Clays and Clay Minerals, Vol. 41, No. 6, 757–770, 1993.

COMPREHENSIVE SUBJECT, AUTHOR, TITLE INDEX[1], VOLUME 41, 1993

KENDRA HAMILTON AND KATRINA SIMONEAUX

$1M$ mica 45

$2M_1$ mica 45

^{13}C CPMAS Nuclear Magnetic Resonance Study of the Adsorption of 2-Phenethylamine on Clays, by Janet F Bank, Gabriel Ofori-Okai, and Shelton Bank 95

^{13}C MAS NMR 87

^{40}Ar/^{39}Ar Analyses of Authigenic Muscovite, Timing of Stylolitization, and Implications for Pressure Solution Mechanisms: Jurassic Norphlet Formation, Offshore Alabama, by Andrew R. Thomas, William M. Dahl, Chris M Hall, and Derek York 269

^{40}Ar/^{39}Ar dating

A

A Chemical, XRD, and ^{27}Al MAS NMR Investigation of Miocene Gulf Coast Shales with Application to Understanding Illite/Smectite Crystal-Chemistry, by Paul A. Schroeder 666

Acidity 317

Adsorption 288, 335, 472, 678

Adsorption and Spectroscopic Studies on the Interactions of Cobalt(III) Chelates with Clays, by Masami Kaneyoshi, Akihiko Yamagishi, Masahiro Tanaguchi, and Akiko Aramata 1

Adsorption of Water Vapor by Soils: Investigations of the Influence of Organic Matter, Iron, and Aluminum on Energetic Heterogeneity of Soil Clays, by Z. Sokolowska, G. Jòzefciuk, S. Sokolowski, and A. Ourumova-Pesheva 346

AEM 401

Age dating 26

Aging 353

Al content 637

Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions (The), by Robert A. Schoonheydt, J. van den Eynde, H. Tubbax, H. Leeman, M. Stuyckens, I. Lenotte, and W. E. E. Stone 598

$Al(OH)_3$ polymorphs 590

Al-interlayer 38

Al^{3+} substitution 729

Alkali halide 73

Allophane 431

Aluminium 716

Aluminum 598

Amine reactions with clays 95

Amorphization 608

Amrhein, C. (with I. Lebron, D. L. Suarez, and J. E. Strong), Size of Mica Domains and Distribution of the Adsorbed Na-Ca Ions 380

Analysis of Palygorskites and Associated Clays from the Jbel Rhassoul (Morocco): Chemical Characteristics and Origin of Formation, by Azzedine Chahi, Joelle Duplay, and Jacques Lucas 401

Anchimetamorphism 743

Anion adsorption 461

Anorthosite 56

Aramata, Akiko (with Masami Kaneyoshi, Akihiko Yamagishi, and Masahiro Tanaguchi), Adsorption and Spectroscopic Studies on the Interactions of Cobalt(III) Chelates with Clays 1

Aronson, James L. (with David L. Bish), Paleogeothermal and Paleohydrologic Conditions in Silicic Tuff from Yucca Mountain, Nevada 148

Ash fall 521

Ash flow 521

B

β-alanine 678

Bank, Janet F. (with Gabriel Ofori-Okai and Shelton Bank), ^{13}C CPMAS Nuclear Magnetic Resonance Study of the Adsorption of 2-Phenethylamine on Clays 95

Bank, Shelton (with Janet F. Bank and Gabriel Ofori-Okai), ^{13}C CPMAS Nuclear Magnetic Resonance Study of the Adsorption of 2-Phenethylamine on Clays 95

Bayerite 590

Beidellite 423, 453

Benzene chemisorption 87

Bish, David L. (with Clifford T. Johnston), Rietveld Refinement and Fourier-Transform Infrared Spectroscopic Study of the Dickite Structure at Low Temperature 297

Bish, David L. (with James L. Aronson), Paleogeothermal and Paleohydrologic Conditions in Silicic Tuff from Yucca Mountain, Nevada 148

Bish, David L., Rietveld Refinement of the Kaolinite Structure at 1.5 K 736

[1] Items are indexed to the first page of the journal article in which they appear.

Copyright © 1993, The Clay Minerals Society

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Bleam, William F. (with Gereon J. Welhouse and Mark A. Janowiak), The Surface Coulomb Energy and Proton Coulomb Potentials of Pyrophillite {010}, {110}, {100}, {130} Edges 305
Bohor, B. F. (with R. M. Pollastro), Origin and Clay-Mineral Genesis of the Cretaceous/Tertiary Boundary Unit, Western Interior of North America 7
Book Review: *Clay Minerals, Their Natural Resources and Uses*, ed. by K. Nagasawa, by Haydn H. Murray 399
Bookin, A. S. (with V. A. Drits), Polytype Diversity of the Hydrotalcite-like Minerals. I. Possible Polytypes and Their Diffraction Features 551
Bookin, A. S. (with V. I. Cherkashin and V. A. Drits), Polytype Diversity of the Hydrotalcite-like Minerals. II. Determination of the Polytypes of Experimentally Studied Varieties 558
Bookin, A. S. (with V. I. Cherkashin and V. A. Drits), Reinterpretation of the X-ray Diffraction Patterns of Stichtite and Reevesite 631
Bouchet, Alain (with Dominique Righi and Sabine Petit), Characterization of Hydroxy-Interlayered Vermiculite and Illite/Smectite Interstratified Minerals from the Weathering of a Chlorite in a Cryorthod 484
Boxwork Fabric of Halloysite-Rich Kaolin Formed by Weathering of Anorthosite in the Sancheong Area, Korea, by Gi Young Jeong and Soo Jin Kim 56
Boxwork fabric 56
Breukelaar, Johan (with J. Kloprogge, J. Ben H. Jansen, and John W. Geus), Development of Ammonium-Saponites from Gels with Variable Ammonium Concentration and Water Content at Low Temperatures 103
Brønsted Acidification Observed During Hydrothermal Treatment of a Calcium Montmorillonite, by Robert B. Heimann 716
Burial diagenesis 26, 666
Bylina, P. (with J. Jelitto, E. Dubińska, and A. Wiewióra), Layer Silicates from Serpentine-Pegmatite Contact (Wiry, Lower Silesia, Poland) 691

C

Ca-smectite 716
Cation exchange capacity 103
Cesio, A. M. (with C. Volzone, R. M. Torres Sanchez, and E. Pereira), Hydroxy-Chromium Smectite 700
Chahi, Azzedine (with Joelle Duplay and Jacques Lucas), Analysis of Palygorskites and Associated Clays from the Jbel Rhassoul (Morocco): Chemical Characteristics and Origin of Formation 401
Changes in Particle Morphology During Illitization: An Experimental Study, by Gene Whitney and Bruce Velde 209
Characterization of Colloidal Solids from Athabasca Fine Tails, by L. S. Kotlyar, Y. Deslandes, B. D. Sparks, H. Kodama, and R. Schutte 341
Characterization of Hydroxy-Interlayered Vermiculite and Illite/Smectite Interstratified Minerals from the Weathering of a Chlorite in a Cryorthod, by Dominique Righi, Sabine Petit, and Alain Bouchet 484
Characterization of Tubular Chrysotile by Thermoporometry, Nitrogen Sorption, DRIFTS, and TEM, by Mark K. Titulaer, J. Cees van Miltenburg, J. Ben H. Jansen, and John W. Geus 496
Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy, by P. B. Malla, M. Robert, L. A. Douglas, D. Tessier, and S. Komarneni 412
Charge heterogeneity 412
Charge location 453
Chemical analysis 280, 521
Chemisorption of Benzene on Cu-Montmorillonite as Characterized by FTIR and ^{13}C MAS NMR, by Z. R. Hinedi, C. T. Johnston, and C. Erickson 87
Cherkashin, V. I. (with A. S. Bookin and V. A. Drits), Polytype Diversity of the Hydrotalcite-like Minerals. II. Determination of the Polytypes of Experimentally Studied Varieties 558
Cherkashin, V. I. (with A. S. Bookin and V. A. Drits), Reinterpretation of the X-ray Diffraction Patterns of Stichtite and Reevesite 631
Chermak, J. A., Low Temperature Experimental Investigation of the Effect of High pH KOH Solutions on the Opalinus Shale, Switzerland 365
Chlorite 219, 240, 260, 484, 691
Chlorite Geothermometry: A Review, by Patrice de Caritat, Ian Hutcheon, and John L. Walshe 219
Chlorite Polytype Geothermometry, by Jeffrey R. Walker 260
Chromia 328
Chrysotile asbestos 496
Clay acidic sites 95
Clay Mineralogy and Illite Crystallinity of the Atoka Formation, Arkoma Basin, and Frontal Ouachita Mountains, by Christoph Spötl, David Houseknecht, and Robert Jaques 743
Clay minerals 537
Clay suspensions 114
Clay-metal chelate interactions 1
Clays 412, 472
Claystone 7
CO_2 adsorption 729
Coagulation 453
Colloidal solids 341
Comparison of I/S Transformation and Maturity of Organic Matter at Elevated Temperatures, by B. Velde and B. Lanson 178
Composition 219, 537
Compositional End Members and Thermodynamic

