Meet the Authors

Alain Baronnet is an emeritus professor at the Centre Interdisciplinaire de Nanosciences de Marseille (CINaM), Université Aix-Marseille, France. In his work on the microstructures and defects of natural and synthetic layer silicates, like micas and serpentines, he has applied transmission electron microscopy to show how these singularities can be used as markers of crystal-growth conditions. More recently, he has been investigating how sponges and molluscs grow biominerals to build up their skeleton or shell. When not in the TEM room, he enjoys playing folk guitar and casting flies over the clear chalk streams of Provence.

Charles R. M. Butt is an Honorary Fellow with CSIRO Earth Science & Resource Engineering in Perth, Western Australia, and a Fellow of the Australian Academy of Technological Sciences and Engineering. He has over 40 years of research experience in geochemical exploration in deeply weathered and lateritic terrains and in the genesis of secondary mineral deposits of nickel, uranium, and gold. He has a BA from Keele University, England, and a PhD in applied geochemistry from Imperial College, London. He was an associate editor of the *Journal of Geochemical Exploration* (1976–1999) and *Geochemistry: Exploration, Environment, Analysis* (2000–2010), and a guest editor for the *Elements* issue on gold in 2009.

Dominique Cluzel is a professor of geology at the University of New Caledonia, Nouméa. He has a PhD in structural geology (1977) from the Université Paris XI. After 5 years in Africa, he became a senior lecturer at the University of Orléans (France), and in 1990 was awarded a SciD degree in geology and geodynamics. He obtained a professorship at the University of New Caledonia (1991–1998) and then returned to Orléans for the period 1998–2008. Since 2008, he has again been in Nouméa. His current research focuses on the tectonic and geodynamic evolution of New Caledonia and the Paleozoic of northwest China.

Gregory M. Dipple is professor and head of the Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia, where he has taught for 20 years. He received his PhD in geology from Johns Hopkins University in 1992. His research examines mineral–fluid interactions in environments from the Earth's deep interior to the near surface. He has worked extensively with the mineral exploration industry on the processes of mineral deposit formation and the implications for ore genesis. He leads an international team that is developing carbon capture and fixation capabilities within mine wastes to mitigate industrial greenhouse gas emissions.

Bernard W. Evans is an emeritus professor at the University of Washington, Seattle. For more than 50 years he has been teaching and doing research on diverse topics in the field of metamorphic and igneous petrogenesis. His fascination with serpentinite began in California in the mid-1960s, when he joined Bob Coleman and others to write a paper about brucite. Shortly after, he began a collaboration with Volkmar Trommsdorff to study, mainly in the Alps, the effects of contact, Barrovian, and eclogite-facies metamorphism on serpentinite and related rocks. His principal research tools have been the polarized-light microscope and the electron microprobe.

Stéphane Guillot is Director of Research at the Centre National de la Recherche Scientifique in the Institut des Sciences de la Terre, Université de Grenoble, France, where he has been since 2005. He was trained as a geologist in the Himalayas, where he acquired an interest in the exhumation of high- to ultrahigh-pressure rocks. By the 2000s, he had recognized the importance of serpentinite in the exhumation process, and his research has since been focused on the origin and role of serpentinites in subduction zones. He is currently examining serpentinization of the lithospheric mantle during obduction of the Semail ophiolite and during subduction–collision processes in Tibet and the Alps.

Keiko Hattori is a professor in the Department of Earth Sciences at the University of Ottawa, where she has been based since 1983. After obtaining BSc, MSc, and PhD degrees from the University of Tokyo, she moved to Canada in 1977 as a postdoctoral fellow to study Icelandic rocks. Since the early 1990s, she has studied serpentinites to evaluate their roles in subduction zones. Apart from teaching and supervising students, she currently serves on the editorial board of *Scientific Reports* for Nature Publishing and is associate editor of *Canadian Mineralogist* and the *Journal of Geological Research*. She is a fellow of the Mineralogical Society of America and the Royal Society of Canada.

Greg Hirth is a professor in the Department of Geological Sciences at Brown University in Providence, Rhode Island, USA, where he received his PhD in the early 1990s. While a student at Brown, he became fascinated by the mechanical behavior of the oceanic lithosphere. These experiences motivated him to begin new experimental projects on the ductile and frictional properties of serpentinite, which he has conducted in collaboration with students and colleagues at the Woods Hole Oceanographic Institution, MIT, and, since 2007, Brown.

Thomas M. McCollom is a research scientist in the Laboratory for Atmospheric and Space Physics at the University of Colorado, Boulder. He uses a combination of laboratory experimentation, theoretical modeling, and field work to study the geochemistry and microbiology of geologic systems. His current research interests focus on understanding how fluid–rock interactions supply chemical energy to support microbial communities in subsurface and hydrothermal environments, both on Earth and in potentially habitable sites throughout the Solar System.

Ian M. Power is a postdoctoral fellow in the Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia. Ian received his BSc and PhD degrees in geology and environmental science from the University of Western Ontario. His research encompasses geomicrobiology, low-temperature geochemistry, and mineralogy. He aims to elucidate abiotic and biotic reaction pathways for carbon mineralization and CO_2-sequestration technologies.

