

BOOK REVIEW

APPLIED MINERALOGY OF CEMENT & CONCRETE, Maarten A.T.M. Broekmans and Herbert Pöllmann, Editors. *Reviews in Mineralogy and Geochemistry*, Mineralogical Society of America, vol. 74, 364 p. \$40 (24% member discount). ISBN 978-0-939950-88-1 (order via <http://www.minsocam.org>).

This interesting and useful book will undoubtedly be a useful reference for anyone interested in the mineralogy of cements and cement-based materials including concrete. Editors Maarten Broekmans and Herbert Pöllmann have assembled an excellent compendium of information on mineralogy ranging from calcium aluminates to microscopy.

Volume 74 of *Reviews in Mineralogy and Geochemistry* presents in-depth studies of the mineralogy of calcium aluminates, mineralogy of clinker and hydraulic cements, quantitative X-ray diffraction techniques applied to cement and cement-based materials, supplementary cementitious materials, and deleterious reactions present in aggregates used in concrete such as alkali-silica reaction. These reviews present substantive information from a materials standpoint as well as fundamentals and applications-oriented information on relevant characterization techniques. Valuable chapters reviewing alternative low-CO₂ cementitious binders and industrial X-ray diffraction are also included in the compendium. It is curious to note that, although portland cement is the most common cementing material in the world, very little of the volume discusses the mineralogy of portland cement-based materials.

The presentation of information in each chapter is made in a methodical and useful manner, with seminal images and other data (spectra and XRD patterns) provided that will undoubtedly serve as a reference for future researchers. The section on microscopy of clinker and cements is particularly useful. This chapter

gives discussions of proper sample preparation techniques for microscopy. The images of phases not typically encountered in traditional portland cement-based materials are especially valuable. Such information will be of great importance in research on the next generation of cement-based materials. It is a shame, however, that all of the graphics in the book are in black and white. The book would be even more useful, if color images had been used throughout.

Since the field of cement and cement-based materials, which includes concrete, varies widely among many disciplines, some topics of interest are not covered in this volume such as NMR, TEM, other forms of spectroscopy such as FTIR, WDXRF, Raman, and other characterization tools commonly employed during research and applied studies. An excellent idea for the future would be to have a volume of various analytical techniques as applied to portland cement-based materials.

Nonetheless, this book, like previous MSA *Reviews* volumes, will serve as a valuable and substantive resource for anyone interested in studies of cement and cement-based materials, and the volume includes useful information on new cements and various tools used to characterize these materials.

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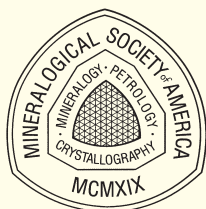
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