Monday, April 27, 2020

WEBINARS

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Raman Spectroscopy: Theory, Practice, and Applications

Wednesday, May 6, 2020 1:00 PM - 2:00 PM EDT

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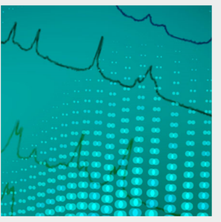
About This Webinar



Raman spectroscopy is a spectroscopic technique that probes vibrational states of molecules using, for example, visible light. It requires very little or no sample preparation and can be employed to test gas, liquid, and solid materials. Advances in lasers and solid-state detectors have allowed Raman spectrometers to be inexpensive and portable, perhaps even contained in a cellphone.

This webinar reviews the basic theory behind normal, resonant, and surface-enhanced Raman scattering; discusses the required hardware in a working Raman spectrometer; describes data analysis and presentation; and gives examples of common applications. In addition, it will examine some of the market challenges and solutions.

Learning goals:

- Learn the basic theory behind normal, resonant, and surface-enhanced Raman scattering.
- Become familiar with the basic setup of a Raman spectrometer.
- Understand performance trade-offs associated with the limitations of the hardware such as illumination laser, diffraction grating, and image sensor.
- Learn about factors that influence the choice of the illumination laser.
- Become familiar with data analysis and portrayal.
- Become familiar with the most common applications of Raman spectroscopy.

About the presenters:
Slawomir S. Piatek has been measuring proper motions of nearby galaxies using images obtained with the Hubble Space Telescope as a senior university lecturer of physics at New Jersey Institute of Technology. He has developed a photonics training program for engineers at Hamamatsu Corp. in New Jersey in the role of a science consultant. Also at Hamamatsu, he is involved in popularizing a SiPM as a novel photodetector by writing and lecturing about it and by experimenting with the device. He earned a Ph.D. in physics at Rutgers, the State University of New Jersey, in 1994.

John D. Gilmore has been characterizing leading-edge photonic devices for over three decades. He has developed sophisticated test and measurement capabilities, enabling precise characterization of image sensors and spectrometers. In addition, he has vast knowledge of the operation, optimization, and practical use of photonic devices, with particular emphasis on image sensors, spectrometers, and Raman modules. He received his B.S. degree in electronic engineering technology (EET) from Capital Institute of Technology, Laurel, Md., in 1986, and received his M.S. degree in electrical engineering with a concentration in solid state devices and material processing from the New Jersey Institute, Newark, N.J., in 1993. He joined Hamamatsu Corp. in September of 1986 and is presently the spectrometer business development manager. He is currently involved with the development of application-specific inspection equipment, general spectrometer marketing, and advanced field technical support.

Who should attend:
Anyone who performs Raman measurements to analyze the chemical structure and composition of samples; anyone who is interested in learning more about how Raman spectroscopy works and its various applications; researchers and technicians who use spectroscopic techniques in their work; and technical professionals who are involved in the design, development, evaluation, and/or implementation of spectroscopic instruments.

About Hamamatsu Corp.:
Hamamatsu Corp. is the North American subsidiary of Hamamatsu Photonics K.K. (Japan). Hamamatsu is a leading provider of photonic source and detector products with a very wide array of components and systems for a wide array of applications. The spectrometer products (UV, VIS, NIR, and Raman) leverage the company's many decades of electronics, optics, and manufacturing expertise to provide solutions for a vast number of applications in both dispersive and interferometer-based architectures. Hamamatsu has the product selection to match application fit, form, and function requirements, thereby empowering breakthroughs with light.

Mark Your Calendar

Date: Wednesday, May 6, 2020

Time: 1:00 PM - 2:00 PM EDT

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