

Advanced Silicon Technology and MEMS Reliability

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3:00 pm in Birck 1001

Abstract: This talk will highlight some of the advanced Si technologies being developed at MIT Lincoln Laboratory, including FDSOI CMOS for extreme environments, 3D integration, digital focal planes, RF MEMS and microfluidics. RFMEMS reliability and science will be covered more detail.

RFMEMS technologies have been developed by many researchers and companies over the last 10 years. The excellent performance of these devices and circuits has been clearly demonstrated. Here results for reliability have been demonstrated, several achieving over 1 trillion cycles. Reliability for DoD and commercial applications is still an issue for RF MEMS. Packaging, surface conditions, and ambient environments play a key role. This talk will discuss some of the successful RF MEMS switch designs and applications as well as provide insight to reliability aspects of these devices.

Bio: Jeremy Muldavin received his BSE in Engineering Physics from the University of Michigan in 1995 where he performed research in the area of high energy spin physics. He went on to receive his MSE and PHD (2001) in Electrical Engineering with a major in Electromagnetics and a minor in Communications. His graduate research focused on micro-machined circuits and devices for RF and millimeter-wave circuit and antenna applications.

He is currently an Assistant Group Leader of the Advanced Silicon Technology Group at MIT Lincoln Laboratory where he has continued his interest in RF micro-electro-mechanical-systems (MEMS) design, fabrication, and modeling.

Dr. Muldavin has served for 8 years on the IEEE Radio & Wireless Symposium Steering Committee, for three years as a chair of the IEEE MTT-S Boston Section, and served as the Registration Chair for the 2009 IEEE International Microwave Symposium.

