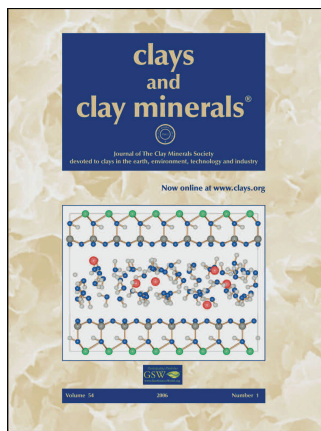




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## The Clay Minerals Society

### JOURNAL MATTERS



### New Editor-in-Chief Sought for *Clays and Clay Minerals*

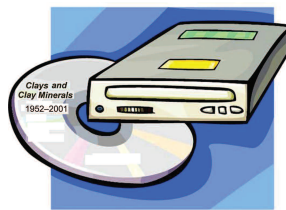
Following seven sterling years of service, Derek Bain is to stand down as editor-in-chief of *Clays and Clay Minerals*, and now, we seek a highly motivated individual to replace him. The successful candidate must have a PhD, have expertise in clay science, have excellent organizational/management skills and have superior communication skills (oral and written). The editor should be even handed, independent

and tactful. Editorial experience, the ability to help supervise the online version of *Clays and Clay Minerals*, and a willingness to develop a strategy for continued growth of the journal readership are desired. The editor will select and work closely with a board of associate editors whose function will be to assist with the review of manuscripts submitted for publication. The editor will also appoint and supervise a managing editor, who will be responsible for technical aspects of journal copy preparation and other assigned tasks. Development and management of the editorial office budget is also a duty of the editor, in conjunction with the Society treasurer. Reasonable overheads (including the managing editor's salary) and travel expenses to attend professional society meetings will be reimbursed. This is a three-year renewable appointment with a starting date of January 1, 2008.

Individuals interested in this opportunity are invited to submit a letter of interest that specifically identifies the candidate's (1) knowledge of clay science, (2) editorial experience, and (3) organizational/management skills. Along with this letter, please send a curriculum vitae, a list of three referees, and a proposed budget for the editorial office to: David Laird, USDA, ARS, National Soil Tilth Laboratory, 2150 Pammel Drive, Ames, Iowa 50011, USA; tel.: 515-294-1581; fax: 515-294-8125; e-mail: Laird@nstl.gov.

Potential candidates are urged to contact David Laird for more information, including a list of duties for the editor-in-chief and a copy of the current budget. Consideration of applications will start March 1, 2007, and will continue until the position is filled.

### Clays and Clay Minerals Archive Now Available



The archive of the Society's journal is now available, both online and in DVD format. The online version is available without charge to all users of the Internet. The DVD version is available for purchase from the Society office. It costs \$600 to institutional libraries, \$100 to individuals, and \$75 to members of the Society. Sales will help to defray the cost of creating the archive, which we hope will be used extensively.

To access the archive online, go to [www.clays.org/journal/journal.html](http://www.clays.org/journal/journal.html) and follow the blue-button link to "Archive."

### Forthcoming Papers in *Clays and Clay Minerals*

Phil G. Slade and Will P. Gates

**HDTMA in the interlayers of high-charged Llano vermiculite**

Tarmo Kiipli, Enli Kiipli, Toivo Kallaste, Rutt Hints, Peeter Somelar, and Kalle Kirsimäe

**Altered volcanic ash as an indicator of marine environment reflecting pH and sedimentation rate – example from the Ordovician Kinnekulle Bed of Baltoscandia**

Daniel Tunega, Bernard A. Goodman, Georg Haberhauer, Thomas G. Reichenauer, Martin H. Gerzabek, and Hans Lischka

**Ab initio calculations of relative stabilities of different structural arrangements in dioctahedral phyllosilicates**

Brian J. Teppen and Vaneet Aggarwal

**Thermodynamics of organic cation exchange selectivity in smectites**

T. Grygar, D. Hradil, P. Bezdička, B. Doušová, L. Čapek, and O. Schneeweiss  
**Fe(III)-modified montmorillonite and bentonite: synthesis, chemical and UV-Vis spectral characterization, As sorption, and catalysis of oxidative dehydrogenation of propane**

Jennifer E. Kyle and Paul A. Schroeder

**Role of smectite in siliceous sinter formation and microbial texture preservation: Octopus Spring, Yellowstone National Park, Wyoming, USA**

