

# ASV 13 PROGRAM

## LAYOUT

### MONDAY, JUNE 22

10-00	Participants registration	
12-30	Lunch	
14-00	Opening ceremony	
14-30	<b>Visual Information and Analysis</b>	<b>Numerical Visualization</b>
16-00	Coffee	
16-30	<b>Posters: 3-minutes presentations and exhibition</b>	
19-00	Welcome reception	

### TUESDAY, JUNE 23

9-00	<b>Instabilities and Turbulent Flow (1)</b>	
10-30	Coffee	
11-00	<b>Instabilities and Turbulent Flow (2)</b>	<b>Heat Transfer</b>
12-30	Lunch	
14-00	<b>Instabilities and Turbulent Flow (3)</b>	
15-30	Coffee	
16-00	<b>Posters: 3-minutes presentations and exhibition</b>	

### WEDNESDAY, JUNE 24

9-00	<b>Industrial Fluid Mechanics</b>	
10-30	Coffee	
11-00	<b>Instabilities and Turbulent Flow (4)</b>	<b>Bio Fluid</b>
12-30	Lunch	
14-00	<b>Combustion Phenomena and Engine</b>	
15-30	Coffee	
16-00	<b>Posters: 3-minutes presentations and exhibition</b>	
18-00	Tour to ITAM SB RAS	

### THURSDAY, JUNE 25

9-00	<b>High Speed Flows and Gas Dynamics (1)</b>	
10-30	Coffee	
11-00	<b>High Speed Flows and Gas Dynamics (2)</b>	
12-30	Lunch	
14-00	<b>High Speed Flows and Gas Dynamics (3)</b>	
15-30	Coffee	
16-00	<b>Posters: 3-minutes presentations and exhibition</b>	
19-00	Banquet	

## FRIDAY, JUNE 26

9-00	<b>Multiphase and Reacting Flows (1)</b>	
10-30	Coffee	
11-00	<b>Nano and Micro Fluid</b>	
12-30	Lunch	
14-00	<b>Multiphase and Reacting Flows (2)</b>	<b>Flow Control</b>
15-00	<b>Posters: 3-minutes presentations and exhibition</b>	
15-30	Coffee	
17-00	Closing ceremony	

## DETAILS

### MONDAY, JUNE 22

- 10-00 PARTICIPANTS REGISTRATION
- 12-30 LUNCH
- 14-00 OPENING CEREMONY

#### Visual Information and Analysis

- 14-30 **ID 43** K. Ohmi, S. Tuladhar, T. Kim (Japan) Color differential analysis of art paintings by means of a CIE-LUV based segmentation method.
- 14-45 **ID 114** V.A. Lebiga, V.N. Zinoviev, A.Yu. Pak, D.S. Mironov (Russia) Visual representation of results of spectral analysis of experimental data by different techniques.
- 15-00 **ID 12** N.V. Denisova (Russia) Visualization using tomography method.
- 15-15 **ID 111** Kao Shu Hwang, Hwung Hweng Hwung, Bor Tai Shi (Taiwan) Applying photogrammetry in laboratory bathymetry measurement.
- 15-30 **ID 85** A.V. Boiko, A.V. Dovgal, A.M. Sorokin, I.D. Zverkov (Russia) On some applications of particle image velocimetry in subsonic shear flows.
- 15-45 **ID 73** V.I. Borodulin, A.V. Ivanov, Y.S. Kachanov (Russia) Quantitative visualization of transition scenarios in swept-wing boundary layers.

#### Numerical Visualization

- 14-30 **ID 115** A.N. Kudryavtsev, D.B. Epstein (Russia) Visualization in computational aerodynamics of high-speed shock-dominated flows.
- 14-45 **ID 127** E.G. Kostsov, M.B. Ostapkevich (Russia) Visualization in the WinALT simulation environment.
- 15-00 **ID 129** G.V. Shoev, Ye.A. Bondar (Russia) Numerical simulation of flows with thermochemical non-equilibrium in ANSYS Fluent.
- 15-15 **ID 25** Arman Safdari, Kyung Chun Kim (Korea) Numerical visualization of thermo-fluid flow during opening and closing refrigerator door.

