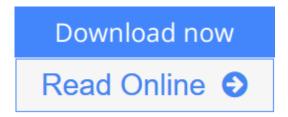


Earth Materials 2nd Edition: Introduction to Mineralogy and Petrology

By Cornelis Klein, Anthony Philpotts



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This concise, accessible, market-leading textbook brings together the wideranging fundamentals students need to understand rocks and minerals, and shows them how they relate to the broader Earth, materials and environmental sciences. Designed specifically for one-semester courses, it is beautifully illustrated to explain the key concepts in mineralogy and petrology. This edition has been fully updated based on classroom experience, and new features include a completely new chapter providing an elementary introduction to thermodynamics, kinetics, radioactive decay and absolute dating; new mineral descriptions and many new stunning color photographs; and a new section on hydraulic fracturing and discussion of some of its most serious potential environmental consequences. The book uses stunning photos of mineral specimens and rock thin sections to help students build a core understanding. It also creates a highly effective learning experience through close integration of clear illustrations with engaging text, and helps students to easily visualize crystal structures through the CrystalViewer's 3D software, available online.



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Editorial Review

Review

Earth Materials is a magnificent textbook that illustrates in a wonderful way how petrology and mineralogy relate to our planet Earth, its formation and modification by igneous, metamorphic and sedimentary processes. Outstanding photographs and detailed thin section images are neatly combined with clear illustrations, fostering the link between observations and fundamental theoretical principles. A new section in the second edition about thermodynamics and kinetics nicely complements the thorough coverage of key concepts in petrology and mineralogy. The available online resources are an essential aid for teaching, and students will benefit from the review questions at the end of each chapter. Earth Materials is simply a great textbook, which I can highly recommend.' Ralf Halama, Keele University

'Earth Materials captures the fundamentals of mineralogy and petrology in a one-semester text in a surprisingly thorough and direct way. This book can be successfully used for both one-semester courses and two-semester sequences. My students appreciate the clear, color images, and I appreciate the depth of information provided.' Christine M. Clark, Eastern Michigan University

'There is an increasing trend to condense mineralogy and petrology into a one semester course, and Earth Materials - An Introduction to Mineralogy and Petrology authored by Klein and Philpotts, provides the perfect textbook for such a course. It is extensive enough to supply fundamental information on mineralogy and petrology separately, while also seamlessly integrating these two subjects into a cohesive entity. Most impressive to me are the extensive colour figures and thin sections for most of the rock types.' Zhaohui (George) Li, University of Wisconsin

I have used this textbook in my undergraduate Earth Materials course since its publication in 2013, and the second edition adds important new elements, including a more comprehensive treatment of thermodynamics and phase equilibria. The components that made the first edition so welcome are still here: the integration of crystallography with sedimentary, igneous, and metamorphic geology; the colorful images of atomic structures, minerals and geologic localities; and the consideration of the role that minerals play in our society. It is by far the best text for those of us who have to cover all the mineralogical and petrological bases in one semester.' Peter J. Heaney, Pennsylvania State University

I really like the way this book organizes the subjects of mineralogy and petrology to emphasize the connection between plate tectonics, mantle processes, mineral stability, and rock composition. Teaching with this organization clearly reinforces the big picture of geologic processes while digging into enough depth in each subject area to prepare students to tackle integrated geologic problems.' Alexis Sitchler, Colorado School of Mines

'Brilliant! Absolutely brilliant! A landmark text in the Earth Sciences for modern times! The color illustrations, figures and photographs of all things geologically important, accompanied by lucid text, will seductively attract young minds. The chapters covering wide-ranging topics are all relevant for 21st century students of Earth and material science. I can't think of a better text that is a 'must buy' for our undergraduates.' Asish R. Basu, University of Texas, Arlington

About the Author

Cornelis ('Kase') Klein is Emeritus Professor in the Department of Earth and Planetary Sciences at the

University of New Mexico, Albuquerque. He received his BSc and MSc in geology from McGill University, Canada, and his PhD from Harvard University, Massachusetts, also in geology. He has been a member of the geology faculty at Harvard University, Indiana University, Bloomington, and the University of New Mexico, and has taught courses in mineralogy at all these universities. His published books include Manual of Mineralogy (19th-21st editions), Manual of Mineral Science (22nd-23rd editions) and Minerals and Rocks: Exercises in Crystal and Mineral Chemistry, Crystallography, X-Ray Powder Diffraction, Mineral and Rock Identification, and Ore Mineralogy, 3rd edition (2007). He has received two awards for excellence in teaching from the University of New Mexico.

Anthony R. Philpotts is Emeritus Professor of Geology and Geophysics at the University of Connecticut, a Visiting Fellow in the Department of Geology and Geophysics at Yale University, Connecticut and Adjunct Professor in the Department of Geosciences at the University of Massachusetts. He received his BSc and MSc in geology from McGill University, Canada, and his PhD from the University of Cambridge. He has taught igneous and metamorphic petrology courses at McGill University and the University of Connecticut for more than forty years. His published books include Principles of Igneous and Metamorphic Petrology, 2nd edition (Cambridge, 2009) and Petrography of Igneous and Metamorphic Rocks (1989, 2003).

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