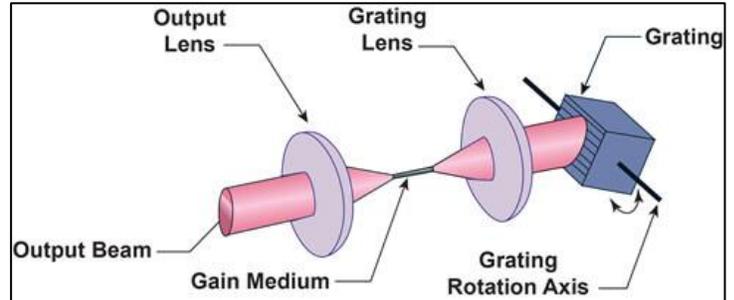


Tunable Laser Based Spectroscopic Imaging and Sensing

Timothy Day, Vice President, DRS Daylight Solutions

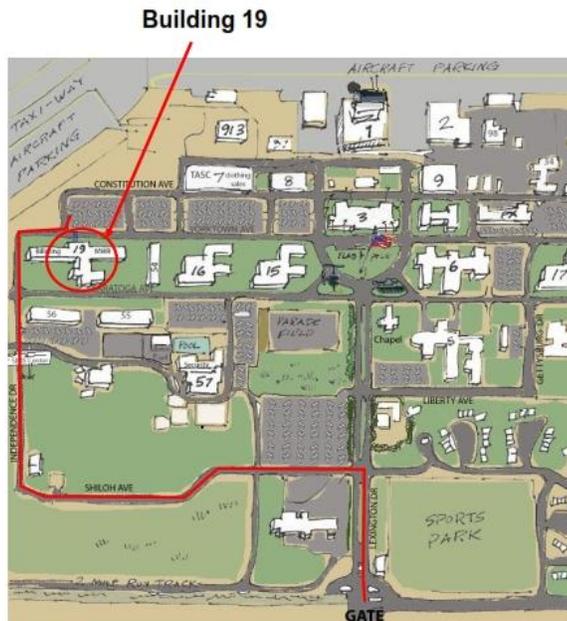
Abstract: Quantum Cascade Lasers (QCLs) have opened up an enormous number of possible applications in the Mid and Long Wave Infrared (loosely defined as from 3-12um of center wavelength). Basic research, chemical sensing, directed infrared counter measures, and free space communications are just a few of the many examples. In this talk we will cover applications in the Spectroscopic Imaging and Sensing arena using tunable embodiments of a QCL. After a brief introduction to the QCL and its technical benefits, we will then dive into Instrument and Applications Engineering examples ranging from tunable laser based microscopes, tissue diagnostics for cancer screening, pharmaceutical drug development and blood diagnostics all using tunable Mid-Long Wave IR sources.



About our speaker: Dr. Timothy Day is Vice President and General Manager of DRS Daylight Solutions. DRS Daylight Solutions is an advanced manufacturer of molecular detection and imaging products serving markets that include Industrial Process Control, Medical Diagnostics and Defense and Security using Mid IR lasers and sensor systems. Dr. Day concurrently serves as the executive manager for Daylight Defense, LLC, a wholly owned subsidiary of DRS Daylight Solutions, established to serve the Defense and Security markets. While at Daylight Defense, he and his team have introduced a number of EO/IR products that serve the U.S. military in areas such as directed infrared countermeasures, stand-off detection of explosives, laser aiming/designating, combat ID, free-space secure communications and other applications. Dr. Day is a cofounder of Daylight Solutions (EST 2004) and served as the CEO and CTO for the company from 2004 to 2017. In June of 2017, Daylight Solutions was acquired for \$150M through a merger with Leonardo DRS and currently operates as DRS Daylight Solutions. Dr. Day has over 25 years' experience in both technical and business management in the photonics industry. He has developed extensive patent and product portfolios and transferred numerous products into production, both onshore and overseas. He

has led engineering, research, product development, manufacturing, and marketing operations. He began his career as co-founder of New Focus, where he served from 1990 through 2004. During his time at New Focus he was involved in all aspects of the company's history, concluding with his work on the sale of the company to Bookham Technology PLC for \$338M. Dr. Day actively participates on the boards for the following companies; Cold

Quanta, Northern Colorado Veterans Resource Center and IRSweep. Dr. Day holds both a BS and an MS in Physics from San Diego State University and a PhD in Electrical Engineering from Stanford University. Dr. Day resides in San Diego, CA with his wife and they have three children.



WEDNESDAY, 9 JANUARY 2019

Reception: 5:00 pm

Dinner: 6:00 pm (buffet)

Talk: 7:00 pm

Dinner cost: \$35 members/\$40 non-members registered by Jan. 2

\$40/\$45 after Jan. 2

(OSSC Student Members \$10 by Jan. 2, \$20 after)

Venue:

Joint Forces Training Base
4745 Yorktown Avenue, Building 19
(Militia Room),
Los Alamitos, CA, 90720

On-line Registration: www.osscc.org or

Contact: Alex Small

Events@osscc.org, 240-672-7639