



JSPS Asian CORE Workshop
on
Next Generation Ultra-Short Pulse Lasers
for High Field and Ultrafast Science

March 2nd - 4th, 2011

RIKEN Cooperation Center, 3F, W321

Chair Ken-ichi Ueda (The University of Electro-Communications)

Co-Chairs Kaoru Yamanouchi (The University of Tokyo)
Katsumi Midorikawa (RIKEN)
Yoshiaki Kato (The Graduate School for Creation of New
Photonics Industries)

Sponsor Japan Society for the Promotion of Science (JSPS)

Co-Sponsors Institute for Laser Science, The University of Electro-Communications
Extreme Photonics Research Group, RIKEN
CORAL, The University of Tokyo
Institute of Laser Engineering, Osaka University
Advanced Photon Research Center, JAEA

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Program

2 March (Wednesday)

18:00-20:00 **Reception** (Cooperation Center 5F, W524)

3 March (Thursday)

(Cooperation Center 3F, W321)

Opening

09:00-09:10 Kohei TAMAO (Director, RIKEN Advanced Science Inst.)

Welcome address

S-1: Overview

09:10-09:40 Ken-ichi UEDA (UEC, Japan)

“Route toward Reality” Critical issues on ultra-high intensity solid state lasers

09:40-10:10 Ruxin LI and Zhizhan XU (SIOM, China)

Recent development of ultrafast intense laser technologies at SIOM

10:10-10:40 Chang Hee NAM (KAIST, Korea)

CEP stabilization of ultra-high power femtosecond lasers

10:40-11:10 M. KRISHNAMURTHY (TIFR, India)

Neutral atoms and negative ions accelerated up to MeV from a dense nanocluster media

Coffee break (20 min)

S-2: Ultrafast Molecular Science (1)

11:30-12:00 Reika KANYA and Kaoru YAMANOUCHI (U. Tokyo, Japan)

Observation of laser-assisted electron scattering in femtosecond intense laser fields

12:00-12:20 Huailiang XU, Tomoya OKINO and Kaoru YAMANOUCHI (Jilin U., China / U Tokyo, Japan)

Ultrafast delocalization of hydrogen atoms in allene in intense laser fields

12:20-12:40 Kanaka Raju PANDRI and Masayuki KATSURAGAWA (UEC, Japan)

Adiabatic Raman process and its applications into ultrafast laser science

Lunch (60 min)

S-3: High Field and Plasma Physics

- 13:40-14:10 Zhengming SHENG and Jie ZHANG (SJTU, China)
Recent activities on ultrafast laser-matter interaction at SJTU
- 14:10-14:40 Kiminori KONDO (JAEA, Japan)
High power laser science at JAEA
- 14:40-15:10 Yutong LI , et al. (IOP, China)
Recent progress of high energy density physics at IOP
- 15:10-15:30 I. W. Choi, et al. (GIST, Korea)
Recent particle acceleration experiments using the ultra-high power Ti:sapphire laser system at APRI, GIST
- 15:30-15:50 Alexander S. PIROZHKOV et al. (JAEA, Japan)
New mechanism of relativistic high harmonic generation in gas jet targets
- 15:50-16:10 Masaharu NISHIKINO (JAEA, Japan)
Novel applications using X-ray laser and laser plasma X-ray pulse

Coffee break (20 min)

S-4: Extreme Photonics Research at RIKEN

- 16:30-18:15 Katsumi MIDORIKAWA (RIKEN)
Extreme Photonics at RIKEN
Laboratory Tour
- 18:30-20:00 **Banquet** (Hirosawa Club)

4 March (Friday)

(Cooperation Center 3F, W321)

S-5: High Intensity / Ultrafast Light Sources

- 09:00-09:30 Noriaki MIYANAGA, Junji KAWANAKA, et al. (Osaka U., Japan)
Technological progress on sub-Exa Watt laser
- 09:30-10:00 Zhiyi WEI (IOP, China)
Development of PW laser facility and attosecond laser source for the researches on frontier sciences
- 10:00-10:20 T. J. Yu, et al. (GIST, Korea)
Dual beam, dual mode operation of a Petawatt Ti:sapphire laser system for multi-purpose experiments and its applications
- 10:20-10:50 Dong Eon KIM (POSTECH, Korea)
Recent establishment of Max Planck Center for Attosecond Science and research activities at CASTECH, POSTECH

10:50-11:10 Hitoki YONEDA (UEC, Japan)
Nonlinear optical phenomena with ultra-fast intense EUV FEL laser pulse

Coffee Break (20 min)

S-6: Ultrafast Molecular Science (2)

11:30-12:00 Hirohiko KONO (Tohoku U., Japan)
First-principles simulation of laser control of nanocarbons

12:00-12:30 Yunquan LIU (Peking U, China)
Few-body dynamics of atoms and molecules in strong laser fields

12:30-13:00 Hiroyuki KATSUKI (IMS, Japan)
Wave packet interferometry in solid para-hydrogen

Lunch (60 min)

S-7: New Approaches for the Next Generation Lasers

14:00-14:30 Akira SHIRAKAWA (UEC, Japan)
Frontier and future of high power fiber lasers

14:30-15:00 Takagimi YANAGITANI (Konoshima, Japan)
Optical ceramics at Konoshima Chemical

15:00-15:20 Jun DONG (Xiamen U, China)
Progress of laser-diode pumped heavy doped Yb:YAG ceramics lasers

15:20-15:40 Jian ZHANG (SIC, China/ Nanyang T U, Singapore)
Transparent rare earth doped YAG ceramics for mid-infrared solid state lasers

Coffee break (20 min)

S-8: Round Table Discussion

16:00-17:30 All participants
Open discussions on the future of Asian collaboration on high-field and ultrafast science.

Closing

17:30-17:40 K. Ueda,