



Preface

by THORSTEN SCHÄFER, REINER DORHMANN AND H.C. GREENWELL

Chapter 1. Investigation of microstructures in naturally and experimentally deformed reference clay rocks using innovative methods in scanning electron microscopy

by GUILLAUME DESBOIS, SUSANNE HEMES, BEN LAURICH, MAARTJE HOUBEN, JOP KLAVER, NADINE HÖHNE, JANOS L. URAI, GIOACCHINO VIGGIANI, and PIERRE BÉSUELLE

Chapter 2. Combined use of neutron-scattering, fluid-invasion, and image-analysis techniques to assess pore structure, accessibility, and connectivity in tight rock

by CHRISTOPHER R. CLARKSON and NISAEI A. SOLANO

Chapter 3. Observations of pore systems of natural siliciclastic mudstones

by ANDREW C. APLIN and JULIAN K.S. MOORE

Chapter 4. Spatially resolved quantification by NanoSIMS of organic matter sorbed to (clay) minerals

by CHRISTIAN SCHURIG, THOMAS SCHRANK, CARSTEN W. MÜLLER, CARMEN, HÖSCHEN, JOHANN LUGMEIER, LYDIA POHL, and INGRID KÖGEL-KNABNER

Chapter 5. High-speed, coupled micro-beam XRD/XRF/XAFS mapping at GSECARS: APS Beamline 13-ID-E

by ANTONIO LANZIROTTI, MATT NEWVILLE, LORI MANOUKIAN, and KARINA LANGE

Chapter 6. Microscopic X-ray imaging techniques applied to mineral systems and catalyst particles

by J.F.W. MOSSELMANS, C.I. PEARCE, W.R. BOWER, R.A.D. PATRICK, S.W.T. PRICE, A.M. BEALE, A.P. SIMS, and L. BARRIO

Chapter 7. Water mobility and structure in natural clay systems

by MARC FLEURY, ERIC KOHLER, and LOIC BARRÉ

Chapter 8. Multi-scale imaging and transport properties in shales from experiments and molecular dynamics simulations

by NATHAN WELCH, JOHN CRAWSHAW, and EDO BOEK

Chapter 9. Microscopic chemical imaging: a key to understand ion mobility in tight formations

by D. GROLIMUND, H.A.O. WANG, L.R. VAN LOON, F. MARONE, N. DIAZ, A. KAESTNER, and A. JAKOB

Chapter 10. Upscaling electrokinetic transport in clays with lattice Boltzmann and pore network models

by AMAËL OBLIGER, MARIE JARDAT, DANIEL COELHO, SAMIR BÉKRI, and BENJAMIN ROTENBERG

Chapter 11. Impact of microstructure on anion exclusion in compacted clay media

by CHRISTOPHE TOURNASSAT, STÉPHANE GABOREAU, JEAN-CHARLES ROBINET, IAN C. BOURG, and CARL I. STEEFEL

Chapter 12. On the use and abuse of N₂ physisorption for the characterization of the pore structure of shales

by PIETER BERTIER, KEVIN SCHWEINAR, HELGE STANJEK, AMIN GHANIZADEH, CHRISTOPHER R. CLARKSON, ANDREAS BUSCH, NIKO KAMPMAN, DIRK PRINZ, ALEXANDRA AMANN-HILDENBRAND, BERNHARD M. KROOSS, and VITALIY PIPICH

Chapter 13. Comparison of methods for the determination of the pore system of a potential German gas shale

by S. KAUFHOLD, G. GRATHOFF, M. HALISCH, M. PLÖTZE, J. KUS, K. UFER, R. DOHRMANN, S. LADAGE, and CH. OSTERTAG-HENNING

Chapter 14. Microstructural insights into the petrophysical characteristics of indurated clays

by P. MARSCHALL, L. KELLER, S.B. GIGER, and J. BECKER

Chapter 15. Hydration of Febex bentonite as observed by environmental scanning electron microscopy (ESEM)

by FRANK FRIEDRICH, DIETER SCHILD, PETER G. WEIDLER, and THORSTEN SCHÄFER

Chapter 16. Porosity evolution in the chalk: An example from the chalk-type source rocks of the Outer Carpathians (Poland)

by KATARZYNA GÓRNIAK

Chapter 17. The internal architecture and permeability structures of faults in shale formations

by PIERRE DICK, CHARLES WITTEBROODT, CHRISTELLE COURBET, JUUSO SAMMALJÄRVI, IMÈNE ESTÈVE, JEAN-MICHEL MATRAY, MARJA SIITARI-KAUPPI, MIKO VOUTILAINEN, and ALEXANDRE DAUZÈRES

Chapter 18. Monitoring water-chemistry evolution in the bentonite buffer using magnets: Effects of corrosion on buffer stability

by NICOLA RIGONAT, CHRISTIAN MAVRIS, SIMON HARLEY, and IAN B. BUTLER

Chapter 19. Clay-based modeling approach to diffusion and sorption in the argillaceous rock from the Horonobe URL: Application to Ni(II), Am(III), and Se(IV)

by YUKIO TACHI, TADAHIRO SUYAMA, KENJI YOTSUJI, YASUO ISHII, and HIROAKI TAKAHASHI

Chapter 20. Diffusion model considering multiple pore structures in compacted bentonite

by KENJI YOTSUJI, YUKIO TACHI, and TAKAHIRO OHKUBO