15-30 **ID 13** Harijono Djodjodhardjo, Riyadh I. Ahmed, A.R. Abu-Talib, A.S. Mohd-Rafie (Malaysia) Analytical and CFD visualization studies of Coandă MAV.

16-00 COFFEE

16-30 **Posters: 3-minutes presentations and exhibition**

#### **Visual Information and Analysis**

(1) **ID 106** M.N. Karchevskiy, M.P. Tokarev, M.V. Shestakov, D.M. Markovich (Russia) PTV method based on tomographic reconstruction of 3D images.

(2) **ID 161** G.M. Zharkova, V.N. Kovrizhina (Russia) Thin-film coatings for visualization of near-wall flows.

(3) **ID 98** B.Yu. Zanin, A.V. Dovgal, M.M. Katasonov, M.V. Mikhaelis, A.M. Pavlenko, A.M. Sorokin (Russia) Visualization of flow separation by oil film.

(4) **ID 23** Zhan Huang, Hong-Wei Wang, Jian Gong (China) The verification and experiment of optical flow method.

(5) **ID 49** Song Qiang, Huang Jie, Xie Ai-min, Ke Fa-wei, Liu Sen (China) Multi-sequence laser shadow imaging technique based on spectral pyramid.

(6) **ID 57** Bin Wang, Jie Han, Shuang Chen, Wen Gai, Weihua Chu, Shouchun Guo (China) A longer acquisition time high-speed camera model with Bernoulli compressing imaging.

#### **Numerical Visualization**

(7) **ID 104** A.V. Kashkovsky (Russia) Algorithm of visualization of scalar fields by compact vector graphics.

(8) **ID 92** R. Mullyadzhanov, S. Abdurakipov, K. Hanjalic (Russia, The Netherlands) Large-eddy simulations of the round jet with a fully developed inflow conditions at  $Re = 5300$ : coherent structures evolution.

(9) **ID 44** M.A. Pakhomov, V.I. Terekhov (Russia) Numerical modelling of film cooling from cylindrical holes embedded in a transverse trench.

19-00 WELCOME RECEPTION

## **TUESDAY, JUNE 23**

### **Instabilities and Turbulent Flow (1)**

9-00 **PLENARY ID 170** V. Theofilis (Spain) Global instability analysis of axially inhomogeneous systems of trailing vortices.

9-30 **ID 77** A.S. Guzeev, A.I. Korotkin, S.Yu. Soloviev (Russia) Interaction of vortex systems at a flow of bodies.

9-45 **ID 123** Chong Pan, Jinjun Wang (China) Lagrangian-based visualization of stagnation vortex pair.

10-00 **ID 165** Sun Chenghong, Dai Qin (Daichin) (China) Experimental investigation on aerodynamics and flow structures of a wing with tip sails in ground effect.

10-15 **ID 38** S. Masseboeuf, S. Mouton, B. Leclaire (France) Clinometric measurements by means of high-accuracy 3C-PIV and upwash assessment in ground effect condition in the ONERA F1 low speed pressurized wind tunnel.

10-30 COFFEE

## Instabilities and Turbulent Flow (2)

- 11-00 **ID 55** S. Takagi, Y. Miyamori (Japan) Observation of Karman vortex street on flowing soap film behind cylinders at low Reynolds numbers.
- 11-15 **ID 10** Wei-Cheng Chen, Chang-Lung Shih, Keh-Chin Chang, Muh-Rong Wang (Taiwan) Comparison of turbulent flow measurements over a circular cylinder with intrusive/non-intrusive velocity anemometry.
- 11-30 **ID 83** A.Yu. D'yachenko, V.I. Terekhov, N.I. Yarygina (Russia) Features of the interaction of two different scales separated flow using thermographic visualization.
- 11-45 **ID 50** Csaba Hefler, Huihe Qiu (Hong Kong SAR) Visualization and aerodynamic analysis of an escaping dragonfly.
- 12-00 **ID 78** Tae Hyun Chang, Keon-Je Oh, Kwon-Soo Lee, Chang-Hoan Lee (Korea) Study on velocity profiles around the spiral baffle plates in a horizontal circular tube without inner tubes.

