Tuesday, November 8

8:30  Registration

Room A

8:45-9:50  Exhibitors’ Presentation
*Chair: Nobuie Konishi (Nobby Tech Ltd.), Masato Furuse (Photoron Ltd.)
and Yasuhiro Sasaki (nac Image Technology Inc.)*

9:50-10:10  Coffee Break

10:10-11:40  High-Speed Biomedical Imaging I
*Chair: Katsumasa Fujita (Osaka University) and T.G. Etoh (Osaka University)*

10:10  2A-A01  Yuji Sasaki  The University of Tokyo  Protein Motions with X-ray Single Molecule Observations (Invited) ... 75

10:40  2A-A02  Geoffrey H. Campbell, Melissa K. Santala, and Joseph T. McKeown  Lawrence Livermore National Laboratory  Time resolved electron microscopy for in situ experiments (Invited) ... 76

11:10  2A-A03  Stephan Nickell, Anna Lena Eberle, Dirk Zeidler  Carl Zeiss  MultiSEM - the world’s fastest scanning electron microscope (Invited) ... 77

11:40-13:00  Lunch (Izumi)

13:00-14:30  High-Speed Biomedical Imaging II
*Chair: Geoffrey H. Campbell (LLNL, USA) and Wei Zhao (Xi’an Institute of Optics and Precision Mechanics)*

13:00  2A-P01  Haruo Sugi  Teikyo University  Electron Microscopic Recording of Myosin Head Power Stroke Producing Muscle (Invited) ... 78

13:30  2A-P02  Katsumasa Fujita  Osaka University  Raman microscopy for imaging cellular dynamics (Invited) ... 79

14:00  2A-P03  Toshio Ando  Kanazawa University  High-speed Atomic Force Microscopy for Observing Protein Molecules (Invited) ... 80

14:30-15:00  Coffee Break, Poster Posting

15:00-16:40  Poster Short Presentations II (3 min./poster)
*Chair: Mayuko Koga (Hyogo Pref. University) and Alessio Morace (Osaka University)*

2P-01  T. Baba, K. Ikezaki, H. Sekiguchi, T. Kubo, Y. C. Sasaki  The University of Tokyo  X-ray imaging of single protein’s motion with Ultra-high speed and accuracy ... 81

2P-02  Wei Shi, Hong Liu, Zhijin Yan, Ming Xu, Lei Hou, Ting Shang  Xi’an University of Technology  Research progress on linear avalanche multiplication GaAs terahertz emitter ... 82

2P-03  Ming Xu, Kangkang Bian, Yu Ji, Wei Shi, Hong Liu, Lei Hou  Xi’an University of Technology  Research on Synchronization of 2 Parallel GaAs Photoconductive Semiconductor Switches Excited by 2 Laser Diodes ... 83

2P-04  B. Hosseini, H. Moosavi-Nejad, S.F. Moosavi-Nejad, H. Akiyama, H. Hosseini  Kumamoto University  Microscopic Observation of Effects of Shock Waves on Cancer Cells ... 84

2P-05  Truc Hung NGO, Yen-Wei CHEN, Naoki MATSUSHIRO  Ritsumeikan University  A Fast Dynamic, Three-dimensional Facial Structure Reconstruction for Quantitative Assessment of Facial Paralysis ... 85

2P-06  Kazuya Seo, Koji Kawabata  Yamagata University  The launch conditions of a discus and the size optimization on the basis of the launch condition ... 86

2P-07  Ryusuke Noda, Toshiyuki Nakata, Hao Liu, Huihe Qiu, Wei Shyy  The Hong Kong University of Science and Technology  Filming and modeling three-dimensional kinematics of insect flapping wings and body ... 87
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2P-08 Li YongPing
Ningbo Dahongying University
Rapid Tree Model Reconstruction for Fruit Harvesting Robot System Based on Binocular Stereo Vision

2P-09 M. Nishida, S. Furuya, K. Yamada
Nagoya Inst. Of technology
A Study on High Accuracy Measurement of Dynamic Stress-Strain Curves Using a Split-Hopkinson Tension Bar

