THz-Raman spectroscopy systems enhance explosives identification and forensic analysis

Monrovia, CA April 22, 2013 – Ondax, Inc, a leader in the design and manufacture of high-performance Raman filters, laser sources and Raman spectroscopy systems, will be presenting new results demonstrating enhanced spectral measurements of explosives and hazardous materials at the upcoming SPIE Defense, Security and Sensing conference in Baltimore on April 30-May 2. The company will also be demonstrating their new THz-Raman™ spectroscopy products in the exhibition hall.

THz-Raman extends the range of traditional Raman spectroscopy, currently a widely accepted technique for explosives detection and identification, into the low-frequency or “terahertz regime”, enabling collection of both chemical and structural spectral signatures that improves sensitivity and greatly enhances forensic analysis of a broad range of explosives, chemical and biological threat agents.

Dr. James Carriere, Director of Business Development for Ondax, will present new data collected with the Ondax system, based on work done at Ondax and with samples provided by the Department of Chemistry and Biochemistry at the University of California, San Diego. According to Dr. Carriere, “We have seen an increasing interest in using THz-Raman as a complementary analytical tool in both formulation and analysis of drugs, explosives, and other hazmat materials, whether they are chemical or biological in nature. Most of these are composed of large, complex molecules that exhibit rich responses in the low-frequency Raman/THz regime, and our spectroscopy systems make these spectra easy and affordable to access.”

Randy Heyler, Ondax CEO, added “Our results show that many explosive materials exhibit extremely strong spectra in the low-frequency/THz-Raman regime, and when compared to existing Raman detection techniques, this additional data makes them easier to detect and analyze, providing additional means to compare the detailed composition and manufacture of the substances.”

The presentation is part of the “Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Sensing” Conference session on “Advances in Standoff Explosives Detection.” The paper, entitled “THz-Raman spectroscopy for explosive, chemical and biological detection” will be presented at 8:20 a.m. on Wednesday, May 1 (paper #8710-26). Equipment demonstrations will also be active during the entire conference at the Ondax booth #1939 in the Exhibit hall.

Ondax, Inc. is the world’s largest manufacturer of commercial Volume Holographic Grating (VHG) filters, wavelength-stabilized laser sources, and THz-Raman spectroscopy systems for security, industrial, defense, medical, instrumentation and scientific applications. VHG’s are specialized optical filters that provide wavelength stabilization, spectral and temporal control for lasers and laser-based systems, and enhance the optical performance and resolution of spectroscopy systems. Our products enable our customers to make their lasers and optical systems, smaller, more portable, more efficient, less expensive and more environmentally stable and robust.

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