## Heat Transfer

- 11-00 **ID 26** V. Kongkaiptaiboon, K. Ruengpayungsak, K. Wongcharee, C. Thianpong, S. Eiamsa-ard (Thailand) Fluid flow and heat transfer characteristics in round tubes fitted with circular-ring turbulator.
- 11-15 **ID 116** G.B. Abadi, E. Yun, S.Y. Yoon, K.C. Kim (Korea) Flow boiling visualization of zeotropic mixture of R134a and R245fa in a vertical tube.
- 11-30 **ID 63** K. Yongsiri, K. Nanan, V. Chuwattanakul, P. Eiamsa-ard, C. Nuntadusit, S. Eiamsa-ard (Thailand) Heat transfer visualization of swirling impinging jets using thermochromic liquid crystal sheet.
- 11-45 **ID 42** C. Nuntadusit, B. Kaewkraikrong, M. Wae-hayee (Thailand) Flow and heat transfer characteristics of impinging jet from pipe nozzle with vortex generators.
- 12-30 LUNCH

## Instabilities and Turbulent Flow (3)

- 14-00 **PLENARY ID 76** V.L. Okulov, G.A.M. van Kuik, J.N. Sørensen, D.H. Wood (Denmark, Russia, The Netherlands, Canada) Flow visualization as inspiration and demonstration in the development of rotor vortex theories.
- 14-30 **ID 14** Harijono Djodihardjo (Malaysia) Analysis and visualization studies of near field aircraft trailing vortices for passive wake alleviation.
- 14-45 **ID 68** J. Xiong, H.S. Ma, P.Li, Q. Zhou, G.S. Li, H.B. Wang, X. Liu (China) Pressure sensitive paint measurements at large blow-down transonic wind tunnel.
- 15-00 **ID 39** V.E. Mosharov, V.N. Radchenko (Russia) Pressure sensitive paint measurement on the blades of counter rotating open rotor.
- 15-15 **ID 162** C.J. Lee, K.R. Cho, D.H. Doh (Korea) Masked omnidirectional integration algorithm for pressure calculation.
- 15-30 COFFEE

## Posters: 3-minutes presentations and exhibition

### Instabilities and Turbulent Flow

- (1) **ID 67** Liang Lei, Ren XiaoBo, Yin XiWei (China) Research on pressure sensitive paints experimental technology in low speed wind tunnel.
- (2) **ID 147** G.G. Gadzhimagomedov (Russia) PIV measurements of aerodynamic load distribution on a propeller blade.
- (3) **ID 35** Shaofei Wang, Yingzheng Liu (China) Wake dynamics behind a harbor seal vibrissa: a comparative view by PIV measurements.
- (4) **ID 154** V.T. Bui, V.I. Lapygin (Russia) On flow pattern around a finite-length circular cylinder in low-speed wind tunnel.
- (5) **ID 99** S.S. Abdurakipov, L.A. Kozinkin, M.P. Tokarev, V.M. Dulin, D.M. Markovich (Russia) Analysis of spiral structures in swirling jets from time-resolved tomographic PIV data.
- (6) **ID 27** V.V. Kozlov, G.R. Grek, Yu. A. Litvinenko (Russia) Round and plane jet flow stability.
- (7) **ID 152** M.V. Litvinenko, Yu.A. Litvinenko, V.V. Vikhorev, G.V. Kozlov (Russia) Experimental study of Dean vortices instability in a free round jet.
- (8) **ID 160** N.V. Gavrilov, V.Yu. Liapidevskii (Russia) Mixing in large amplitude internal waves.
- (9) **ID 143** Chang Lin, Guang-Wei Tseng, Ming-Jer Kao, Song-Chen Chang, Ching-Piao Tsai (Taiwan) Flow structure in hydraulic jump during run-down motion of shoaling solitary wave over 1:3 slope.
- (10) **ID 145** I.D. Zverkov, A.V. Kryukov, I.S. Konovalov (Russia) Visualisation of boundary layer transition on a wavy surface wing at low Reynolds numbers.
- (11) **ID 107** S.N. Tolkachev, V.N. Gorev, V.V. Kozlov (Russia) The investigation of the role of 2D and localized roughness on the laminar-turbulent transition on the swept wing.
- (12) **ID 108** S.N. Tolkachev, V.N. Kovrizhina, G.M. Zharkova (Russia) Liquid crystal thermography method for investigation disturbed near-wall structure of the swept wing boundary layer on the leading edge.
- (13) **ID 74** V.I. Borodulin, A.V. Ivanov, Y.S. Kachanov, A. Hanifi (Russia, Sweden) Visualization of transition control in a 45-degree swept-wing boundary layer.
- (14) **ID 70** D. Bountin, Yu. Gromiko, A. Maslov, P. Polivanov, A. Sidorenko (Russia) Turbulent spots intermittency in boundary layer and its relation to the transition.
- (15) **ID 9** V.I. Borodulin, Y.S. Kachanov (Russia) Quantitative visualization of instantaneous structure of post-transitional wall turbulence.

