SEMINARIOS DE LA SOCIEDAD ESPAÑOLA DE MINERALOGÍA

VOLUMEN 5

Instrumental Techniques Applied to Mineralogy and Geochemistry

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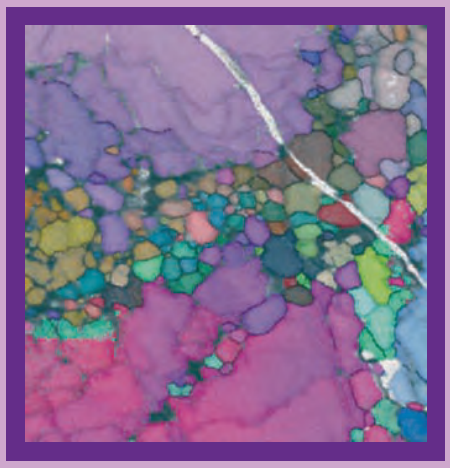

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FOREWORD

On the occasion of the Spanish Society of Mineralogy (SEM) and Spanish Society of Clays (SEA) joint meeting in Zaragoza on September 16th-19th, a workshop on *Instrumental techniques applied to Mineralogy and Geochemistry* is held with the aim of updating the knowledge of young and also senior researchers.

The scope of this workshop includes the most common analytical techniques used in geological and material sciences research mainly covering details of analytical practice and representative and new applications. The treatment is designed to be of interest to the graduate student, as well as the research scientist whose involves the use of analytical techniques and/or the interpretation of analytical results. Consequently, it is hoped that this volume will provide a valuable source for researchers in their respective fields and stimulate future development.

This volume is divided into four topical sections: Electron Microscopy, X-ray absorption Spectroscopy (XAS), Isotope Geology and Fluid Inclusions. The volume follows the same pattern; after a general introduction to the subject, an overview of the technique and its practical applications to understanding geological processes. It is clear that some techniques are further along than others in terms of specific applications, but all of them are promising and have high potential for making important contributions to knowledge.

Accounts of Electron Microscopy include two contributions reflecting the basics and the progress that have been achieved at present. These techniques appear to be useful for solving problems in traditional areas as well as in other fields, such as nanotechnology. The next session, XAS, describes methods involving in detection and characterization of even trace amounts of atoms that are dispersed within minerals. This has been recently exploited also by Environmental scientists working on the understanding of mineralogical and biogeochemical processes. Specific aspects of different techniques and instrumentation will be highlighted on the basis of few examples of their use in mineralogy and geochemistry. The following section deals with

Isotope Geology a discipline, like the already mentioned, capable of contributing significantly to the solution of a wide variety of problems. This is the reason why the first volume of the *Seminarios de la SEM* series was devoted to principles and applications of isotope geochemistry mainly to use this information in all geological branches. In this volume, the aim is to illustrate not only the geological application but also other areas of significant activity. Finally, a session devoted to Fluid Inclusion studies will be useful for workers in any field: the principles, philosophy and procedures expressed herein are applicable to any study, no matter what the emphasis.

In a collective work, such as this volume, the first acknowledgement must go to the invited authors for their willingness to participate and for all their hard work (timely efforts) in the production of the workshop and the resulting volume. We are indeed grateful to the institutions that helped to make both this volume and the *Instrumental techniques applied to Mineralogy and Geochemistry* workshop possible. The University of Zaragoza along with the Faculty of Science strongly support the whole organization of the workshop. The Ciencia y Tecnología department (Gobierno de Aragón), the Instituto Geológico y Minero de España, Colegio Oficial de Geólogos and SAMCA mining company provided generous financial support to the organization and printing of this volume, making possible to the same time its distribution to all SEM and SEA members and to the libraries of the main universities and research institutions.

Ignacio Subías
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July 2008

INDEX

INDEX

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