2P-10 T. Goji Ethoh, Q. A. Nguyen, K. Shimonomura, Y. Le Thy, Y. Kamakura
Osaka University
The Upper-bound Frame Rate of Silicon Image Sensors

2P-11 Akihito Komazawa
Shizuoka University
A Time-of-Flight Range Image Sensor Using High-Speed 4-Tap Lock-in Pixels

2P-12 V.B. Lebedev, A.A. Demchenko, G.G. Feldman, V.N. Krutikov
All-Russian Research Institute for Optical and Physical Measurements (VNIIOF)
Miniaturization of high-speed streak cameras for fast running processes recording

2P-13 Jinshou Tian, Tao Wang, Dandan Hui, Jun Zhang, Shaorong Chen, Hui Jia
Xi’an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences
Small-size Streak Tube for Imaging Lidar

2P-14 Yosuke Miki, Yonghee Lee, Ryosuke Yonesaka, Peng Xia, Masato Shinomura, Yasuhito Awatsuji, Kenzo Nishio
Kyoto Inst. of Technology
Recording of high-speed and high-dynamic-range motion picture using a polarization imaging camera

Hamamatsu Photonics K.K.
A review of ultra-high-speed imaging and applications using streak cameras

Osaka University
Radiation Resistance and Improved Emission Lifetimes of Hydrothermal-grown Bulk ZnO Single Crystals After Gamma-ray Irradiation

2P-17 P.I. Konovalov, A.S. Dolotov, R.I. Nurtdinov, M.P. Vikulin
VNIIA
New method of electron scrubbing of microchannel plates

VNIIA
New generation of streak tubes producing by VNIIA

2P-19 H. Omata Y. Akahoshi, Y. Suzuki K. Okubo T. Koura
Kyushu Inst. of Technology
Measure load and pressure of gelatin projectile by using high-speed camera

2P-20 Megumi Kageyama, Yusuhito Akahoshi, Takao Koura, Takahiko Mataki, Yukihito Kitazawa, Kazuo Shimamura, Taku Isumiyama, Kazue Hashimoto, Satomi Kawamoto, Junichi Aoyama
Kyushu Inst. of Technology
Evaluation of penetration characteristics of harpoon tips for capturing space debris and development of debris capture gun

2P-21 Takanari Sakai, Koki Umeda, Satoshi Kinoshita, Keiko Watanabe
Ritsumeikan University
Plasma Measurement by Optical Visualization and Triple Probe Method under High-speed Impact

2P-22 A. Mori, S. Tanaka, K. Hokamato
Sojo University
Optical Observation of Metal Jet Generated by High Speed Inclined Collision

2P-23 K. Ohtani and T. Ogawa
Tohoku University
Underwater Expansion Wave Focusing by Reflecting at the Air Interface
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2P-24  J Nicholls  QinetiQ Australia  High Frame Rate 3D Motion Analysis of Large Scale Events  


2P-28  Yewang Chen, Xu Wu, Shuangchen Ruan, Chunyu Guo, Weiqi Li, Jun Yu, RuoHeng Luo, and Yihuai Zhu  Shenzhen University  Ultra-flat and ultra-broadband supercontinuum generation in photonic crystal fiber pumped by noise-like pulses  

2P-29  Zhenhua Wang, Wenhua Li, Min Luan, Qiang Wu, Xinzheng Zhang, Jingjun Xu  Nankai University  High efficient background-free transient beam deflection optical gating for broadband femtosecond time-resolved spectroscopy  

2P-30  Jun Liu, Xiong Shen, Ruxin Li  Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences  Transient-grating self-referenced spectral interferometry for sub-nanojoule femtosecond pulses characterization and 2DES  

2P-31  S. Tamura, K. Yamamoto, J. I. Khandaker, W. Ma, Z. Kelgenbaeva, T. Mashima  Kumamoto University  Synthesis procedure of CuZnS nanoparticles by pulsed plasma in liquid method  

2P-32  G. N. Hall, N. Izumi, R. Tommasini, J. P. Holder, Q. L. Landen, D. Hargrove, P. M. Bell, D. K. Bradley, et al  Lawrence Livermore National Laboratory  Spatial Resolution and Detective Quantum Efficiency measurements of AXIS; an instrument for Imaging Compton radiographs at the National Ignition Facility  


