Applications of Confocal Laser Scanning Microscopy (CLSM) to Organic Petrology Working Group Report 2016

A working group (WG) to investigate applications of confocal laser scanning microscopy to organic petrology was established within ICCP Commission II in 2015 at the Potsdam meeting. The WG is open to all interested persons. During 2015-2016, potential members of the WG were solicited for activity and asked to complete a survey describing instrument access and available instrument parameters, e.g., type of lasers, detectors, objective lens, etc. Participants also compiled a list of confocal applications which they are interested to pursue within the context of the working group. At the 2016 Houston joint meeting of ICCP-TSOP-AASP the members of the WG and their interests were presented as:

- Dragan Životić, Univ. Belgrade, Belgrade, Romania: 3-D imaging of sedimentary organic matter.
- Mark Curtis, Univ. Oklahoma, Norman OK, USA: imaging of hydraulic fracture networks and proppant embedment.
- Bill Schopf, UCLA, Los Angeles CA, USA: 2-D and 3-D imaging of sedimentary organic matter for cellular morphology and preparatory selection for detailed study location, also investigation of fluorescent minerals, e.g. REE substitution in apatite.
- João Graciano, UFRJ, Rio de Janeiro, Brazil: imaging and fluorescence properties of palynological concentrations.
- Angeles Borrego, INCAR, Oviedo, Spain: improved imaging for maceral identification and characterization of morphology and microstructure, quantitative spectroscopy of autofluorescent macerals.
- Katrin Ruckwied, Shell, Houston TX, USA: thermal maturity applications.
- Ingrid Romero, Univ. Illinois, Champagne IL, USA: palynomorph ultrastructure imaging, assessment of fluorescence properties for kerogen type differentiation.
- Jolanta Kus, BGR, Hannover, Germany: improved imaging for maceral identification and characterization of morphology and microstructure, distribution of fluid inclusions, quantitative spectroscopy of autofluorescent macerals.
- Paul Hackley, USGS, Reston VA, USA: thermal maturity applications, relation of autofluorescence to variation in chemical composition and structure.

During 2016-2017 the members of the WG will decide on consensus study objective(s) and select a common set of sample(s), if applicable. The intention of the WG is to function as a multi-year interlaboratory study, trading common perspectives and approaches within confocal laser scanning as applied to sedimentary organic matter and to organic petrology in general. Potential outcomes may include a ‘white paper’ reviewing techniques and applications, or research paper(s) describing consensus objective(s) from interlaboratory study. Indirect outcomes also are anticipated as

collaborative efforts develop between individual participating laboratories. Interested parties are encouraged to contact WG conveners Paul Hackley (phackley@usgs.gov) and Jolanta Kus (j.kus@bgr.de) to participate.