

Tuesday, June 17, 2014
LRS APPLICATIONS IN THE FIELD OF CARBONACEOUS MATERIALS,
ASTROBIOLOGY, AND PALEOBIOLOGY
8:30 a.m. Umrath Lounge

Chairs: Craig Marshall
Jan Jehlicka

- 8:30 a.m. Lünsdorf N. K. *
[The Effect of Polishing on Raman Spectra of Diagenetic Carbonaceous Matter \(RSDCM\) — Implications on the Correlation of Vitrinite Reflectance and RSDCM](#) [#5018]
 Polishing distorts the Raman spectrum (RS) of metamorphic carbonaceous matter (CM). It is shown here that RS of diagenetic CM are unaffected by polishing and the Raman area ratio can be used in analogue to vitrinite reflectance for ca. 1 to 8% V_r .
- 8:45 a.m. Lahfid A. Lacroix B. Hoareau G. Delchini S. Bourrat X.
[Raman Spectroscopy of Carbonaceous Materials geothermometry: a reliable method to investigate thermal history of foreland basins.](#) [#5099]
 Raman Spectroscopy of Carbonaceous Materials (RSCM) could be an alternative method to constrain paleotemperatures of rocks. The aim of this study is to extend the applicability of this method towards palotemperatures lower than 200°C.
- 9:00 a.m. Emry J. R. * Olcott Marshall A. Marshall C. P.
[Complementary Methods for Addressing Fluorescence Issues in Raman Hyperspectral Datasets](#) [#5103]
 Raman hyperspectral or chemical imaging is becoming a popular technique to identify and analyze the spatial distribution of minerals and mineraloids in samples and this technique has been utilized in a variety of geological studies.
- 9:15 a.m. Jehlicka J. * Osterrothova K. Nedbalova L. Gunde-Cimerman N. Oren A.
[Discrimination of Pigments of Microalgae, Bacteria and Yeasts Using Lightweight Handheld Raman Spectrometers: Prospects for Astrobiology](#) [#5042]
 Handheld Raman instrumentation with 532 nm lasers can be used to distinguish carotenoids of autotrophic microalgae, purple sulfur bacteria, halophilic Archaea and pigmented yeasts. Pigments are proposed as biomarkers for astrobiology of Mars.
- 9:30 a.m. Manrique-Martinez J. A. Sansano A. Navarro R. J. Lopez-Reyes G. Rull F. Gomez J. M.
[Remote Raman Detection of Biomarkers on Mineralogical Substrates](#) [#5091]
 Remote Raman spectroscopy can be used to identify life signatures and remains of biological activity. In this work we present our developments about the use of this technique for implementation in a planetary exploration payload.
- 9:45 a.m. Olcott Marshall A. Marshall C. P. *
[Field Raman Analyses of Mars Analog Sites: Test Cases for Future Rover Missions](#) [#5079]
 Our preliminary Raman spectroscopic data shows that a 785 nm excitation laser source is better suited to collecting data from iron- and sulfate-rich martian analog environments than a 514.5 nm excitation laser source is.
- 10:00 a.m. COFFEE BREAK