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Components of Illite and Dioctahedral Aluminous Smectite Solid Solutions, by Barbara Ransom and Harold C. Helgeson 537
Considerations and Applications of the Illite/Smectite Geothermometer in Hydrocarbon-Bearing Rocks of Miocene to Mississippian Age, by Richard M. Pollastro 119
Copper 288, 678
Corbató, Charles E. (with Rodney T. Tettenhorst), Quantitative Analysis of Mixtures of 1M and 2M_1 Dioctahedral Micas by X-ray Diffraction 45
Corrensite 240
Cristobalite 753
Cross-linked smectites 700
Cross-linking 472
Cryolite 461
Crystal structure 580, 608, 736
Crystallinity 570
Cu-montmorillonite 87

D

Dahl, William M. (with Andrew R. Thomas, Chris M Hall, and Derek York), $^{40}Ar/^{39}Ar$ Analyses of Authigenic Muscovite, Timing of Stylolitization, and Implications for Pressure Solution Mechanisms: Jurassic Norphlet Formation, Offshore Alabama 269
de Caritat, Patrice (with Ian Hutcheon and John L. Walshe), Chlorite Geothermometry: A Review 219
de la Calle, C. (with J. L. Martin de Vidales and C. H. Pons), Stacking Order in a K/Mg Interstratified Vermiculite from Malawi 580
Dealkalized leached layer 431
Defect distribution 705
Deslandes, Y. (with L. S. Kotlyar, B. D. Sparks, H. Kodama, and R. Schutte), Characterization of Colloidal Solids from Athabasca Fine Tails 341
Development of Ammonium-Saponites from Gels with Variable Ammonium Concentration and Water Content at Low Temperatures, by J. Theo Kloprogge, Johan Breukelaar, J. Ben H. Jansen, and John W. Geus 103
Diagenesis 134, 240, 260, 743
Diagenetic Kaolinite/Dickite (Betic Cordilleras, Spain), by M. D. Ruiz Cruz and L. Moreno Real 570
Dickite 297, 570
Differential thermal analysis 570
Dimepiperate 335
Dimepiperate Adsorption and Hydrolysis on Al^{3+}-, Fe^{3+}- and Na^{+}-Montmorillonite, by A Pusino, W. Liu, and C. Gessa 335
Dioctahedral smectites 637
Disubstituted benzenes 527
Dithionite 360
Dolomite 240
Doner, Harvey (with Frederic Hetzel), Some Colloidal Properties of Beidellite: Comparison with Low and High Charge Montmorillonites 453
Doner, Harvey E. (with Baohua Gu), The Microstructure of Dilute Clay and Humic Acid Suspensions Revealed by Freeze-Fracture Electron Microscopy: A Reply 114
Douglas, L. A. (with P. B. Malla, M. Robert, D. Tessier, and S. Komarneni), Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy 412
Drilling mud 373
Drits, V. A. (with A. S. Bookin and V. I. Cherkashin), Polytype Diversity of the Hydrotalcite-like Minerals. II. Determination of the Polytypes of Experimentally Studied Varieties 558
Drits, V. A. (with A. S. Bookin and V. I. Cherkashin), Reinterpretation of the X-ray Diffraction Patterns of Stichtite and Reevesite 631
Drits, V. A. (with A. S. Bookin), Polytype Diversity of the Hydrotalcite-like Minerals. I. Possible Polytypes and Their Diffraction Features 551
Drits, V. A. (with F. Weber, A. L. Salyn, and S. I . Tsipursky), X-ray Identification of One-Layer Illite Varieties: Application to the Study of Illites Around Uranium Deposits of Canada 389
Dubińska, E. (with J. Jelitto, A. Wiewióra, and P. Bylina), Layer Silicates from Serpentine-Pegmatite Contact (Wiry, Lower Silesia, Poland), 691
Duplay, Joelle (with Azzedine Chahi and Jacques Lucas), Analysis of Palygorskites and Associated Clays from the Jbel Rhassoul (Morocco): Chemical Characteristics and Origin of Formation 401

E

Eberl, D. D., Three Zones for Illite Formation during Burial Diagenesis and Metamorphism 26
Edge structure 305
Effect of Mechanical Treatment on the Crystal Structure and Thermal Behavior of Kaolinite (The), by Éva Kristóf, A. Zoltán Juhász, and István Vassányi 608
Effect of Prolonged Aging on the Transformation of Short-Range Ordered Aluminum Precipitation Products Formed in the Presence of Organic and Inorganic Ligands, by A. Violante, L. Gianfreda, and P. Violante 353
Ejecta 7
Electron microprobe 423
Electron microscopy 111, 114, 570
Electron paramagnetic resonance 565, 660
Electrophoretic Mobility of Imogolite and Allophane in the Presence of Inorganic Anions and Citrate (The), by Chunming Su and James B. Harsh 461
Electrophoretic mobility 380
Electrostatic potential 305

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Elementary particle 280
Elliott, W. Crawford, Origin of the Mg-Smectite at the Cretaceous/Tertiary (K/T) Boundary at Stevns Klint, Denmark 442
End members 537
Erickson, C. (with C. T. Johnston and Z. R. Hinedi), Chemisorption of Benzene on Cu-Montmorillonite as Characterized by FTIR and ^{13}C MAS NMR 87
Eslinger, Eric (with J. Reed Glasmann), Geothermometry and Geochronology Using Clay Minerals—An Introduction 117
Ethylenediamine 678
Experimental Determination of the Rates of Precipitation of Authigenic Illite and Kaolinite in the Presence of Aqueous Oxalate and Comparison to the K/Ar Ages of Authigenic Illite in Reservoir Sandstones, by J. S. Small 191
Experimental investigation 365
Experimentally Derived Kinetic Model for Smectite-to-Illite Conversion and its Use as a Geothermometer (An), by Wuu-Liang Huang, John M. Longo, and David R. Pevear 162

F

Fallick, A. E. (with C. I. Macaulay and R. S. Haszeldine), Implications of Linearly Correlated Oxygen and Hydrogen Isotopic Compositions for Kaolinite and Illite in the Magnus Sandstone, North Sea 184
Fibrous material 431
Fine tails 341
Flocs 373
Formation Mechanism of Aluminum Hydroxide Polymorphs, by A. Violante and P. M. Huang 590
Formation of Clay Minerals During Low-Temperature Experimental Alteration of Obsidian, by Motoharu Kawano, Katsutoshi Tomita, and Yoshitaka Kamino 431
Fractal 373
Freeze fracture 114
Fry, I. V. (with A. U. Gehring and G. Sposito), Residual Manganese(II) Entrapped in Single-Layer-Hydrate Montmorillonite Interlayers 565
Fry, I. V. (with A. U. Gehring, J. Luster, and Garrison Sposito), The Chemical Form of Vanadium (IV) in Kaolinite 660
FTIR 87, 288

