

Tuesday, June 17, 2014
 POSTER SESSION II
 4:00 p.m. Gargoyle Hall

LRS in the Field: Instrument Concepts and Practical Applications

Bersani D. Jehlicka J. Vandenabeele P.

[Evaluating Handheld and Portable Raman Instrumentation for Analysing Minerals in the Field](#) [#5041]

The use of different mobile (handheld and portable) Raman instruments for mineral analysis in the field (the Alps).

Barone G. Bersani D. Jehlicka J. Lottici P. P. Mazzoleni P. Raneri S. Vandenabeele P.
 Di Giacomo C. Larinà G.

[Non Destructive Investigation on the 17th/18th Century Sicilian Jewelry Collection at the Messina Regional Museum Using Mobile Raman Equipment](#) [#5065]

A handheld Raman spectrometer operating at 785 nm was used for the *in situ* analysis of the gems present in the 17th/18th century Sicilian jewelry collection preserved in the Messina Regional Museum (Italy).

Heintz R. A.

[An Exceptional View of Geological Materials with Raman Imaging](#) [#5105]

Raman imaging elevates the analysis capabilities of Raman spectroscopy to a whole new level. It takes all of the advantages of Raman spectroscopy for the analysis of geological samples and extends it to a whole new dimension.

Enhancing LRS: New Concepts, Synergies with Other Technologies, and Tools for Data Processing

Yin J. H.

[Application of Liquid Core Fiber Fourier Transform Raman Spectroscopy to Low Concentration Detection](#) [#5002]

Fourier transform Raman system integrating liquid core fiber technique got high quality Raman spectra at low concentrations from 10^{-7} – 10^{-12} M. The extreme sensitivity makes it a potential analytical tool in low concentration environment monitoring.

LRS Applications in the Field of Biomineralization and Environmental Mineralogy

Pan Z. Y. Jin J. J.

[Visual and Raman Spectroscopic Observations of Hot Compressed Water Oxidation of Guaiacol in Fused Silica Capillary Reactors](#) [#5043]

The decomposition of guaiacol in hot compressed water oxidation (HCWO) with H_2O_2 in fused silica capillary reactors with *in situ* Raman spectroscopy.

Moore J. K. Hammann B. A. Surface J. A. Ma Z. L. Hayes S. E.

[Raman Spectroscopy and Solid State NMR Characterization of Carbonates and Metal-Oxide Clusters](#) [#5070]

Presented here is data showing the utility of combining Raman spectroscopy and solid-state Nuclear Magnetic Resonance. These techniques were combined to study local structure of carbonate minerals and metal oxides.

Choi S. Wilkin R. T. Chunming S.

[Raman Spectroscopy for Arsenic Speciation in Sulfidic Water and Adsorbed Arsenic on Iron Oxides](#) [#5073]

Raman spectroscopic measurements were performed on arsenic aqueous solutions for arsenic speciation. Also, for understanding mineral phases in the presence of dissolved arsenic and ferrous and ferric ions, we conducted batch tests.

Ibrahim M. Basu A. R.

[Application of Raman Imaging in Oil Shale Analysis](#) [#5104]

Raman microscopy can provide an alternative method for measuring thermal maturity of the hydrocarbons in oil shales.

LRS Applications in the Field of Carbonaceous Materials, Astrobiology, and Paleobiology

Lünsdorf N. K. Lünsdorf J. O.

[*Automated Curve-Fitting of Raman Spectra by an Iterative, Randomized Approach Applied to Carbonaceous Matter and Minerals* \[#5026\]](#)

The proposed software is based on a randomized, iterative approach and was used to find two new Raman parameter ratios, which correlate well over the maturity range of 1–8% V_r and from lower greenschist to higher amphibolite facies conditions.

Moroz T. N. Ponomarchuk V. A. Goryainov S, V. Palchik N. A. Zhmodik S. M.

