



**SAN FRANCISCO BAY AREA  
NANOTECHNOLOGY COUNCIL**

**July 2008 Seminar**

**Subject: Surface Enhanced Raman Scattering (SERS) Nanotags for Clinical Diagnostics**

**Speaker: Dr. Rebecca Golightly, Scientist at Oxonica, Inc.,**

**Date:** Tuesday, July 15, 2008

**Time:** Registration & light lunch 11:30am. Presentation & Q/A 12:00 to 1pm

**Location:** National Semiconductor Bldg E-1 CMA Room. 2900 Semiconductor Drive, Santa Clara, CA  
<http://www.google.com/search?hl=en&q=2900+Semiconductor+Drive.+santa+clara+%2C+ca&btnG=Google+Search>

**Cost:** IEEE Members and Students \$5. Non-Members \$10

**Please RSVP at our web site:** [www.ieee.org/nano](http://www.ieee.org/nano)

**Talk Abstract:**

The use of Nanoplex Biotags as labels for tracking biological molecules has many benefits over traditional biomarkers (i.e. fluorophores, quantum dots). Some of these benefits include the potential for high multiplexing capabilities, they do not photobleach, and they can be detected in a variety of biological matrices including whole blood. Oxonica has developed the novel Nanoplex Biotags which are a type of optical quantitation label based on surface-enhanced Raman scattering (SERS). The particles consist of a 50-nm-diameter gold nanoparticle core, a layer of organic reporter molecules and a 20-nm-thick silica (glass) coating. The spectrum of each tag consists solely of the Raman signal from the adsorbed reporter. By using different reporters, a large number of spectrally unique tags can be prepared, allowing a high level of multiplexing. The glass coating renders the particles exceptionally robust to changes in pH, temperature and ionic strength, and provides a facile surface for bioconjugation.

**Speaker Biography:**

Dr. Golightly is a scientist at Oxonica, Inc., in Mountain View, CA. Oxonica develops nanotechnology-based commercial products for global markets, including Envirox™, a diesel fuel additive; Optisol™, a uvA/uvB absorber for personal care products; and Nanoplex™ Biotags, optical detection labels for biodiagnostics. Rebecca's PhD in chemistry was earned at Pennsylvania State University in 2006, where she has received a student research award for her work towards the design of optically detectable biosensors for DNA detection. She has presented her research at many conferences including internationally. In 2001, she earned her bachelor's degree in chemistry from McDaniel College in Westminster, MD.