thu.), 11:00 - 12:40, Room #43

Session Chairs:

Dr. M. R. Visbal (Air Force Research Laboratory)

Prof. A. Sasoh (Nagoya University)

AJK2011-15010	Experimental Study of Blowing Direction Effects of DBD Plasma Actuator on Separation Control of Flow around an Airfoil
	T. Nonomura (ISAS/JAXA), K. Asada, S. Sekimoto (University of Tokyo), A. Oyama, K. Fujii (ISAS/JAXA)
AJK2011-15027	Computational Study of Aerodynamic Characteristics of an Airfoil with DBD Plasma Actuator
	K. Asada (The University of Tokyo), K. Fujii (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency)
AJK2011-15022	Experimental and Numerical Aerodynamic Analysis of Repairing a Triangular Shaped Airfoil
	F. Etemadi (Amirkabir University of Technology, Center of Excellence in Computational Aerospace Engineering), M. Mani (Aerospace Engineering Department Center of Excellence in Computational Aerospace Engineering), M. Etemadi (Department of mechanical engineering Islamic Azad University ,Langroud branch Guilan, Iran)
AJK2011-15020	Effects of Cylinder Diameters, Reynolds Number and Distance between Two-Tandem Cylinders on the Wake Profile and Turbulence Intensity
	A. Rahimzadeh (sharif university of technology), M. Malek jafarian (Birjand University), A.

	Khoshnevis (sabzevar tarbiat moalem university)
AJK2011-15025	Numerical Prediction of Deviation Angles of NACA65 Profiles at On- and Off-Design Conditions
	M. H. Nakhaei, A. Madadi, M. J. Kermani (Amirkabir university of technology)

S15-04. Unique concepts

Jul. 28 (Thu.), 15:40 - 17:00, Room #43

Session Chairs:

Prof. S. Sunada (osaka prefecture university)

Dr. K. Yamamoto (JAXA)

AJK2011-15029	Lift-Force Measurement for Hovering Flight of Four-Winged Flapping Micro Aerial Vehicle K. Hiraki, K. Fujii (Kyushu Institute of Technology)
AJK2011-15013	Three-Dimensional Wing Design Towards the Future Mars Airplane R. Kojima, D. Lee, T. Tatsukawa (University of Tokyo), T. Nonomura, A. Oyama, K. Fujii (ISAS/JAXA)
AJK2011-15023	Thrust Characteristics of Cycloidal Propeller and Flow Measurement D. Hasegawa (University of Tsukuba,), K. Matsuuchi (University of Tsukuba), M. Onda (SkyPlatform Technology CO.,LTD), Y. Sekiguchi (University of Tsukuba)
AJK2011-15032	Control of Flight Altitude of a Small Flapping Robot by Wing Flapping Frequencies T. Imura, M. Fuchiwaki, K. Tanaka (KIT)

S16. 9th Symposium on Fundamental Issues and Perspectives in Fluid Mechanics

S16-01. vortex

Jul. 27 (Wed.), 16:00 - 18:00, Room #22

Session Chairs:

Prof. F. Battaglia (Virginia Tech)

Prof. D. Doh (KMU)

AJK2011-16004	Thrust of a Thin Plate Starting Impulsively S. Ichikawa (Tokyo University of Science), K. Kikuchi, O. Mochizuki (Toyo University)
AJK2011-16008	Vortex Shedding Suppression for a Circular Cylinder by Attaching Cylindrical Rings (A Consideration of the Mechanism) H. Nakamura (NDA)
AJK2011-16010	Effect of Reynolds Number on the Turbulent Flow Structure in the Near-Wall Region of an Impinging Round Jet K. J. Hammad (Dantec Dynamics), I. M. Milanovic (University of Hartford)
AJK2011-16015	Circulation of a Vortex Ring Generated by Pulsating Jet Flow F. Akagi, Y. Kawabata, Y. Ando, S. Yamaguchi (Fukuoka University), M. Furukawa (Kyushu University)
AJK2011-16019	Visualization Study on the Flow around a Flagellar Propeller near the Wall H. Jeon (SNU), Y. Kim, S. Jin (KPU), J. Yoo (Seoul National University)
AJK2011-16033	Coalescence Phenomena of Liquid Droplets in a Circular Tube M. Muraoka (Tokyo University of Science Faculty of Science and Technology Department of Mechanical Engineering), N. Ogawa (TUS), J. Kasuya (Tokyo University of Science Faculty of Science and Technology Department of Mechanical Engineering), H. Matsuda (Tokyo University of Science Faculty of Science and Technology Department of Mechanical Engineering), K. Komiya (The University of Tokyo Graduate school of Interdisciplinary Information studies), I. Ueno (Tokyo University of Science Faculty of Science and Technology Tokyo University of Science), H. Mizoguchi (Tokyo University of Science Faculty of Science and Technology Department of Mechanical Engineering)

S16-02. Fundamental problems

Jul. 28 (Thu.), 08:30 - 10:50, Room #22

Session Chairs:

Prof. O. Mochizuki (Toyo University)

Prof. J. Bayandor (Virginia Tech)

AJK2011-16001	Expanding of Fire-Ball and Subsequent Shock Wave Propagation by Explosives Detonation in Underwater H. Kwak, K. Kang, I. Ko (CAU)
AJK2011-16003	Numerical Analyses on Electric Double Layer and Electroosmotic Flow in Nano-Scale Parallel Plates H. Kumamaru, H. Kobayashi, K. Itoh, Y. Shimogonya (University of Hyogo)
AJK2011-16012	A Functional Scaling Relationship for Laminar to Turbulent Flow Regimes G. Papadopoulos (ATK GASL)
AJK2011-16013	Experimental Investigation of a Turbulent Boundary Layer Subjected to an Adverse Pressure Gradient T. Nakamura (TOSHIBA), T. Kameda, S. Mochizuki (Yamaguchi University)
	An Appropriate Metric to Switch on a Turbulence Model for Rayleigh-Taylor Instability Driven Mixing

AJK2011-16017	B. Rollin, M. J. Andrews (LANL)
AJK2011-16024	Unsteady Boundary-Layer Flow of Power-Law Fluid on a Stretching Flat Plate N. Ashrafi (IAU), M. Mohammadali (Department of Mechanical and Aerospace Engineering Science and Research Branch Islamic Azad University, 14778, Tehran,)
AJK2011-16030	Relation between Disturbance in Boundary Layer and Free Stream Turbulence Component R. Norimatsu, S. Takai, M. Matsubara (Shinshu university)

S16-03. Fluid Machinery

Jul. 28 (Thu.), 11:00 - 12:40, Room #22

Session Chairs:

Prof. J. Yoo (Seoul National University)

Dr. K. J. Hammad (Dantec Dynamics)

AJK2011-16016	Influence of a Weak Superposed Centripetal Flow in a Rotor-Stator System for Several Pre-Swirl Ratio F. Abdel nour, R. Debuchy, G. Bois (LML)
AJK2011-16021	Use of Wigner-Ville Transformations for Fluid Particles in Laser Doppler Flow Accelerometry S. Chun, H. Kwon (KRISS)
AJK2011-16026	Experimental Investigation of the Single-Phase Friction Factor and Heat Transfer Inside the Horizontal Internally Micro-Fin Tubes in the Transition Region H. Tam, L. Tam (UM), A. Ghajar (OSU), C. Sun, H. Leung (UM)
AJK2011-16027	The Effect of Inner Surface Roughness and Heating on Friction Factor in Horizontal Micro-Tubes H. Tam, L. Tam (UM), A. Ghajar (OSU), W. Ng, I. Wong, K. Leong, C. Wu (UM)
AJK2011-16022	Flow Entrainment of Gravity Currents K. M. Mok (University of Macau), H. H. Yeh (Oregon State University), K. K. Jeong, K. I. Hoi (University of Macau)

S16-04. jet

Jul. 28 (Thu.), 15:40 - 17:00, Room #22

Session Chairs:

Prof. H. Kim (Andong National University)

Prof. P. Vlachos (Virginia Tech)

AJK2011-16028	Experimental Extraction of Linear Disturbance in a Two-Dimensional Turbulent Jet and Comparison to a Linear Stability Theory S. Tazoe, M. Matsubara (Sinshu Univ), A. Kawanishi (Shinshu Univ)
AJK2011-16032	Study on the Flow Characteristics of Synthetic Jets near a Rigid Plane Boundary R. Tsunoda, K. Nishibe, Y. Fujita (Graduate School of Mechanical Engineering, Kogakuin University), K. Sato (Dept. of Innovative Mechanical Engineering, Kogakuin University), K. Yokota (Dept. of Mechanical Engineering, Nagoya Institute of Technology), K. Toru (Graduate School of Engineering Sciences, Kyushu University)
AJK2011-16034	Effect of Pressure Fluctuation at Nozzle Exit on Flapping Phenomena in a Two-Dimensional Jet Y. Shoji, O. Terashima, Y. Sakai, . Nagata (Nagoya University)
AJK2011-16035	Three-Dimensional Vortex Structure in the Wake of an Oscillating Discoid Airfoil K. Nakagawa, H. Hasegawa (Akita Univ)

S17. 4th Symposium on Transport Phenomena in Energy Conversion From Clean and Sustainable Resources

S17-01. Energy conversion from clean and sustainable resources I

Jul. 27 (Wed.), 16:00 - 18:00, Room #53

Session Chairs:

Prof. Y. Matsukuma (Kyushu University)

Dr. J. Nie (Dassault Systemes SIMULIA Corp.)