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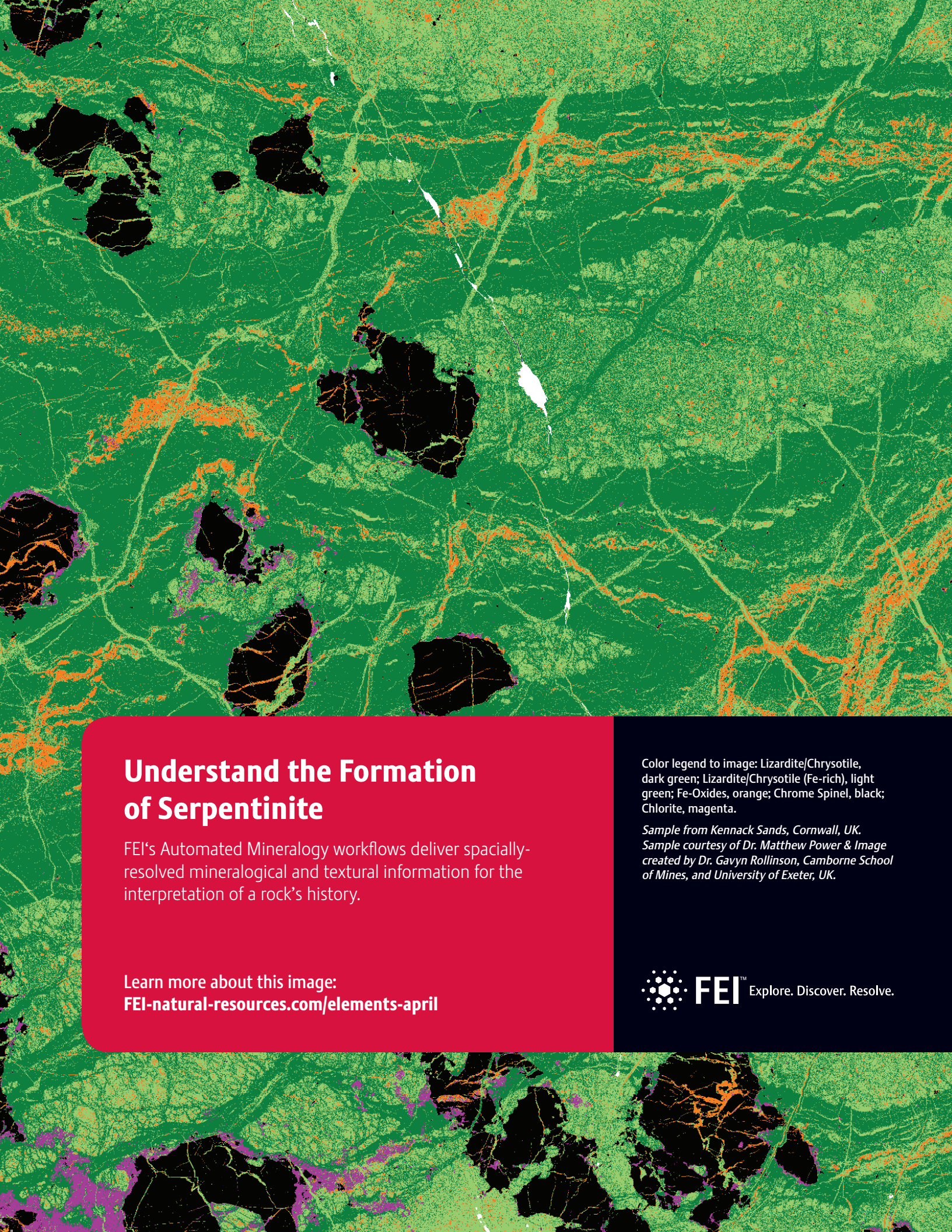
Jeffrey S. Seewald is a senior scientist in the Marine Chemistry and Geochemistry Department at the Woods Hole Oceanographic Institution. He received his PhD in geology at the University of Minnesota before arriving at Woods Hole as a postdoctoral student. In his research, he uses field, laboratory, and theoretical approaches to examine fluid–rock reactions in hot, aqueous geological environments, with a focus on chemical processes that regulate the generation and stability of organic compounds. His work is motivated by an interest in the geochemical processes responsible for the formation of hydrothermal fluids at oceanic spreading centers, the origin and maintenance of life in hydrothermal environments, and the accumulation of oil and natural gas.

Siobhan A. (Sasha) Wilson obtained her PhD from the University of British Columbia in 2010 and was a NASA postdoctoral fellow at Indiana University from 2010 to 2011. She is currently a lecturer in the School of Geosciences at Monash University in Melbourne, Australia. Sasha is an environmental mineralogist who uses crystal chemical and isotopic information to trace element cycling in low-temperature weathering systems, with applications to mineral carbonation, the development of green technologies, and astrobiological exploration.



Understand the Formation of Serpentinite

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Color legend to image: Lizardite/Chrysotile, dark green; Lizardite/Chrysotile (Fe-rich), light green; Fe-Oxides, orange; Chrome Spinel, black; Chlorite, magenta.

Sample from Kennack Sands, Cornwall, UK. Sample courtesy of Dr. Matthew Power & Image created by Dr. Gavyn Rollinson, Camborne School of Mines, and University of Exeter, UK.

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