

CROPS 2017

Young scientists Chinese-Russian Optics & Photonics Symposium

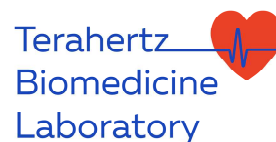
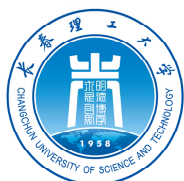
November, 27 –
December, 6

St.Petersburg



ITMO UNIVERSITY

In closest cooperation with:



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Welcome to CROPS-2017!



A warm welcome is never being complete without warm words. It is with great pleasure that we welcome you all in Saint Petersburg. It is with immense pleasure that I invite you all to be a part of this event. I would like also to say that without your warmth and support, this event would be incomplete so take part in all the activities with heart and soul. Hope you will enjoy our hospitality.

Dr. Mikhail K. Khodzitsky

Organizing committee

Chief of Terahertz Biomedicine Laboratory

Advisor of ITMO Optical Student Chapter

Monday. November, 27

ITMO University. Lomonosova st., 9. Room 1221.

09:30 – 10:00 Gathering people to the registration

10:00 – 12:00 Registration process

12:00 – 13:00 Opening ceremony

Organization Committee

Welcome to ITMO University!

Dr. Anna Baldycheva (University of Exeter, UK)

***Graphene and 2D Materials for Next Generation Electronics,
Opto-Electronics and Photonics***

13:00 – 14:00 Lunch

14:30 – 18:00 City tour

18:30 – 20:30 Welcome party

Tuesday. November, 28

ITMO University. Kadetskaya line V.I., 3-b. Conference hall.

- 10:00 – 11:00 Invited lecture
Dr. Le Gao (Changchun Univ. of Science and Technology, China)
*Quantitative Determination of Biomolecule Levels
with Biolayer White Light Interferometry*
- 11:00 – 11:15 Coffee break
- 11:15 – 12:15 Invited lecture
Dr. Zhang Rui (Beijing Institute of Technology, China)
*A novel continuous-terahertz-wave molecular imaging method
for biomedical applications*
- 12:15 – 12:30 Coffee break
- 12:30 – 13:30 Invited lecture
Dr. Alexander Kukaev (St.Petersburg Electrotechnical Univ., Russia)
Laser gyro: development history and modern applications
- 13:30 – 14:30 Lunch
- 14:30 – 16:10 Students' talks
Feng Shijia (Beijing Institute of Technology, China)
*An optimized design of miniaturized terahertz
time-domain spectrometer*
Bogdan Sokolenko (V.I. Vernadsky Crimean Federal Univ., Russia)
Optical vortex profilometry with nanoscale resolution
XinMeng Zhang (Changchun Univ. of Science and Technology, China)
*Demonstration of free space optical transmission in turbulence
based on partially coherent source*
Egor Litvinov (ITMO University, Russia)
*Epsilon-near-zero metal-dielectric composite
for terahertz frequency range*
Yuxiang Wen (Nankai University, China)
Portable spectrometer system based on microaxicave
- 16:10 – 16:40 Coffee break

ITMO University. Kadetskaya line V.I., 3-b. Conference hall.

- 16:40 – 19:00 Lab tour
Dr. Vladimir Vinogradov
*Solution Chemistry of Advanced Materials and Technologies
International laboratory*

Wednesday. November, 29

ITMO University. Lomonosova st., 9. Room 1216.

- 10:00 – 11:00 Invited lecture
Dr. Mikhail Khodzitsky (ITMO University, Russia)
Terahertz photonics for biomedical applications
- 11:00 – 12:00 Poster session + Coffee break
- 12:00 – 13:00 Invited lecture
Dr. Andrey Dunaev (Orel State Univ. named after I.S. Turgenev, Russia)
Optical non-invasive technologies for study hemodynamics and metabolic activity of human tissues
- 13:00 – 14:00 Lunch
- 14:00 – 15:00 Invited lecture
Dr. Dmitri Lioubtchenko (KTH Royal Institute of Technology, Sweden)
Novel technology developments at a dielectric rod waveguide to cover THz gap
- 15:00 – 15:15 Coffee break
- 15:15 – 16:15 Students' talks
Ksenia Kandurova (Orel State Univ. named after I.S. Turgenev, Russia)
Application and possibilities of fluorescence spectroscopy method for intraoperative analysis of abdominal cavity organs tissues during minimally invasive interventions
Sviatoslav Gusev (ITMO University, Russia)
Blood glucose concentration sensing using THz spectroscopy
Elena Zharkikh (Orel State Univ. named after I.S. Turgenev, Russia)
Laser Doppler flowmetry and spectroscopy methods in assessment of microvascular and metabolic complications in diabetes

ITMO University. Lomonosova st., 9. Room 1223.