AJK2011-17003	Effects of Swirl on Velocity-Field Uniformity in Disk Shape SOFC Channel Flow K. Tsunoda, K. Aminaka (SIT)
AJK2011-17001	Computational Modeling of Future Wind Power Installations A. Nematbakhsh, D. Olinger, I. Hussein (WPI), G. Tryggvason (Notre Dame)
AJK2011-17012	Production of Liquid Hydrocarbon Fuel by Catalytic Cracking of Waste Fish Fat in Continuous Pilot System N. Mrad (LUNAM, GEPEA), M. Paraschiv (GEPEA), F. Aloui (LUNAM, GEPEA), M. Tazerout (LUNAM, EMN, GEPEA), S. Ben nasrallah (ENIM, LESTE)
AJK2011-17013	Study of the Regenerator Porosity Influence on Gamma Type Stirling Engine Performances R. Gheith, F. Aloui, M. Tazerout (LUNAM, GEPEA), S. Ben nasrallah (LESTE)
AJK2011-17011	Performance Test of Electricity Generation Utilizing Vortex Induced Vibration R. Iiyoshi, M. Kamijyo, S. Yamada (NUT), M. Koide (Niigata Sangyo University), T. Takahashi, M. Shirakashi (NUT)
AJK2011-17015	Simulation of Liquid Water Evaporation in GDL for PEMFC under Gas Purge Condition G. Inoue, N. Ishibe, Y. Matsukuma, M. Minemoto (Kyushu University)

S17-02. Energy conversion from clean and sustainable resources II

Jul. 28 (Thu.), 08:30 - 10:10, Room #53

Session Chairs:

Dr. K. J. Hammad (Dantec Dynamics)

Prof. Y. Kang (Kyung Hee University)

AJK2011-17004	Numerical Simulations of Droplets on the Hydrophobic and Hydrophilic Walls by Lattice Boltzmann Method.
	Y. Matsukuma, G. Inoue, M. Minemoto (Kyushu University)
AJK2011-17005	Simulation of Hydrogen Production by using Concentrated Solar Energy through Thermo-Chemical Water Splitting Process. Part I: Simulation of Zinc Oxide Reduction Reaction.
	F. A. Khan, K. Siddiqui (UWO)
AJK2011-17006	Simulation of Hydrogen Production by using Concentrated Solar Energy through Thermo-Chemical Water Splitting Process. Part II: Simulation of Zinc Hydrolysis Reaction to Generate Hydrogen.
	F. A. Khan, K. Siddiqui (UWO)
AJK2011-17009	3D Structural Imaging of Porous GDL of a Fuel Cell
	K. Seung-Gon, L. Sang-Joon (POSTECH)
AJK2011-17014	Effect of Carbon Black Aggregate Structure and Ionomer Coating on Proton Conductivity in PEFC Catalyst Layer
	G. Inoue, Y. Fan, T. Matsuoka, Y. Matsukuma, M. Minemoto (Kyushu University)

S18. Computational Fluid Dynamics of Nuclear Engineering Applications and Systems**S18-01. Computational Fluid Dynamics of Nuclear Engineering Applications and Systems**

Jul. 26 (Tue.), 11:00 - 13:00, Room #54

Session Chairs:

Prof. K. Okamoto (The University of Tokyo)

Dr. J. Jeong (Korea Atomic Energy Research Institute)

AJK2011-18003	Numerical Investigation of Turbulent Flow in a T-Junction
	J. Kim (KAERI), J. Jeong (Pusan National University)
AJK2011-18009	Application of Large Eddy Simulation to Thermal Mixing Phenomena in T-Junction Piping System
	M. Tanaka, H. Ohshima (JAEA)
AJK2011-18005	Large Scale Flow Pulsation in Square Arrayed Rod Bundles
	T. Kim, J. Bae, H. Jung, K. Kim, H. Cho (Department of mechanical engineering, Yonsei University), C. Shin, W. In (KAERI)
AJK2011-18006	Evaluation of Entrance Blockage of Inner Channel in Dual-Cooled Annular Nuclear Fuel
	C. Shin, T. Chun, D. Oh, W. In (KAERI)
AJK2011-18007	Study on the Thermo-Hydrodynamics of a Dry Gas Seal in Helium Circulator for High Temperature Gas-Cooled Reactor
	J. Lin, H. Wang (INET)
AJK2011-18002	CFD Prediction for an Overpressure Buildup Phenomenon of SRI Hydrogen Test in an Open Space
	H. Kang (KAERI)

S19. 2nd Symposium on Bio-Inspired Fluid Mechanics**S19-01. Bio-fluid mechanics in swimming and flying**

Jul. 28 (Thu.), 11:00 - 13:00, Room #54

Session Chairs:

Prof. H. Liu (Chiba University)

Dr. K. Kikuchi (Toyo University)

AJK2011-19002	Direct Simulation of Dense Suspensions of Non-Spherical Particles
	O. Shardt, J. Derksen (University of Alberta)
AJK2011-19014	Magnetic Control of Biologically Inspired Robotic Microswimmers
	U. K. Cheang (Department of Mechanical Engineering & Mechanics, Drexel University), J. H. Lee (KIMM), P. Kim, M. J. Kim (Department of Mechanical Engineering & Mechanics, Drexel University)
AJK2011-19020	Swimming Hydrodynamics and Maneuverability in C-Start of Zebrafish Larvae: an Integrated Computational Study
	G. Li, H. Liu (Chiba University), U. K. Müller (California State University), J. L. Leeuwen (Wageningen University)
AJK2011-19010	Vortex Structure of a Vortex Ring over a Butterfly Wing and Its Dynamic Behavior
	M. Fuchiwaki, K. Tanaka (Kyushu Institute of technology), T. Tabata (Kagoshima National College of Technology)
AJK2011-19018	An Investigation on the Issues in Modelling of Free Flight in Animal Locomotion
	M. Maeda, T. Nakata, H. Liu (Chiba University)

AJK2011-19003	Study on the Pump of a Mosquito
	K. Kikuchi, O. Mochizuki (Toyo University)
S19-02. Physiological fluid mechanics Jul. 28 (Thu.), 15:40 - 17:20, Room #54 Session Chairs: Prof. M. Hung (Department of Biomechatronic Engineering National Chiayi University) Dr. M. A. Solovchuk (National Taiwan University, Department of Engineering Science and Ocean Engineering)	
AJK2011-19025	PIV Measured Hemodynamic Study with Several Stents in a Cerebral Aneurysm Model for New Stent Design
	C. Yu, S. Shida (Graduate School of Biomedical Engineering, Tohoku University), K. Matsumoto (Graduate School of Engineering, Tohoku University), M. Ohta (Institute of Fluid Science, Tohoku University)
AJK2011-19021	Influence of Sinus of Valsalva on Aortic Valve Movements by Lattice Boltzmann Method
	T. Fukui, K. Morinishi (Kyoto Institute of Technology)
AJK2011-19006	A New Circulation Model Combined with a Detailed Network Model of Arterial Blood Flow
	Y. Kim, E. Shim (Kangwon National University)
AJK2011-19004	Investigation into the Acoustic Streaming and Convective Cooling Phenomena during a High-Intensity Focused Ultrasound Thermal Ablation
	M. A. Solovchuk (National Taiwan University, Department of Engineering Science and Ocean Engineering), T. W. Sheu (NTU), M. Thiriet (LJLL, University of Paris # 6, Paris, France)
AJK2011-19012	Application of the Integrated System of Laser-Induced Heating and the Microfluidic Device for Selecting Cells Treated with Drugs
	M. Hung (Department of Biomechatronic Engineering National Chiayi University), C. Lin (NCYU)

S20. Symposium on Development and Applications of Immersed Boundary Methods

S20-01. Immersed Boundary Methods [1] Jul. 28 (Thu.), 11:00 - 12:40, Room #31 Session Chairs: Prof. Z. Zheng (University of Kansas) Prof. S. Kang (Sogang Univ.)	
AJK2011-20006	An Improved Penalty Immersed Boundary Method for Fluid-Flexible Body Interaction
	W. Huang, C. Chang, H. Sung (KAIST)
AJK2011-20009	Numerical Simulation of Unsteady Flow through a Two-Dimensional Channel with a Vocal Cord Model
	S. Miyauchi, T. Omori, S. Takeuchi, T. Kajishima (Osaka University)
AJK2011-20002	Fast and Accurate Simulation of Strongly Coupled Fluid-Structure Interaction using a Direct Forcing Immersed Boundary Method
	J. Yang, F. Stern (University of Iowa)
AJK2011-20005	A Discrete-Forcing Immersed Boundary Method for the Fluid-Structure Interaction of an Elastic Slender Body
	I. Lee, H. Choi (Seoul National University)
AJK2011-20011	Fluid-Structure Interactive Simulation using a Virtual Flux Method
	K. Morinishi, T. Fukui (KIT)
S20-02. Immersed Boundary Methods [2] Jul. 28 (Thu.), 15:40 - 17:00, Room #31 Session Chairs: Prof. T. Kajishima (Osaka University) Prof. J. Yang (University of Iowa)	
AJK2011-20007	Direct Numerical Simulation of Flow Past a Solid Particle - Influence of Streamline Curvature and Particle Non-Sphericity -
	T. Fukada, T. Omori, S. Takeuchi, T. Kajishima (Osaka University)
AJK2011-20019	Migration of an Elastic Capsule in a Channel Flow
	S. Shin, H. Sung (KAIST)
AJK2011-20015	Coupling Penalization and Vortex Methods for Incompressible Flows
	I. Mortazavi (IMB), G. Cottet (LJK), F. Gallizio (DIASP), A. Magni (LJK)
AJK2011-20010	DNS of Conjugate Heat Transfer Phenomena with an Improved IB Method
	S. Kang (Sogang Univ.)

