#### **INDEX**

ALBA Synchrotron Light Source. Status and
perspectives Salvador Ferrer7
Synchrotron X-ray Diffraction in Mineralogy
and Materials Chemistry. Possibilities and Applications
Miguel A. G. Aranda29
Microfocus spectroscopy experiments on mineral
deposits and in cultural heritage science at Diamond
Light Source.
Josep Roque-Rosell61
SpLine: Spanish BM25 CRG X-ray beamline at the
European Synchrotron Radiation Facility
Germán R. Castro89
Synchrotron Data Analysis Using XOP
Manuel Sánchez del Río109







## SEMINARIO DE LA SOCIEDAD ESPAÑOLA DE MINERALOGÍA

### **VOLUMEN 6**

# Synchrotron Radiation in Mineralogy

Salamanca, 9 de Septiembre de 2009



#### **Editores:**

Mercedes Suárez Esther Ayuso Eva M. Manchado



### SEMINARIOS DE LA SOCIEDAD ESPAÑOLA DE MINERALOGÍA

#### **VOLUMEN 6**

### SYNCHROTRON RADIATION IN MINERALOGY

#### Editoras:

Mercedes Suárez, Esther Ayuso y Eva M. Manchado

© Mercedes Suárez, Esther Ayuso y Eva M. Manchado (Editoras)

© Sociedad Española de Mineralogía

Depósito Legal: CA-602-2004

ISSN: 1698-5478

Impreso en Españo-Printed in Spain

2009-08-07

Impresión: Gráficas Varona s.l.

C/ Newton, Parcela 55

Póligono El Montalvo

37008 Salamanca

#### **FOREWORD**

The Spanish Society of Mineralogy (SEM) celebrated the XXIX annual meeting in Salamanca, from the 9th to the 12th of September of 2009. The meeting started, as the five last editions, with a workshop devoted to a subject of general interest for the members, on this occasion: "Synchrotron Radiation in Mineralogy". This volume contains the abstracts of the conferences presented. The aim of the workshop was to reinforce the use of synchrotron radiation by the Spanish mineralogical community, in the same as in other countries where crystallographists, mineralogists and petrologists are an important group of users. For this reason the workshop, and consequently the chapters of this volume, were planned as a source of practical information for potentials users.

There are four general chapters in which the main techniques used in Mineralogy are presented. In all cases, after the introductory concepts and generalities on each specific technique, a series of examples of the application of the synchrotron radiation to mineralogical problems is presented. The examples here presented go from the study of the conditions for the genesis of minerals to the modification of their properties or the identification of minerals in Archaeometry. The last chapter corresponds to a practical session devoted to data analyses.

In addition to the presentation of the main techniques and possibilities bases on the study of specific questions, the workshop focused on the use of the excellent facilities to which Spain has access. Our country maintains two beamlines active at the European Synchrotron Radiation Facility de Grenoble (France), and the Spanish synchrotron ALBA (a medium energy third generation synchrotron source) is now under construction in Cerdanyola del Vallés (Barcelona). The Spanish mineralogical community can especially take advantage of these and other facilities to which they can resort as members of the European Union (Diamond, Soleil and Elletra).

The workshop and this book have been possible thanks to the generous contributions of the authors, all of them specialist in the use of synchrotron radiation. Our sincere acknowledgment for accepting our invitation; for the Spanish Mineralogical Society and for the Organizing Committee of the XXIX meeting SEM it was a privilege to be able to count on them.

Mercedes Suárez Esther Ayuso Eva M. Manchado July 2009

#### **INDEX**

ALBA Synchrotron Light Source. Status and perspectives
Salvador Ferrer
Synchrotron X-ray Diffraction in Mineralogy and Materials Chemistry.
Possibilities and Applications
Miguel A. G. Aranda29
Microfocus spectroscopy experiments on mineral deposits and
in cultural heritage science at Diamond Light Source.
Josep Roque-Rosell
SpLine: Spanish BM25 CRG X-ray beamline at the European
Synchrotron Radiation Facility
Germán R Castro
Synchrotron Data Analysis Using XOP
Manuel Sánchez del Río