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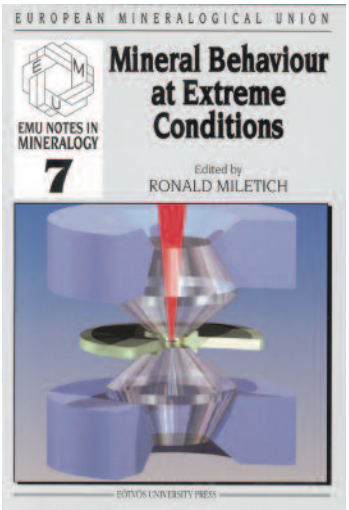

Mineral Behaviour at Extreme Conditions

Edited by Ronald Miletich

Amongst its various activities, the European Mineralogical Union organizes short courses ('Schools') in front-rank fields of the mineralogical sciences. Each of these schools is accompanied by the publication of a review volume in the series *EMU Notes in Mineralogy*. We reported on the first six volumes in the series in the last issue of *Elements*. In 2005, EMU held a school entitled Mineral Behaviour at Extreme Conditions. The school was organized by **Ronald Miletich** and held in Heidelberg (Germany) from June 19 to 25, 2005. Recently, the seventh volume of the *EMU Notes in Mineralogy* was published; it contains the contributions presented during this school.

This most recent volume of the *EMU Notes in Mineralogy* provides up-to-date reviews of our understanding of the behaviour of minerals and geomaterials under external conditions that are sufficiently extreme to induce significant changes. The volume's eighteen chapters reflect the diversity of this theme. They also demonstrate how highly interdisciplinary this domain of modern mineralogy has become, bringing together physicists, chemists and geologists, experimentalists and computer scientists. The chapters are well balanced with respect to providing basic introductory material, information on the experimental facilities to be found in modern laboratories, and the evaluation and interpretation of experimental data at the limits of conditions achievable in modern laboratories. In addition, discussions of theoretical approaches help the reader to understand experimental results and to gain insights where the necessary experimental conditions are still far from feasible.

All authors are internationally known specialists, each focusing on theoretical, practical or experimental aspects. The EMU Notes series was introduced to provide university teachers with up-to-date reviews in important, rapidly evolving areas of mineralogical science and to introduce both senior scientists and students to new topics.

The volume consists of the following chapters:

- **Introduction to minerals under extreme conditions** (H. Keppler, Bayreuth, Germany and D.J. Forst, Bayreuth, Germany)
- **Mineral structures, defects and their evolution with pressure and temperature** (R. Miletich, Heidelberg, Germany and T. Malcherek, Hamburg, Germany)
- **Silicate melts at extreme conditions** (S.L. Webb, Göttingen, Germany)
- **Elastic and piezoelectric properties of minerals I. Principles and experimental approaches** (J. Schreuer, Frankfurt, Germany and S. Haussühl, Cologne, Germany)
- **Basics of first-principles simulation of matter under extreme conditions** (D.Y. Jung, Zurich, Switzerland and A.R. Oganov, Zurich, Switzerland)
- **Displacive phase transitions** (T. Malcherek, Hamburg, Germany)
- **Elastic and piezoelectric properties of minerals II. Structure–property relationships** (J. Schreuer, Frankfurt, Germany and S. Haussühl, Cologne, Germany)
- **Mineral surfaces – part I: Surface-sensitive techniques** (S.L.S. Stipp, Copenhagen, Denmark)
- **Diamonds as optical windows to extreme conditions** (R. Boehler, Mainz, Germany)
- **Fluid–mineral interaction at high pressure** (H. Keppler, Bayreuth, Germany and A. Audétat, Bayreuth, Germany)
- **Mineral surfaces – part II: Structure and reactivity** (S.L.S. Stipp, Copenhagen, Denmark)
- **Laser heating at megabar pressures: Melting temperatures of iron and other transition metals** (R. Boehler, Mainz, Germany)
- **Diffraction techniques: Shedding light on structural changes at extreme conditions** (R. Miletich, Heidelberg, Germany, C. Hejny, Heidelberg, Germany, G. Kraus, Zurich, Switzerland and A. Ullrich, Heidelberg, Germany)
- **Plastic deformation of minerals at high pressure: Experimental techniques** (P. Cordier, Lille, France, H. Couvy, Lille, France, S. Merkel, Berkeley, USA and D. Weidner, Stony Brook, USA)
- **Shock experiments on minerals: Basic physics and techniques** (F. Langenhorst, Jena, Germany and U. Hornemann, Efringen-Kirchen, Germany)
- **Plastic deformation of minerals at high pressure: Multiscale numerical modelling** (P. Cordier, Lille, France, F. Barbe, Rouen, France, J. Durinck, Lille, France, A. Tommasi, Montpellier, France, and A.M. Walker, Canberra, Australia)
- **Viscoelasticity of the Earth's mantle** (S.L. Webb, Göttingen, Germany)
- **Theory of minerals at extreme conditions: Predictability of structures and properties** (D.J. Adams, Zurich, Switzerland and A.R. Oganov, Zurich, Switzerland)

All chapters include an extended list of references. Some figures are in colour. At the end of the book there are author and subject indexes.

How to place an order

Please send an e-mail to: herta.silvia.effenberger@univie.ac.at asking for:

> Vol. 7 (2005): "Mineral Behaviour at Extreme Conditions"
> R. Miletich (ed), 488 pages, softcover, ISBN 963-463-8376
> Price: 24 € (excl. postage)

Order forms are available from EMU's home page http://www.univie.ac.at/Mineralogie/EMU/school.htm#Notes.

The eighth EMU School was held in Budapest, Hungary, from August 28 to September 1, 2006. The topic was Technical Mineralogy: Silicate-Based Materials. The accompanying volume is expected to be published by the end of the year. The editor is Bernard Grobéty, University of Fribourg, Switzerland.

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