



Chemical Geology 229 (2006) 1

**CHEMICAL
GEOLOGY**INCLUDING
ISOTOPE GEOSCIENCEwww.elsevier.com/locate/chemgeo

Preface

Physics, chemistry and rheology of silicate melts and glasses

Knowledge of the physical, chemical and thermodynamic properties of silicate melts and glasses is required to understand magma formation and evolution at all scales of observation. As is illustrated by the papers published in this special issue of *Chemical Geology*, there is a complex interplay between microscopic and macroscopic features. Whereas determining the microscopic structure of glasses and melts is useful to understand how macroscopic properties vary with pressure, temperature and composition, studies of macroscopic properties in turn put strong constraints on which microscopic aspects are actually relevant to a given problem. In this issue this approach is successfully applied to a variety of topics which range from melt rheology to volatile solubility or from spectroscopic investigations of silicate speciation to computer simulation studies of melt/glass structure. These papers were originally presented and discussed in April 2005 at the Vienna meeting of the European Union of Geosciences. They represent an up-to-date overview

of current research in the field, ranging from classical approaches to new science and technology solutions which will help expand our research possibilities. We thank the *Chemical Geology* staff and all contributors and colleagues who made this volume possible.

Roberto Moretti

*INGV sezione Osservatorio Vesuviano,**Via Diocleziano, 328, 80124 Napoli, Italy**E-mail address: moretti@ov.ingv.it.*

Corresponding author.

Pascal Richet

*Institut de Physique du Globe de Paris 4,**Place Jussieu, 75252 Paris Cedex 05, France*

Jonathan F. Stebbins

*Department of Geological and Environmental**Sciences, Stanford University, Stanford**CA 94305-2115 USA*