G

Gabbitas, Neil (with John G. Thompson and Philippa J. R. Uwins), The Intercalation of Kaolinite by Alkali Halides in the Solid State: A Systematic Study of the Intercalates and Their Derivatives 73
Garcia Hernandez, J. E. (with J. S. Notario del Pino, M. M. Gonzalez Martin, F. Hernan Reguera, and J. A. Rodriguez Losada), Zeolites in Pyroclastic Deposits in Southeastern Tenerife (Canary Islands) 521
Gates, W. P. (with H. T. Wilkinson and J. W. Stucki), Swelling Properties of Microbially Reduced Ferruginous Smectite 360
Gehring, A. U. (with I. V. Fry and G. Sposito), Residual Manganese(II) Entrapped in Single-Layer-Hydrate Montmorillonite Interlayers 565
Gehring, A. U. (with I. V. Fry, J. Luster, and Garrison Sposito) The Chemical Form of Vanadium (IV) in Kaolinite 660
Geoautoclave 521
Georgia 514
Geothermal gradients 148
Geothermometer 119, 162, 219, 260
Geothermometry and Geochronology Using Clay Minerals—An Introduction, by Eric Eslinger and J. Reed Glasmann 117
Gessa, C. (with A Pusino and W. Liu), Dimepiperate Adsorption and Hydrolysis on Al^{3+}-, Fe^{3+}- and Na^{+}-Montmorillonite 335
Geus, John W. (with J. Kloprogge, Johan Breukelaar, and J. Ben H. Jansen), Development of Ammonium-Saponites from Gels with Variable Ammonium Concentration and Water Content at Low Temperatures 103
Geus, John W. (with J. Theo Kloprogge, A. M. J. van der Eerden, J. Ben H. Jansen, and Roelof D. Schuiling), Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity 423
Geus, John W. (with Mark K. Titulaer, J. Cees van Miltenburg, and J. Ben H. Jansen), Characterization of Tubular Chrysotile by Thermoporometry, Nitrogen Sorption, DRIFTS, and TEM 496
Gianfreda, L. (with A. Violante and P. Violante), Effect of Prolonged Aging on the Transformation of Short-Range Ordered Aluminum Precipitation Products Formed in the Presence of Organic and Inorganic Ligands 353
Gibbsite 353, 590
Gibbsite-type intercalates 716
Gilkes, R. J. (with Balbir Singh), Weathering of Spodumene to Smectite in a Lateritic Environment 624
Glasmann, Reed J. (with Eric Eslinger), Geothermometry and Geochronology Using Clay Minerals—An Introduction 117
Glass alteration 7
Gonzalez Martin, M. M. (with J. E. Garcia Hernandez, J. S. Notario del Pino, F. Hernan Reguera, and J. A. Rodriguez Losada), Zeolites in Pyroclastic Deposits in Southeastern Tenerife (Canary Islands) 521
Grinding 608
Gu, Baohua (with Harvey E. Doner), The Microstruc-

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

ture of Dilute Clay and Humic Acid Suspensions Revealed by Freeze-Fracture Electron Microscopy: A Reply 114
Gulf Coast 666
Gulf Coast basin 26

H

H positions 736
Hall, Chris M. (with Andrew R. Thomas, William M. Dahl, and Derek York), $^{40}Ar/^{39}Ar$ Analyses of Authigenic Muscovite, Timing of Stylolitization, and Implications for Pressure Solution Mechanisms: Jurassic Norphlet Formation, Offshore Alabama 269
Halloysite 7, 56
Harsh, James B. (with Chunming Su), The Electrophoretic Mobility of Imogolite and Allophane in the Presence of Inorganic Anions and Citrate 461
Haszeldine, R. S. (with C. I. Macaulay and A. E. Fallick), Implications of Linearly Correlated Oxygen and Hydrogen Isotopic Compositions for Kaolinite and Illite in the Magnus Sandstone, North Sea 184
Hectorite 598
Heimann, Robert B., Brønsted Acidification Observed During Hydrothermal Treatment of a Calcium Montmorillonite 716
Helgeson, Harold C. (with Barbara Ransom), Compositional End Members and Thermodynamic Components of Illite and Dioctahedral Aluminous Smectite Solid Solutions 537
Heller-Kallai, Lisa (with Faina Tsvetkov and Uri Mingelgrin), Potassium Halide-Treated Montmorillonite (KTM) as a Solid Phase in Liquid Chromatography 527
Hernan Reguera, F. (with J. E. Garcia Hernandez, J. S. Notario del Pino, M. M. Gonzalez Martin, and J. A. Rodriguez Losada), Zeolites in Pyroclastic Deposits in Southeastern Tenerife (Canary Islands) 521
Hetzel, Frederic (with Harvey Doner), Some Colloidal Properties of Beidellite: Comparison with Low and High Charge Montmorillonites 453
High pH 365
High-resolution TEM 280, 412
Hillier, S., Origin, Diagenesis, and Mineralogy of Chlorite Minerals in Devonian Lacustrine Mudrocks, Orcadian Basin, Scotland 240
Hinedi, Z. R. (with C. T. Johnston and C. Erickson), Chemisorption of Benzene on Cu-Montmorillonite as Characterized by FTIR and ^{13}C MAS NMR 87
Houseknecht, David (with Christoph Spötl and Robert Jaques), Clay Mineralogy and Illite Crystallinity of the Atoka Formation, Arkoma Basin, and Frontal Ouachita Mountains 743
HPLC 527
Huang, Hening, Porosity-Size Relationship of Drilling Mud Flocs 373
Huang, P. M. (with A. Violante), Formation Mechanism of Aluminum Hydroxide Polymorphs 590
Huang, P. M. (with G. Lou), Silication of Hydroxy-Al Interlayers in Smectite 38
Huang, Wuu-Liang (with John M. Longo, and David R. Pevear), An Experimentally Derived Kinetic Model for Smectite-to-Illite Conversion and its Use as a Geothermometer 162
Huang, Wuu-Liang, The Formation of Illitic Clays from Kaolinite in KOH Solution from 225°C to 350°C 643
Hutcheon, Ian (with Patrice de Caritat and John L. Walshe) Chlorite Geothermometry: A Review 219
Hydrocarbons 119
Hydrolysis 335
Hydrophilic 341
Hydrotalcite-like compound 729
Hydrotalcite-like group 551, 558, 631
Hydrothermal alteration 389
Hydrothermal condition 724
Hydrothermal synthesis 423
Hydroxy-Chromium Smectite, by C. Volzone, A. M. Cesio, R. M. Torres Sanchez, and E. Pereira 700
Hydroxy-FeAl pillars 317
Hydroxy-interlayered intergrades 484

I

I/S clays 537
Illite 26, 66, 162, 184, 191, 280, 389, 401, 537, 643, 743
Illite crystallinity 743
Illite from the Potsdam Sandstone of New York: A Probable Noncentrosymmetric Mica Structure, by R. C. Reynolds Jr. and C. H. Thompson 66
Illite synthesis 643
Illite/Smectite Geothermometry of the Proterozoic Oronto Group, Midcontinent Rift System, by Kirsten L. Price and S. Douglas McDowell 134
Illite/smectite 26, 119, 134, 178, 184, 666
Illite/smectite mixed-layers 484
Illitization 119, 209
Implications of Linearly Correlated Oxygen and Hydrogen Isotopic Compositions for Kaolinite and Illite in the Magnus Sandstone, North Sea, by A. E. Fallick, C. I. Macaulay, and R. S. Haszeldine 184
Infrared spectroscopy 103, 297, 335, 496, 570
Inner-sphere complex 461
Intercalate(s) 73, 705
Intercalation of Kaolinite by Alkali Halides in the Solid State: A Systematic Study of the Intercalates and Their Derivatives (The), by John G. Thompson,

