



Program of the International Conference on Quantum Metrology 2016

(05.05.2016 version)

Wednesday, May 11, 2016

8:15 ÷ 12:30, 14:00 Registration

Session 1 (CW10 room in Lectures Centre of Poznan University of Technology, PUT)

9:00 Opening the QM 2016 conference

9:20 Fundamental Constants: The Basis for a New SI (opening talk) – Klaus von Klitzing, Max Planck Institut, Stuttgart, Germany.

10:00 Strontium Optical Lattice Clock (2nd opening talk) – Czesław Radzewicz, University of Warsaw, Poland

10:40 Collective photo outside the building
Coffee break

Session 2 (room No 23 in Lectures Centre of PUT)

11:15 AC Voltage Standards with Josephson-Junction Arrays (invited talk) – Blaise Jeanneret, METAS, Bern-Wabern, Switzerland

11:45 A single-ion optical clock with 3×10^{-18} uncertainty (invited talk) – Ekkehard Peik, Braunschweig, PTB, Germany

12:15 Terahertz Wave Applications of High-Temperature Superconductors: Sources, Detectors and Filters – Lutfi Ozyuzer, Izmir Institute of Technology, Turkey

12:45 Noise Thermometry Utilizing Superconducting Devices- from 100 μ K to 1000 K (invited talk) – Thomas Schurig, PTB, Berlin Germany.

13:15 ÷ 14:30 Lunch break

Session 3 (room No 23)

14:30 Investigation of the Effectiveness of the SiO₂ Protective Layer to Improve the Yield Ratio of the Contact Resistance for GaAs/AlGaAs QHR Array Device (invited talk) – Takehiko Oe, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan

15:00 A simple primary quantum resistance standard based on graphene – Jan-Theodoor Janssen, NPL, Teddington, UK

15:30 Coherent terahertz emission from stacks of intrinsic Josephson junctions in Bi₂Sr₂CaCu₂O₈ (invited talk) – Fabian Rudau, Tübingen University, Germany

16:00 Shapiro steps features in single and coupled Josephson junctions – Yury M. Shukrinov, JINR, Dubna, Moscow Region, Russia.

16:30 Measuring incompatible observables by means of sequential weak values evaluation – Alessio Avella, INRIM, Torino, Italy.

Session 4

17:00 ÷ 18:00, Poster session at coffee and snack (beside the conference room, No 23)

- International Comparisons of the National Standard of Length; Dariusz Czulek et al., Central Office of Measures, Warsaw, Poland.
- Simulations of electrical networks for quantum metrology experiments, Ilaria Finardi, INRIM, Torino, Italy.
- Toward extending the frequency of the AC–DC voltage transfer at Silesian University of Technology up to 10 MHz; Marian Kampik, Silesian University of Technology, Gliwice, Poland.
- Sample homogeneity loophole and significance tests; Marian Kupczyński, University of Quebec and Outaouais, Canada.
- True meaning of recent tests of local realism; Marian Kupczyński, University of Quebec and Outaouais, Canada.
- Emergence of individual dopants in pn-junction-based nanosensors; Roland Nowak, Warsaw University of Technology, Poland.
- Enhanced Ionic Conductivity of Thin Film $\text{Li}_{1-x}\text{La}_x\text{TiO}_3$ electrolyte by aluminum doping; Mehtap Ozdemir, Gediz University, Izmir, Turkey.
- Nanometrology of thermal properties using Scanning thermal microscopy, Maciej Rudek, Wroclaw University of Technology, Poland.
- Towards the propagation of AC Quantum Voltage Standards. Review of the research visit in NPL under EMPIR project ACQPRO, Adam Tatar, Central Office of Measures, Warsaw, Poland.
- Automated impedance metrology extending the quantum toolbox for electricity; Adam Ziółek, Central Office of Measures, Warsaw, Poland.

During the poster session an oral presentation of TOPTICA Photonics company (exhibitor) will be given in the lecture room (No 23).

Thursday, May 12

Session 5 (room No 23)

- 9:00 Josephson Voltage Metrology for Watt Balance Experiments at NIST (invited talk) – Yi-hua Tang, NIST, Gaithersburg, USA
- 9:30 High-precision pulse-driven AC Josephson voltage standard up to 1 V at PTB – Olivier Kieler, PTB, Braunschweig, Germany.
- 10:00 Dry cooling of a 10 V programmable Josephson voltage standard array – Michael Starkloff, Supracon AG, Jena, Germany
- 10:30 Galileo – European Global Satellite Navigation System (invited talk) – Włodzimierz Lewandowski, Central Office of Measures, Warsaw, Poland

11:15 Coffee break

Session 6 (room 23)

- 11:45 The quantum voltage standards based on the high- T_c Josephson junctions (invited talk) – Alexander M. Klushin, Institute for Physics of Microstructures of RAS, Nizhny Novgorod, Russia.
- 12:15 Gravitational Wave Astronomy: Bringing the sensitivity of future detectors to the Standard quantum limit and beyond (invited talk) – Stefani Kroker, PTB, Braunschweig, Germany

- 12:45 Superconducting Single Photon Detectors (invited talk) – Giovanni Piero Pepe, University of Naples, Italy
13:15 Magnetron Sputtered VO₂ films for Field Effect Transistors via Metal Insulator Transition – Gulnur Aygun, Izmir Institute of Technology, Turkey

13:45 ÷ 15:00 Lunch break

15:00 ÷ 17:30 Sightseeing of the Poznan city (with a walk and by tram). To visit Old Market Square and Cathedral.

19:30 ÷ 22:00 **Conference dinner**

Friday, May 13

Session 7 (room 23)

- 9:00 Magnetic localized centers in modified titanium oxides nanocomposites – Niko Guskos, West Pomeranian University of Technology, Szczecin, Poland.
9:30 Modelling and Simulation Analysis of Phase Transformations in a Binary Alloy – Osman Adiguzel, Firat University, Elazig, Turkey.
10:00 Quantum Coherence Sets The Quantum Speed Limit For Mixed States – Debasis Mondal, Harish-Chandra Research Institute, Jhansi, Allahabad, India.
10:30 Quantum mechanical aspects in the MEMS/NEMS technology – Oskar Słowik, Wrocław University of Technology, Poland

11:00 Coffee break

Session 8 (room 23)

- 11:30 Spin orbit driven phenomena: challenges of metrology for spin electronics – Anna Dyrdał, Adam Mickiewicz University, Poznań, Poland
12:00 Metrology of Graphene based nanoelectromechanical systems using scanning probe microscopy methods – Krzysztof Gajewski, Wrocław University of Technology, Poland.
12:30 Improvement in determination of the Boltzmann constant k and a new definition of the kelvin – Anna Szmyrka-Grzebyk, Institute of Low Temperatures, Polish Academy of Sciences, Wrocław, Poland
13:00 Conference closing

13:15 Lunch

Place of the conference

The QM 2016 conference will take place on the campus of Poznan University of Technology (PUT), Lectures Centre of PUT, ul. Piotrowo 2, Poznan.

GPS position: **52° 24' 12" North; 16° 57' 00" East.**

Tram lines: **5** from the main railway station via city center. Tram stop: **Politechnika** .
6 and **18** from the main railway station. Tram stop: **Kórnicka**