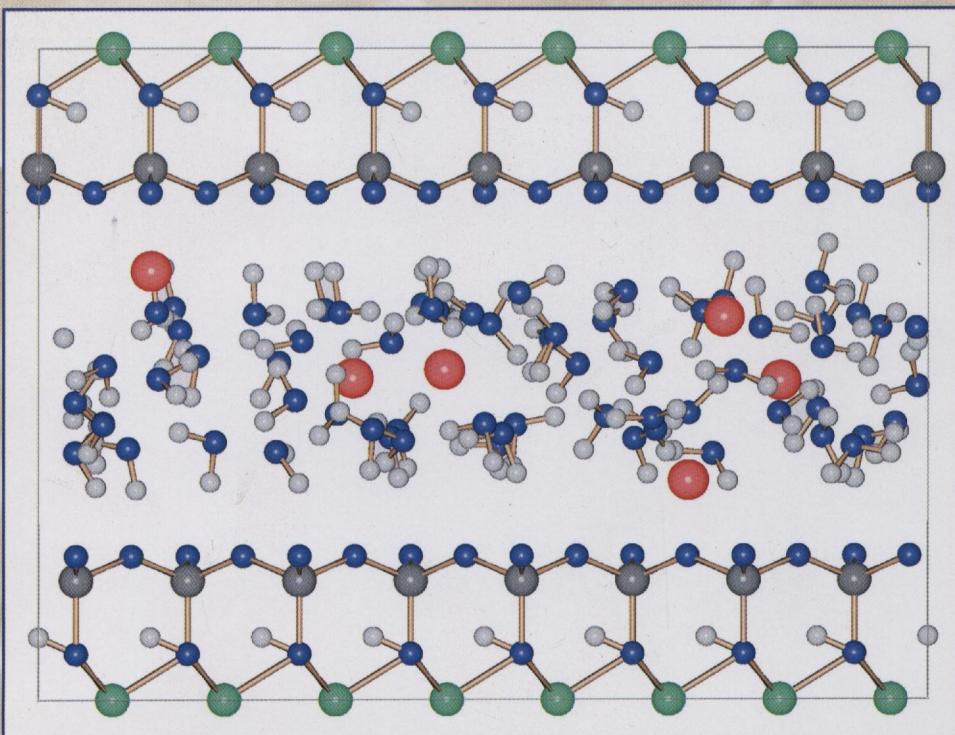


# clays and clay minerals<sup>®</sup>



Journal of The Clay Minerals Society  
devoted to clays in the earth, environment, technology and industry

Now online at [cms.lanl.gov](http://cms.lanl.gov)



Volume 52

# Clays and Clay Minerals

Volume 53 Number 4 August 2005

## Contents

Preparation and properties of reduced-charge smectites – a review <i>Peter Komadel, Jana Madejová and Juraj Bujdák</i>	313
Cation exchange and pillaring of smectites by aqueous Fe nitrate solutions <i>Harouna Dramé</i>	335
Experimental evidence for Ca-chloride ion pairs in the interlayer of montmorillonite. An XRD profile modeling approach <i>Eric Ferrage, Christophe Tournassat, Emmanuel Rinnert, Laurent Charlet and Bruno Lanson</i>	348
Clay-porphyrin systems: spectroscopic evidence of TMPyP protonation, non-planar distortion and meso substituent rotation <i>Patrícia Moura Dias, Dalva Lúcia A. de Faria and Vera R. Leopoldo Constantino</i>	361
Reaction of phosphate compounds with a high-silica allophane <i>Kiyoshi Okada, Koji Nishimuta, Yoshikazu Kameshima, Akira Nakajima and Kenneth J. D. MacKenzie</i>	372
The heat capacity of the serpentine subgroup mineral berthierine ( $\text{Fe}_{2.5}\text{Al}_{0.5}[\text{Si}_{1.5}\text{Al}_{0.5}\text{O}_5](\text{OH})_4$ ) <i>Christian Bertoldi, Edgar Dachs, Lado Cemic, Thomas Theye, Richard Wirth and Werner Groger</i>	380
Characterization of expandable clay minerals in Lake Baikal sediments by thermal dehydration and cation exchange <i>Tomas Grygar, Petr Bezdicka, David Hradil, Michaela Hruskova, Katerina Novotna, Jaroslav Kadlec, Petr Pruner and Hedi Oberhansli</i>	389
Weathering process of volcanic glass to allophane determined by $^{27}\text{Al}$ and $^{29}\text{Si}$ solid-state NMR <i>Syuntaro Hiradate and Shin-Ichiro Wada</i>	401
Origin of clay minerals in soils on pyroclastic deposits in the island of Lipari (Italy) <i>A. Mirabella, M. Egli, S. Raimondi and D. Giaccai</i>	409
Forthcoming papers	422

## Annual Sustaining Members, Patrons and Benefactors of The Clay Minerals Society

### Benefactors

ExxonMobil Upstream Research Co.  
Southern Clay Products, Inc.

### Patrons

ChevronTexaco ETC  
IMERYS  
Nestlé Purina PetCare Company  
Thiele Kaolin Company

### Members

Burgess Pigment Company  
H.H. Murray and Associates  
Kentucky-Tennessee Clay Company  
Oil-Dri Corporation of America  
Wyo-Ben, Inc.

### Individuals

Richard Brown  
Randall T. Cygan  
Joe B. Dixon

Jessica Elzea Kogel  
Steven B. Feldman  
Stephen Guggenheim  
Necip Güven  
Phoebe Hauff  
W. D. Johns  
B. F. Jones  
Kenneth M. Towe  
Joe L. White