PAPERS PRESENTED—1989 ANNUAL MEETING OF THE CLAY MINERALS SOCIETY

The following papers were presented at the 26th annual meeting of The Clay Minerals Society in Sacramento, California, September 25–28, 1989. The complete Program and Abstracts booklet of the meeting is available from The Clay Minerals Society, Society Office, P.O. Box 880, Evergreen, Colorado 80439, U.S.A., for a nominal fee.

Plenary Lectures

HETEROGENEITY IN ILLITE/SMECTITE MIXED-LAYER CLAYS—1989 GEORGE W. BRINDLEY LECTURE—W. D. Johns

OLD AND NEW CONCEPTS OF ILLITE/SMECTITE—R. C. Reynolds, Jr.

COLLOID AND SURFACE CHEMISTRY OF CLAYS—H. van Olphen

Clays as Containment Barriers

CLAY BARRIERS FOR NUCLEAR FUEL WASTE CONTAINMENT—S. C. H. Cheung and M. N. Gray

THERMOMECHANICAL FAILURE OF CLAY SOIL SUBJECTED TO NUCLEAR WASTE HEAT—T. Hueckel and G. Baldi

CLAY MINERAL TYPE AND ORGANIC CONTAINMENT RETENTION BY ORGANO-CLAYS—W. F. Jaynes and S. A. Boyd

ROLE OF SURFACTANTS, ASSOCIATION LIQUIDS, AND STRESS LEVELS IN THE FLOW OF INSOLUBLE LIQUID HYDROCARBONS THROUGH CLAY BARRIERS—R. M. Quigley and Federico Fernandez

LABORATORY DIFFUSION TESTING FOR WASTE DISPOSAL—C. D. Shackelford

POTASSIUM CONTENT, INTERLAYER CHARGE, AND INTERCRYSTALLINE SWELLING OF ILLITE/SMECTITE MIXED LAYERS IN K-BENTONITE—F. T. Madsen, Max Muller-Vonmoos, and Gunter Kahr

EFFECT OF SORPTION BARRIERS ON RADON FLUX FROM SOIL—D. W. Oscarson, T. B. Goh, M. Cheslock, and C. Shaykewich

LABORATORY DIFFUSION TESTING FOR WASTE DISPOSAL—C. D. Shackelford

Clays as Fundamental and Mixed-Layer Particles

ILLITE CRYSTAL MORPHOLOGY: RELATIONSHIPS TO ENVIRONMENT OF SHALE DIAGENESIS—J. R. Glasmann

APPLICATION OF INTERPARTICLE DIFFRACTION CONCEPT TO THE STUDY OF ILLITE—D. D. Eberl

QUANTIFICATION OF MIXED-LAYERING IN CLAY MINERALS BY MEASUREMENTS OF DIFFRACTION LINE BROADENING—R. C. Reynolds, Jr.

THE ILLITE-SMECTITE CONTACT IN 10 Å/17 Å INTERSTRATIFIED CLAY MINERALS—R. T. Tettenhorst and C. E. Corbato


MIXED-LAYER ILLITE/SMTETITE: A MULTIPHASE MODEL—P. E. Rosenberg and J. A. Kittrick


CONTRASTING K/Ar CONSEQUENCES OF TWO PARADIGMS OF ILLITE/SMECTITE STRUCTURE—J. L. Aronson and J. P. Girard

TARASOVITE-LIKE ILLITE/SMECITITE IN A VOLCANOCLASTIC BURIAL DIAGENETIC SEQUENCE FROM SOUTHWESTERN MONTANA—D. K. McCarty and G. R. Thompson

EVIDENCE FOR TWO DIFFERENT LAYER-CHARGE COMPONENTS IN INTERSTRATIFIED ILLITE/SMECTITE FROM ORDOVICIAN AND SILURIAN K-BENTONITES—Kenan Cetin and W. D. Huff

THE SMECTITE-TO-CHLORITE TRANSITION IN HYDROTHERMALLY METAMORPHOSED BASALTIC ROCKS—P. Schiffman and L. A. Bettison-Varga

COMPARISON OF MICROANALYTICAL TECHNIQUES USED IN THE CHARACTERIZATION OF MIXED-LAYER CHLORITE/SMECTITE FROM THE POINT SAL OPHIOLITE—L. A. Bettison-Varga and I. D. R. Mackinnon

