

IBS Conference on Quantum Nanoscience 2019

BRINGING THE QUANTUM NANOSCIENCE COMMUNITY TOGETHER

Website: icqns.org | Email: conference@qns.science

There are many conferences that cover subfields of quantum nanoscience. Join us in the first-of-its-kind attempt to gather this broad community, from experts to young scientists from all around the globe, working in this exciting research topic. The Center for Quantum Nanoscience has strong expertise in investigating, assembling and controlling quantum systems at surfaces - a relatively new topic in quantum nanoscience. Therefore, we feel that this location makes a good venue to sow the seeds of a long-lasting international conference on quantum nanoscience.

PROGRAM

Session 1_What is Quantum Nanoscience?

Quantum Nanoscience is the intersection of quantum science and nanoscience. In the session, we will explore the working definition as well as interesting concepts and examples of quantum systems at the nanoscale that enable quantum-coherent functionality.

Session 2_Quantum Sensing with Nanoscale Systems

Quantum systems can make incredibly sensitive sensors of their environment. At the nanoscale this can be combined with high spatial resolution.

Session 3_Theory Challenges in Quantum Nanoscience

Quantum Nanoscience has diverse needs for theoretical investigations ranging from modelling with high precision to the investigation and understanding of quantum coherence.

Session 4_Quantum Surface Science at the Nanoscale

Surfaces of materials offer the opportunity to use scanning probe techniques to measure their properties. This can be combined with atomic-scale manipulation to build structures with atomic-scale precision. Recently it has become possible to perform quantum-coherent manipulation of atoms on surfaces.

Session 5_A Chemical Route to Quantum Nanoscience

Chemistry is the method with which most of our everyday materials are made. We will explore possible pathways from quantum coherent effects in interesting molecules to the future dream of self-assembled quantum computers.

INVITED SPEAKERS

Ali Yazdani

Physics Department of Princeton Univ. USA

Andreas Heinrich

Director of IBS Center for Quantum Nanoscience, Korea

Andrew Dzurak

School of Electrical Engineering and Telecommunications, UNSW, Australia

Ania Jayich

Department of Physics, UCSB, USA

Arzhang Ardavan

Department of Physics, Oxford Univ., UK

Daniel Loss

Department of Physics, Univ. of Basel, Switzerland

Donghun Lee

Physics Department of Korea Univ., Korea

Fabio Donati

Center for QNS / Department of Physics at Ehwa Univ. Korea

Jelena Klinovaja

Department of Physics, Univ. of Basel, Switzerland

Jörg Wrachtrup

Physics Department of University of Stuttgart, Germany

Martin B. Plenio

Institute of Theoretical Physics in University of Ulm, Germany

Roberta Sessoli

Department of Chemistry, Univ. of Florence, Italy

Taeyoung Choi

Center for QNS / Department of Physics at Ewha Univ., Korea

William D. Oliver

Department of Physics, Director at MIT Lincoln Lab, USA

Wolfgang Wernsdorfer

Department of Physics, KIT Karlsruhe, Germany

Yonuk Chong

Korea Research Institute of Science and Standards, Korea

※Participants who submit an abstract can deliver a poster presentation and 8 abstracts will be selected as contributed oral talks.

