



**Inventing the Ideal Ohmic Switch**  
**By**  
**Chris Keimel, Chief Technology Officer**  
**Menlo Micro**

Time: **12:00pm-1:00 pm, 09/20**  
Room: **MSEE 239**

**Abstract:** For the past 150 years, a switch is the original and most basic building block of all electrical systems, and for the past few decades many have sought to miniaturize and scale this fundamental electrical building block through MEMS based technologies. The challenge is multidisciplinary in nature, drawing on sound device design, fabrication processing, packaging and the materials that bring all these elements together. The goal is the ideal switch that will enable and drive future innovation in RF and mmWave Communication and Power IoT systems.

Menlo Micro has developed and is commercializing the Ideal Switch with first products targeting RF and mmWave applications. With frequency performance from DC to X-band and high RF power capability up to 25W, the ohmic switch's ultra low insertion loss and high linearity make it an ideal component technology for existing and next generation test and communication platforms. Under development is the next phase of this technology's journey – its entry in the Power IoT markets where these tiny metal MEMS based microcantilevers will be responsible for controlling the currents and voltages (kW level power) in many of the electrical systems around us today.

This seminar will focus on both the technical journey of developing the fundamental device building blocks of a MEMS switch as well as the entrepreneurial journey of how Menlo Micro came to exist from its early days in the labs of GE Global Research.

**Bio :** Chris is the Chief Technology Officer and Co-Founder of Menlo Micro. He has been at the heart of developing Menlo's MEMS Ideal Switch technology since inception at GE Global Research in the mid-2000s. He is responsible for Menlo's technical strategy and leadership of its R&D activities. Prior to joining Menlo, Chris was a Senior Engineer at GE Global Research where he led the Metal MEMS Technology development for more than 12 years. Chris has been active in Semiconductor and MEMS device development for more than 20 years with a focus on novel fabrication and material processing techniques for devices such as pressure sensors, quantum dots, inertial sensors, single electron transistors and many more. He has published more than 20 journal articles (Nature, APL, etc.), been granted more than 30 patents, organized symposiums on MEMS as part of the Materials Research Society conferences, given numerous invited talks on MEMS technologies and is a reviewer for technical journals.