IAP Seminar

Silvan Schmid

TU Wien, Institute of Sensor and Actuator Systems, Micro and Nanosensors

Tuesday, 3rd October 2017, 16:00 s.t.

TU Wien, Institut für Angewandte Physik, E134
1040 Wien, Wiedner Hauptstraße 8-10
Yellow Tower „B“, 4th floor, SEM.R. DB gelb 04 (DB04E11)

“Good vibrations” - Advanced sensors based on nanomechanical resonators

Pressure sensors, accelerometers, gyroscopes, electronic filters, and Lab-on-a-chip devices are just a few of the most prominent examples of Microelectromechanical Systems (MEMS). MEMS have become omnipresent helpers by making our phones and cars smart and reducing analysis times in modern medical laboratories. Nanoelectromechanical Systems (NEMS) are the little sibling of MEMS. By downscaling the sensing elements from the micro- to the nanoscale, NEMS exhibit unprecedented sensitivities. As a particular achievement, such nanomechanical resonators have created a revolutionary new field of quantum optomechanics, which has enabled quantum mechanical experiments with “macroscopic” devices. Since its beginning two decades ago, NEMS research has been driven mainly by applications in metrology and fundamental science. In our Micro and Nanosensors Group we conduct NEMS research with focus on advanced sensor applications, such as mass spectrometry, bolometry, photothermal microscopy, infrared spectroscopy, and optical NEMS. This goal is supported by fundamental research on nanomechanical resonators with regards to energy loss, and their interaction with optic, plasmonic and electric fields.

All interested colleagues are welcome to this seminar lecture (45 min. presentation followed by discussion)

Friedrich Aumayr
(LVA-Leiter)

U. Diebold
(Seminar Chair)