S21. 4th Symposium on the Transport Phenomena in Mixing

S21-01. Transport Phenomena in Mixing I Jul. 25 (Mon.), 13:30 - 15:10, Room #52 Session Chairs: Dr. K. J. Hammad (Dantec Dynamics) Prof. T. J. Heindel (ISU)	
---	--

AJK2011-21016 (Keynote)	An Experimental Study on Methane/Oxygen-Air Combustion with a Rapidly Mixed Type Tubular Flame Burner
	B. L. Shi, T. Kowari, D. Shimokuri, S. Ishizuka (Department of Mechanical Engineering, Hiroshima University)
AJK2011-21019	Effects of the Air - Fuel Ejection Velocity Ratio on the Combustion Characteristics and the Unburned Gas Compositions of the Propane - Air Rapidly Mixed Tubular Flame Combustion
	Y. Wang, K. Kimura, N. Gokita, D. Shimokuri, S. Ishizuka (Department of Mechanical Engineering, Hiroshima University)
AJK2011-21017	Study on Conditional Statistics in Two-Dimensional Liquid Jet with the Second-Order Reaction
	T. Watanabe, H. Yasuhara, Y. Sakai (Nagoya Univ.), T. Kubo (Meijo Univ.), K. Nagata, O. Terashima (Nagoya Univ.)
AJK2011-21015	Characteristics of the Scalar Field in a Turbulent Liquid Jet, and a Fundamental Study on the Micro Scale Concentration Measurements by the Optical Fiber LIF Method
	T. Kawaguchi, Y. Sakai, K. Nagata, O. Terashima, S. Takaku (Nagoya University)

S21-02. Transport Phenomena in Mixing II

Jul. 25 (Mon.), 16:00 - 17:40, Room #52

Session Chairs:

Prof. T. Koso (Kyushu University)

Prof. I. Milanovic (UH)

AJK2011-21022	Development of Flow behind Three-Dimensional Fractal Structure
	T. Hiramatsu, Y. Kato, T. Ushijima, O. Kitoh (Nagoya Institute of Technology)
AJK2011-21006	Fluid Flow and Entropy Generation Characteristics Analysis of the Channel Geometry in X-Shaped Micro-Channels
	S. Tu (Kumamoto University, Japan), S. Torii (Kumamoto University), Y. Shih (Department of Energy and Refrigerating Air-Conditioning Engineering, National Taipei University of Technology)
AJK2011-21003	Study on the Interfacial Layers between the Turbulent / Non Turbulent Regions in Two-Dimensional Turbulent Jet
	O. Terashima (Nagoya Univ.), Y. Sakai, K. Nagata (Nagoya University)
AJK2011-21004	Effects on Momentum Thickness and Density Ratio for Side-Jet Formation in Round Jets with Variable-Density
	Y. Kaneda (Graduate school of Sci and Tech, Nihon University), A. Muramatsu (Nihon Univ.)
AJK2011-21002	Turbulent Mixing with Density Differences
	J. Derksen (University of Alberta)

S21-03. Transport Phenomena in Mixing III

Jul. 26 (Tue.), 08:30 - 10:10, Room #52

Session Chairs:

Prof. Y. Sakai (Nagoya University)

Dr. G. Papadopoulos (ATK GASL)

AJK2011-21014 (Keynote)	Numerical Simulation of Entrainment and Transport of Gas Bubbles by Vortex Ring
	T. Uchiyama (Nagoya University), Y. Yoshii (Software Cradle Co., Ltd.)
AJK2011-21021	Wake Vortices in Jets in Cross-Flow
	I. Milanovic (UH), K. B. Zaman, T. J. Bencic (NASA GRC)
AJK2011-21018	Numerical Study of Mixing in a Droplet Moving through a Winding Channel
	M. Tanaka, Y. Miyajima, J. Mizutani (KIT)
AJK2011-21010	Mixing of Matter by a Rising Bubble Near a Wall
	T. Koso, H. Iwashita (Kyushu University), F. Usuki (Denso Co. Ltd.)

S22. 23rd Symposium on Fluid Machinery

S22-01. Axial Compressors

Jul. 26 (Tue.), 11:00 - 12:40, Room #31

Session Chairs:

Prof. S. Kang (Seoul National University)

Prof. S. Song (Seoul National University)

AJK2011-22015	Characteristics of Surge and Rotating Stall in a Three-Stage Axial Flow Compressor using Shock Tube
	D. Morita, Y. Fujita (Graduate Student, Graduate school of Science and Engineering, Waseda University), Y. Ohta, E. Oota (Department of Applied Mechanics and Aerospace Engineering, Waseda University)
AJK2011-22079	Unsteady and Three-Dimensional Flow Mechanism of Spike-Type Stall Inception in an Axial Flow Compressor Rotor
	H. Kikuta (Kyushu University Graduate School), K. Iwakiri (Mitsubishi Heavy Industries, Ltd), M. Furukawa, K. Yamada, S. Gunjishima (Kyushu University), G. Okada (Kyushu University Graduate School)
AJK2011-22024	Numerical Study on Unsteadiness of Tip Clearance Flow and Performance Prediction of Axial Compressor

	Y. Hwang, S. Kang (SNU)
AJK2011-22051	Multistage Axial Compressor Design and Performance Evaluation
	Y. Kang, T. Park (KARI), S. Yang (Korea Aerospace Research Institute), O. Hwang (Korea Aerospace Research Institute)
AJK2011-22001	The Impact of Bleeding on Compressor Stator Corner Separation
	B. Zhao, S. Li, Q. Li, S. Zhou (BUAA)

S22-02. Centrifugal Compressors, Boundary Layer, Film Cooling, Aircraft Engine Performance

Jul. 26 (Tue.), 16:00 - 18:00, Room #31

Session Chairs:

Prof. S. Song (Seoul National University)

Prof. K. Kim (Inha University)

AJK2011-22036	Optimization of the Centrifugal Compressor Design using Surrogate Management Framework
	K. Ha, S. Kang (SNU)
AJK2011-22072	Efficiency Improvement at Part Load of Multistage Centrifugal Compressor for Turbo Chiller
	D. Kawaguchi (Hitachi, Ltd), T. Okada, Y. Nakamura, M. Terasaki (Hitachi Appliances, Inc.)
AJK2011-22020	The Effect of Surface Roughness and Favorable Pressure Gradient on Turbulent Boundary Layers
	J. Shin, S. Song (SNU)
AJK2011-22003	Numerical Study on Film-Cooling Effectiveness for Various Film-Cooling Hole Schemes
	S. Kim, K. Lee, K. Kim (Inha University)
AJK2011-22004	Impact of Air System Bleeding on Aircraft Engine Performance
	B. Zhao, S. Li, Q. Li, S. Zhou (BUAA)
AJK2011-22014	Numerical Study on the Range Enhancement of a Centrifugal Compressor with a Ring Groove System
	C. Park (HanYang University), Y. Choi, K. Lee (KITECH), J. Yoon (HanYang University)

S22-03. Fans and Blowers

Jul. 27 (Wed.), 08:30 - 10:50, Room #31

Session Chairs:

Prof. K. Kim (Inha University)

Prof. S. Kang (Seoul National University)

AJK2011-22031	Internal Flow Conditions of Contra-Rotating Small-Sized Axial Fan
	T. Shigemitsu, J. Fukutomi, Y. Okabe, K. Iuchi (The University of Tokushima)
AJK2011-22061	Experimental Investigation on Ducted Counter-Rotating Axial Flow Fans
	H. Nouri (DYNFLUID LABORATORY - Arts et Métiers ParisTech), F. Ravelet, F. Bakir, C. Sarraf (DYNFLUID LABORATORY - Arts et Métiers ParisTech France)
AJK2011-22054	Study on P-Q Curves of Cooling Fans for Thermal Design of Electronic Equipment (Effects of Opening Position of Obstructions Near a Fan)
	T. Fukue, M. Ishizuka, T. Hatakeyama, S. Nakagawa (Toyama Prefectural University), K. Koizumi (COSEL Co., Ltd.)
AJK2011-22048	Detached Eddy Simulation of Unsteady Flow Field and Prediction of Aerodynamic Sound in a Half-Ducted Propeller Fan
	K. Kusano (Kyushu University), J. Jeong (Samsung Heavy Industry), K. Yamada, M. Furukawa (Kyushu University)
AJK2011-22047	Study of High Efficiency and Low Noise Centrifugal Fan
	T. Nagae, Z. Zheng (Daikin Industries, ltd.)
AJK2011-22059	Flow Anaysis and Deterministic Decoupling in a Squirrel Cage Fan
	J. Gonzalez (UO)
AJK2011-22010	Experimental Study on the Performance and Pressure Fluctuations of a Regenerative Gas Blower for Different Design Parameters
	Y. Kim (MAE, SNU), S. Kang (Seoul National University), Y. Noh (Advanced Technology Center, Corporate Research & Development Division, Hyundai-Kia Motors)

S22-04. Pumps

Jul. 27 (Wed.), 11:00 - 13:00, Room #31

Session Chairs:

Prof. M. Furukawa (Kyushu University)

Dr. H. Watanabe (Ebara Corporation Fluid Machinery & Systems Company)

AJK2011-22055	Analysis of Unsteady Flow Velocity Fields Inside the Impeller of a Radial Flow Pump
	G. Cavazzini (Department of Mechanical Engineering, University of Padova), P. Dupont (Laboratoire de Mécanique de LILLE (UMR CNRS 8107), Arts et Métiers ParisTech, École Centrale de Lille, France), G. Pavesi (Department of Mechanical Engineering, University of PADOVA, Italy), G. Bois, P. Cherdieu (Laboratoire de Mécanique de LILLE (UMR CNRS 8107), Arts et Métiers ParisTech, École Centrale de Lille, France), A. Atif (Laboratory of Advanced Mechanics)
AJK2011-22053	Unsteady Simulation of a Circulation Pump at High Temperature and High Pressure
	S. Liu (Dept. of Thermal Engineering, Tsinghua University), Y. Sha, Y. Wu (Dept. of Thermal Eng.,