2P-34  Manabu Tanaka, Tomoyuki Imatsuji, Taro Hashiume, Takayuki Watanabe, Hisao Nagai, Takeshi Koivasaki, Takafumi Okuma  Kyushu University  Investigation of Temperature Fluctuation Phenomena in Multiphase AC Arc by High-Speed Camera with Bandpass Filter Optics  

16:40-17:30 Poster View II(Room A&B)
### Room B

**10:10-11:50 Explosion, Detonation and the Applications**

*Chair: Shiro Kubota (AIST) and Tomotaka Homae (National Institute of Technology, Toyama College)*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Affiliation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:10</td>
<td>2B-A01</td>
<td>M. Asahara, T. Saburi, Y. Wada, S. Kubota, T. Kubota, T. Ando, T. Miyasaka</td>
<td>Gifu University</td>
<td>Simultaneous Direct and Shadowgraph Photographs of Self-Ignition to Flame Development with High-Pressure Hydrogen flow in a rectangular tube</td>
</tr>
<tr>
<td>10:30</td>
<td>2B-A02</td>
<td>T. Biswal, S. Dutta</td>
<td>Defence Research &amp; Development Organisation</td>
<td>Analysis of gun barrel stability during launch dynamics through high-speed imaging</td>
</tr>
<tr>
<td>10:50</td>
<td>2B-A03</td>
<td>T. Saburi, M. Yoshida, S. Kubota</td>
<td>AIST</td>
<td>Dynamic Strain Distribution of FRP Plate under Blast Loading</td>
</tr>
<tr>
<td>11:10</td>
<td>2B-A04</td>
<td>T. Homae, Y. Sugiyama, K. Wakabayashi, T. Matsumura, Y. Nakayama</td>
<td>National Institute of Technology, Toyama College</td>
<td>Interaction between Explosion of Explosives and Water in a Tube</td>
</tr>
<tr>
<td>11:30</td>
<td>2B-A05</td>
<td>S. Kubota, T. Saburi, K. Nagayama</td>
<td>AIST</td>
<td>High Speed Photography for Explosion Phenomena of High Explosives</td>
</tr>
</tbody>
</table>

**11:50-13:00 Lunch (Izumi)**

**13:00-14:10 High-speed Image Sensors/Cameras and Imaging Systems I**

*Chair: Kazuhiro Shimonomura (Ritsumeikan University) and Renato Turchetta (Rutherford Appleton Laboratory)*

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<tr>
<td>13:00</td>
<td>2B-P01</td>
<td>Tatsuya Yaoita</td>
<td>Ken Automation, Inc.</td>
<td>Visualization of high-speed phenomena using high-speed infrared camera (Invited)</td>
</tr>
<tr>
<td>13:50</td>
<td>2B-P03</td>
<td>Hiroyuki Usui</td>
<td>Nobby Tech. Ltd.</td>
<td>Development of ratio temperature radiometry system by synchronizing a high-speed color camera and a middle-speed twin NIR image sensor camera.</td>
</tr>
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### Room C

**10:10-11:50 Spray and Combustion**

*Chair: Manabu Fuchihata (Kindai University) and Yasuo Moriyoshi (Chiba University)*

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<tbody>
<tr>
<td>10:10</td>
<td>2C-A01</td>
<td>N. Kawahara, K. Kintaka, E. Tomita</td>
<td>Okayama University</td>
<td>High-speed visualization of fuel spray impingement in the near-wall region using a DISI injector</td>
</tr>
<tr>
<td>10:30</td>
<td>2C-A02</td>
<td>Yasuo Moriyoshi, Tatsuya Kuboyama</td>
<td>Chiba University</td>
<td>Elucidation of Phenomena in Internal Combustion Engines by High-Speed Imaging Techniques</td>
</tr>
<tr>
<td>10:50</td>
<td>2C-A03</td>
<td>Takafuli Yamazaki, Tsuneyoshi Matsuoka, Yuji Nakamura</td>
<td>Toyohashi University of Technology</td>
<td>High-speed Imaging of Temporal Thermal Field in Thermoplastic Material during Flame Spread</td>
</tr>
<tr>
<td>11:10</td>
<td>2C-A04</td>
<td>M. Fuchihata, A. Salaihme, T. Hirasawa, K. Saito</td>
<td>Kindai University</td>
<td>Experimental and frequency analysis validation of numerical simulation results</td>
</tr>
<tr>
<td>11:30</td>
<td>2C-A05</td>
<td>J. Hayashi, N. Nakatsuka, I. Morimoto, F. Akamatsu</td>
<td>Osaka University</td>
<td>Time evolution of the high temperature region formed by laser induced breakdown and of the development of the flame kernel in the constant volume combustion vessel</td>
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**11:50-13:00 Lunch (Izumi)**
**Flow Visualization I**  
*Chair: Herbert Olivier (SWL, RWTH-Aachen) and Toshiharu Mizukaki (Tokai University)*

