

Spring 2015 Seminar Series

Presented by the ECE Division

RESONANT CHEMICAL MICROSENSORS

FRIDAY APRIL 10, 2015
12:00 PM – HEC 356

The presentation discusses resonant MEMS and, in particular, resonant microsensors, in which the measurand affects a characteristic of the resonance behavior of a microstructure, such as its resonance frequency or quality factor. The example of resonant chemical sensors will be used to discuss benefits but also limitations of resonant sensors. The seminar will highlight how proper selection of the resonance mode and device geometry can improve device performance and how fast temperature modulations of the resonant sensors enable the observation of signal transients that contain additional analyte information.

Many of the microsensors highlighted in this presentation have been fabricated in the cleanrooms of the Institute for Electronics and Nanotechnology (IEN) at the Georgia Institute of Technology. The final part of the talk will highlight IEN's fabrication and characterization capabilities as well as the breadth of (MEMS) research enabled by these facilities.

DR. OLIVER BRAND Georgia Institute of Technology



Oliver Brand is a Professor in the School of Electrical and Computer Engineering and the Executive Director of the Institute for Electronics and Nanotechnology (IEN) at the Georgia Institute of Technology. He received his diploma degree in Physics from Technical University Karlsruhe, Germany in 1990 and his Ph.D. degree from ETH Zurich, Switzerland in 1994. From 1995 to 1997, he worked as a postdoctoral fellow at the Georgia Institute of Technology. From 1997 to 2002, he was a lecturer at ETH Zurich in Zurich, Switzerland and deputy director of the Physical Electronics Laboratory (PEL).

Dr. Brand has co-authored more than 200 publications in scientific journals and conference proceedings. He is a co-editor of the Wiley-VCH book series Advanced Micro and Nanosystems and a member of the editorial board of Sensors and Materials. He has served as General Co-Chair of the 2008 IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2008) and been a member of technical program committees of the IEEE MEMS Conference, the IEEE Sensors Conference and the Transducers Conference. Dr. Brand is a senior member of the IEEE and a co-recipient the 2005 IEEE Donald G. Fink Prize Paper Award. His research interests are in the areas of integrated microsystems, microsensors, MEMS fabrication technologies, and microsystem packaging.

Hosted by: Dr. Reza Abdolvand