	Tsinghua University)
AJK2011-22033	The Influence of Major Diameter Solid Particle on the Double-Channel Pump Performance
	Y. Li, Q. Cui, Z. Zhu (Zhejiang Sci-Tech University), Z. He (Zhejiang Institute of Mechanical & Electrical Engineering co., LTD), B. Cui (Zhejiang Sci-Tech University)
AJK2011-22037	Diagonal Flow Pump Impeller with NACA65 Series Blade (Correction of Blade Geometry)
	Y. Kinoue, N. Shiomi, T. Setoguchi (Saga University), K. Sawamura (Torishima Pump Mfg. Co., Ltd.), H. Maeda (R&D Dept., Torishima Pump MFG. Co., LTD.)
AJK2011-22064	Optimal Design of Mixed-Flow Pump Impeller based on Direct Inverse Problem Iteration and Genetic Algorithm
	H. Bing, S. Cao (State Key Laboratory of Hydrosience and Engineering, Department of Thermal Engineering, Tsinghua University)
AJK2011-22028	Numerical Simulation and Bench Test of a Helico-Axial Multiphase Pump
	J. Zhang, H. Zhu, H. Wei (China University of Petroleum-Beijing)

S22-05. Cavitation, Water Jet

Jul. 27 (Wed.), 16:00 - 17:00, Room #31

Session Chairs:

Prof. A. Furukawa (Kyushu University)

Prof. M. Furukawa (Kyushu University)

AJK2011-22002	Scale Effects on the Cavitation Development in Fluid Machinery
	W. Yu (Zhejiang Pump Works Co. Ltd.), X. Luo (Tsinghua University), Y. Zhang, B. Ji (State Key Laboratory of Hydrosience & Engineering, Tsinghua University), H. Xu (Tsinghua University)
AJK2011-22045	Investigation of the Performance for a Heat Generator using Hydrodynamic Cavitation
	K. Pyun, W. Kwon, K. Oh, J. Yoon (Hanyang University)
AJK2011-22007	Effect of Interfacial Flow on the Coherency of Ultra-High Speed Water Jet in Air
	Y. Wang, M. Yang, C. Kang (UJS), B. Chen (Dardi International Corporation)

S22-06. Water and Wind Turbines, Torque Converter, Micromixer

Jul. 28 (Thu.), 08:30 - 10:10, Room #31

Session Chairs:

Dr. Y. Kinoue (Saga University)

Dr. T. Shigemitsu (The University of Tokushima)

AJK2011-22029	Hydraulic Disturbance Method to Reduce the Pressure Fluctuation in Francis Turbine Draft Tube
	Z. Li, J. Chang (CAU), X. Ji (State Key Laboratory of Water Resources and Hydropower Engineering Sciences, Wuhan University, Wuhan, Hubei), W. Liu (HEC), Z. Xin (CAU)
AJK2011-22035	6-DOF Numerical Simulation of the Vertical-Axis Water Turbine
	X. Wang (THU), X. Luo (Tsinghua University), B. Zhuang (THU), W. Yu (Zhejiang Pump Works Co., Ltd), H. Xu (State Key Laboratory of Hydrosience and Engineering, Tsinghua University)
AJK2011-22039	Influence of Internal Objects in Flow Characteristics of Darrieus Turbine
	K. Takeshima, Y. Tasaka, Y. Murai (Hokkaido Uni.)
AJK2011-22058	Flow Field Analysis around a Lockup Clutch inside a Torque Converter
	T. Yamaguchi (Aisin AW Co.,Ltd.), S. Yamakawa, S. Ikeda, K. Tanaka (Dept. of Mechanical Information Science and Technology, Kyushu Institute Technology)
AJK2011-22022	The Optimization Analysis on Piezoelectric Micromixer with the Modified Tesla Structures
	X. He, H. Zhuo (School of energy and power engineering, Jiangsu University)

S23. Symposium on Issues and Perspectives in Ground Vehicle Flows

S23-01. Aeroacoustics and turbulent flow

Jul. 25 (Mon.), 13:30 - 15:30, Room #53

Session Chairs:

Dr. T. Nakashima (Hiroshima Univ.)

AJK2011-23002	Development of Prediction Method for Wind Noise caused by Airflow around Front Pillar
	Y. Okutsu, N. Hamamoto (MMC), R. Powell (Exa Corporation), L. Wu (Exa Japan Inc.)
AJK2011-23019	An Experimental and Numerical Investigation on the Tonal Noise Produced by Automotive Door Gaps
	A. T. De Jong (Delft University of Technology)
AJK2011-23004	Experimental and Numerical Investigation of Automotive Wind Throb Phenomenon
	K. Iida, Y. Hashizume (SUZUKI MOTOR CORPORATION), H. Narita, L. Wu (Exa Japan Inc.), G. Balasubramanian, B. Crouse (Exa Corporation)
AJK2011-23022	Noise Prediction in HVAC Squirrel-Cage Fans by Unsteady Reynolds Navier-Stokes Computation
	I. Guerras Colón, S. Velarde-Suárez, R. Ballesteros-Tajadura, J. González, J. Fernández Oro (Universidad de Oviedo)
AJK2011-23018	HVAC Blower Aeroacoustics Predictions based on the Lattice Boltzmann Method
	F. Perot, M. Kim (Exa Corporation), K. Wada (Exa Japan Inc.), K. Norisada (Denso Corporation), N. Sasaki (Densotechno Corporation), M. Kitada, S. Hirayama, M. Sakai, S. Imahigasi (Denso)

	Corporation)
AJK2011-23029	Experimental Study of Roughness Influence on a Turbulent Pipe Flow.
	B. Herout (RENAULT S.A.S. DIM - DCT - DCBM - 66554 Powertrain Thermal and Hydraulic Simulation), A. Giovannini, H. Boisson (IMFT), R. Bensaid (RENAULT S.A.S. DIM - DCT - DCBM - 66554 Powertrain Thermal and Hydraulic Simulation)

S23-02. Vehicle aerodynamics

Jul. 25 (Mon.), 16:00 - 18:00, Room #53

Session Chairs:

Dr. F. Perot (Exa Corporation)

Dr. M. Tsubokura (Hokkaido University)

AJK2011-23031	Unsteady Aerodynamics Simulation of a Heavy Duty Truck in Wind Gusts Coupled with Vehicle Motion Analysis in Six Degrees of Freedom
	T. Nakashima (Hiroshima Univ.), S. Matsuda (Hiroshima Univ.), M. Tsubokura (Hokkaido Univ.), Y. Doi (Hiroshima Univ.)
AJK2011-23034	Large Eddy Simulation on the Unsteady Aerodynamics of a Heavy Duty Truck in Wind Gust
	M. Tsubokura, P. Das (Hokkaido University), T. Matsuuki (Isuzu Advanced Engineering Center, Ltd.), T. Nakashima (Hiroshima University)
AJK2011-23006	On the RANS Modeling of Turbulent Airflow over a Simplified Car Model
	V. K. Krastev, G. Bella (University of Rome "Tor Vergata", Department of Mechanical Engineering)
AJK2011-23024	Effective Body Shape for Reducing Yawing Moment in Cross Wind
	A. Matsui, K. Hishida (Keio University)
AJK2011-23032	An Analytical Approach to Improve Drag Control Techniques for the Ahmed Body
	I. Mortazavi, C. Bruneau (IMB Universite de Bordeaux), E. Creuse (Laboratoire Paul Painlevé Universite Lille 1), D. Depeyras (IMB Universite de Boredeaux), P. Gillieron (Renault Company)
AJK2011-23009	Optimisation of Boat-Tails for Heavy Vehicles
	D. Burton (Monash), M. Nazarinia (University of Melbourne), J. Sheridan, D. Parkin (Monash University)

S23-03. Environmental issues and hydrogen-assisted approach

Jul. 26 (Tue.), 08:30 - 10:30, Room #53

Session Chairs:

Prof. O. Lim (University of Ulsan)

Dr. S. Jeong (KATECH)

AJK2011-23010	An Experimental Study on the Clutch Type Water Pump of Diesel Passenger Car for Improving the Fuel Efficiency and Reducing CO2 Emission
	S. Jeong (KATECH), W. Kim (HYU), C. Oh (TAEWON), J. Park, H. Lee, S. Oh (KATECH)
AJK2011-23014	Effect of Hydrogen-Diesel Quantity Variation on Brake Thermal Efficiency of a Dual Fuelled Diesel Engine
	B. K. Debnath, N. Sahoo, U. K. Saha (IIT Guwahati)
AJK2011-23011	The Development and Implementation of Model-Based Control Algorithm of Urea-SCR Dosing System for Improving De-NOx Performance and Reducing NH3-Slip
	S. Jeong (KATECH), W. Kim (HYU), J. Park, H. Lee, S. Oh (KATECH)
AJK2011-23017	Potential of Fuel Stratification for Reducing Pressure Rise Rate in HCCI Engines Fueled with DME/n-Butane
	O. Lim (University of Ulsan)
AJK2011-23021	Study of Biodiesel Effect for DME Fuel Lubricity using TE90
	Y. Lim (KPetro), J. Kim, C. Jung, E. Yim (K-Petro)
AJK2011-23030	Numerical Simulation of the Filling-Up Process of a Hydrogen Fuel Tank for Vehicular Applications
	A. Suryan (ANU), T. Setoguchi (IOES), H. D. Kim (ANU)

S23-04. Thermal management

Jul. 26 (Tue.), 11:00 - 13:00, Room #53

Session Chairs:

Prof. I. Kohri (Tokyo City University)

Dr. M. Kim (Hyundai Motor Co.)