- 16:15 – 16:45 Coffee break
- 16:45 – 17:45 Special Russian-Chinese lecture
Dr. Konstantin Grebenyuk (Saratov State Univ., Russia)
Chinese for Engineers: Prospects and Opportunities
- 17:45 – 18:00 Coffee break
- 18:00 – 19:00 Special Russian-Chinese lecture
Dr. Konstantin Grebenyuk (Saratov State Univ., Russia)
Chinese for Engineers: How to start learning Chinese

Thursday. November, 30

Tydex Optics Company. Domostroitelnaya str., 16.

10:00 – 14:00 Visit to local photonics manufacturer
Dr. Grigory Kropotov
Tydex Optics
THz optics - from development to manufacturing

ITMO University. Kadetskaya line V.I., 3-b

14:00 – 15:00 Lunch

15:00 – 16:40 Students' talks
Liliia Dvoretckaja (St.Petersburg Academic Univ., Russia)
Influence of silicon resonant particles on the surface plasmon-polaritons excitation efficiency
Evgeniya Seryogina (Orel State Univ. named after I.S. Turgenev, Russia)
Assessment of the influence of different concentrations of zinc on the brain biochemical processes in rat model
Maxim Masyukov (ITMO University, Russia)
Chiral periodic structures with polarizing effects
Ekaterina Sukhina (ITMO University, Russia)
Investigation of femtosecond infrared radiation influence on glial cells
Igor Kozlov (Orel State Univ. named after I.S. Turgenev, Russia)
Simultaneous assessment of blood flow rhythmic oscillation by using of laser Doppler flowmetry and videocapillaroscopy methods

16:40 – 17:00 Coffee break

17:00 – 20:00 University and labs tour
Dr. Mikhail Khodzitsky & Petr Demchenko
Terahertz Biomedicine
Laboratory for THz radiation applications investigation
Alexey Schekoldin
FabLab Technopark
Laboratory for implementation of students' personal projects
Dr. Sergey Stafeev
Optimus
Own optical museum of ITMO University

Friday. December, 1

ITMO University. Lomonosova st., 9

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| 10:00 – 11:00 | Invited lecture
Dr. Xue Changxi (<i>Changchun Univ. of Science and Technology, China</i>)
<i>Imaging Diffractive Optics and Fabrication Technology</i> |
| 11:00 – 11:15 | Coffee break |
| 11:15 – 13:00 | Business Photonics workshop
Representatives of Optical Industry |
| 13:00 – 14:00 | Lunch |
| 14:00 – 15:00 | Invited lecture
Dr. Weiwei Liu (<i>Nankai University, China</i>)
<i>Strong confinement of THz pulse by femtosecond laser filamentation</i> |
| 15:00 – 15:15 | Coffee break |
| 15:15 – 16:15 | Invited lecture
Dr. Weiwei Liu (<i>Nankai University, China</i>)
<i>Application of ultrafast laser in atmospheric remote sensing and environmental exploration</i> |
| 16:15 – 16:30 | Coffee break |
| 16:30 – 17:00 | Chapter activity meeting &
Photonics career development workshop |
| 17:00 – 17:30 | Best student Paper/Poster/Talk Award |

