



1st International School on Surface Science "Technologies and Measurements on Atomic Scale" (28 Sept. – 2 October 2011, Veliky Novgorod, Russia)

First Announcement

The School's primary objective is to convey the state of the art in modern surface science and demonstrate theoretical and experimental ability to study single atoms or molecules adsorbed on solid state surfaces. The School will also demonstrate multiple roles of a scanning probe microscope operating at cryogenic temperatures and in ultrahigh vacuum, the main experimental tool at the atomic scale. It can be used not only as an extremely high resolution microscope but also as a multipurpose spectrometer to study the electronic, vibrational and spin states of a designated object with atomic resolution.

All School's lecturers, both Russian and International, are leading figures in their respective parts of surface science. Lecture topics center around surface magnetism, model catalysis, surface phase transitions, quantum informatics, superconductive and strongly correlated systems, and low dimensional systems including carbon nanomaterials. The School is organized as a 5-day workshop in which lectures alternate with participants' own presentations.

The 1st International School on Surface Science "Technologies and Measurements on Atomic Scale" (SSS TMAS) will be held in Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia.

The official language SSS TMAS will be English and Russian.

Tentative Lecture Program

I. Surface Magnetism on Atomic Scale

1. Prof. Markus Morgenstern (Julich Aachen Res Alliance Fundamentals Future Inform Technol., Germany) "Spin detection by scanning tunneling microscopy"
2. Prof. Anatoly K. Zvezdin (GPI RAS, Moscow) "Spin-transfer nano-oscillators: from fundamental physics to applications"
3. Dr. Gabriela Herzog (Univ Hamburg, Inst Appl Phys, Germany) "Spin mapping and manipulation at the nanoscale"

II. Vibrational Spectroscopy and Chemistry of Single Molecules with STM Inelastic Tunneling

4. Prof. Karina Morgenstern (Leibniz Univ Hannover, Inst Festkorperphys, Germany) "Single molecule manipulation"
5. Prof. Sergei G. Tikhodeev (GPI RAS, Moscow) "Inelastic Tunneling Current-Driven Motions of Single Adsorbates"

III. Model Heterogeneous Catalysis

6. Prof. George M. Zhidomirov (GPI RAS, Moscow, IC SB RAS, Novosibirsk) "Charge states on surfaces"

IV. Structural Phase Transitions on Surface

7. Dr. Boris V. Andryushechkin (GPI RAS, Moscow) "Structural phase transitions in chemisorbed layers of halogens"
8. Prof. Alexander A. Saranin (Institute for Automation and Control Processes FEB RAS, Vladivostok, Russia) "Atom dynamics on reconstructed silicon surfaces"

V. Superconducting and strong-correlation systems

9. Prof. Sergei Borisenko (Leibniz Inst for Solid state and Material research, Dresden Germany) "The high-T-c problem: Phonons vs. spin-fluctuations"
10. Dr. Tristan Cren (Institut des Nanosciences de Paris Université Paris 6, France) "Confinement effects in nanosized superconductors"
11. Prof. Denis Vyalikh (Institute of Solid State Physics, University of Technology, Dresden, Germany) "Electron f-d hybridization and fine structure of "f-bands" in rare-earth heavy-fermion materials"

VI. Low-dimensional systems including carbon materials

12. Prof. Sergei N. Molotkov (Inst Solid State Phys RAS, Chernogolovka) "Symmetry Based Classification of 1D, 2D Electron Spectra"
13. Prof. Markus Morgenstern (Julich Aachen Res Alliance Fundamentals Future Inform Technol., Germany) "Graphene on the nanoscale probed by STM"
14. Dr. Elena D. Obraztsova (GPI RAS, Moscow) "Nanophotonics based on SWNT and graphene"

VII. Quantum communications

15. Prof. Sergei N. Molotkov (Inst Solid State Phys RAS, Chernogolovka) "Relativistic Quantum Cryptography"
16. Prof. Sergei P. Kulik (Lomonosov Moscow State Univ, Moscow) "Quantum information and entangled states"

Program Committee

Prof. Konstantin N. Eltsov (Prokhorov General Physics Institute RAS, Moscow, Russia)
Prof. Sergei N. Molotkov (Institute of Solid State Physics RAS, Chernogolovka, Russia)
Prof. Valerii I. Bukhtiyarov (Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia)
Prof. Alexander A. Saranin (Institute for Automation and Control Processes FEB RAS, Vladivostok, Russia)

Organizing Committee

Chairman:

Prof. Konstantin N. Eltsov (Prokhorov General Physics Institute RAS, Moscow, Russia)

Co-Chairman:

Prof. Anatoly L. Gavrikov (Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia)

Members:

Dr. Boris V. Andryushechkin (Prokhorov General Physics Institute RAS, Moscow, Russia)
Prof. Anatoly Yu. Zakharov (Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia)
Dr. Anna A. Schneider (Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia)

Secretary:

Dr. Tatiana V. Pavlova (Prokhorov General Physics Institute RAS, Moscow, Russia)

Important Dates

First Announcement - August 5, 2011.
Abstract submission deadline - September 7, 2011.
Acceptance of the submitted abstracts - September 13, 2011.
Fee payment deadline - September 15, 2011.

Registration Fee

Registration Fee is 3 500 RUB. Fee includes:

- participation in the scientific program of SSS TMAS 2011;
- conference materials including the Conference Program;
- excursion;
- refreshments during the breaks, welcome party, conference dinner.

Organizers



Sponsors



For more information please visit the official website SSS TMAS: <http://sss-tmas.issp.ras.ru>

Contacts: sss-tmas@kapella.gpi.ru