AJK2011-23020	Fan Modeling in CFD using MRF Model for under Hood Purposes
	P. V. Gullberg, C. L. Lofdahl (Chalmers), P. J. Nilsson (VTC)
AJK2011-23005	Determination of Suitable MRF-Region for Practical Prediction of Engine Cooling Fan Performance
	Y. Kobayashi, I. Kohri (TCU), Y. Matsushima (Mitsubishi FUSO Track&Bus Co.)
AJK2011-23003	Prediction of the Thermal Injury in the Engine Compartment by Coupling 1D with 3D Simulation
	I. Kohri, E. Hara (Tokyo City University), S. Miyamoto, T. Komoriya (Fuji Heavy Industry Corp.)
AJK2011-23023	Development of a New HVAC Flow System for the Next Generation Automated People Mover
	M. Nagaoka (Heat and Fluid Dynamics Department, IHI Corporation), M. Kawai (Numerical Engineering Department, IHI Corporation), N. Takai (Transportation System Project Department, IHI Corporation)

	Corporation)
AJK2011-23025	On Uncertainty and Local Sensitivity Analysis for Transient Conjugate Heat Transfer Problems C. Rauch (ViF)
AJK2011-23028	Investigation of Aerodynamic Wheel Designs on a Passenger Car at Different Cooling Air Flow Conditions C. Landström, L. Löfdahl (Chalmers University of Technology)

S24. 3rd Symposium on CFD Verification And Validation

S24-01. 3rd Symposium on CFD Verification and Validation

Jul. 28 (Thu.), 08:30 - 09:50, Room #52

Session Chairs:

Dr. K. Takase (Japan Atomic Energy Agency)

Prof. Y. Hassan (Texas A&M University)

AJK2011-24001	Prediction of Two-Phase Friction Factor of R134a Inside a Vertical Tube using CFD Analysis for Homogeneous Condensation Flow A. S. Dalkilic, N. A. Kurekci (Yildiz Technical University), S. Wongwises (KMUTT)
AJK2011-24007	Gas-Liquid Flow through Horizontal Eccentric Annuli : CFD and Experiments Compared M. Sorgun (Ataturk University, Civil Engineering Department), R. Osgouei (Universiti Teknologi PETRONAS), E. Ozbayoglu (University of Tulsa, McDougall School of Petroleum Engineering Department, Tulsa-OK, USA), M. Ozbayoglu (TOBB University of Economics and Technology)
AJK2011-24006	Numerical Simulation of a New Typed Sprinkler Irrigation System X. Zhu, X. Wang, J. Liu (JSU)
AJK2011-24003	Influence of Computational Domain on the CFD Results L. Dong (Research Center of Fluid Machinery Engineering and Technology , Jiangsu University , Zhenjiang , Jiangsu , China), H. Liu, M. Tan, Y. Wang, K. Wang, Y. Ren (Research Center of Fluid Machinery Engineering and Technology)

S25. 2nd International Symposium on Turbulent Flows: Issues and Perspectives

S25-01. Basic flow

Jul. 25 (Mon.), 13:30 - 15:30, Room #21

Session Chairs:

Prof. Y. Kawaguchi (Tokyo University of Science)

Prof. H. Peerhossaini (Ecole Polytechniques - University of Nantes Nantes)

AJK2011-25010	Turbulence in Accelerating Boundary Layers P. R. Joshi, J. Katz, X. Liu (JHU)
AJK2011-25017	Turbulence Length Scales in a Vortical Flow C. Habchi, T. Lemenand (LTN CNRS-UMR 6607), D. Della Valle (ONIRIS Nantes), H. Peerhossaini (LTN CNRS-UMR 6607)
AJK2011-25006	Numerical Study on the Flow Past a Twisted Elliptic Cylinder with Subcritical Reynolds Number M. H. Kim, J. W. Lee, H. S. Yoon, M. Y. Ha (PNU)
AJK2011-25009	Effect of Development-Zone Restrictions on the Turbulent Characteristics of Impinging Jet Flow T. Kawaguchi, C. Shekhar, K. Nishino (YNU)
AJK2011-25012	Fractality in Turbulence S. M. Salim, F. Nicolleau (University of Sheffield)
AJK2011-25011	Large-Eddy Simulation of the Flow Field in the Hudson River T. N. Phan, J. C. Wells (Ritsumeikan University), W. D. Kirkey (Clarkson University), M. S. Islam (REON), J. S. Bonner (Clarkson University)

S25-02. Turbulence Control

Jul. 25 (Mon.), 16:00 - 18:20, Room #21

Session Chairs:

Prof. S. Tamano (Nagoya Institute of Technology)

Prof. Y. Noh (Yonsei University)

AJK2011-25002	Jet Flow Control by DBD Plasma Actuator -A Change of the Jet Diffusion by the Electrode Dimensions- H. Jin, T. Ono, M. Kimura (CST)
AJK2011-25007	Opposition Control of Turbulent Taylor-Couette Flow C. Le dauphin, K. Fukagata (KEIO UNIVERSITY)
AJK2011-25008	Direct Numerical Simulation of Turbulent Friction Drag Reduction by Traveling Wave-Like Blowing using Plasma Actuators Y. Murai, K. Fukagata (Keio university)
AJK2011-25003	Numerical Simulation of Mixing Enhancement and Suppression in Two-Dimensional Mixing Layer M. Kawagoe, K. Fukagata (Keio University)

AJK2011-25001	Streamwise Variations in Turbulence Statistics in Drag-Reducing Turbulent Boundary Layer of Viscoelastic Fluids
	S. Tamano (NIT), M. D. Graham (UW-Madison), Y. Morinishi (NIT)
AJK2011-25015	Relationship between Vortex Structure and Reynolds Shear Stress of Turbulent Drag Reducing Flow with Blowing Polymer Solution from the Wall
	S. Ishitsuka, H. Xu, M. Motozawa (TUS), K. Iwamoto (TUAT), H. Ando, T. Senda (NMRI), Y. Kawaguchi (TUS)
AJK2011-25019	Parametric Study of Viscoelastic Turbulence within an Obstructed Channel Flow
	T. Kawase, T. Tsukahara, Y. Kawaguchi (Tokyo University of Science)

S25-03. Flow with separation and attachment

Jul. 26 (Tue.), 08:30 - 10:30, Room #21

Session Chairs:

Prof. K. Fukagata (Keio University)

Prof. K. Siddiqui (University of Western Ontario)

AJK2011-25020 (Keynote)	Spatio-Temporal Characteristics of Heat Transfer in Separated and Reattaching Flows
	H. Nakamura, S. Takaki, S. Yamada (NDA)
AJK2011-25014	Experimental Investigation on Effects of Surface Roughness Geometry Affecting to Flow Resistance
	T. Ito, A. Matsumoto, T. Ito, M. Motozawa (TUS), K. Iwamoto (TUAT), H. Kawashima, H. Ando, T. Senda (NMRI), Y. Kawaguchi (TUS)
AJK2011-25021	Measurement on the Structure of the Reynolds Stress for the Turbulent Boundary Layer Flow over a Two-Dimensional Escarpment with Mild Upwind Slope
	B. Shiau, B. Tsai (NTOU)
AJK2011-25004	Flow Past Permeable Manipulator Ring Placed in a Turbulent Pipe Flow
	K. Utsunomiya, S. Nakanishi, H. Osaka (HIROSHIMA INSTITUTE OF TECHNOLOGY)
AJK2011-25024	Numerical Study on Fluid Flow and Heat Transfer of Mixed Convection to a Stagnation Region from an Upward-Facing Horizontal Plate
	A. Mitsuishi, K. Kitamura (Toyohashi Univ. Tech.)

S26. 18th Symposium on Industrial and Environmental Applications of Fluid Mechanics

S26-01. (oral1)

Jul. 28 (Thu.), 11:00 - 12:20, Room #52

Session Chairs:

Prof. F. Tanaka (University of Fukui)

Prof. H. Kang (KNU)

AJK2011-35018 (Keynote)	Parallel Simulation of Multiphase Flows using the Volume-of-Fluid Method
	S. Zaleski (DALEMBERT)
AJK2011-35007	3D Tomographic Transition of Particle Distribution in Microchannel
	J. Choi, M. Takei (Chiba Univ.)
AJK2011-35017	A Projection Method-Based Model for Shallow-Water Flows over Dry and Irregular Bottom using Unstructured Finite-Volume Technique
	K. Nguyen (LHSV), R. K. Ray (LSVH)

S26-02. (oral2)

Jul. 28 (Thu.), 15:40 - 16:20, Room #52

Session Chairs:

Prof. K. Nguyen (LHSV)

Dr. J. Choi (Chiba Univ.)

AJK2011-35002	On the Smoke Propagation of a Fire in a Tunnel with Concentrated Exhaust Ventilation
	F. Tanaka, M. Kato, S. Majima (University of Fukui), N. Kawabata (Kanazawa University), T. Kikumoto, M. Yamada (Echo Plan Co., Ltd.)
AJK2011-35011	Forced Convection Heat Transfer Characteristics of V-Bent Circular Fin-Tube Heat Exchanger
	J. Lee, H. Kang (KNU)

F01. Forum on Fluid Measurements and Instrumentation

F01-01. Forum on Fluid Measurement and Instrumentation

Jul. 26 (Tue.), 16:00 - 18:00, Room #53

Session Chairs:

Prof. H. Hirahara (Saitama University)

Dr. J. T. Park (NSWCCD)

AJK2011-31001	Length Efficiency of the Etoile Flow Straightener -Numerical Experimentation-
	B. Laribi (FIMA, CUKM), A. Youcefi (USTO), E. Matene (CUKM)
AJK2011-31002	Numerical Investigation of a New Design of the Étoile Flow Straightener
	B. Laribi (FIMA, CUKM), A. Youcefi (USTO), D. Belkacemi (CUKM)
	Correction of Flow Metering Coefficients using Two-Dimensional Curve Fitting

AJK2011-31003	S. Chun, B. Yoon (KRISS), D. Lee (Dae Deok Hi-Tech. Inc.), H. Choi (KRISS)
AJK2011-31009	Effect of a Tee and a Valve on the Flow Measurement Accuracy for Turbulent Pipe Flow with Flow Conditioners
	B. Laribi (FIMA, CUKM), N. Bouricha (FIMA)
AJK2011-31025	Non-Newtonian Fluid Cavern and Newtonian Cloud Height Tests to Characterize Pulse Jet Mixer Operation
	C. W. Enderlin, J. R. Bontha, J. A. Bamberger, F. Nigl (PNNL)
AJK2011-31026	Wet Steam Flowrate Calibration Facility
	M. Ishibashi (NMIJ), T. Funaki, M. Takamoto (AIST), S. Umezawa, M. Sakai, H. Amari, H. Shimada (TEPCO), R. Morita, F. Inada, Y. Uchiyama (CRIEPI)