### Heat transfer

- (16) **ID 15** S. Eiamsa-ard, P. Somravysin, W. Changcharoen, P. Promthaisong, V. Chuwattanakul, M. Pimsarn (Thailand) Flow-field and thermal behaviors of turbulent flow through a round tube equipped with dual twisted tapes.
- (17) **ID 140** D.M. Markovich, A.S. Nebuchinov, S.Z. Sapozhnikov, V.Y. Mityakov, A.V. Mityakov, A.A. Gusakov, A.V. Bashkatov, E.R. Zainullina, A.S. Kosolapov, S.A. Mozhayskiy, V.V. Seroshtanov (Russia) An investigation of heat exchange in a flow above an array of dimples by means of a PIV technique combined with gradient heat flux measurements.
- (18) **ID 158** A.S. Surtaev, V.S. Serdyukov, M.I. Moiseev, A.N. Pavlenko (Russia) Synchronized high-speed visible- and infrared-based experimental techniques for investigation of the pool boiling heat transfer.

## WEDNESDAY, JUNE 24

### Industrial Fluid Mechanics

- 9-00 **PLENARY ID 19** Akira Goto (Japan) A historical perspective on the turbomachinery flow visualization in an industry.
- 9-30 **ID 103** T.C. Ho, H.H. Hwang, S.J. Jan, K.S. Hwang (Taiwan) Flow field in the forebay of the Hsin-Ta Power Plant in Taiwan.
- 9-45 **ID 95** M.I. Shilyaev, A.R. Bogomolov, E.M. Khromova, A.V. Tolstykh (Russia) The system of calculation for intergrated inertial-condensation-absorption dust and gas cleaning of flue gases of heat power plants.
- 10-30 COFFEE

### Instabilities and Turbulent Flow (4)

- 11-00 **ID 41** I.V. Naumov, I.V. Litvinov, V.L. Okulov, R.F. Mikkelsen, J.N. Sørensen (Russia, Denmark) Development of far wake behind solid disk and rotating blades.
- 11-15 **ID 124** Dong Xue, Chong Pan, Jinjun Wang, Vladimir. I. Borodulin, Yury. S. Kachanov (China, Russia) Determining time-scale of laminar wing-tip vortex instability by visualization.
- 11-30 **ID 100** M.V. Shestakov, M.P. Tokarev, D.M. Markovich (Russia) Visualizing the evolution and interaction of vortices in a quasi two-dimensional jet: time-resolved tomographic PIV measurements.
- 11-45 **ID 134** Y.N. Shirshov, D.A. Nersesyan, D.S. Naumov, N.N. Sysoev, I.A. Znamenskaya (Russia) Waterjet cutting machines high speed water jets dynamic characteristics research.
- 12-00 **ID 105** S.N. Yakovenko (Russia) Map of instability development scenarios in the Re-Pr space for overturning internal waves in stably stratified flows.
- 12-15 **ID 109** M.M. Katasonov, V.V. Kozlov, P.A. Motyrev (Russia) Experimental study of localized disturbances and wave packets – forerunners at boundary layer of straight wing.