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Neil Gabbitas, and Philippa J. R. Uwins 73
Intergrade 691
Interlayer adsorption 38
Interlayer cations 335
Interstratification 280, 580
Interstratified minerals 570
Ion beam thinning 624
Ion exchange 580
Isomorphic substitution 660
Isothermal Treatments of Regularly Interstratified Montmorillonite-Beidellite at Hydrothermal Conditions, Hirohisa Yamada and Hiromoto Nakazawa 724
Isothermal treatments 716
Itoh, M. (with C. Mizota), Volcanic Origin of a Cristobalite in the Te Ngae Tephric-Loess from North Island, New Zealand 743

J

Janowiak, Mark A. (William F. Bleam and Gereon J. Welhouse), The Surface Coulomb Energy and Proton Coulomb Potentials of Pyrophillite {010}, {110}, {100}, {130} Edges 305
Jansen, J. Ben H. (with by Mark K. Titulaer, J. Cees van Miltenburg, and John W. Geus), Characterization of Tubular Chrysotile by Thermoporometry, Nitrogen Sorption, DRIFTS, and TEM 496
Jansen, J. Ben H. (with J. Theo Kloprogge, A. M. J. van der Eerden, John W. Geus, and Roelof D. Schuiling), Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity 423
Jansen, J. Ben H. (with J. Kloprogge, Johan Breukelaar John W. Geus), Development of Ammonium-Saponites from Gels with Variable Ammonium Concentration and Water Content at Low Temperatures 103
Jaques, Robert (with Christoph Spötl and David Houseknecht), Clay Mineralogy and Illite Crystallinity of the Atoka Formation, Arkoma Basin, and Frontal Ouachita Mountains 743
Jbel Rhassoul 401
Jelitto, J. (with E. Dubiñska, A. Wiewióra, and P. Bylina), Layer Silicates from Serpentine-Pegmatite Contact (Wiry, Lower Silesia, Poland), 691
Jeong, Gi Young (with Soo Jin Kim), Boxwork Fabric of Halloysite-Rich Kaolin Formed by Weathering of Anorthosite in the Sancheong Area, Korea 56
Jimenez-Lopez, Antonio (with Jose Maza-Rodriguez, Pascual Olivera-Pastor, Pedro Maireles-Torres, and Enrique Rodriguez-Castellon), Pillared Clays Prepared from the Reaction of Chromium Acetate with Montmorillonite 328
Johnston, C. T. (with Z. R. Hinedi and C. Erickson), Chemisorption of Benzene on Cu-Montmorillonite as Characterized by FTIR and ^{13}C MAS NMR 87
Johnston, Clifford T. (with David L. Bish), Rietveld Refinement and Fourier-Transform Infrared Spectroscopic Study of the Dickite Structure at Low Temperature 297
Jòzefciuk, G. (with Z. Sokolowska, S. Sokolowski, and A. Ourumova-Pesheva), Adsorption of Water Vapor by Soils: Investigations of the Influence of Organic Matter, Iron, and Aluminum on Energetic Heterogeneity of Soil Clays 346
Juhász, A. Zoltán (with Éva Kristóf and István Vassányi), The Effect of Mechanical Treatment on the Crystal Structure and Thermal Behavior of Kaolinite 608

K

K-rectorite 365
K/Ar 191
K/Ar dating 148, 442
K/T boundary 442
K/T boundary unit 7
Kamino, Yoshitaka (with Motoharu Kawano and Katsutoshi Tomita), Formation of Clay Minerals During Low-Temperature Experimental Alteration of Obsidian 431
Kaneyoshi, Masami (with Akihiko Yamagishi, Masahiro Tanaguchi, and Akiko Aramata), Adsorption and Spectroscopic Studies on the Interactions of Cobalt(III) Chelates with Clays 1
Kaolin 56, 514
Kaolinite 7, 73, 184, 191, 423, 514, 570, 608, 613, 643, 660, 705, 736
Kaolinite Particle Sizes in the <2 μm Range Using Laser Scattering, by Ian D. R. Mackinnon, Philippa J. R. Uwins, Anya Yago, and David Page 613
Kaolinite:NMF Intercalates, by Philippa J. R. Uwins, Ian D. R. Mackinnon, John G. Thompson, and Anya J. E. Yago 705
Kawano, Motoharu (with Katsutoshi Tomita and Hisanori Yamane), Synthesis of Smectite from Volcanic Glass at Low Temperature 653
Kawano, Motoharu (with Katsutoshi Tomita and Yoshitaka Kamino), Formation of Clay Minerals During Low-Temperature Experimental Alteration of Obsidian 431
Kim, Soo Jin (with Gi Young Jeong), Boxwork Fabric of Halloysite-Rich Kaolin Formed by Weathering of Anorthosite in the Sancheong Area, Korea 56
Kinetics 162, 178, 643
Kloprogge, J. Theo (with A. M. J. van der Eerden, J. Ben H. Jansen, John W. Geus, and Roelof D. Schuiling), Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity 423

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Kloprogge, J. Theo (with Johan Breukelaar, J. Ben H. Jansen, and John W. Geus), Development of Ammonium-Saponites from Gels with Variable Ammonium Concentration and Water Content at Low Temperatures 103
Kodama, H. (with L. S. Kotlyar, Y. Deslandes, B. D. Sparks, and R. Schutte), Characterization of Colloidal Solids from Athabasca Fine Tails 341
Komarneni, S. (with P. B. Malla), Properties and Characterization of Al_2O_3 and SiO_2-TiO_2 Pillared Saponite 472
Komarneni, S. (with P. B. Malla, M. Robert, L. A. Douglas, and D. Tessier), Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy 412
Kotlyar, L. S. (with Y. Deslandes, B. D. Sparks, H. Kodama, and R. Schutte), Characterization of Colloidal Solids from Athabasca Fine Tails 341
Kristóf, Éva (with A. Zoltán Juhász and István), The Effect of Mechanical Treatment on the Crystal Structure and Thermal Behavior of Kaolinite 608

L

Laird, D. A. (with E. A. Nater), Nature of the Illitic Phase Associated with Randomly Interstratified Smectite/Illite in Soils 280
Lanson, B. (with B. Velde), Comparison of I/S Transformation and Maturity of Organic Matter at Elevated Temperatures 178
Laponite 598
Laser scattering 613
Lattice sum 305
Layer Silicates from Serpentine-Pegmatite Contact (Wiry, Lower Silesia, Poland), by J. Jelitto, E. Dubińska, A. Wiewióra, and P. Bylina 691
Lebron, I. (with D. L. Suarez, C. Amrhein, and J. E. Strong), Size of Mica Domains and Distribution of the Adsorbed Na-Ca Ions 380
Leeman, H. (with Robert A. Schoonheydt, J. van den Eynde, H. Tubbax, M. Stuyckens, I. Lenotte, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598
Lenotte, I. (with Robert A. Schoonheydt, J. van den Eynde, H. Tubbax, H. Leeman, M. Stuyckens, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598
Liu, W. (with A Pusino and C. Gessa), Dimepiperate Adsorption and Hydrolysis on Al^{3+}-, Fe^{3+}- and Na^{+}-Montmorillonite 335
Longo, John M. (with Wuu-Liang Huang and David R. Pevear), An Experimentally Derived Kinetic Model for Smectite-to-Illite Conversion and its Use as a Geothermometer 162
Lou, G. (with P. M. Huang), Silication of Hydroxy-Al Interlayers in Smectite 38
Low Temperature Experimental Investigation of the Effect of High pH KOH Solutions on the Opalinus Shale, Switzerland, by J. A. Chermak 365
Low temperature 297, 653, 736
Low-grade metamorphism 260
Lucas, Jacques (with Azzedine Chahi and Joelle Duplay), Analysis of Palygorskites and Associated Clays from the Jbel Rhassoul (Morocco): Chemical Characteristics and Origin of Formation 401
Luster, J. (with A. U. Gehring, I. V. Fry, and Garrison Sposito), The Chemical Form of Vanadium (IV) in Kaolinite 660