F01-02. Forum on Fluid Measurement and Instrumentation

Jul. 27 (Wed.), 08:30 - 10:30, Room #53

Session Chairs:

Ms. J. A. Bamberger (PNNL)

Prof. J. Sung (Seoul National University of Technology)

AJK2011-31004	Design and Testing of Instrumentation for Multi-Phase Flow Sampling and Local Void Fraction Measurement
	Y. Yang, D. P. Telionis (VT)
AJK2011-31006	PIV Measurements of Propeller Flow Field in a Large Cavitation Tunnel
	T. Mori, R. Kimoto, K. Naganuma (Naval Systems Research Center, TRDI/Ministry of Defense)
AJK2011-31007	6 Degree of Freedom Motion Analysis of Surface Ship Models
	J. T. Park, A. L. Silver, R. C. Bishop (NSWCCD)
AJK2011-31008	A Hybrid PTV using an Affine Transformation
	D. Doh, G. Cho, C. Lee, H. Jo (KMU), J. Choi (NH), M. Takei (NU)
AJK2011-31013	Flow Characteristics of Fluid Droplet Obtained from Air Assisted Atomizer
	P. Watanawanyoo (Ph.D. (Mechanical Engineering) Student, SAITAMA UNIVERSITY, JAPAN)
AJK2011-31017	Characterizing Transient Mixing of Settled Solids Suspended using a Submerged Dual-Opposed Mixer Pump
	J. A. Bamberger, J. A. Fort, C. W. Enderlin (PNNL)

F01-03. Forum on Fluid Measurement and Instrumentation

Jul. 27 (Wed.), 11:00 - 13:00, Room #53

Session Chairs:

Prof. D. Doh (KMU)

Prof. A. Iida (Toyohashi University of Technology)

AJK2011-31005	Spatial Filter Velocimetry based on Time-Series Particle Images
	S. Hosokawa, H. Sakamoto, A. Tomiyama (Kobe U.)
AJK2011-31011	The Development of Extremely-Compact Static Pressure Probe for the Simultaneous Measurement of Pressure and Velocity in the Turbulent Flows
	K. Onishi, O. Terashima, Y. Sakai, K. Nagata (Nagoya University)
AJK2011-31012	High-Speed Imaging of Gas Flow by Parallel Phase-Shifting Digital Holography
	T. Kakue, T. Tahara, Y. Shimozato, K. Ito, Y. Awatsuji (Graduate School of Science and Technology, Kyoto Institute of Technology), K. Nishio (Advanced Technology Center, Kyoto Institute of Technology), S. Ura (Graduate School of Science and Technology, Kyoto Institute of Technology), T. Kubota (Kubota Holography Laboratory Corporation), O. Matoba (Graduate School of System Informatics, Kobe University)
AJK2011-31014	Creation of Transparent Flow Passage to Measure the Bio Medical Flow Inside Human Body by PIV
	S. Kim, A. Seo, J. Jang, K. Chung (Konkuk University)
AJK2011-31021	Measurement of Ionized Particle Distribution in Axisymmetric Jet
	M. Katoh, Y. Takamatsu (Tokyo University of Science), S. Yamada (National Defence Academy), H. Ishikawa (Tokyo University of Science)
AJK2011-31023	A Multi-Parametric Particle Pairing Algorithm for Particle Tracking Velocimetry in Single and Multiphase Flows
	N. D. Cardwell (VT), P. P. Vlachos (Virginia Tech)

F02. Open Forum on Multiphase Flows: Work in Progress

F02-01. Open Forum on Multiphase Flows I

Jul. 27 (Wed.), 16:00 - 18:00, Room #54

Session Chairs:

Prof. K. Bang (KMU)

Prof. H. Umekawa (Kansai University)

AJK2011-32003	Flow Field near a Moving Contact Line with Surfactant-Containing Liquid
	T. Ito, S. Noda (Toyohashi University of Technology)
	Numerical Simulation of Capillary Rise in Tube Considering Dynamic Contact Angle

AJK2011-32006	Y. Yamamoto (Kansai Univ.), T. Ito (Toyohashi Univ. Tech.), T. Wakimoto, K. Katoh (Osaka City Univ.)
AJK2011-32005	Three-Dimensional Deformation and Mergence of Waves Induced by Inflectional Instability in a Radial Liquid Sheet T. Wakimoto, K. Katoh (Osaka City University)
AJK2011-32008	Experimental Study on Gas-Liquid Flow Distributions in Upward Multi-Pass Channel (Comparison of R-134a Flow and Air-Water Flow) R. M. Zuradzman, H. Goshima (Mie Univ.), K. Takiguchi, T. Tsuchiya, M. Okamoto (FRS), M. Ajima (FEH), Y. Kitade (FRS), M. Hirota, N. Maruyama, A. Nishimura (Mie Univ.)
AJK2011-32004	A New Method to Manipulate a Droplet on a Plate by using Laser and Supersonic Oscillator K. Katoh, T. Wakimoto (Osaka City University)
AJK2011-32009	Post-Impingement Behavior of a Liquid Drop on Solid Walls: A Current Progress S. Lee (KAIST)

F02-02. Open Forum on Multiphase Flows II

Jul. 28 (Thu.), 08:30 - 10:50, Room #54

Session Chairs:

Prof. S. Lee (KAIST)

Prof. K. Katoh (Osaka City University)

AJK2011-32002	Modeling Two-Phase Flow in Inclined Channel with Downward-Facing Heated Wall K. Bang (KMU)
AJK2011-32001	Experiment and Analysis of Interfacial Area Transport in Gas-Liquid Two-Phase Flow I. Kataoka (Osaka Univ.)
AJK2011-32007	Heat Transfer Experiments for SMART Steam Generator D. Kim, M. Kim (POSTECH)
AJK2011-32013	Diffusion and Mixing Phenomena in Micro-Channel due to the Chemiluminescence-Fluorescence Hybrid Method K. Yoshida, R. Matsumoto (Kansai University)
AJK2011-32012	Quantitatively Measurement of Void Fraction under Forced Convective Boiling Condition by using Neutron Radiography. H. Umekawa, H. Taniguchi, S. Nakamura, K. Sakakura, T. Ami (Kansai University), Y. Saito (Kyoto University Research Reactor Institute)
AJK2011-32011	Visualization and Void Fraction Measurement of Decompressed Boiling Flow in a Capillary Tube H. Asano, N. Takenaka (Kobe Univ.), K. Takiguchi, M. Okamoto, T. Tsuchiya, Y. Kitaide (FRS), N. Maruyama, M. Hirota (Mie Univ.)
AJK2011-32010	Development of Numerical Simulation Method for Thermal Striping Phenomena in Japan Sodium Cooled Fast Reactor M. Tanaka (JAEA), S. Murakami (CUSTOMER SYSTEM), H. Ohki (NDD corporation), H. Ohshima (JAEA)

F03. 46th Cavitation and Multiphase Flow Forum

F03-01. Bubble Dynamics and Gas-Liquid Two Phase Flow

Jul. 28 (Thu.), 08:30 - 10:30, Room #23

Session Chairs:

Prof. S. H. Rhee (SNU)

Dr. M. Nohmi (Ebara Corporation)

AJK2011-33017	Nonlinear Propagation of Sound Beam in Nonuniform Bubbly Liquids T. Kanagawa (Univ. of Tokyo), T. Yano (Department Mechanical Engineering, Osaka University), J. Kawahara, K. Kobayashi, M. Watanabe, S. Fujikawa (Division of Mechanical and Space Engineering, Hokkaido University)
AJK2011-33019	Ultrasound Beam Radiated from Circular Piston in Bubbly Liquids: Nonlinear Analysis for Envelope of Short Waves with Diffraction Effect J. Kawahara (Hokkaido Univ.), T. Kanagawa (Univ. of Tokyo), T. Yano (Department of Mechanical Engineering, Osaka University), K. Kobayashi, M. Watanabe, S. Fujikawa (Division of Mechanical and Space Engineering, Hokkaido University)
AJK2011-33011	Effects of Phospholipid Layers on the Motion of Microbubbles under Pressure Variations Y. Tanaka, H. Takahira (Osaka Pref. Univ.)
AJK2011-33016	A Molecular Dynamics Approach for Nucleation-Growth of Cryogenic Cavitation S. Tsuda (Department of Mechanical Systems Engineering, Shinshu University), T. Komatsu, S. Takagi, Y. Matsumoto (Department of Mechanical Engineering, The University of Tokyo)
AJK2011-33022	Numerical Investigations of Thermal Effects on the Interaction of Shock Waves with Bubbles Y. Jinbo, H. Takahira (Osaka Pref. Univ.)
AJK2011-33009	Bubble Dynamics Observed in a Gas-Liquid Venturi Flow W. Nishi, M. Nogami, H. Takahira (Osaka Pref. Univ.)

F03-02. Caviating Flow

Jul. 28 (Thu.), 11:00 - 13:00, Room #23

Session Chairs:

Prof. B. Shin (Changwon National University)

Prof. H. Takahira (Osaka Pref. Univ.)

AJK2011-33018	Luminescent Spots Induced by a Cavitating Jet
	H. Soyama (Tohoku University)
AJK2011-33023	Numerical Investigation on the Structure of High-Speed Cavitating Water Jet Issuing from an Orifice Nozzle
	G. Peng, H. Ito, S. Shimizu (Nihon Univ.), S. Fujikawa (Hokkaido Univ.)
AJK2011-33003	Cavitation from a Butterfly Valve: Comparing 3D Simulations to 3D X-Ray Computed Tomography Flow Visualization
	G. Brett, M. L. Riveland (Fisher Controls International, LLC, Emerson Process Management), T. C. Jensen, T. J. Heindel (ISU)
AJK2011-33010	Numerical Analysis of Super-Cavitating Flow around a Two-Dimensional Cavitator Geometry
	S. Park, S. H. Rhee (SNU)
AJK2011-33012	Experimental and Numerical Studies on Super-Cavitating Flow of Axisymmetric Cavitators
	B. Ahn, H. Kim, C. Lee (CNU)
AJK2011-33015	Title: Observation and Scaling of Tip Vortex Cavitation on Elliptical Hydrofoils
	S. Nagaya (Naval Systems Research Center, TRDI/Ministry of Defense (Presently IHI)), R. Kimoto, K. Naganuma, T. Mori (NSRC, TRDI/MOD)

F03-03. Cavitation in Turbomachinery

Jul. 28 (Thu.), 15:40 - 17:20, Room #23

Session Chairs:

Prof. H. Soyama (Tohoku University)

Prof. G. Peng (Nihon Univ.)

