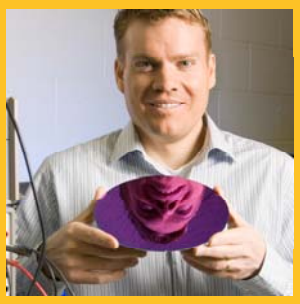
UCF DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCEINCE

Spring 2014 Seminar Series

Presented by the ECE Division

DR. AARON HAWKINS

Brigham Young University



BIOGRAPHY

Aaron R. Hawkins grew up in a tiny town in New Mexico. He earned his BS in applied physics from Caltech in 1994 and his PhD in electrical and computer engineering from UC Santa Barbara in 1998. While a graduate student, he co-founded Terabit Technology, a company specializing in fiber optic receivers which was later sold to CIENA. After working for CIENA and Intel, he joined the faculty at Brigham Young University in 2002. He currently serves as director of the university's Integrated Microfabrication Laboratory and as the Engineering and Technology Endowed Professor and Associate Chair in the Electrical and Computer Engineering Department. He has authored or coauthored almost 300 journal and conference papers and was recently appointed as Editor-in-Chief for the IEEE Journal of Quantum Electronics.

MINIATURIZATION OF BIOMOLECULE AND CHEMICAL SENSORS

THURSDAY MARCH 27, 2014

2:45 PM – HEC 101

Many of the motivations for miniaturizing electronics – low cost, portability, high performance – carry over to the new drive to miniaturize laboratory analysis. Silicon micromachining techniques also heavily influence the design of new tools and platforms. This talk will highlight two efforts at miniaturization, the first a fluorescence detector capable of single molecule detection and the second a chemical analyzer performing chromatography and mass spectrometry. The fluorescence detector is based on a new class of optofluidic devices which combine optical waveguiding with microfluidic controls. The key innovation is a fluid filled micro-channel capable of optical mode confinement. The highlighted chemical analyzer relies on a microfabricated ion trap for mass analysis, combined with a miniaturized gas chromatograph and a solid-state ion detector capable of operating at atmospheric pressure.

UCF

4328 Scorpius Street Room 346 Orlando, FL 32816

WWW.EECS.UCF.EDU