M

Macaulay, C. I. (with A. E. Fallick and R. S. Haszeldine), Implications of Linearly Correlated Oxygen and Hydrogen Isotopic Compositions for Kaolinite and Illite in the Magnus Sandstone, North Sea 184
Mackinnon, Ian D. R. (with Philippa J. R. Uwins, Anya Yago, and David Page), Kaolinite Particle Sizes in the <2 μm Range Using Laser Scattering 613
Mackinnon, Ian D. R. (with Philippa J. R. Uwins, John G. Thompson, and Anya J. E. Yago), Kaolinite: NMF Intercalates 705
Magnetic properties 111
Maireles-Torres, Pedro (with Antonio Jimenez-Lopez, Jose Maza-Rodriguez, Pascual Olivera-Pastor, and Enrique Rodriguez-Castellon), Pillared Clays Prepared from the Reaction of Chromium Acetate with Montmorillonite 328
Malla, P. B. (with M. Robert, L. A. Douglas, D. Tessier, and S. Komarneni), Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy 412
Malla, P. B. (with S. Komarneni), Properties and Characterization of Al_2O_3 and SiO_2-TiO_2 Pillared Saponite 472
Malonic acid 678
Mao, Gang (with Masamichi Tsuji and Yutaka Tamaura), Synthesis and CO_2 Adsorption Features of a Hydrotalcite-like Compound of the Mg^{2+}-$Al^{3+}Fe(CN)_6^{4-}$ System with High Layer-Charge Density 729
March function 45
Martin de Vidales, J. L. (with C. de la Calle and C. H. Pons), Stacking Order in a K/Mg Interstratified Vermiculite from Malawi 580
MAS NMR 472
Maza-Rodriguez, Jose (with Antonio Jimenez-Lopez, Pascual Olivera-Pastor, Pedro Maireles-Torres, and Enrique Rodriguez-Castellon), Pillared Clays

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Prepared from the Reaction of Chromium Acetate with Montmorillonite 328
McDowell, S. Douglas (with Kirsten L. Price), Illite/Smectite Geothermometry of the Proterozoic Oronto Group, Midcontinent Rift System 134
Mechanochemistry 608
Meteorite impact 7
Mica domains 380
Mica(s) 66, 637, 691
Microorganism 360
Microstructure 114
Microstructure of Dilute Clay and Humic Acid Suspension Revealed by Freeze-Fracture Electron Microscopy: A Reply (The), by Baohua Gu and Harvey E. Doner 114
Mineralization 134
Mingelgrin, Uri (with Faina Tsvetkov and Lisa Heller-Kallai), Potassium Halide-Treated Montmorillonite (KTM) as a Solid Phase in Liquid Chromatography 527
Miocene 666
Mixed-layered clays 537
Mizota, C. (with M. Itoh), Volcanic Origin of a Cristobalite in the Te Ngae Tephric-Loess from North Island, New Zealand 743
Mn(II) coordination 565
Modeling 288, 678
Modeling of H^+ and Cu^{2+} adsorption on Calcium-Montmorillonite, by Markus Stadler and Paul W. Schindler 288
Montmorillonite 38, 114, 288, 328, 335, 353, 412, 472, 527, 565, 678
Moreno Real, L. (with M. D. Ruiz Cruz), Diagenetic Kaolinite/Dickite (Betic Cordilleras, Spain) 570
Morphology 209
Mössbauer spectroscopy 111
Murad, Enver (with Udo Schwertmann), Temporal Stability of a Fine-Grained Magnetite 111
Murray, Haydn H., Book Review: *Clay Minerals, Their Natural Resources and Uses*, ed. by K. Nagasawa 399
Muscovite 269

N

N-methyl formamide 705
N_2 adsorption and desorption 496
Nakazawa, Hiromoto (with Hirohisa Yamada), Isothermal Treatments of Regularly Interstratified Montmorillonite-Beidellite at Hydrothermal Conditions 724
Nanostructure 401
Nater, E. A (with D. A. Laird), Nature of the Illitic Phase Associated with Randomly Interstratified Smectite/Illite in Soils 280
Nature of the Illitic Phase Assocated with Randomly Interstratified Smectite/Illite in Soils, by D. A. Laird and E. A. Nater 280
Neoformation 401
Neutron powder diffraction 297, 736
New Zealand 753
NIR spectra 637
NMR 666
Noble, Paul N. (with James L. Post), The Near-Infrared Combination Band Frequencies of Dioctahedral Smectites, Micas, and Illites 637
Noncentrosymmetric 66
Noncrystalline Al products 353
Noncrystalline materials 590
Noncrystalline weathering products 624
Nonstoichiometric dissolution 431
Nordstrandite 590
Norphlet formation 269
North Sea 191
Notario del Pino, J. S. (with J. E. Garcia Hernandez, M. M. Gonzalez Martin, F. Hernan Reguera, and J. A. Rodriguez Losada), Zeolites in Pyroclastic Deposits in Southeastern Tenerife (Canary Islands) 521

O

Obsidian 431
Octahedral cation distribution 389
Ofori-Okai, Gabriel (with Janet F. Bank and Shelton Bank), ^{13}C CPMAS Nuclear Magnetic Resonance Study of the Adsorption of 2-Phenethylamine on Clays 95
Olivera-Pastor, Pascual (with Antonio Jimenez-Lopez, Jose Maza-Rodriguez, Pedro Maireles-Torres, and Enrique Rodriguez-Castellon), Pillared Clays Prepared from the Reaction of Chromium Acetate with Montmorillonite 328
Opalinus shale 365
Ordering 580
Origin and Clay-Mineral Genesis of the Cretaceous/Tertiary Boundary Unit, Western Interior of North America, by R. M. Pollastro and B. F. Bohor 7
Origin of the Mg-Smectite at the Cretaceous/Tertiary (K/T) Boundary at Stevns Klint, Denmark, by W. Crawford Elliott 442
Origin, Diagenesis, and Mineralogy of Chlorite Minerals in Devonian Lacustrine Mudrocks, Orcadian Basin, Scotland, by S. Hillier 240
Ostwald ripening 26
Ourumova-Pesheva, A. (Z. Sokolowska, G. Jòzefciuk, and S. Sokolowski), Adsorption of Water Vapor by Soils: Investigations of the Influence of Organic Matter, Iron, and Aluminum on Energetic Heterogeneity of Soil Clays 346
Outer-sphere complex 461
Oxalate 191
Oxidation 111