AJK2011-33006	Experimental and Numerical Analysis of the Cavitating Part Load Vortex Dynamics of Low-Head Hydraulic Turbines.
	S. Houde, M. S. Iliescu, R. Fraser, C. Deschênes (Universite Laval Laboratoire de Machines Hydrauliques)
AJK2011-33020	An Investigation of Cavitation and Suction Vortices Behavior in Pump Sump
	B. Shin (Changwon National University)
AJK2011-33014	A Study on the Cause Investigation of the Local Pipe Wall Thinning in the Downstream of an Orifice through the UT Data and Numerical Analysis
	K. Hwang, H. Yun (KEPCO E&C)
AJK2011-33007	On Boundary Conditions for Cavitation CFD and System Dynamics of Closed Loop Channel
	M. Nohmi (Ebara Corporation), T. Ikohagi, Y. Iga (Institute of Fluid Science, Tohoku University)
AJK2011-33002	Cavitation Performance of Centrifugal Pump with and without Inducer
	X. Li, S. Yuan (Research Center of Fluid Machinery Engineering and Technology , Jiangsu University , P R China), Z. Pan (Research Center of Fluid Machinery Engineering and Technology, Jiangsu University, Zhenjiang, Jiangsu Province, P R China)

F04. Advances in Fluids Engineering Education

F04-01. Advances in Fluids Engineering Education

Jul. 27 (Wed.), 17:10 - 17:50, Room #52

Session Chairs:

Prof. O. Furuya (Kogakuin University)

AJK2011-34005	Introduction of Comprehensive Learning-Type Class - An Example: Fluid Mechanics Class -
	Y. Sugimoto, K. Sato (Department of Mechanical Engineering, Kanazawa Institute of Technology)
AJK2011-34007	Fundamental Exercises in Mechanical Systems Engineering using Robot Manipulator
	H. Takanobu (Kogakuin Univ.)

F06. Microfluidics Summer Forum

F06-01. Microfluidics Summer Forum 1

Jul. 25 (Mon.), 13:30 - 15:30, Room #23

Session Chairs:

Prof. S. Song (Hanyang University)

Dr. T. Tokumasu (IFS, Tohoku Univ.)

AJK2011-36005	An Estimation of Thermodynamic and Transport Properties of Cryogenic Hydrogen using Classical Molecular Simulation
	H. Nagashima (Tohoku University), T. Tokumasu (Institute of Fluid Science, Tohoku University), S. Tsuda (Department of Mechanical Systems Engineering, Shinshu University), N. Tsuboi (Department of Mechanical and Control Engineering, Kyushu Institute of Technology), M. Koshi (University of Tokyo), K. Hayashi (Aoyama Gakuin University)
	Theoretical Development of Predicted Iteration Method for Considering Electron Dynamics in

AJK2011-36033	Quantum Molecular Dynamics
	K. Doi, S. Kawano (Osaka University)
AJK2011-36031	Development of an Electron Scattering Model to Detect Differences in DNA Base Molecules
	Y. Nishioka, K. Doi, S. Kawano (Department of Mechanical Science and Bioengineering Graduate School of Engineering Science, Osaka University)
AJK2011-36032	Numerical Modeling of Red Blood Cell Suspended in a Channel with Uniform Magnetic Field
	K. Tatsumi, R. Kuroki, K. Nishitani, T. Arakawa, K. Nakabe (Kyoto University, department of mechanical engineering and science)
AJK2011-36017	Micro-PIV Measurement on Transient Flows in Pneumatic MEMS Device for Cell Trapping
	H. Kim, K. Kim (Pusan National University)
AJK2011-36022	Application of Micro-Schlieren Technique to Quantitative Analysis of Mass Transport in a Micromixer
	T. Hsiao, C. Sun (Taiwan Tech)

F06-02. Microfluidics Summer Forum 2

Jul. 25 (Mon.), 16:00 - 18:00, Room #23

Session Chairs:

Prof. K. Tatsumi (Kyoto Univ.)

Prof. H. Ko (Sungkyunkwan Univ.)

AJK2011-36020	Molecular Dynamics Study of Oxygen Permeation through the Ionomer of PEFC Catalyst Layer
	K. Sakai, T. Tokumasu (Tohoku University)
AJK2011-36021	A Molecular Dynamics Study for the Characteristics of Proton Transfer in Polymer Electrolyte Membrane
	T. Tokumasu (IFS, Tohoku Univ.), T. Yoshida (Tohoku Univ.)
AJK2011-36027	Prediction of Flow Crossover in the GDL of PEFC using Serpentine Flow Channel
	L. K. Saha (DU), N. Oshima (hokudai)
AJK2011-36034	Improvement of Proton Conduction in PEFC by Applying External Perturbations
	H. Hashizume, K. Doi, S. Kawano (Department of Mechanical Science and Bioengineering, Graduate School of Engineering Science, Osaka University)
AJK2011-36015	Flow Visualization around Actuating Valve of Micro-Vibrating Flow Pump
	O. O. Osman, H. Shintaku, S. Kawano (Osaka University)
AJK2011-36006	Liquid-Liquid Interfacial Flow Structure Obtained from Nano-PIV/Lif
	M. Iino, A. Hasegawa, H. Shimizu, Y. Sato (Keio)

F06-03. Microfluidics Summer Forum 3

Jul. 26 (Tue.), 08:30 - 10:30, Room #23

Session Chairs:

Prof. K. Kim (Pusan National University)

Prof. T. Suzuki (Kagawa University)

AJK2011-36008	Droplet Bistability in Microchannel and Its Application to Flow Control
	B. Lee, J. Yoo (Seoul National University)
AJK2011-36013	Optimization of Chemical Reaction Processes in Microreactors using Reaction Rate Analyses
	Y. Asano, S. Togashi (Hitachi, Ltd.), Y. Endo (Hitachi Plant Technologies)
AJK2011-36026	Micro Rod Mixer using AC Electric Field Induced Flow
	H. Obara, S. Tashiro (Tokyo Metropolitan University)
AJK2011-36037	Optical Film Thickness Measurements using a Reflectance Mode Swept-Field Confocal Microscope
	J. Hernandez (MnIT MTU)
AJK2011-36035	Electrical Detection of Pollen Allergen using Electrode-Embedded-Microchannel.
	C. Kawaguchi (Osaka Univ), M. Taniguchi, M. Tsutsui (The Institute of Scientific and Industrial Research, Osaka University), S. Kawano (Department of Mechanical Science and Bioengineering Graduate School of Engineering Science, Osaka University), T. Kawai (The Institute of Scientific and Industrial Research, Osaka University)
AJK2011-36038	Development of Bionic Auditory Membrane with Non-Uniform Thickness for Acoustic Sensor with Wide-Range Frequency Selectivity
	H. Shintaku, S. Kawano (Osaka University)

F06-04. Microfluidics Summer Forum 4

Jul. 26 (Tue.), 11:00 - 13:00, Room #23

Session Chairs:

Prof. S. Kawano (Osaka University)

Prof. H. Choi (Seoul National University of Technology)

AJK2011-36014 (Keynote)	Development of Gating Nanopores for Next-Next DNA Sequencing using Mechanically Controllable Break-Junctions
	M. Taniguchi (ISIR-SANKEN)
AJK2011-36039	Experimental Study on Flow Control of Lambda DNA in Electrode-Embedded Microchannel
	S. Uehara, N. Yukimoto, H. Shintaku, S. Kawano (Osaka University)

AJK2011-36011	Development of Polydiacetylene-Embedded Microfibers using 3-D Hydrodynamic Focusing Technique
	I. Yoo, J. Lee, S. Song (Hanyang University)
AJK2011-36023	High-Speed Pulsed Mixing with High-Frequency Switching of Pumping from Three Micropumps
	K. Sugano, A. Nakata, H. Yoshimune, T. Tsuchiya, O. Tabata (Kyoto University)
AJK2011-36024	Development of a Novel Biomedical Screening Platform using GC-SPR and CD Fluidics
	H. Shih, J. Tsao, K. Tsai, C. Su, J. Shaw (ITRI)

T01. Technical Flash on Complicated Phenomena in Industry

T01-01. Technical Flash on Complicated Phenomena in Industry (1)

Jul. 26 (Tue.), 16:00 - 17:20, Room #23

Session Chairs:

Dr. M. Kawai (IHI Corporation)

AJK2011-41009	Improvement of Reciprocating Compressor Performance by Shape Optimization of Valve Channel with Statistical Robust-Design Concept
	S. Kubo (IHI)
AJK2011-41011	Study on Optimum Determination of Thermo-Pyrolysis Properties using Cone Calorimeter Data
	K. Yoon (CAU), W. Park, D. Lee (KRRI), T. Kim (CAU)
AJK2011-41013	Study of Fire Size Estimation for Railway Cars with ISO 9705 Test
	D. Lee, W. Park, W. Jung (KRRI), J. Hwang (Yonsei University)
AJK2011-41008	Hot Smoke Test in a Subway Tunnel in Korea
	W. Park, D. Lee, W. Jung (KRRI)

T01-02. Technical Flash on Complicated Phenomena in Industry (2)

Jul. 27 (Wed.), 08:30 - 09:30, Room #23

Session Chairs:

Dr. M. Kawai (IHI Corporation)