### Bio Fluid

- 11-00 **ID 118** A.K. Khe, A.A. Cherevko, A.P. Chupakhin, A.V. Chebotnikov (Russia) Endovascular blood flow measurement system.
- 11-15 **ID 117** A.E. Akulov, A.A. Cherevko, A.P. Chupakhin, E.Yu. Derevtsov, A.K. Khe, S.V. Maltseva, M.P. Moshkin (Russia) An efficient vizualization method of highly branched vascular net according to the high-field MRI data.
- 11-30 **ID 62** E.Yeom, S. Lee (Korea) Visualization of blood flows in a rat extracorporeal model for measuring hemorheological and hemodynamic properties simultaneously.
- 11-45 **ID 51** Jeongeun Ryu, Bae Geun Hwang, Wonjung Kim, Sang Joon Lee (Korea) Direct visualization of embolism spreading and water refilling under tension in xylem vessels of intact plants.
- 12-00 **ID 22** Young-Ran Ha, Seung-Chul Lee, and Sang-Joon Lee (Korea) Experimental study on feeding-behavior differences between two species of mosquitoes using X-ray imaging technique.
- 12-30 LUNCH

## Combustion Phenomena and Engine

- 14-00 **PLENARY ID 148** A.A. Vasiliev, E.I. Palchikov, V.V. Kubarev, E.N. Chesnokov, P.V. Koshlyakov, A.V. Dolgikh, I.Yu. Krasnikov (Russia) Terahertz technique for research of waves of burning and a detonation with use of free electron laser.
- 14-30 **ID 96** L.M. Chikishev, A.S. Lobasov, D.K. Sharaborin, O.A. Gobyzov, V.M. Dulin, A.V. Bilsky, V.V. Tsatiashvili, V.G. Avgustinovich, D.M. Markovich (Russia) PIV/PLIF measurements in advanced premixing GT-burner.
- 14-45 **ID 29** V.V. Kozlov, G.R. Grek, M.M. Katasonov, O.P. Korobeinichev, Yu.A. Litvinenko, A.G. Shmakov (Russia) Jet flows stability and their combustion.
- 15-00 **ID 110** O.P. Korobeinichev, A.G. Shmakov, A.A. Chernov, K.V. Toropecky, D.M. Markovich, V.M. Dulin (Russia) Sources of uncertainties in flame front imaging by PIV technique.
- 15-30 COFFEE

## 16-00 Posters: 3-minutes presentations and exhibition

### Combustion Phenomena and Engine

- (1) **ID 137** I.S. Anufriev, D.V. Krasinsky, E.Yu. Shadrin, O.V. Sharypov (Russia) Visualization of the flow structure in a perspective vortex furnace.
- (2) **ID 90** A.S. Lobasov, L.M. Chikishev, V.M. Dulin, D.M. Markovich, K. Hanjalić (Russia) OH\* planar laser-induced fluorescence for flame front visualization and thermometry in a laminar premixed flame.
- (3) **ID 28** V.V. Kozlov, G.R. Grek, O.P. Korobeinichev, Yu.A. Litvinenko, A.G. Shmakov (Russia) Propane and hydrogen microjet combustion in a transverse acoustic field.
- (4) **ID 93** L.A. Kozinkin, A.S. Lobasov, D.K. Sharaborin, V.M. Dulin, M.P. Tokarev, L.M. Chikishev, D.M. Markovich (Russia) Large-scale vortex structures in swirling flames measured by tomographic PIV.
- (5) **ID 54** D.K. Sharaborin, I.M. Vereshchagin, V.M. Dulin, Sh.A. Piralishvili, D.M. Markovich, K. Hanjalić (Russia) Application of Rayleigh and Raman scattering techniques for planar thermometry in a swirling flame.
- (6) **ID 88** I.M. Vereshchagin, A.S. Lobasov, V.M. Dulin, Sh.A. Piralishvili, D.M. Markovich (Russia) Visualization of unsteady flow of a swirl burner by PIV/PLIF techniques.
- 18-00 TOUR TO ITAM SB RAS