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

P

Page, David (with Ian D. R. Mackinnon, Philippa J. R. Uwins, and Anya Yago), Kaolinite Particle Sizes in the <2 μm Range Using Laser Scattering 613
Paleogeothermal and Paleohydrologic Conditions in Silicic Tuff from Yucca Mountain, Nevada, by David L. Bish and James L. Aronson 148
Palygorskites 401
Paragonite 423
Particle 209
Particle size 613, 705
Peak-area ratio 45
Pedogenesis 753
Pereira. E. (with C. Volzone, A. M. Cesio, and R. M. Torres Sanchez), Hydroxy-Chromium Smectite 700
Pesticides 335
Petit, Sabine (with Dominique Righi and Alain Bouchet), Characterization of Hydroxy-Interlayered Vermiculite and Illite/Smectite Interstratified Minerals from the Weathering of a Chlorite in a Cryorthod 484
Pevear, David R. (with John M. Longo and Wuu-Liang Huang), An Experimentally Derived Kinetic Model for Smectite-to-Illite Conversion and its Use as a Geothermometer 162
Phillipsite 365, 521
Photon correlation spectroscopy 380
Pillared clay 317, 472
Pillared Clays Prepared from the Reaction of Chromium Acetate with Montmorillonite, by Antonio Jimenez-Lopez, Jose Maza-Rodriguez, Pascual Olivera-Pastor, Pedro Maireles-Torres, and Enrique Rodriguez-Castellon 328
Pillared smectite 700
Pillaring 328, 598
Point of zero mobility 461
Pollastro, R. M. (with B. F. Bohor), Origin and Clay-Mineral Genesis of the Cretaceous/Tertiary Boundary Unit, Western Interior of North America 7
Pollastro, Richard M., Considerations and Applications of the Illite/Smectite Geothermometer in Hydrocarbon-Bearing Rocks of Miocene to Mississippian Age 119
Poly(vinyl) alcohol 453
Poly-piphenylene 87
Polymeric Cr species 700
Polytype 219, 389, 631, 743
Polytype Diversity of the Hydrotalcite-like Minerals. I. Possible Polytypes and Their Diffraction Features, by A. S. Bookin and V. A. Drits 551
Polytype Diversity of the Hydrotalcite-like Minerals. II. Determination of the Polytypes of Experimentally Studied Varieties, by A. S. Bookin, V. I. Cherkashin, and V. A. Drits 558
Polytype X-ray diffraction 66
Polytype(s) 260, 551, 558
Pons, C. H. (with C. de la Calle and J. L. Martin de Vidales), Stacking Order in a K/Mg Interstratified Vermiculite from Malawi 580
Porewater 184
Porosity 373
Porosity-Size Relationship of Drilling Mud Flocs, by Hening Huang 373
Post, James L. (with Paul N. Noble), The Near-Infrared Combination Band Frequencies of Dioctahedral Smectites, Micas, and Illites 637
Potassium Halide-Treated Montmorillonite (KTM) as a Solid Phase in Liquid Chromatography, by Faina Tsvetkov, Lisa Heller-Kallai, and Uri Mingelgrin 527
Potassium halides 527
Potassium/argon 26
Preferred orientation 45
Preparation 317
Preparation and Characterization of Hydroxy-FeAl Pillared Clays, by Dongyuan Zhao, Guojia Wang, Yahu Yang, Xiexian Guo, Qibin Wang, and Jiyao Ren 317
Pressure solution 269
Price, Kirsten L. (with S. Douglas McDowell), Illite/Smectite Geothermometry of the Proterozoic Oronto Group, Midcontinent Rift System 134
Properties and Characterization of Al_2O_3 and SiO_2-TiO_2 Pillared Saponite, by P. B. Malla and S. Komarneni 472
Proterozoic 134
Provenance 743
Pruett, Robert J. (with Harold L. Webb), Sampling and Analysis of KGa-1B Well-Crystallized Kaolin Source Clay 514
Pseudoboehmite 353, 590
Pseudomonas 360
Punctuated diagenesis 26
Pusino, A. (with W. Liu and C. Gessa), Dimepiperate Adsorption and Hydrolysis on Al^{3+}-, Fe^{3+}- and Na^+-Montmorillonite 335
Pyrophyllite 305, 423

Q

Quantitative Analysis of Mixtures of 1*M* and $2M_1$ Dioctahedral Micas by X-ray Diffraction, by Rodney T. Tettenhorst and Charles E. Corbató 45
Quantitative analysis 45
Quartz cement 269

R

Ransom, Barbara (with Harold C. Helgeson), Compositional End Members and Thermodynamic

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Components of Illite and Dioctahedral Aluminous Smectite Solid Solutions 537
Rare earth elements 442
Rate 191
Reevesite 631
Regularly stratified montmorillonite-beidellite 716
Reinterpretation of the X-ray Diffraction Patterns of Stichtite and Reevesite, by A. S. Bookin, V. I. Cherkashin, and V. A. Drits 631
Ren, Jiyao (with by Dongyuan Zhao, Guojia Wang, Yahu Yang, Xiexian Guo, and Qibin Wang), Preparation and Characterization of Hydroxy-FeAl Pillared Clays 317
Residual Manganese(II) Entrapped in Single-Layer-Hydrate Montmorillonite Interlayers, by A. U. Gehring, I. V. Fry, and G. Sposito 565
Retrograde 134
Review 219
Reynolds Jr., R. C. (with C. H. Thompson), Illite from the Potsdam Sandstone of New York: A Probable Noncentrosymmetric Mica Structure 66
Rietveld Refinement and Fourier-Transform Infrared Spectroscopic Study of the Dickite Structure at Low Temperature, by David L. Bish and Clifford T. Johnston 297
Rietveld Refinement of the Kaolinite Structure at 1.5 K, by David L. Bish 736
Rietveld refinement 297
Righi, Dominique (with Sabine Petit and Alain Bouchet), Characterization of Hydroxy-Interlayered Vermiculite and Illite/Smectite Interstratified Minerals from the Weathering of a Chlorite in a Cryorthod 484
Robert, M. (with P. B. Malla, L. A. Douglas, D. Tessier, and S. Komarneni), Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy 412
Rodriguez Losada, J. A. (with J. E. Garcia Hernandez, J. S. Notario del Pino, M. M. Gonzalez Martin, and F. Hernan Reguera), Zeolites in Pyroclastic Deposits in Southeastern Tenerife (Canary Islands) 521
Rodriguez-Castellon, Enrique (with Antonio Jimenez-Lopez, Jose Maza-Rodriguez, Pascual Olivera-Pastor, and Pedro Maireles-Torres), Pillared Clays Prepared from the Reaction of Chromium Acetate with Montmorillonite 328
Ruiz Cruz, M. D. (with L. Moreno Real), Diagenetic Kaolinite/Dickite (Betic Cordilleras, Spain) 570

S

Salyn, A. L. (with V. A. Drits, F. Weber, and S. I. Tsipursky), X-ray Identification of One-Layer Illite Varieties: Application to the Study of Illites Around Uranium Deposits of Canada 389
Sampling and Analysis of KGa-1B Well-Crystallized Kaolin Source Clay, by Robert J. Pruett and Harold L. Webb 514
Sandstone(s) 191, 269
Saponite 103, 472, 598
Scanning electron microscopy (see SEM)
Schindler, Paul W. (with Markus Stadler), Modeling of H^+ and Cu^{2+} adsorption on Calcium-Montmorillonite 288
Schindler, Paul W. (with Markus Stadler), The Effect of Dissolved Ligands upon the Sorption of Cu(II) by Ca-Montmorillonite 678
Schoonheydt, Robert A. (with J. van den Eynde, H. Tubbax, H. Leeman, M. Stuyckens, I. Lenotte, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598
Schroeder, Paul A., A Chemical, XRD, and ^{27}Al MAS NMR Investigation of Miocene Gulf Coast Shales with Application to Understanding Illite/Smectite Crystal-Chemistry 666
Schuiling, Roelof D. (with J. Theo Kloprogge, A. M. J. van der Eerden, J. Ben H. Jansen, and John W. Geus), Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity 423
Schutte, R. (with L. S. Kotlyar, Y. Deslandes, B. D. Sparks, and H. Kodama), Characterization of Colloidal Solids from Athabasca Fine Tails 341
Schwertmann, Udo (with Enver Murad), Temporal Stability of a Fine-Grained Magnetite 111
Sedimentary basins 26
SEM 7, 56, 423, 691
Serpentinite/pegmatite contact 691
Shale 26
Silication 38
Silication of Hydroxy-Al Interlayers in Smectite, by G. Lou and P. M. Huang 38
Silicic acid 38
Singh, Balbir (with R. J. Gilkes), Weathering of Spodumene to Smectite in a Lateritic Environment 624
Size of Mica Domains and Distribution of the Adsorbed Na-Ca Ions, by I. Lebron, D. L. Suarez, C. Amrhein, and J. E. Strong 380
Small, J. S., Experimental Determination of the Rates of Precipitation of Authigenic Illite and Kaolinite in the Presence of Aqueous Oxalate and Comparison to the K/Ar Ages of Authigenic Illite in Reservoir Sandstones 191
Smectite 26, 162, 280, 401, 431, 442, 472, 537, 624, 653
Smectite diagenesis 119
Smectite/illite 162, 280
Sodium hydroxide concentration 653
Soil clays 484
Soil constituents 346
Sokolowska, Z. (with G. Jòzefciuk, S. Sokolowski, and