Mikhail Y. Gelfer, Christian Burger, Pranav Nawani, Benjamin S. Hsiao, Benjamin Chu, Mayu Si, Miriam Rafailovich, Grazyna Panek, Gunnar Jeschke, Alexander Y. Fadeev, and Jeffrey W. Gilman  
**Lamellar nanostructure in Somasif-based organoclays**

Steven M. Kuznicki, Christopher C.H. Lin, Junjie Bian, and Alejandro Anson

**Chemical upgrading of Bowie, Arizona, sedimentary sodium chabazite**

Sven Sindern, Helge Stanjek, Christoph Hilgers, and Yvonne Etoundi

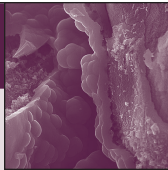
**Short-term hydrothermal effects on the 'crystallinities' of illite and chlorite in the footwall of the Aachen-Faille du Midi thrust fault – first results of the RWTH-1 drilling project**

If you'd like to purchase a copy of the disk, send payment together with your order form ([www.clays.org/publications/Pubsorderform.pdf](http://www.clays.org/publications/Pubsorderform.pdf)) to The Clay Minerals Society 3635 Concorde Pkwy Suite 500 Chantilly, VA 20151-1125, USA

### Electronic Submission and Tracking of Manuscripts

Papers for *Clays and Clay Minerals* should now be submitted by electronic means. Go to [www.clays.org/journal/journal.html](http://www.clays.org/journal/journal.html) and click on the "submit paper" icon. You will first need to become a registered user of the site, but your username and password will be the same for all subsequent submissions. The steps you will need to take are explained on screen, but help is available from the managing editor should you run into difficulty ([kmurphy@iol.ie](mailto:kmurphy@iol.ie)). We look forward to receiving your comments, and your papers.

## Clay Mineralogy: AN INTRODUCTORY COURSE



THIS is the first in a new multimedia series of educational materials to be sponsored by The Clay Minerals Society. The CD contains material used to support a graduate-level course on clay minerals taught by Professor Ray Ferrell at Louisiana State University. The content is presented in six modules that cover basic mineralogy and classification, geologic origin, aqueous solubility and ion exchange, waste isolation and fluid flow, and X-ray powder diffraction methods for the identification and quantification of clay mineral assemblages. The general objectives of this presentation are to foster a greater understanding of clay mineral reactions in the environment and the processes controlling their geologic distribution and industrial utilization. It produces an increased awareness of the relationship between structural/chemical characteristics of the diverse clay minerals present in rocks, soils, and sediments and their physical and chemical properties.

*"Every now and then, something comes along that is both great value and extremely useful. 'Clay Mineralogy: An Introductory Course' falls into that category."* – Clays and Clay Minerals

The CD is available at \$10 per copy (add \$10 for mailing outside of the US and Canada). Send your order (with check or credit card authorization, including card verification number) to The Clay Minerals Society, 3635 Concorde Pkwy Ste 500, Chantilly, VA 20151-1125, USA. Tel.: (703) 652-9960; fax: (703) 652-9951; e-mail: cms@clays.org.

## WORKSHOP LECTURE SERIES VOLUMES THE CLAY MINERALS SOCIETY

- 2 *Electron-Optical Methods in Clay Science* (1990) IDR Mackinnon, FA Mumpton (eds), 159 pp, ISBN 978-1-881208-02-8 **\$26 (\$21)**
- 3 *Thermal Analysis in Clay Science* (1990) JW Stucki, DL Bish, FA Mumpton (eds) 192 pp, ISBN 978-1-881208-03-6 **\$18 (\$13)**
- 4 *Clay-Water Interface and its Rheological Implications* (1993) N Güven, RM Pollastro (eds) 244 pp, ISBN 978-1-881208-04-4 **\$23 (\$18)**
- 5 *Computer Applications in X-ray Powder Diffraction Analysis of Clay Minerals* (1993) RC Reynolds Jr, JR Walker (eds) 171 pp, ISBN 978-1-881208-06-0 **\$23 (\$18)**
- 6 *Layer Charge Characteristics of 2:1 Silicate Clay Minerals* (1994) AR Mermut (ed) 144 pp, ISBN 978-1-881208-07-9 **\$20 (\$15)**
- 7 *Scanning Probe Microscopy of Clays* (1994) KL Nagy, AE Blum (eds) 256 pp, ISBN 978-1-881208-08-7 **\$26 (\$21)**
- 8 *Organic Pollutants in the Environment* (1996) BL Sawhney (ed) 197 pp, ISBN 978-1-881208-10-9 **\$23 (\$18)**
- 9 *Synchrotron X-ray Methods in Clay Science* (1999) DG Schulze, JW Stucki, PM Bertsch (eds) 244 pp, ISBN 978-1-881208-09-5 **\$23 (\$18)**
- 10 *Electrochemical Properties of Clays* (2003) A Fitch (ed) 205 pp, ISBN 978-1-881208-13-3 **\$26 (\$21)**
- 11 *Teaching Clay Science* (2002) AC Rule, S Guggenheim (eds) 223 pp, ISBN 978-1-881208-12-5 **\$26 (\$21)**
- 12 *Molecular Modeling of Clays and Mineral Surfaces* (2003) JD Kubicki, WF Bleam (eds) 229 pp, ISBN 978-1-881208-11-7 **\$26 (\$21)**
- 13 *The Application of Vibrational Spectroscopy to Clay Minerals and Layered Double Hydroxides* (2005) JT Klopogge (ed) 285 pp, ISBN 978-1-881208-14-1 **\$26 (\$21)**