## THURSDAY, JUNE 25

### High Speed Flows and Gas Dynamics (1)

- 9-00 **PLENARY ID 33** S.X. Li (China) Final appearance of Jilin meteorite shower and orbit analysis.
- 9-30 **ID 17** Ke Fa-wei, Huang Jie, Xie Ai-min, Song Qiang, Zheng Lei, Liu Sen (China) Photography and location technology of binocular front light based on attitude measurement of flying model with hypervelocity in the free flight ballistic range.
- 9-45 **ID 59** Liu Sen, Wang Zonghao, Xie Aimin, Huang Jie (China) Shadowgraph imaging and post-processing for hypersonic boundary layer transition in ballistic range.

- 10-00 **ID 130** Junqi Shen, Chong Pan, Jinjun Wang (China) Sublimation and LDV investigation of the boundary layer transition on a stratospheric airship model at different Reynolds numbers.
- 10-15 **ID 61** Xin Zhang, Yong Huang, Zheyu Shi, Zhihong Shen, Wanbo Wang, Kun Tang (China) Flow control over a supercritical wing using plasma actuator at high Reynolds number.
- 10-30 COFFEE

### **High Speed Flows and Gas Dynamics (2)**

- 11-00 **PLENARY ID 20** Yu.N. Grigoryev, I.V. Ershov (Russia) Stability of a supersonic Couette flow of vibrationally excited molecular gas.
- 11-30 **ID 139** V.I. Zapryagaev, I.N. Kavun, L.P. Trubitsuna (Russia) Visualization of streamwise vortices structure near reattachment line of supersonic laminar separated flow.
- 11-45 **ID 97** S.P. Kiselev, V.P. Kiselev, V.N. Zaikovskii (Russia) The visualization method and numerical simulation using in the study of self-oscillations in a radial supersonic overexpanded jet.
- 12-00 **ID 75** I.I. Lipatov, R.J. Tugazakov, V.S. Khlebnikov (Russia) Formation of coherent structures on flat plate of finite width as a result of weak and strong shock waves influence.
- 12-15 **ID 40** F.N. Glazyrin, I.V. Mursenkova, D.S. Naumov, I.Yu. Ostapenko, I.A. Znamenskaya (Russia) Optical study of shock-wave flows at the initiation of the sliding surface discharge.
- 12-30 LUNCH

### **High Speed Flows and Gas Dynamics (3)**

- 14-00 **ID 102** Yu.H. Ganiev, Yu.M. Lipnitskiy, S.E. Filippov, V.A. Kozlovskiy, A.V. Krasilnikov, D.M. Markovich, O.A. Gobyzov, Yu.A. Lozhkin, I.E. Ivanov (Russia) PIV measurements of nonuniform supersonic flow in continuous-operated wind tunnel.
- 14-15 **ID 150** A.D. Kosinov, N.V. Semionov (Russia) Visualization of quasi-stationary regimes of a supersonic flow establishing in the wind tunnel.
- 14-30 **ID 48** P.A. Polivanov, A.A. Sidorenko, A.A. Maslov (Russia) Calculation of pressure fields based on PIV measurements for supersonic flow.
- 14-45 **ID 80** N.P. Adamov, A.M. Kharitonov, E.A. Chasovnikov (Russia) Optical method of determining the damping characteristics of reentry vehicle models at supersonic velocities.
- 15-00 **ID 166** S.V. Klinkov, V.F. Kosarev, V.N. Zaikovskii (Russia) Measurement of metal particle velocities in radial supersonic jet.
- 15-15 **ID 136** P. Chen, S.X. Li, S.J. Luo, Y.F. Liu (China) Numerical visualization on flowfield in a supersonic chevron nozzle ejector.
- 15-30 COFFEE

### **16-00 Posters: 3-minutes presentations and exhibition**

#### **High Speed Flows and Gas Dynamics**

(1) **ID 37** J.K. Ma, S.X. Li, Y.F. Liu (China) Visualization of unsteady shock wave oscillations by high speed schlieren photography.