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

A. Ourumova-Pesheva), Adsorption of Water Vapor by Soils: Investigations of the Influence of Organic Matter, Iron, and Aluminum on Energetic Heterogeneity of Soil Clays 346
Sokolowski, S. (with Z. Sokolowska, G. Jòzefciuk, and A. Ourumova-Pesheva), Adsorption of Water Vapor by Soils: Investigations of the Influence of Organic Matter, Iron, and Aluminum on Energetic Heterogeneity of Soil Clays 346
Solid state NMR 95
Some Colloidal Properties of Beidellite: Comparison with Low and High Charge Montmorillonites, by Frederic Hetzel and Harvey Doner 453
Source clays 514
Space group C2 66
Sparks, B. D. (with L. S. Kotlyar, Y. Deslandes, H. Kodama, and R. Schutte), Characterization of Colloidal Solids from Athabasca Fine Tails 341
Specific adsorption 461
Spodosol 484
Spodumene 624
Sposito, G. (with A. U. Gehring and I. V. Fry), Residual Manganese(II) Entrapped in Single-Layer-Hydrate Montmorillonite Interlayers 565
Sposito, Garrison (with A. U. Gehring, I. V. Fry, and J. Luster), The Chemical Form of Vanadium (IV) in Kaolinite, by A. U. Gehring 660
Spötl, Christoph (with David Houseknecht and Robert Jaques), Clay Mineralogy and Illite Crystallinity of the Atoka Formation, Arkoma Basin, and Frontal Ouachita Mountains 743
Stability 317
Stable isotope(s) 184, 753
Stacking 580
Stacking Order in a K/Mg Interstratified Vermiculite from Malawi, by C. de la Calle, J. L. Martin de Vidales, and C. H. Pons 580
Stadler, Markus (with Paul W. Schindler), Modeling of H^+ and Cu^{2+} adsorption on Calcium-Montmorillonite 288
Stadler, Markus (with Paul W. Schindler), The Effect of Dissolved Ligands upon the Sorption of Cu(II) by Ca-Montmorillonite 678
Stichtite 631
Stoichiometry 537
Stone, W. E. E. (with Robert A. Schoonheydt, J. van den Eynde, H. Tubbax, H. Leeman, M. Stuyckens, and I. Lenotte), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598
Strong, J. E. (with I. Lebron, D. L. Suarez, and C. Amrhein), Size of Mica Domains and Distribution of the Adsorbed Na-Ca Ions 380
Structure 73
Stucki, J. W. (with W. P. Gates and H. T. Wilkinson), Swelling Properties of Microbially Reduced Ferruginous Smectite 360
Stuyckens, M. (with Robert A. Schoonheydt, J. van den Eynde, H. Tubbax, H. Leeman, I. Lenotte, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598
Stylolites 269
Su, Chunming (with James B. Harsh), The Electrophoretic Mobility of Imogolite and Allophane in the Presence of Inorganic Anions and Citrate 461
Suarez, D. L. (with I. Lebron, C. Amrhein, and J. E. Strong), Size of Mica Domains and Distribution of the Adsorbed Na-Ca Ions 380
Surface charge density 453
Surface complexation 461
Surface Coulomb Energy and Proton Coulomb Potentials of Pyrophillite {010}, {110}, {100}, {130} Edges (The), by William F. Bleam, Gereon J. Welhouse, and Mark A. Janowiak 305
Surface heterogeneity 346
Surface precipitation 461
Swelling Properties of Microbially Reduced Ferruginous Smectite, by W. P. Gates, H. T. Wilkinson, and J. W. Stucki 360
Synthesis 73, 103, 653
Synthesis and CO_2 Adsorption Features of a Hydrotalcite-like Compound of the Mg^{2+}-$Al^{3+}Fe(CN)_6^{4-}$ System with High Layer-Charge Density, by Gang Mao, Masamichi Tsuji, and Yutaka Tamaura 729
Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity, by J. Theo Kloprogge, A. M. J. van der Eerden, J. Ben H. Jansen, John W. Geus, and Roelof D. Schuiling 423
Synthesis of Smectite from Volcanic Glass at Low Temperature, by Katsutoshi Tomita, Hisanori Yamane, and Motoharu Kawano 653

T

Tamaura, Yutaka (with Gang Mao and Masamichi Tsuji), Synthesis and CO_2 Adsorption Features of a Hydrotalcite-like Compound of the Mg^{2+}-$Al^{3+}Fe(CN)_6^{4-}$ System with High Layer-Charge Density 729
Tanaguchi, Masahiro (with Masami Kaneyoshi, Akihiko Yamagishi, and Akiko Aramata), Adsorption and Spectroscopic Studies on the Interactions of Cobalt(III) Chelates with Clays 1
TEM 56, 103, 209, 461, 496, 624
Temporal Stability of a Fine-Grained Magnetite, by Enver Murad and Udo Schwertmann 111
Tessier, D. (with P. B. Malla, M. Robert, L. A. Douglas, and S. Komarneni), Charge Heterogeneity and Nanostructure of 2:1 Layer Silicates by High-Resolution Transmission Electron Microscopy 412
Tettenhorst, Rodney T. (with Charles E. Corbató),

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

Quantitative Analysis of Mixtures of $1M$ and $2M_1$ Dioctahedral Micas by X-ray Diffraction 45

The Chemical Form of Vanadium (IV) in Kaolinite, by A. U. Gehring, I. V. Fry, J. Luster, and Garrison Sposito 660

The Effect of Dissolved Ligands upon the Sorption of Cu(II) by Ca-Montmorillonite, by Markus Stadler and Paul W. Schindler 678

The Formation of Illitic Clays from Kaolinite in KOH Solution from 225°C to 350°C, by Wuu-Liang Huang 643

The Near-Infrared Combination Band Frequencies of Dioctahedral Smectites, Micas, and Illites, by James L. Post and Paul N. Noble 637

Thermal analysis 103

Thermal behavior 608

Thermal history 134

Thermal maturity 119

Thermodynamic components 537

Thermodynamic status 537

Thermogravimetry 570

Thermoporometry 496

Thomas, Andrew R. (with William M. Dahl, Chris M Hall, and Derek York), $^{40}Ar/^{39}Ar$ Analyses of Authigenic Muscovite, Timing of Stylolitization, and Implications for Pressure Solution Mechanisms: Jurassic Norphlet Formation, Offshore Alabama 269

Thompson, C. H. (with R. C. Reynolds Jr.), Illite from the Potsdam Sandstone of New York: A Probable Noncentrosymmetric Mica Structure 66

Thompson, John G. (with Neil Gabbitas and Philippa J. R. Uwins), The Intercalation of Kaolinite by Alkali Halides in the Solid State: A Systematic Study of the Intercalates and Their Derivatives 73

Thompson, John G. (with Philippa J. R. Uwins, Ian D. R. Mackinnon, and Anya J. E. Yago), Kaolinite:NMF Intercalates 705

Three component interstratified minerals 691

Three Zones for Illite Formation During Burial Diagenesis and Metamorphism, by D. D. Eberl 26

Titulaer, Mark K. (with J. Cees van Miltenburg, J. Ben H. Jansen, and John W. Geus), Characterization of Tubular Chrysotile by Thermoporometry, Nitrogen Sorption, DRIFTS, and TEM 496

Tomita, Katsutoshi (with Hisanori Yamane and Motoharu Kawano), Synthesis of Smectite from Volcanic Glass at Low Temperature 653

