PHYSICS AND CHEMISTRY OF SILICATE MELTS AND MAGMAS

Proceedings of a symposium held on the occasion of the joint annual meetings of the MINERALOGICAL ASSOCIATION OF CANADA and the GEOLOGICAL ASSOCIATION OF CANADA at the University of Alberta, Edmonton, May 19-21, 1976

Editors: C. M. Scarfe and A. J. Piwinskii

PREFACE

A knowledge of the properties of silicate melts and magmas is fundamental to an understanding of the generation, evolution and emplacement of igneous rocks. However, properties such as diffusion, nucleation, crystal growth, viscosity, electrical conductivity, volatile-component solubility, thermodynamics, and structure have been neglected in experimental studies in the past and are not well-understood for most melts of geological interest. For example, the importance of melt viscosity in igneous processes has been known for some time, but only in the last decade have sufficient quantitative data become available for the geologist to begin to accurately assess the influence of this parameter. For these reasons, and because of the extent of current work on the physics and chemistry of silicate melts and magmas, a one-day session was convened during the Annual Joint Meeting of the Geological and Mineralogical Associations of Canada, Edmonton, May 19-21, 1976. The participants were geochemists, geophysicists and materials scientists working on experimental and theoretical aspects of silicate melts.

We would like to take this opportunity to thank the Mineralogical Association of Canada for the opportunity to publish the proceedings of the conference in this special issue. We are also grateful to the GAC-MAC Organizing Committee and to the financial sponsors for a special grant to help defray costs of publication.

Christopher M. Scarfe,
Department of Geology,
University of Alberta

Alf J. Piwinskii,
Lawrence Livermore Laboratory,
University of California

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