FORMATION OF ILLITE LAYERS IN UPPER JURASSIC ILLITE/SMECTITE IN THE NORTH SEA CENTRAL THROUGH CLAYSTONE OIL-SOURCE ROCKS—Holger Lindgreen, P. L. Hansen, and H. J. Jakobsen

A NEW MIXED-LAYER CLAY MINERAL: REGULAR 1:1 MIXED-LAYER KAOLINITE/SMECTITE—A. R. Thomas

EXAMINATION OF MODELS OF SMECTITE ILLITIZATION—S. P. Altaner

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Soils

PHOSPHATE SORPTION-DESORPTION BEHAVIOR OF CLAYS FROM DEPOSITS AND SOILS—M. Sayin and A. R. Mermut

FLOCCULATION OF REFERENCE CLAYS AND ARID-ZONE SOIL CLAYS AS AFFECTED BY ELECTROLYTE CONCENTRATION, EXCHANGEABLE SODIUM PERCENTAGE, SODIUM ADSORPTION RATIO, pH, AND CLAY MINERALOGY—Sabine Goldberg and H. S. Forster

MINERALOGICAL CHANGES DURING SEQUENTIAL EXTRACTION PROCEDURE FOR DETERMINING THE PARTITIONING OF SeleniUM IN SOIL OF THE WESTERN SAN JOAQUIN VALLEY, CALIFORNIA—J. M. O’Neil, D. S. Lipton, and H. E. Doner

SHRINK-SWELL CHARACTERISTICS OF KAOLINITIC VERTISOLS OF HAWAII—H. U. Malik and R. C. Jones

THE INFLUENCE OF CITRATE ON THE KINETICS OF Fe(II) OXYGENATION AND THE FORMATION AND TRANSFORMATION OF IRON OXYHYDROXIDES—G. S. R. Krishnamurti and P. M. Huang

FREEZE-AIDED CRYSTALLIZATION OF COLLOIDAL CLAYS—R. R. Blank and M. A. Forberg

BIOTITE WEATHERING IN FOREST SOILS FROM THE EASTERN UNITED STATES—Diane Keller and Richard April

HYDROXY-AI POLYCATION ADSORPTION AND DESTABILIZATION OF ILLITE AND MONTMORILLONITE SUSPENSIONS—Baohua Gu and H. E. Doner

QUANTITATIVE MINERALOGICAL DIFFERENCES BETWEEN THREE HAWAIIAN KAOLINITIC VERTISOLS AS DETERMINED BY X-RAY DIFFRACTION CURVE FITTING—R. C. Jones and H. U. Malik

Fundamental Physics and Chemistry

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MAGNETIC SEPARATION OF SYNTHETIC GORGETHITES—S. C. Dormann, L. H. Bowen, and S. B. Weed

SOLID STATE TRANSFORMATION OF Fe3O4 BY THERMAL REDUCTION AND RE-OXIDATION—A. M. Bryan, L. H. Bowen, and S. B. Weed

SPECTROSCOPIC AND CHEMICAL EVIDENCE FOR EFFECTS OF ENERGY STORAGE ON SURFACE CHEMISTRY OF CLAYS—L. Coyne

THE INFRARED SPECTRUM OF ROSCOELITE—J. L. Post and P. N. Noble

THE NATURE OF FLUORINE IN A PARTIALLY ORDERED ILLITE/SMECTITE CLAY—S. J. Chipera and D. L. Bish

SINGLE CRYSTAL FOURIER-TRANSFORM INFRARED SPECTROSCOPIC STUDY OF OURAY DICKITE AND KEOKUK KAOLINITE—C. T. Johnston, S. F. Agnew, and D. L. Bish

LOW-TEMPERATURE SYNTHESIS AND PROPERTIES OF Zn-MICA AND Zn-SMECTITE—Atsumu Tsunashima, Mitsue Sato, and Katsunori Kosuge

PREPARATION AND UTILIZATION OF AMORPHOUS SILICA FROM SERPENTINE BY ACID DISSOLUTION—Katsunori Kosuge, Atsumu Tsunashima, and Ryoei Otsuka

THE SURFACE ENERGIES OF TALC AND PYROPHYLITE AS DETERMINED BY THE WICKING METHOD—R. F. Giese, P. M. Costanzo, C. J. van Oss, and J. Norris

