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Raytheon Read Out Integrated Circuits (ROIC) for Electro/Optical Applications

By Eric Beuville, Ph.D.,

September 29, 2016

6:30 pm (pizza and networking), 7 pm talk

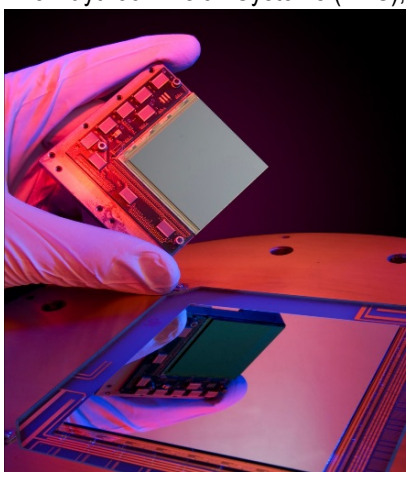
California State University Channel Islands

One University Drive, Camarillo, CA 93012, Del Norte Hall, Room 1500

Meetings are free and open to the public

RSVP at http://raytheon_roic.eventbrite.com

The Raytheon Vision Systems (RVS), based in Goleta, California, develops and produces detection and imaging systems covering the x-ray, visible, infrared, terahertz, and millimeter wave regions of the electromagnetic spectrum. This presentation will provide a basic understanding of the ReadOut Integrated Circuits (ROIC) designed for infrared and visible focal plane array (FPA) sensors. Key imaging characteristics will be introduced, like spectral content, type of detector covering specific wavelength bands (HgCdTe and Si) and basic ROIC front-end architectures.



This presentation will also cover a variety ROIC for imaging applications, from large dynamic range digital pixels, trusted split manufacturing ROIC (28nm, 1.1B transistors), More than Moore heterogeneous 2.5D and 3D wafer stacking, space-based surveillance (staring and scanning systems), astronomy with ground based telescopes (using Si:As IBC at 7K) and other uncooled commercial applications.

Dr Eric Beuville is the manager of Raytheon Vision Systems Integrated Circuit Design Center. Eric has 28 year of experience in IC design. He has a Bachelor in Physics, and a Master and a Ph.D. in Electronic Engineering obtained while working at CERN (Geneva, Switzerland) designing ICs for High Energy particle physics.

In 1989 Eric worked at the French Atomic Research Agency (CEA), on radiation hard IC technologies for high-energy physics. In 1992 he joined the Lawrence Berkeley National Laboratory (LBNL) to design IC for radiation detectors, instrumentation and medical imaging. In 1998, Eric worked at Indigo Systems (now FLIR) on IC designs for commercial and defense infrared imaging systems, astronomy and medical applications (digital x-ray mammography, deep brain stimulation IC, etc...).

In 2006, Eric joined Raytheon Vision Systems as a senior IC designer and is now the manager of the IC design center. Eric has been designing IC for tactical defense and space applications, astronomy and medical imaging programs like photon counting.

Eric is the author and co-author of more than 60 publications and three US patents.