Mineralogical Association of Canada

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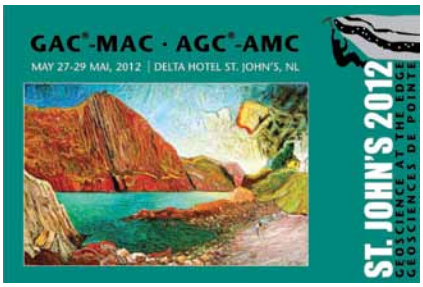
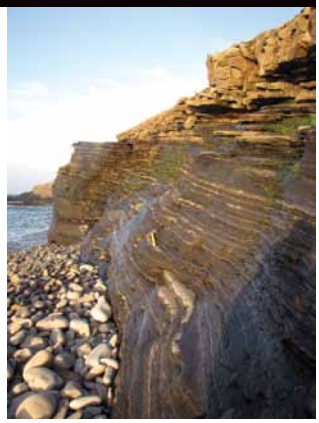
SHORT COURSE "QUANTITATIVE MINERALOGY AND MICROANALYSIS OF SEDIMENTS AND SEDIMENTARY ROCKS"

The Mineralogical Association of Canada will offer a two-day short course on quantitative mineralogy and microanalysis prior to the GAC-MAC meeting to be held in St. John's, Newfoundland. The purpose of this short course is to introduce geologists to modern technologies and techniques for the study of the petrography and mineralogy of sediments and sedimentary rocks. The approaches can provide new insights into the reconstruction of sedimentary paleoenvironments and basin architecture and the distribution of paleodrainage systems, with applications to mineral prospecting and oil and gas exploration. Many modern methods in mineralogy are focused on automation, visualization and microanalysis to produce quantitative data in a systematic and automated fashion, and the course will emphasize these developments. Quantitative data can include the identity, abundance, size, shape, ground-boundary association, and chemical and isotopic composition of detrital and authigenic minerals; the textural characteristics of sedimentary rocks, including porosity and permeability; and the distribution of chemical constituents between finely laminated layers of sediments. A particular goal will be to illustrate how mineral liberation analysis (MLA, and similar scanning electron microscope–based approaches, such as QEMSCAN and CCSEM) has evolved from a method developed for process ore mineralogy into a technique for quantitative studies of the petrography and mineralogy of sedimentary rocks in polished thin sections and sediments in polished grain mounts. Information on mineralogy from the MLA and spectroscopic and X-ray techniques links naturally to the in situ microanalysis of minerals, which is one of the most vibrant areas of geochemistry today.



Dates: Friday and Saturday, May 25–26, 2012
Prior to the GAC®-MAC joint annual meeting
Venue: Delta St. John's Hotel and Conference Centre
St. John's, Newfoundland, Canada
Organizer: Paul Sylvester, Memorial University of Newfoundland, Canada
E-mail: psylvester@mun.ca
Audience: Academics and students; government and industry researchers
Registration: http://stjohns2012

List of Topics and Speakers



- Value of heavy minerals in sediments and sedimentary rocks for provenance, transport history and stratigraphic correlation – Andy Morton (HM Research Associates, Coventry, United Kingdom)
- Use of the MLA for mineralogical studies of sediments and sedimentary rocks – Paul Sylvester (Memorial University, St. John's, Newfoundland, Canada)
- Combined FIB-SEM-TEM techniques resolve microstructures and mineral phases in sedimentary rocks – Richard Wirth (Deutsches GeoForschungsZentrum, Potsdam, Germany)
- Remote and field-based imaging spectroscopy for the diagenetic mineralogy of sedimentary rocks – Brenda Beitler Bowen (Purdue University, West Lafayette, Indiana, USA)
- Cathodoluminescence of feldspars and carbonates in sedimentary rocks – Laura González-Acebrón (Universidad Complutense de Madrid, Spain)
- 3D characterization of sandstone by means of X-ray computed tomography – Veerle Cnudde (Ghent University, Belgium)
- Tour of micro-analysis facility, Memorial University: Laser ablation-ICPMS, mineral liberation analyzer, and secondary ion mass spectrometer – Mike Tubrett, Michael Shaffer, and Graham Layne (Memorial University, St. John's, Newfoundland, Canada)
- Application of synchrotron microanalysis to studies of mine tailings and contaminated soils – Heather Jamieson (Queen's University, Kingston, Ontario, Canada)
- U-Pb geochronology and Hf-isotope geochemistry of detrital zircon in sedimentary systems – Jan Kosler (University of Bergen, Norway)
- Provenance of sandstones using in situ Pb isotope analysis of feldspar – Shane Tyrrell (University College Dublin, Ireland)
- Combined apatite fission track and U-Pb dating by LA-ICPMS – David Chew (Trinity College Dublin, Ireland)
- Light stable isotope microanalysis of clays in sedimentary rocks – Lynda Williams (Arizona State University, Tempe, Arizona, USA)
- CCSEM studies of heavy minerals in sandstones, stream sediments and coastal sands of Greenland for provenance and characterisation – Dirk Frei (Stellenbosch University, Matieland, South Africa)
- MLA studies of till mineralogy for mineral exploration in Labrador – Derek Wilton (Memorial University, St. John's, Newfoundland, Canada)
- Application of mineral provenance studies to petroleum exploration: Case study of the Scotian Basin – Georgia Pe-Piper (Saint Mary's University, Halifax, Nova Scotia, Canada)