- (2) **ID 101** O.A. Gobyzov, Yu.A. Lozhkin, M.N. Ryabov, D.M. Markovich (Russia) Application of optical techniques to study dynamics of submillimeter droplets in a supersonic flow with shock wave.
- (3) **ID 121** G.V. Shoev, A.A. Kokhanchik, M.Yu. Timokhin, Ye.A. Bondar (Russia) Viscous and rarefaction effects in stationary regular reflection of oblique shock wave.
- (4) **ID 112** K.A. Lomanovich, B.V. Postnikov (Russia) A shock-wave pattern and surface pressure distribution when a flat obstacle impinging by supersonic jet.
- (5) **ID 113** V.I. Zapryagaev, N.P. Kiselev, V.M. Boiko, A.A. Pivovarov (Russia) Flow structure visualization in supersonic annular jet exhausting from dual bell nozzle.
- (6) **ID 65** Zhang Qinghu, Yang Yanguang, Zhang Kouli, Wu Anping, Wang Gang (China) The effect of micro-ramps on supersonic flow over double wedge.
- (7) **ID 82** A.A. Iatskikh, Yu.G. Yermolaev (Russia) Visualization of the evolution of coherent structures in a supersonic boundary layer.
- (8) **ID 81** G. Kolosov, A. Panina (Russia) Hot-wire measurements visualization of the artificial disturbance evolution in 2D and 3D supersonic boundary layers.
- (9) **ID 87** S.A. Gaponov, A.N. Semenov (Russia) Influence of a gas blowing direction through a porous surface on the stability of the supersonic boundary layer.
- (10) **ID 47** P.A. Polivanov, Y.V. Gromiko, D.A. Bountin, A.A. Sidorenko, A.A. Maslov (Russia) The evolution of wave packet to turbulent spot in the boundary layer at high speeds.
- (11) **ID 155** T.A. Kiseleva (Bobarykina), V.F. Chirkashenko, V.I. Yakovlev (Russia) About the peculiarities of visualisation of the pulsing optical discharge in the supersonic flow.
- (12) **ID 163** V.I. Kornilov, I.N. Kavun (Russia) Aerodynamic characteristics of cylindrical bodies in supersonic flow: numerical/experimental studies and flow visualization.
- (13) **ID 18** M.A. Yadrenkin, V.P. Fomichev (Russia) Assessment of the MHD-interaction parameters using shadow pictures in pulse tests.

19-00

BANQUET

## FRIDAY, JUNE 26

### Multiphase and Reacting Flows (1)

- 9-00 **PLENARY ID 84** D.M. Markovich, M.V. Timoshevskiy, S.A. Churkin, A.Yu. Kravtsova, K.S. Pervunin, K. Hanjalić (Russia) An application of modern optical techniques for the study of cavitation in hydroturbine elements.
- 9-30 **ID 119** P.H. Tsai, C.H. Wang, A.B. Wang, A. Korobkin, R. Purvis, T. Khabakhpasheva (Taiwan, UK) Investigation of droplet oscillation on a vibrating elastic plate.
- 9-45 **ID 11** A.V. Cherdantsev, D.B. Hann, B.N. Hewakandamby, B.J. Azzopardi (UK, Russia) Study of deposition of droplets from the gas core onto a gas-sheared liquid film.
- 10-00 **ID 142** T.A. Khmel, A.V. Fedorov (Russia) Investigation of the processes of dust dispersion within the model of collisional particle dynamics.
- 10-15 **ID 141** A.V. Fedorov, T.A. Khmel, Yu.V. Kratova (Russia) Numerical modeling of detonation flows in axisymmetric gas-particle mixtures.
- 10-30 COFFEE

