



MICROSCOPY SOCIETY OF NORTHEASTERN OHIO, INC.

An affiliate society of the Microscopy Society of
America and the Microanalysis Society



MSNO FALL MEETING

3:00 – 7:15 p.m., Wednesday, October 5th, 2016
ASM Headquarters – 9639 Kinsman Rd,
Material park, OH 44073

Registration, Vendor Exhibitions and ASM Tours	3:00 – 4:30 PM	Registration Vendor Exhibitions ASM tours
Welcoming Remarks	4:30 – 4:45 PM	<i>William T. Mahoney</i> ASM Managing Director
Presentation 1 <i>Label-free SPR and SPR imaging analysis with plasmonic microarrays and calcinated nanofilms</i>	4:45 – 5:30 PM	<i>Prof. Quan Jason Cheng</i> Department of Chemistry University of California Riverside, CA 92521
Dinner MSNO student awards	5:30 – 6:30 PM	MSNO student awardees <i>Harry Scott, CWRU</i> <i>Dinesh Lolla, The University of Akron</i>
Presentation 2 <i>Microstructure-Property Relationships in Advanced Materials</i>	6:30 – 7:15 PM	<i>Prof. John J. Lewandowski</i> Department of Materials Science and Engineering, Case Western Reserve University, Cleveland, OH 44106

Please register online at <http://www.msneo.org/2016-fall-meeting-registration.html>
by **Friday, 9/30/2016 at noon.**

Registration is \$20 for members, \$25 for non-members, \$5 for student members, \$10 for student non-members.

A limited number of onsite registrations are available for an additional \$10 cost.

* Free parking is available onsite at lower level.

2016 MSNO Fall Meeting Program



Label-free SPR and SPR imaging analysis with plasmonic microarrays and calcinated nanofilm

Quan Jason Cheng

Department of Chemistry

University of California

Riverside, CA 92521

quan.cheng@ucr.edu

Label-free detection of molecular interactions presents an attractive alternative to traditional label-based techniques such as fluorescence. As one of the most advanced label free techniques, surface plasmon resonance (SPR) continues to be at the forefront of evolving sensing technology. This seminar will discuss several strategies in the design and fabrication of high performing SPR biochips and their applications. Using spatial variation of the conducting layer and resonance confinement, manipulation of the metal film can lead to attenuation of the evanescent field in the background area, while enabling the excitation of SPPs inside the desired patterns. In addition, micro-patterned glass substrate has been developed to de-couple resonance in the resonance angle between the wells and the surrounding area, resulting in the isolation of the array spot resonance with a significant reduction of the background signal. Use of calcinated nanofilms for facilitating the establishment of biomimetic interfaces will be presented. Calcination of nanoparticle-based monolayer plasmonic films has also been developed for improving sensitivity and enabling orthogonal detection including onchip mass spectrometry and SERS analysis. Applications of the calcinated nanofilms in membrane stability assessment, signal amplification towards ultrasensitive detection, and in situ construction of a polymer coating for investigation of cell adhesion using host-guest reactions will be presented.



Microstructure-Property Relationships in Advanced Materials

John J. Lewandowski

Arthur P. Armington Professor of Engineering II

Dept. Materials Science and Engineering

Case Western Reserve University

Cleveland, OH 44122

JJL3@case.edu

Microstructural features at various size and length scales control mechanical properties of structural materials. Examples will be taken from work conducted by various previous and present graduate student advisees and visiting scholars on materials systems that range from Al-Mg alloys to implantable biomedical alloys and additively manufactured materials.

2016 MSNO Fall Meeting Sponsors



Cleveland Section of the
Society for Applied
Spectroscopy (SAS)



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Map for parking

