WEBINAR

CHEMISTRY AT THE NANOSCALE – AFM MEETS IR SPECTROSCOPY

Bruker Nano Surfaces & Metrology, Karlsruhe, Germany

Nanoscale Infrared spectroscopy has been successfully demonstrated in an expanding range of applications in recent years due to significant increases in capability. One method of nanoscale infrared spectroscopy, atomic force microscope based infrared spectroscopy (AFM-IR) uses the tip of an AFM as a nanoscale detector of the expansion caused by absorption of IR radiation. AFM-IR can be used to obtain IR absorption spectra and chemical imaging with resolution as fine as the AFM tip radius, >100X smaller than spatial resolution limits of conventional infrared spectroscopy. The photothermal AFM-IR technique has demonstrated improvements in sensitivity, down to the scale of single monolayers, and speed with spectral acquisition times dropping by an order of magnitude. This presentation will describe the underlying technology and complementary techniques for nano-mechanical/nano-electrical and nano-thermal analysis. The presentation will also highlight numerous applications of nanoscale spectroscopy and chemical imaging in physics, materials and life sciences. Applications include nanoscale chemical analysis of polymers, composites, semiconductors, biological cells, proteins, tissue, and other areas.

SPEAKER

Dr. Miriam Unger

Dr. Miriam Unger is working as nanoIR Applications Development Manager at Bruker Nano Surfaces and Metrology. She holds a PhD in Physical Chemistry obtained in 2010 at the University Duisburg-Essen in Germany and has more than 15 years experiences with infrared microscopic techniques (including research stays in Japan and USA). Since 2014 she works in the field of nanoscale IR spectroscopy and imaging and navigates multiple academic and industrial collaboration for technology and applications development to broaden our product portfolio. She is author/co-author of more than 35 scientific articles and 4 book chapters.

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We invite you to attend this webinar

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