## CLAYS IN THE NEWS

### A New Morphology for Deep Marine Resources

Professor Garrison Sposito, of the University of California at Berkeley, has investigated a new morphology for methane hydrate crystallization by computational modeling of clay minerals. Methane hydrates are a major potential natural gas resource, but they are primarily found in very low-temperature, high-pressure environments in deep marine sediments. They usually form either as pore-fillings within granular sediments or as coatings on grain boundaries. New Monte Carlo and molecular dynamics simulations have been used to investigate methane hydrate crystallization and stabilization within the interlayers of hydrated Na-montmorillonite, a 2:1 clay mineral observed in oceanic sediments with naturally occurring hydrates. Interlayer methane hydrate model structures are predicted to occur at pressures from 10 to 30 atmospheres and at temperatures up to 300 K. The hydrate can exist in a three-layer structure with Na-montmorillonite containing 0.5, 1.0 or 2.25 CH<sub>4</sub> per clay mineral unit cell. The modeling strongly suggests that only the 0.5 CH<sub>4</sub>/clay mineral unit-cell geometry is stable. The molecular dynamics simulations suggest that the mechanism for stabilizing the hydrate is a repulsive "guest-host" interaction.

### Nanotech Tools Made from Clay

A Rochester, N.Y.-based company has found a way to use halloysite as an unobtrusive carrier in metals, perfumes and other substances. NaturalNano says that by filling halloysite tubes with copper and then mixing the tubes into a polymer, a manufacturer could make an electrically conductive plastic. If filled with fungicides, the halloysite particles could be swirled into paint to make it more resistant to mildew and mold. Time-released coatings could also be added to make all-day deodorant. There are also potential agricultural uses—spreading pesticides from the halloysite nanotubes could potentially reduce the amount sprayed on agricultural land by up to 70 or 80%—and even medical uses, where the tubes could be used for drug delivery in humans. Naturally occurring halloysite tubes are much cheaper than synthetic equivalents, e.g. carbon nanotubes which cost up to \$250 a gram and are made in furnaces in labs. Halloysite mined and purified by NaturalNano retails at \$3.50–\$20.00 per pound, depending on function and complexity.



## 44<sup>th</sup> ANNUAL MEETING "ENCHANTED CLAYS" 2-7 JUNE 2007 SANTA FE, NEW MEXICO

The 44<sup>th</sup> annual meeting of The Clay Minerals Society will be held in early June 2007, in beautiful and historic Santa Fe, New Mexico, USA. Santa Fe provides an idyllic location in the southwestern United States for attendees to enjoy technical and social sessions while soaking up the diverse culture and wonderful climate of New Mexico – The Land of Enchantment. We encourage you to attend, share knowledge and ideas, benefit from technical interactions, and relax in the wonderful historic and enchanted environs of Santa Fe.

The meeting includes two and a half days of technical sessions and symposia, with oral sessions scheduled all day Monday, Tuesday morning, and all day Wednesday. Poster presentations are scheduled for Monday afternoon and Tuesday early evening. The following technical sessions and symposia are planned:

Carbon Sequestration • Carbon Stabilization by Clays • Characterizing Clay Minerals • Clays in Soils and Sediments • Clays and Environmental Processes • Clays and Archeology • Clays and their Role in Protolife • Clays as Nanomaterials • Clays in Extreme Environments • Clays in Oil Shale • Molecular Simulation of Clays • Zeolites

**Go to [www.sandia.gov/clay/](http://www.sandia.gov/clay/) for more information.  
The meeting registration deadline is 3 April 2007.**