Saturday. December, 2

St.Petersburg

All day Museums visiting / Free time

Sunday. December, 3

St.Petersburg

All day Museums visiting / Free time

Monday. December, 4

ITMO University. Kadetskaya line V.I., 3-b

- 10:00 – 11:45 Master class
***Petr Demchenko & Dr. Mikhail Khodzitsky** (ITMO University, Russia)
Experimental THz Photonics (group 1)
Dr. Ilya Anoshkin* (KTH Royal Institute of Technology, Sweden)
*Carbon nanotubes, fullerenes and graphene: Structure,
basics of preparation and properties (group 2)*
- 11:45 – 12:15 Coffee break
- 12:15 – 14:00 Master class
***Petr Demchenko & Dr. Mikhail Khodzitsky** (ITMO University, Russia)
Experimental THz Photonics (group 2)
Dr. Ilya Anoshkin* (KTH Royal Institute of Technology, Sweden)
*Carbon nanotubes, fullerenes and graphene: Structure,
basics of preparation and properties (group 1)*
- 14:00 – 15:00 Lunch
- 15:00 – 16:00 Master class
***Dr. Ilya Anoshkin** (KTH Royal Institute of Technology, Sweden)
Optical and electrical properties of carbon nanotubes
(with demonstration)*
- 16:00 – 16:15 Coffee break
- 16:15 – 17:15 Master class
***Dr. Ilya Anoshkin** (KTH Royal Institute of Technology, Sweden)
Chemical properties of carbon nanomaterials*
- 17:15 – 17:30 Coffee break
- 17:30 – 19:00 Master class
***Igor Kozlov** (Orel State Univ. named after I.S. Turgenev, Russia)
Experimental measurements of the blood microcirculation system*

Tuesday. December, 5

Almazov National Medical Research Center. Parhomenko ave., 15-b

- 10:00 – 10:10 Welcome from the hosting institutions
Dr. Michael Galagudza, Dr. Michael Khodzitsky & Dr. Elena Grineva
- 10:10 – 11:00 Lecture
Dr. Michael Galagudza (Almazov Medical Research Center, Russia)
Experimental research at Almazov Centre
- 11:00 – 12:00 Lecture
Dr. Michael Galagudza (Almazov Medical Research Center, Russia)
Animal experiments in the era of translational medicine
- 12:00 – 13:00 Lecture
Dr. Dmitry Sonin (Almazov Medical Research Center, Russia)
Fluorescent studies in biomedical research
- 13:00 – 14:00 Lunch
- 14:00 – 15:30 Lab tour
Dr. Marina Vasyutina (Almazov Medical Research Center, Russia)
Laboratories and animal facilities
- 15:30 – 16:00 Master class
Dr. Dmitry Korolev (Almazov Medical Research Center, Russia)
Fluorescent imaging of nanoparticles and cells (group 1)
Evgenia Pochkaeva (Almazov Medical Research Center, Russia)
Laser interference microscopy (group 2)
- 16:00 – 16:30 Master class
Dr. Dmitry Korolev (Almazov Medical Research Center, Russia)
Fluorescent imaging of nanoparticles and cells (group 2)
Evgenia Pochkaeva (Almazov Medical Research Center, Russia)
Laser interference microscopy (group 1)
- 16:30 – 17:00 Master class
Nadezhda Pechnikova (Almazov Medical Research Center, Russia)
Perfusion of the isolated heart according to Langendorff (group 1)
Polina Alekseeva (Almazov Medical Research Center, Russia)
Toxicity testing in Zebrafish embryos (group 2)
- 17:00 – 17:30 Master class
Nadezhda Pechnikova (Almazov Medical Research Center, Russia)
Perfusion of the isolated heart according to Langendorff (group 2)
Polina Alekseeva (Almazov Medical Research Center, Russia)
Toxicity testing in Zebrafish embryos (group 1)

Wednesday. December, 6

ITMO University. Kadetskaya line V.I., 3-b

- 10:00 – 11:45 Master class
Dr. Igor Meglinski (*University of Oulu, Finland*)
On-line Monte Carlo-based computational platform for the needs of Biomedical Optics and Biophotonics (part 1)
- 11:45 – 12:15 Coffee break
- 12:15 – 14:00 Master class
Dr. Igor Meglinski (*University of Oulu, Finland*)
On-line Monte Carlo-based computational platform for the needs of Biomedical Optics and Biophotonics (part 2)
- 14:00 – 15:00 Lunch
- 15:00 – 16:45 Master class
Dr. Maxim Gureev (*ITMO University, Russia*)
Small-molecule drug discovery using Molecular docking approach and HTVS protocols
- 16:45 – 17:00 Coffee break
- 17:00 – 18:00 Closing ceremony & Certificates bestowal

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