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<tr>
<td>13:00</td>
<td>2C-P01</td>
<td>Hannah Kittel, I. V. Roisman, C. Tropea</td>
<td>Technical Univ. of Darmstadt</td>
<td>Droplets Make a Splash</td>
</tr>
<tr>
<td>13:20</td>
<td>2C-P02</td>
<td>Y. Tatsumi, S. Murata, H. Nashio, Y. Tanaka</td>
<td>Kyoto Inst. of Technology</td>
<td>Three-dimensional structure of longitudinal vortex past a rotating tire</td>
</tr>
<tr>
<td>13:40</td>
<td>2C-P03</td>
<td>SK Karthick and G Jagadeesh</td>
<td>Indian Institute of Science-Bangalore</td>
<td>Supersonic Gaseous Mixing</td>
</tr>
<tr>
<td>14:00</td>
<td>2C-P04</td>
<td>Koju HIRAKI, Daikai ZAITSU, Yuma YANAGA, Kota TANAKA, Harald KLEINE, Satoshi NONAKA</td>
<td>Kyushu Inst. of Technology</td>
<td>Flow Visualization Around A Rotating Body In A Wind Tunnel</td>
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**Room D**

**High-speed Physics and Chemistry I**  
*Chair: Andrei Nomerotski (Brookhaven National Laboratory) and Zenghu Chang (University of Central Florida)*

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<tbody>
<tr>
<td>10:10</td>
<td>2D-A01</td>
<td>Zhiyi Wei</td>
<td>Institute of Physics, Chinese Academy of Science</td>
<td>Manipulate light matter interaction with attosecond laser pulse (Invited)</td>
</tr>
<tr>
<td>10:40</td>
<td>2D-A02</td>
<td>Yasuo Nabekawa, Tomoya Okino, Katsumi Midorikawa</td>
<td>RIKEN</td>
<td>Probing attosecond dynamics of molecules by an intense a-few-pulse attosecond pulse train (Invited)</td>
</tr>
<tr>
<td>11:10</td>
<td>2D-A03</td>
<td>Shin-ichi Adachi</td>
<td>KEK</td>
<td>Visualizing chemical reactions in solution with femtosecond X-ray scattering (Invited)</td>
</tr>
</tbody>
</table>

**Lunch (Izumi)**

**High-speed Physics and Chemistry II**  
*Chair: Shin-ichi Adachi (KEK) and Yasuo Nabekawa (RIKEN)*

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<thead>
<tr>
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<tbody>
<tr>
<td>13:00</td>
<td>2D-P01</td>
<td>Andrei Nomerotski</td>
<td>Brookhaven National Laboratory</td>
<td>TimepixCam: fast optical imager with time stamping (Invited)</td>
</tr>
<tr>
<td>13:30</td>
<td>2D-P02</td>
<td>Zenghu Chang</td>
<td>University of Central Florida</td>
<td>Ultrabroadband Isolated Attosecond X-ray Pulses (Invited)</td>
</tr>
<tr>
<td>14:00</td>
<td>2D-P03</td>
<td>Ulrich Trunk, on behalf of the AGIPD consortium</td>
<td>DESY-Hamburg</td>
<td>AGIPD: A multi-Megapixel, multi-Megahertz X-Ray Camera for the European XFEL (Invited)</td>
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