[*Raman Spectra of Some Natural Carbonaceous Materials from Black Shale Ores of East Siberian and Amyr Regions, Russia* \[#5072\]](#)

It has been shown that the carbon-rich phases from black-shale and magmatic rocks have various degrees of graphitization and different carbon forms. We may determine type of deposit.

Marshall C. P. Olcott Marshall A.

[*Raman Spectroscopy of Carbonaceous Materials in Hydrothermal Ore Deposits* \[#5092\]](#)

In this study, we explore the potential of Raman spectroscopy of sp² hybridized carbonaceous materials as a geothermometer to shed light on the temperature of ore-forming fluids for the formation of the McArthur river Pb-Zn-Ag orebody.

Wei J. Wang A. Lu Y. Connor K. Bradley A. Marshall C. Steele A.

[*The Detection of Biosignatures by Laser Raman Spectroscopy for Mars Exploration* \[#5013\]](#)

Laser Raman spectra of potential biosignature molecules on Mars possess strong bands to distinguish them from each other and from minerals. Tests of the detection limits demonstrated satisfaction of the requirements posted by Mars2020 STD report.

Culka A. Osterrothová K. Jehlička J. Hutchinson I. Ingley R. McHugh M. Oren A. Edwards H. G. M.

[*Detection of Pigments of Halophilic Endoliths from Gypsum: Portable Raman Instrument and ESA's Prototype Analysis* \[#5067\]](#)

Portable Raman instrument and ESA's Raman prototype analysis of the colored layers of the benthic gypsum crust from Eilat salterns to detect the carotenoid pigments of the extremophile organisms.

LRS Applications in the Field of Geological Fluids, Mineral Physics, and Geophysics

Guegan R. Di Carlo I. Coelho G. Branquet Y. Champallier R. Lahfid A. Bourrat X.

[*Advantages and Limits of the Multi SEM-EDX-RAMAN Coupling for Geomaterials* \[#5034\]](#)

Advantages and limitations of EDX-SEM-Raman coupling via the characterization of two geomaterials: (i) an epidote obtained through a hydrothermal synthesis; and (ii) mother of pearl samples subjected to external stresses will be discussed.

Izci E.

[*Mihaliccik Tremolite: An XRD, FTIR and Raman Spectroscopic Study* \[#5049\]](#)

Tremolite sample used in this study was obtained from Tatarcik deposits of Mihaliccik region of Turkey and characterized by X-ray diffraction, energy dispersive spectroscopy, Raman, and Fourier transform infrared spectroscopy methods.

Iancu V. Tarcea N. Hilchenbach M. Langenhorst F. Popp J.

[*Perchlorate Salt Detectability in Mars Soil Analogues Using Raman Spectroscopy* \[#5094\]](#)

Mars regolith simulants have been mixed with perchlorate salts and the Raman detectability limit of the salts has been assessed from measurement statistics derived from the point-counting technique.

Izci E.

[Structural and Dielectric properties of Acid Activated Metakaolinite and Kaolinite](#) [#5097]

CC31 kaolinite has been metakaolinized and activated with H₂SO₄ of varying concentrations. The samples were characterized using XRD,SEM, and Raman spectroscopy. The dielectric permittivity of these samples were studied.

Korsakov A. V. Golovin A. V. Sharygin I. S.

[Raman Spectroscopic Study of Micas from Ultra-Fresh Udachnay-East Kimberlites](#) [#5035]

Raman spectroscopic study of micas from ultra-fresh Udachnay-East kimberlites.

Sobron P. Barge L. M. Bhartia R. Yamamoto M. Takai K.

[Hydrothermal Mineralogy in the Mid-Okinawa Trough: Laser Raman Spectroscopy Characterization of Black Smoker Chimney Materials](#) [#5102]

Here we describe the laboratory characterization of returned deep-sea black smoker chimney materials using LRS. We analyzed two samples of black smoker chimney material from the mid-Okinawa Trough.