

Preface: EMPG XI

The Eleventh International Symposium on Experimental Mineralogy, Petrology and Geochemistry was held in Bristol, UK from September 11th–13th, 2006, and was organized by Patrice Hornibrook, Simon Kohn and Bernie Wood. The conference consisted of 156 presentations over three full days of oral presentations and two poster sessions. The meeting was attended by around 150 scientists from 16 different countries. Although this number was lower than other recent EMPG meetings, the quality of presentations was very high, and the reduced attendance is attributed to the number of competing meetings in the summer of 2006 rather than any reduction in the vitality of our subject. EMU Medallist lectures were given by Martin Kunz (Lawrence Berkeley Laboratory) and David Dobson (University College London) and keynote lectures were presented by Ho-Kwang Mao (Geophysical Laboratory), Tom Duffy (Princeton), Craig Manning (UCLA) and Marc Hirschmann (University of Minnesota). The contributions covered the complete range of environments in the solid Earth from core formation to mineral surfaces and biomineralization, but there was a particularly strong showing in studies of the mantle, magmatism and fluids. A session devoted to the study of solid-state diffusion in was also held in memory of Olivier Jaoul (1944–2005) as a tribute to his substantial contributions to this field. All the abstracts of the meeting may be viewed at <http://www.empg2006.org/abstracts.php>.

The organization of the meeting was helped by financial contributions from the European Mineralogical Union and the Mineralogical Society and the commercial exhibitors, Cameca, Carl Zeiss SMT, Ceramic Substrates, EasyLab, Eurotherm, Intellection, Lenton, Ögussa and Omega.

We solicited submissions for a special issue of European Journal of Mineralogy and the papers included here are a good cross section of the work presented at the meeting. Dobson et al. present experimental evidence for enrichment of iron at grain boundaries in (Fe, Mg)SiO₃ perovskite. Their findings are supported by numerical simulations that predict iron substitution onto grain boundaries to be energetically favourable over iron substitution in perovskite and are important because element enrichment at grain boundaries can potentially dominate physical and chemical properties in rocks. The 10-Å phase could potentially play an important role in the subduction of water into the deep mantle and Comodi et al. report Raman spectra collected in situ at high pressure and temperature which help to elucidate this enigmatic phase. A further paper on the theme of mantle mineralogy by Durinck et al. presents a numerical model of dislocation cores in forsterite based on the Peierls-Nabarro model. This study emphasizes the influence of lattice friction on plastic deformation of forsterite with possible effects related to non-planar core structures and is of great interest for quantifying the nature of thermal convection in the Earth's upper mantle. Adam et al. explore the relationships between trace element partitioning and crystal structure by means of a painstaking series of X-ray structure refinements of synthetic amphiboles from partitioning experiments. Morizet et al. evaluate the influence of CO₂ on the viscosity of silicate melts, showing that the relatively large effect previously noted is in large part due to trace amounts of water inadvertently introduced into the starting materials rather than an inherent property of CO₂ itself. Finally Botcharnikov et al. present a study of the solubility of multi-component fluids in andesitic melt. Their data have important implications for the interpretation of volcanic gas compositions and measurements of volatile concentrations in melt inclusions.

We are grateful to all the participants at the meeting and all contributors to this special issue. We look forward to the next EMPG meeting in Innsbruck, Austria, during 2008.

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Guest Editors