AJK2011-41016	Interface Breakup, Bubble Formation and Unexpected Bubble Motion in a Vibration Environment
	T. J. O'Hern (Sandia National Lab), B. Shelden, J. Torczynski (Sandia National Labs)
AJK2011-41010	Modeling of Flow and Mass Transfer in Evaporating Thick Photoresist Films
	S. Shiratori, T. Kubokawa, H. Maeda, M. Tachihara (Canon)
AJK2011-41014	Effect of Various Operational Parameters on Slurry Jet Pump Performance
	I. R. Mohamed (NWRC), I. A. El-Sawaf (2Professor, Mechanical Power Engineering Department, Faculty of Engineering, Port-Said University, Egypt.), M. A. Halawa (Assistant professor, Mechanical Power Engineering Department, Faculty of Engineering, Al-Azhar University, Egypt.), M. A. Younes (Mechanical and Electrical Research Institute-National Water Reaserch Center)

T02. Technical Flash on Progress in CFD Software

T02-01. Technical Flash on Progress in CFD Software(1)

Jul. 25 (Mon.), 13:30 - 15:30, Room #31

Session Chairs:

Prof. C. Kato (The University of Tokyo)

Prof. H. Myong (Kookmin University)

AJK2011-42003	Application of Multipoint Optimisation to the Design of a Mixed Flow Impeller-Bowl Type of Hydro Pump
	A. Purwanto, D. Mendicino, A. Ligout, C. Hirsch (NUMECA), R. Dijkers (Flowserve)
AJK2011-42014	Consideration of Analysis Accuracy for Mixed Flow Pump using RANS
	S. Tomimatsu (DMW CORPORATION)
AJK2011-42006	The Influence of Inducer's Tip Clearance on Performance of the Centrifugal Pump
	X. M. Guo (1. The Laboratory of Fluid Transmission and Application, Zhejiang Science and Technology University 2. Zhejiang Water Conservancy and Hydropower College), Z. Zhu (The Laboratory of Fluid Transmission and Application, Zhejiang Sci-Tech University.), B. Cui, Y. Li (The Laboratory of Fluid Transmission and Application, Zhejiang Sci-Tech University)
AJK2011-42020	Advanced Technology of Cavitation Prediction for Industrial Pump by CRUNCH CFD
	Y. Sawa, T. Fukuchi (VINAS Co.,Ltd.)
AJK2011-42017	Computation of Cavitation around Marine Propeller behind Ship Hull
	R. Takashima (MHI)
AJK2011-42022	Prediction of Cavitation Erosion and Residual Stress of Material using Cavitating Flow Simulation with Bubble Flow Model
	M. Fukaya (Mechanical Engineering Research Laboratory, Hitachi, Ltd.)

T02-02. Technical Flash on Progress in CFD Software(2)

Jul. 25 (Mon.), 16:00 - 18:20, Room #31

Session Chairs:

Prof. C. Kato (The University of Tokyo)

Prof. J. Yoon (Hanyang University)	
AJK2011-42008	A Study on Aerodynamic Drag Reduction for Two-Box Vehicle (1st Report) - a Research on Relationship between Vehicle Backward Vortex and Vehicle's Backward Face -
	M. Tadatsu, J. Yamamura, T. Yasuki (Toyota Motor Corporation)
AJK2011-42011	A Study on Aerodynamic Drag Reduction for Two-Box Vehicle (2nd Report) - a Research on Relationship between Vehicle Backward Vortex and Rear Shape of Vehicle -
	J. Yamamura, S. Yasuoka, T. Yasuki (Toyota Motor Corporation)
AJK2011-42002	Aero-Vibroacoustic Fully Coupled Prediction of Panel Impedance Effects in Automotive Sunroof Buffeting
	F. Mendonca, L. Tran, A. Mueller (CD-adapco), J. Morgan (CDaES (a CD-adapco Company))
AJK2011-42010	Development of an Unsteady Aerodynamic Simulator for Road Vehicle based on Large-Eddy Simulation
	M. Tsubokura (Hokkaido University), T. Nakashima (Hiroshima University)
AJK2011-42021	FrontFlow/blue: Open-Source CFD Solvers for the Prediction of Complicated Turbulent Flows and Aeroacoustics with Parallel-Computing Capability of up to 1 Million Cores and 100 Billion Grids
	Y. Yamade (Mizuho Information & Research, Inc), C. Kato, Y. Guo (the University of Tokyo), T. Takayama (Mizuho Information & Research, Inc)
AJK2011-42018	Airframe Noise Prediction using Block-Structured Cartesian-Based CFD Solver
	D. Sasaki (Tohoku University), A. Deguchi, H. Onda, K. Nakahashi (Department of Aerospace Engineering, Tohoku University)
AJK2011-42015	Voxel-Based High Performance Parallel Flow Simulator for Industrial Applications
	K. Ono (Institute of Industrial Science, The University of Tokyo)

T02-03. Technical Flash on Progress in CFD Software(3)

Jul. 26 (Tue.), 08:30 - 10:50, Room #31

Session Chairs:

Prof. R. Kurose (Kyoto University)

Prof. C. Kato (The University of Tokyo)

AJK2011-42009	Large-Eddy Simulations of Pulverized-Coal and Spray Combustion
	H. Watanabe (CRIEPI), R. Kurose (Kyoto University)
AJK2011-42016	Validation of Combustion Problem with Real-Gas Effect and Scalability by General Purpose CFD Software
	K. Tsuboi (ANSYS Japan K.K.)
AJK2011-42019	An Innovative in-Cylinder Engine Combustion Analysis Method Improving Work Efficiency and Calculation Accuracy in CFD
	H. Takase, T. Fukuchi (VINAS Co.,Ltd.)
AJK2011-42023	Development of the Advanced Simulator for Fly Ash Modification in the Pulverized Coal Combustion Furnace
	A. Suzuki (CDAJ), A. Ohnaka, T. Tano (UBE Industries, Ltd.), R. Itokazu, M. Tamura (IHI Corporation), T. Terada (UBE Industries, Ltd.)
AJK2011-42024	Multi-Physics Coupling Models for Mass Transport in Polymer Electrolyte Fuel Cell
	N. Oshima (Hokkaido University), E. Kulihara (Hokkaido univ.), J. Liu (Chongqing univ.), B. Qi (Hokkaido univ.)
AJK2011-42013	Numerical Analysis of Free-Surface Flows under Various Conditions in Gravity by CIP-LSM
	T. Himeno (University of Tokyo)
AJK2011-42004	Analytical Solution of Natural Convection in a Horizontal Cylinder Filled with Porous Material due to Linear Uniform Heat Generation
	K. Mansour (AUT)

T03. Technical Flash on Environmental Problems and New Energies

T03-01. Fluidic Power

Jul. 27 (Wed.), 08:30 - 10:10, Room #22

Session Chairs:

Dr. M. Nohmi (Ebara Corporation)

AJK2011-43001	Design and Experimental Study on Vice Nozzle of Variable Rate Complete Fluid Sprinkler
	J. Liu, S. Yuan, H. Li, X. Zhu (jiangsu university)
AJK2011-43010	Experimental Study of the Effect of Mixing Chamber Length and Diffuser Angle on the Performance of Dredging Jet Pump
	I. R. Mohamed (NWRC), I. A. El-Sawaf (Professor, Mechanical Power Engineering Department, Faculty of Engineering, Port-Said University, Egypt.), M. A. Halaw (Assistant professor, Mechanical Power Engineering Department, Faculty of Engineering, Al-Azhar University, Egypt.), M. A. Younes (Mechanical and Electrical Research Institute-National Water Research Center)
AJK2011-43002	The Performance of a Single Mooring Offshore Platform Installed with Wave-Energy Conversion System
	H. Lee, T. Wu (NSYSU)

AJK2011-43007	Development of New Wind Turbine Blade
	K. Fukami (MHI), A. Honda (Mitsubishi Heavy Industries, Ltd)
AJK2011-43009	Numerical Simulation of Flow around an Off-Shore Wind Turbine in Operation
	T. Endo, H. Sukegawa (TEPCO)
T03-02. Vehicles and Fuel Cells Jul. 27 (Wed.), 11:00 - 12:00, Room #22 Session Chairs: Dr. M. Nohmi (Ebara Corporation)	
AJK2011-43004	Recovery of Kinetic Energy of an Aircraft during Landing into Useful Electrical Energy using Arrestor Net - Electric Generator System.
	N. Jain (ISM Dhanbad)
AJK2011-43003	Life-Cycle Analysis of Energy Efficiency and Greenhouse Gas Emission Fuel Cell Scooters
	J. Hwang (Department of Greenery, National University of Tainan)
AJK2011-43008	Study on Shape of Electrodes for Microfluidic Fuel Cell
	H. Kim, S. Ha, B. Han, K. Lee, Y. Ahn (hanyang university)

T04. Technical Flash on Applications of Nonintrusive Fluid Measurement

T04-01. Applications of Nonintrusive Fluid Measurement

Jul. 28 (Thu.), 15:40 - 17:20, Room #41

Session Chairs:

Prof. K. Asai (Tohoku University)

AJK2011-44001	Nonintrusive Measurement of Flow-Induced Vibration of Cylinders with CCD Camera for Two Degrees of Freedom Motion Capture
	C. Sohn (Kyungbuk National University)
AJK2011-44003	Neutron Imaging: The Principles and Its Fluidic Applications
	K. Kihm (The University of Tennessee)
AJK2011-44004	Novel Techniques in Digital Holography Based Particle Tracking Velocimetry
	S. P. Panday (Osaka Sangyo University - Dpt. Information Systems Engineering), K. Ohmi (Osaka Sangyo University)
AJK2011-44006	3D Particle Sensing and Mixing in Microchannel by using Electrical Capacitance Tomography and Dielectrophoresis
	N. Ali othman (Nihon University), J. Choi, M. Takei (Chiba University)
AJK2011-44007	Visualisation of Flow around a Tumbling Plate
	H. Miyata, J. Funaki, K. Hirata (Doshisha University)

596 papers/abstracts in the list.