

Tuesday, June 17, 2014

ENHANCING LRS: NEW CONCEPTS, SYNERGIES WITH OTHER TECHNOLOGIES,
AND TOOLS FOR DATA PROCESSING

1:30 p.m. Umrath Lounge

Chairs: Shiv Sharma
Samuel Clegg

- 1:30 p.m. Clegg S. M. * Sharma S. K. Wiens R. C. Maurice S. Gasnault O. Misra A. K. Newell R. Bender S. Forni O. Lasue J. Dyar M. D. Nowak-Lovato K. L.
[Remote Raman and LIBS Spectroscopy for Future Mars Rover Missions](#) [#5082]
Remote Raman and Laser-Induced Breakdown Spectroscopy (LIBS) are highly synergistic analytical techniques well suited for future planetary missions.
- 1:45 p.m. Sharma S. K. * Misra A. K. Acosta-Maeda T. E. Bates D. E.
[A Combined Time-Resolved LIBS-Raman System for Surface Chemical Analysis at Standoff Distances](#) [#5029]
We will present 532-nm pulse laser excited LIBS and Raman spectra of a variety of chemicals and minerals measured with a combined LIBS-Raman system consisting of a custom spectrograph fabricated with three holographic gratings and an ICCD camera.
- 2:00 p.m. Tarcea N. * Ringer J. Wilsenack F. Schmitt M. Popp J.
[Stand-Off Deep UV Resonance Raman](#) [#5077]
A mobile experimental breadboard was built from a cw frequency-quadrupled diode pumped solid state laser at 244 nm, an optical telescope with 7cm aperture and a high throughput (f/4.6) — high resolution spectrometer with UV enhanced CCD camera.
- 2:15 p.m. Blacksberg J. * Alerstam E. Maruyama Y. Cochrane C. Rossman G. R.
[Time-Resolved Raman Spectroscopy for Planetary Science](#) [#5055]
We present a time-resolved Raman spectrometer for planetary science as a means for identification and mapping of minerals even in the presence of high background fluorescence.
- 2:30 p.m. Lambert J. L. * Wang A. Cooper J. B. Liu Y.
[Fluorescence Rejection in Planetary Materials Using Shifted-Excitation Raman Spectroscopic Methodologies](#) [#5071]
We present results demonstrating the use of a tunable frequency-doubled vanadate laser to implement shifted excitation difference Raman spectroscopy (SERDS) and Serially Shifted Excitation (SSE) Raman Spectroscopy on planetary materials.
- 2:45 p.m. Carriere J. T. A. * Heyler R. A.
[Low Wavenumber/THz-Raman Laser Raman Spectroscopy: Enabling Easy Access to Crystal Lattice Modes](#) [#5100]
We present a both compact and affordable new tool that is capable of simultaneously measuring both low wave-number signals (<200 cm⁻¹), corresponding to structural crystal lattice modes of the material, and traditional chemical fingerprint region.