

The SAS Spectrum Newsletter

The Newsletter of the Society for Applied Spectroscopy



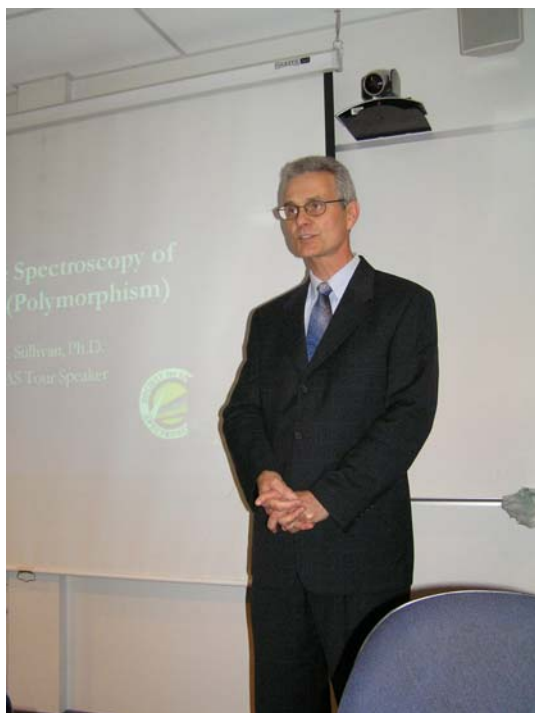
July 2012

Introducing the Agilent Cary 630 FTIR: DISTINCTLY BETTER (AND SMALLER) ROUTINE FTIR

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2012 SAS TOUR SPEAKER MARK SULLIVAN AT NEW YORK SECTION by Seetha Viswanathan

On Tuesday, April 17, the New York section had the honor of hosting Dr. Mark Sullivan for an invited talk as part of the 2012 SAS Speakers Tour. The topic for the presentation was "Solid-State Spectroscopy of Materials (Polymorphism)". The event was held at the Busch Campus of Rutgers University in Piscataway, NJ.



The evening was kicked off with an informal dinner followed by the presentation which was attended by a live audience as well as an online audience via webcast. During the talk, Dr. Sullivan reviewed various examples of spectroscopic techniques to improve processes and troubleshoot problems in pharmaceutical development. Controlling the solid form of the drug substance in a pharmaceutical formulation is often as important to the patient as dosage strength and purity. Most drug substances are small organic molecules with MW < 600 g/mol which may be prone to neat crystallization in multiple crystal structures, forming solvates or remaining amorphous. These solid forms are generally termed polymorphs and may exhibit substantially different properties such as solubility and dissolution rate, hygroscopicity and chemical stability. There are a number of conventional tools to characterize polymorphs such as x-ray powder diffraction, thermal analysis and dynamic vapor sorption. However, solid-state spectroscopy including FTIR, NIR, Raman, terahertz and SSNMR can offer analytical advantages such as speed and specificity. The presentation was enjoyed by the audience with active participation and lively discussions on the pros and cons of the different techniques.

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Dr. Mark Sullivan holds a Ph.D. in chemistry from the laboratory of Professor Gary Maciel at Colorado State University. In his career, he has specialized in non-destructive spectroscopic analytical techniques for the characterization of solid industrial materials including thermoset polymers, carbon fiber composites and dispersions. He also has extensive experience in Process Analytical Technology for performing in-process testing in the chemical and pharmaceutical industries.

Dr. Lydia Breckenridge (NYSAS Chair) presents Dr. Sullivan with a NYSAS paperweight.

July Historical Events in Spectroscopy by Leopold May, Catholic University

June 2, 1862



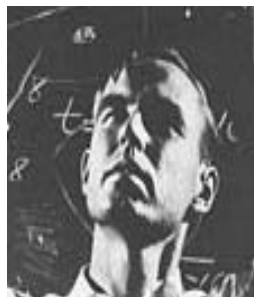
One hundred fifty years ago, William H. Bragg was born. He was a researcher in X-rays and crystal structure and received the [Nobel Prize in Physics](#) in 1915 with his son, W. Lawrence Bragg, for their services in the analysis of crystal structure by means of X-rays.

July 5, 1853



Hendrik A. Lorentz was born on this date. He did research in kinetic theory and thermodynamics. He explained the Zeeman effect and shared the [Nobel Prize in Physics](#) in 1902 with Pieter Zeeman in recognition of the extraordinary service they rendered by their researches into the influence of magnetism upon radiation phenomena.

July 12, 1913



Willis Eugene Lamb, Jr., who was born on this date, precisely determined electromagnetic properties of the electron (Lamb shift). He and Polykarp Kusch shared the [Nobel Prize in Physics](#) in 1955 for their discoveries concerning the fine structure of the hydrogen spectrum.

July 23, 1880



Emma P. Carr was born on this date. Seventy-five years ago, she was the first recipient of the ACS's Francis Garvan Medal. She did research on the ultraviolet spectra of hydrocarbons.

Additional historical events can be found at Dr. May's website, <http://faculty.cua.edu/may/SpectHist.htm>

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