

School on Advances in Condensed Matter Physics: New Trends and Materials in Quantum Technologies



7-15 May 2019
Samarkand, Uzbekistan

Further information:
<http://indico.ictp.it/event/8676/>
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The School aims at bringing together new ideas, novel results, and problems and prospects of modern condensed matter physics, with special focus on quantum technologies. The latter is a new and advanced area of physics and engineering, based on the use of some of the phenomena in quantum mechanics, such as quantum entanglement, quantum superposition and quantum tunneling and interference effects for practical applications such as quantum computing, quantum sensing, quantum cryptography, high precision quantum metrology and quantum imaging.

This will be done by presenting a series of lectures for a broad audience of young researchers (e.g. master and PhD students, young postdocs and research associates), as well as senior scientists from developing countries working on different areas of condensed matter physics, material science, and statistical and chemical physics. Invited lecturers will be world-wide well-known experts on the above topics.

Description:

The lectures will be focused on the most advanced topics of condensed matter physics which are relevant to novel materials for energy conversion, quantum information and medical applications. The goal of the lectures will be twofold, educational and expert-level discussions of novel results. The latter will be done both during the panel lectures and informal seminars.

Topics:

- Graphene, two-dimensional materials and their heterostructures;
- Majorana fermions;
- Topological insulators;
- Quantum Hall effect;
- Novel superconducting materials;
- Quantum entanglement and quantum computing;
- Quantum networks and their applications;
- Quantum optics and cold atoms;
- Quantum metrology

How to apply:

Online application:
<http://indico.ictp.it/event/8676/>

Female students and scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants from developing countries, with priority given to participants from the region. There is no registration fee.

Directors:

V. Falko, NGL, the University of Manchester, U.K.
M. Kiselev, ICTP, Italy
D. Matrasulov, Turin Polytechnic University in Tashkent, Uzbekistan

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J. Yusupov, Turin Polytechnic University in Tashkent, Uzbekistan

Speakers:

A. Akhmerov, (Delft University of Technology, The Netherlands)
G. Casati, (University of Insubria, Italy)
A.H. Castro Neto (National University of Singapore)
R. Fazio, (The Abdus Salam ICTP, Italy)
K. Flensberg, (Niels Bohr Institute, Denmark)
Y. Gefen, (Weizmann Institute, Israel)
L. Glazman, (Yale University, U.S.A.)
M. Katsnelson, (Radboud University Nijmegen, The Netherlands)
A.H. MacDonald (University of Texas at Austin)
T. Martin, (Aix-Marseille University, France)
L. Molenkamp, (University of Wurzburg, Germany)
F. Von Oppen, (Free University of Berlin, Germany)
Y. Oreg, (Weizmann Institute, Israel)
F. Peeters, (University of Antwerp, Belgium)
S. Sachdev, (Harvard University, U.S.A.)
A. Stern, (Weizmann Institute, Israel)

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Deadline:

1 February 2019



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