Tomita, Katsutoshi (with Motoharu Kawano and Yoshitaka Kamino), Formation of Clay Minerals During Low-Temperature Experimental Alteration of Obsidian 431

Torres Sanchez, R. M. (with C. Volzone, A. M. Cesio, and E. Pereira), Hydroxy-Chromium Smectite 700

Transmission electron microscopy (see TEM)

Tsipursky, S. I. (with V. A. Drits, F. Weber, and A. L. Salyn), X-ray Identification of One-Layer Illite Varieties: Application to the Study of Illites Around Uranium Deposits of Canada 389

Tsuji, Masamichi (with Gang Mao and Yutaka Tamaura), Synthesis and CO_2 Adsorption Features of a Hydrotalcite-like Compound of the Mg^{2+}-$Al^{3+}Fe(CN)_6^{4-}$ System with High Layer-Charge Density 729

Tsvetkov, Faina (with Lisa Heller-Kallai and Uri Mingelgrin), Potassium Halide-Treated Montmorillonite (KTM) as a Solid Phase in Liquid Chromatography 527

Tubbax, H. (with Robert A. Schoonheydt, J. van den Eynde, H. Leeman, M. Stuyckens, I. Lenotte, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598

U

Uranium deposits 389

Uwins, Philippa J. R. (with Ian D. R. Mackinnon, Anya Yago, and David Page), Kaolinite Particle Sizes in the <2 μm Range Using Laser Scattering 613

Uwins, Philippa J. R. (with Ian D. R. Mackinnon, John G. Thompson, and Anya J. E. Yago), Kaolinite: NMF Intercalates 705

Uwins, Philippa J. R. (with John G. Thompson and Neil Gabbitas), The Intercalation of Kaolinite by Alkali Halides in the Solid State: A Systematic Study of the Intercalates and Their Derivatives 73

V

Vacant cis-sites 389

Vacant trans-sites 389

van den Eynde, J. (with Robert A. Schoonheydt, H. Tubbax, H. Leeman, M. Stuyckens, I. Lenotte, and W. E. E. Stone), The Al Pillaring of Clays. Part 1. Pillaring with Dilute and Concentrated Al Solutions 598

van der Eerden, A. M. J. (with J. Theo Kloprogge, J. Ben H. Jansen, John W. Geus, and Roelof D. Schuiling), Synthesis and Paragenesis of Na-Beidellite as Function of Temperature, Water Pressure, and Sodium Activity 423

van Miltenburg, J. Cees (with Mark K. Titulaer, J. Ben H. Jansen, and John W. Geus), Characterization of Tubular Chrysotile by Thermoporometry, Nitrogen Sorption, DRIFTS, and TEM 496

Vanadium 653

Vassányi, István (with Éva Kristóf and A. Zoltán Juhász), The Effect of Mechanical Treatment on the Crystal Structure and Thermal Behavior of Kaolinite 608

Velde, B. (with B. Lanson), Comparison of I/S Trans-

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press

formation and Maturity of Organic Matter at Elevated Temperatures 178
Velde, Bruce (with Gene Whitney), Changes in Particle Morphology During Illitization: An Experimental Study 209
Vermiculite 412, 580, 691
Violante, A. (with L. Gianfreda and P. Violante), Effect of Prolonged Aging on the Transformation of Short-Range Ordered Aluminum Precipitation Products Formed in the Presence of Organic and Inorganic Ligands 353
Violante, A. (with P. M. Huang), Formation Mechanism of Aluminum Hydroxide Polymorphs 590
Violante, P. (with A. Violante and L. Gianfreda), Effect of Prolonged Aging on the Transformation of Short-Range Ordered Aluminum Precipitation Products Formed in the Presence of Organic and Inorganic Ligands 353
Vitrinite maturity 178
Vitrinite reflectance 240, 743
Volcanic glass 653
Volcanic Origin of a Cristobalite in the Te Ngae Tephric-Loess from North Island, New Zealand, by C. Mizota and M. Itoh 743
Volzone, C. (with A. M. Cesio, R. M. Torres Sanchez, and E. Pereira), Hydroxy-Chromium Smectite 700

W

Walker, Jeffrey R., Chlorite Polytype Geothermometry 260
Walshe, John L. (with Patrice de Caritat and Ian Hutcheon), Chlorite Geothermometry: A Review 219
Wang, Guojia (with Dongyuan Zhao, Yahu Yang, Xiexian Guo, Qibin Wang, and Jiyao Ren), Preparation and Characterization of Hydroxy-FeAl Pillared Clays 317
Wang, Qibin (Dongyuan Zhao, Guojia Wang, Yahu Yang, Xiexian Guo, and Jiyao Ren), Preparation and Characterization of Hydroxy-FeAl Pillared Clays 317
Water adsorption 346
Weathering 691
Weathering of Spodumene to Smectite in a Lateritic Environment, by Balbir Singh and R. J. Gilkes 624
Webb, Harold L. (with Robert J. Pruett), Sampling and Analysis of KGa-1B Well-Crystallized Kaolin Source Clay 514
Weber, F. (V. A. Drits, A. L. Salyn, and S. I . Tsipursky), X-ray Identification of One-Layer Illite Varieties: Application to the Study of Illites Around Uranium Deposits of Canada 389
Welhouse, Gereon J. (with William F. Bleam and Mark A. Janowiak), The Surface Coulomb Energy and Proton Coulomb Potentials of Pyrophillite {010}, {110}, {100}, {130} Edges 305
Well crystallized 514
Whitney, Gene (with Bruce Velde), Changes in Particle Morphology During Illitization: An Experimental Study 209
Wiewióra, A. (with J. Jelitto, E. Dubińska, and P. Bylina), Layer Silicates from Serpentine-Pegmatite Contact (Wiry, Lower Silesia, Poland), 691
Wilkinson, H. T. (with W. P. Gates and J. W. Stucki), Swelling Properties of Microbially Reduced Ferruginous Smectite 360

X

X-ray diffraction (see XRD)
X-ray diffraction criteria 551, 558
X-ray Identification of One-Layer Illite Varieties: Application to the Study of Illites Around Uranium Deposits of Canada, by V. A. Drits, F. Weber, A. L. Salyn, and S. I . Tsipursky 389
X-ray powder 691
X-ray powder diffraction 103, 148, 570, 743
XRD 7, 45, 73, 423, 496, 521, 631

Y

Yago, Anya (with Ian D. R. Mackinnon, Philippa J. R. Uwins, and David Page), Kaolinite Particle Sizes in the $<2\ \mu m$ Range Using Laser Scattering 613
Yago, Anya J. E. (with Philippa J. R. Uwins, Ian D. R. Mackinnon, and John G. Thompson), Kaolinite:NMF Intercalates 705
Yamada, Hirohisa (with Hiromoto Nakazawa), Isothermal Treatments of Regularly Interstratified Montmorillonite-Beidellite at Hydrothermal Conditions 724
Yamagishi, Akihiko (with Masami Kaneyoshi, , and Akiko Aramata), Adsorption and Spectroscopic Studies on the Interactions of Cobalt(III) Chelates with Clays 1
Yamane, Hisanori (with Katsutoshi Tomita and Motoharu Kawano), Synthesis of Smectite from Volcanic Glass at Low Temperature 653
Yang, Yahu (with Dongyuan Zhao, Guojia Wang, Xiexian Guo, Qibin Wang, and Jiyao Ren, Preparation and Characterization of Hydroxy-FeAl Pillared Clays 317
York, Derek (with Andrew R. Thomas, William M. Dahl, and Chris M Hall), $^{40}Ar/^{39}Ar$ Analyses of Authigenic Muscovite, Timing of Stylolitization, and Implications for Pressure Solution Mechanisms: Jurassic Norphlet Formation, Offshore Alabama 269
Yucca Mountain 148

https://doi.org/10.1346/CCMN.1993.0410616 Published online by Cambridge University Press