CHARACTERIZATION AND QUANTIFICATION OF SURFACE WATER IN VARIABLY Ca-Fe-EXCHANGED MONTMORILLONITE CLAYS USING NEAR-INFRARED CORRELATION SPECTROSCOPY—L. Coyne, J. Bishop, L. Howard, and A. Banin

TUBULAR SILICATE-LAYERED SILICATE INTERCALATION COMPOUNDS: A NEW FAMILY OF ZEOLITIC PILLARED CLAYS—I. D. Johnson, T. A. Werpy, and T. J. Pinnavaia


INFLUENCE OF ELECTROLYTE CONCENTRATION, EXCHANGEABLE CATIONS, AND pH ON THE FLOCULATION OF SILVER HILL ILLITE—Catherine Thellier, Dean Heil, and Garrison Sposito

VERMICULITE GELATION: STRUCTURAL AND TEXTURAL EVOLUTION—J. A. Rausell-Colom, Jesus Saenz, and C. H. Pons

Crystal Structure

RIETVELD REFINEMENT OF THE KAOLINITE STRUCTURE AT 88, 194, and 573 K—D. L. Bish

RIETVELD REFINEMENT OF IIb CHLORITE—J. R. Walker and D. L. Bish

CRYSTAL STRUCTURE DETERMINATIONS FOR Na-, K-, AND Mg-BIRNESSITES USING TRANSMISSION ELECTRON MICROSCOPY AND THE RIETVELD METHOD—J. E. Post and D. R. Veblen

RIETVELD REFINEMENT OF SYNTHETIC GOETHITE AND Mn-SUBSTITUTED GOETHITE—D. L. Bish and M. H. Ebinger

Mineralogy and Diagenesis

ANALYTICAL ELECTRON MICROSCOPIC CHARACTERIZATION OF PHYLOSILICATE CLAYS: FITHIAN ILLITE AND EL DORADO CHLORITE—P. O. Eberly and S. A. Kaser

MORPHOLOGY OF KAOLINITE IN THE EOCENE IONE DEPOSITION SYSTEM, SIERRA FOOTHILLS, CALIFORNIA—James Wood

ILLITE CRYSTAL MORPHOLOGY—J. R. Glasmann

CLAY MINERALOGY OF WEATHERED METABALSOTS IN A ROCK-SAPROLITE-SOIL SEQUENCE—R. Southard, P. Schiffman, and R. Springer

A GEOLOGIC MODEL TO EXPLAIN CHEMICAL DIFFERENCES BETWEEN KAOLINS IN THE GEORGIA-
SOUTH CAROLINA KAOLIN DISTRICT—Tom Dom- browski, H. H. Murray, and M. Gilstrap

GENESIS AND MORPHOLOGY OF SULFIDES FROM GRAY KAOLINS—G. N. White, J. B. Dixon, R. M. Weaver, and M. S. Duncan

MINERALOGY OF SOME PRECAMBRIAN AND CAM- BRIAN SHALES FOUND IN SOUTHWESTERN MON- TANA—T. A. Toth and H. H. Murray

COMBINATION OF GLOBAL AND LOCAL ANALYSES TO EVALUATE CLAYS IN SANDSTONES—Claudine Durand and Raymond Szymanski

COMPOSITIONAL VARIABILITY OF THE PUMPKIN VALLEY SHALE—P. M. Baxter and R. E. Ferrell

ORIGIN OF CLAY MINERAL ASSEMBLAGES ASSOCI- ATED WITH SALINE GROUP EVAPORITES IN NEW YORK STATE—M. M. Hluchy and R. C. Reynolds, Jr.

STRUCTURAL VARIATIONS IN CHLORITE AND IL- LITE IN A DIAGENETIC SEQUENCE FROM THE IM- PERIAL VALLEY, CALIFORNIA—J. R. Walker and G. R. Thompson

CORRENSITE IN HYDROTHERMALLY ALTERED OCEANIC CRUSTAL ROCKS—H. E. Roberson

Applications

CLAY STABILIZATION IN HYDROCARBON RESER- VOIRS—D. E. Simon and R. E. Himes

THE BLENDING OF ROCKSTONE CLAY WITH PEAT FOR THE PRODUCTION OF SANITARYWARE IN GUYANA—Seeram Singh

Reference to abstracts of papers presented at this meeting should be made as follows: