

Thursday, June 19, 2014

LRS IN THE FIELD: INSTRUMENT CONCEPTS AND PRACTICAL APPLICATIONS

4:00 p.m. Umrath Lounge

**Chairs: Jordana Blackeberg
Antonio Sansano**

- 4:00 p.m. Wei J. * Wang A. Lambert J. L. Wettergreen D. Cabrol N. A. Warren-Rhodes K.
[*Mars Microbeam Raman Spectrometer \(MMRS\) On-Board the Zoë Rover in the Atacama Desert*](#) [#5012]
The Raman spectrometer demonstrated robust performance on the Zoë rover in the Atacama Desert. A variety of minerals, including feldspars, calcium sulfates and carbon, were unambiguously identified. Their different depth distributions were observed.
- 4:15 p.m. Guimbretière G. * Canizarès A. Finizola A. Delcher E. Raimboux N. Veron E. Simon P. Devouard B. Bertil A.
[*Raman Study of Secondary Minerals in a Recent Lava Tube*](#) [#5057]
We present here the technical adaptations made for a field use of a laboratory *in situ* Raman spectrometer, and the characterization of secondary mineral phases growing in a recent, still hot on some spots, lava tube (2007 Piton de la Fournaise).
- 4:30 p.m. Michaels C. A. * Gerbig Y. B. Cook R. F.
[*In Situ Analysis of Materials Under Mechanical Stress: A Novel Instrument for Simultaneous Nanoindentation and Raman Spectroscopy*](#) [#5011]
The application of a custom Raman-nanoindentation instrument that allows the simultaneous measurement of the mechanical deformation and Raman spectra of transparent materials under contact loading is reported.
- 4:45 p.m. Sobron P. * Sanz A. Thompson C. Cabrol N. Planetary Lake Lander Project Team
[*In-Situ Lake Bio-Geochemistry Using Laser Raman Spectroscopy and Optrode Sensing*](#) [#5027]
We have used LRS for characterizing the organic content of a lake through real-time, in-situ analyses and through lab analyses of returned samples. β -carotene and fatty acids (triglycerides) were identified as major components of the organic samples.
- 5:00 p.m. McHugh M. * Hutchinson I. B. Ingley R. Nelms N. Edwards H. G. M.
[*Optimising the Operation and Performance of a Raman Spectroscopy Instrument Developed for Planetary Exploration Applications*](#) [#5050]
A description of a software based instrument simulator, developed to aid the optimisation of the operation and performance of Raman spectroscopy instruments, for the purposes of planetary exploration.
- 5:15 p.m. Beegle L. W. Bhartia R. * DeFlores L. Darrach M. Kidd R. D. Abbey W. Asher S. Burton A. Clegg S. Conrad P. G. Edgett K. Ehlmann B. Langenhorst F. Fries M. Hug W. Nealson K. Popp J. Sobron P. Steele A. Weins R. Williford K.
[*SHERLOC: Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals, an Investigation for 2020*](#) [#5101]
SHERLOC enables non-contact, spatially resolved, and highly sensitivity detection and characterization of organics and minerals in the martian surface and near subsurface.