## Nano and Micro Fluid

- 11-00 **ID 157** V. Cheverda, O. Kabov (Russia) Locally heated water film moved by shear stress of gas flow in a minichannel.
- 11-15 **ID 125** V.Ya. Rudyak, E.G. Bord (Russia) Nanofluid Poiseuille flow instability.
- 11-30 **ID 32** V.V. Lemanov, V.I. Terekhov, K.A. Sharov (Russia) Investigation of the flow in free and impinging micro- and macrojets of air.
- 11-45 **ID 133** V.M. Aniskin, A.A. Maslov, I.S. Tsirulnikov, I.V. Timofeev (Russia) Visualization of supersonic axisymmetric and plane underexpanded microjets.
- 12-00 **ID 138** Xu Zheng, Hujun Wang, Xiaohui Rong, Liyu Liu, Zhanhua Silber-Li (China) Visualization in a microfluidic chip modeling the blood flow in coronary bifurcation with stents.
- 12-30 LUNCH

## Multiphase and Reacting Flows (2)

- 14-00 **ID 94** M.I. Shilyaev, A.I. Gorbunkov, A.R. Bogomolov, E.M. Khromova (Russia) Dehydration of coal suspension in centrifuges, vacuum-filters, and filter-presses.
- 14-15 **ID 167** I.S. Batraev, N.S. Ryashin, A.I. Kovalenko, V.F. Kosarev (Russia) Surface modification by detonation spraying.
- 14-30 **ID 52** I. Schweigert (Russia) Effect of surface type on plasma density controlled with external electromagnetic fields.

## Flow Control

- 14-00 **ID 56** J.J. Miao, Wong Hsi (Taiwan) Flow separation control with a truncated ellipse airfoil in cycling aerodynamics.
- 14-15 **ID 126** K.W. Chang, J.-H. Chen (Taiwan) Vortex suppression for bounded and semi-unbounded shear flows past a circular cylinder in rotary oscillation.
- 14-30 **ID 21** Hui Guo, Ya Zhang, Le-Le Gao, Yong Ma (China) Boundary layer transition control by wavelike leading edges.

## 15-00 Posters: 3-minutes presentations and exhibition

### Multiphase and Reacting Flows

- (1) **ID 128** I.A. Amelyushkin (Russia) Reconstruction of the multiphase flow parameters via laser sheet image processing.
- (2) **ID 7** A. Belozerov, E. Romenski, N. Lebedeva (Russia) Conservative model and numerical methods for compressible two-phase pipe flow.
- (3) **ID 71** D.V. Sergachev (Russia) Application of laser-optical diagnostics to research additive technologies of surface modification by high-concentrated energy sources.

### Nano and Micro Fluid

- (4) **ID 89** A.A. Yagodnitsyna, A.V. Kovalev, A.V. Bilsky (Russia) Visualization and velocity field measurements in immiscible liquid-liquid flow in microchannels.
- (5) **ID 132** V.M. Aniskin, A.A. Maslov, N.A. Maslov, I.S. Tsirulnikov, K.A. Muchin, M.O. Rudishin (Russia) LIF visualization of sonic plane microjets.
- (6) **ID 169** A.B. Balbutskiy, V.V. Kozlov, G.V. Kozlov (Russia) Experimental study on the influence of the acoustic field on the stability and structure of impinging microjets.

- (7) **ID 159** A.P. Zavjalov, V.V. Syzrantsev, S.P. Bardakhanov (Russia) Viscosity of nanofluids.
- (8) **ID 153** D.Yu. Trufanov (Russia) Separation nanoparticles in suspension under the influence of the volume force.
- (9) **ID 135** K.V. Zobov (Russia) Usage of the laser beam scattering for the analysis of nanopowder sol.
- (10) **ID 151** S.A. Lkhasaranov, V.V. Syzrantsev, L.A. Urkhanova (Russia) Rheology of nano-modified cement pastes and mortars.

#### **Flow Control**

- (11) **ID 122** V.V. Kozlov, A.V.Kryukov, I.D. Zverkoy (Russia) Flow separation elimination on subsonic plain wing via applying of complex undulations.

15-30 COFFEE

17-00 CLOSING CEREMONY