



Second MIPT-UEC Joint Workshop on Optical Science

October 16-20, 2014

University of Electro-Communications
Chofu, Tokyo, Japan

Book of Abstracts

Organized by
The University of Electro-Communications (UEC)
and
Moscow Institute of Physics and Technology (MIPT)

Program

Date: October 16-20, 2014

Place: The University of Electro-Communications, Building E-3, 301 (Multimedia Hall)

Part 1 Oct. 16 (Thu) (10:00 ~ 12:10)

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|---------------|--|----------------------------|
| 10:00 – 10:10 | Opening Remarks | Takashi Fukuda (UEC) |
| 10:10 – 10:20 | Introduction of MIPT | Igor E. Bulyzhenkov (MIPT) |
| 10:20 – 10:40 | Round University Ranking as a traceable system for evaluation of universities performance | Igor E. Bulyzhenkov (MIPT) |
| 10:40 – 11:10 | Ultrafast atomic and molecular dynamics under intense laser fields | Toru Morishita (UEC) |
| 11:10 – 11:40 | On the Mechanism of Angular Momentum Transfer in Electronic Excitation of Molecules by Electron Impact in a low-temperature plasma | Sergey Yu Savinov (MIPT) |
| 11:40 – 12:10 | Control of frequency correlations between photons via spontaneous parametric down-conversion | Ryosuke Shimizu (UEC) |
| 12:10 – 14:00 | Lunch | |

Part 2 Oct. 16 (Thu) (14:00 ~ 15:50)

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|---------------|--|---------------------|
| 14:00 – 14:30 | Quantum hydrodynamics of ultracold atoms | Hiroki Saito (UEC) |
| 14:30 – 14:50 | Dynamics of ultracold spin-polarized fermions in amplitude-modulated parabolic lattice | Shun Ohgoda (UEC) |
| 15:10 – 15:30 | Break | |
| 15:30 – 15:50 | Studies of Highly Charged Ions at ILS/UEC | Erina Shimizu (UEC) |

Part 3 Oct. 17 (Fri) (10:00 ~ 12:40)

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|---------------|--|----------------------------|
| 10:00 – 10:30 | Resonant electron-transfer processes in collisions of Rydberg atoms with neutral particles | Vladimir S. Lebedev (MIPT) |
| 10:30 – 11:00 | Collisional properties of ultracold atoms and ions | Takashi Mukaiyama (UEC) |
| 11:00 – 11:40 | Break (Poster) | |
| 11:40 – 12:00 | Destruction of circular Rydberg states in thermal collisions with atoms possessing small electron affinities | Elena Mironchuk (UEC) |
| 12:00 – 12:20 | Near-deterministic preparation of a single atom in an optical microtrap | Hikaru Tamura (UEC) |
| 12:20 – 12:40 | The use of optical pumping for measuring polarizabilities of rubidium atoms | Dmitry Tregubov (MIPT) |

12:40 – 14:00 Lunch

Part 4 Oct. 17 (Fri) (14:00 ~ 15:40)

- 14:00 – 14:30 Diagnostics of high temperature plasmas in controlled fusion devices using x-ray spectra of highly-charged tungsten and molybdenum Inga Tolstikhina (MIPT)
- 14:30 – 15:00 Highly frequency-stabilized laser and its applications Mitsuru Musha (UEC)
- 15:00 – 15:20 Design of a page data pattern for coaxial holographic optical correlation system
Kanami Ikeda (UEC)
- 15:20 – 15:40 Laser dyes for diode pumping Olga Burdukova (MIPT)
- 15:40 – 17:00 Lab tour

18:00 – 20:00 Banquet

Part 5 Oct. 18 (Sat) (9:30 ~ 11:50)

- 9:30 – 10:00 Are mass and charge point singularities or sharp energy distributions ?
Igor E. Bulyzhenkov (MIPT)
- 10:00 – 10:30 Ultrahigh-accuracy optical metrology using optical frequency combs
Kaoru Minoshima (UEC)
- 10:30 – 10:50 Break
- 10:50 – 11:10 Optical frequency divider and its application in ultra-broadband Raman comb generation
Nurul Sheeda Suhaimi (UEC)
- 11:10 – 11:30 Towards thulium optical clock Artem Golovizin (MIPT)
- 11:30 – 11:50 Laser cooling of ^{87}Rb using $5S_{1/2}$ - $6P_{3/2}$ transition Yuta Yoshino (UEC)

Part 6 Oct. 20 (Mon) (10:00 ~ 12:10)

- 10:00 – 10:30 Development of mode-locked Tm doped fiber and solid state lasers at the wavelength range of 2 μm in ILS
Masaki Tokurakawa (UEC)
- 10:30 – 11:00 Rapid passage of absorption line using the fast frequency-tuning laser:
Self-media radiation Sergey Andreev (MIPT)
- 11:00 – 11:30 Rapid passage of absorption line using the fast frequency-tuning laser:
Application for high absorption coefficient measurements
Nikolay Pestovsky (MIPT)
- 11:30 – 12:00 Break (Poster)
- 12:00 – 12:20 Potential of ceramic materials for thin-disk lasers Hiroaki Nakao (UEC)
- 12:20 – 12:40 Methods of reference signal in the multipass laser scheme for high-sensitive absorption measurements in optically dense medium Alexandr Zaitsev (MIPT)

12:40 – 14:00 Lunch

Part 7 Oct.20 (Mon) (14:00 ~ 15:40)

14:00 – 14:30 Manipulating Cooper pairs by using linear arrays of small Josephson junctions

Hiroshi Shimada (UEC)

14:30 – 15:00 TBA

Nobuhito Kokubo (UEC)

15:00 – 15:20 Optical vortex generation using thermal nonlinearity of nematic liquid crystal

Dmitry Korshunov (MIPT)

15:20 – 15:40 Development of x-ray laser excited by XFEL

Kazunori Nagamine (UEC)

15:40 – 17:00 Lab tour