Book reviews

Proceedings of the Ninth International Conference on Cement Microscopy

April 5–9, 1987. Reno, Nevada, USA

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International Cement Microscopy Association, 1206 Coventry Lane, Duncanville, Texas 75137, USA. 227 × 152 mm. pp. xi, 502. Reproduced typewriting, illustrated, paperback. No ISBN.

Conference proceedings rarely make easy reading; one must constantly adapt to changing styles, subjects and, in the case of international conferences, levels of competence in the official language. Most readers however, will not wish to read straight through the volume, but rather to refer to individual papers as the need arises. The main value of a varied selection such as this one (varied in quality as well as subject matter) is to provide references to work which would otherwise probably not be available. Many of the papers are frankly not of a standard which would merit publication in the established journals, but are interesting nonetheless in providing an insight into the range of work which is currently being undertaken in the field of cement microscopy.

A conference also provides a useful market place for manufacturers of products related to the subject matter. The advertising aspect of the meeting is reflected with varying degrees of subtlety by many contributions to these proceedings, some of which have only the most tenuous of links with microscopy.

Some of the most useful presentations are those which relate microscopic effects to controlled variations in experimental systems. These include production experiments, such as the paper by Campbell and Weiss; performance correlations with cement characteristics, as in the presentation by Polkowski, and pure research papers such as that by Pollmann on the hydration products of C_3A, all of which add useful data to the pool of experience required in using microscopy as a tool. Papers on techniques are also of great interest. Ono's method is brought up several times, and the problems of quantitative analysis of optical microscopic parameters are investigated in two papers. One of these by Shi, while of considerable interest in itself, is a general technique which, as the author points out, can be applied to cement and concrete samples as well as to any other materials. The other paper, by Marciano *et al.*, provides a very useful study of the value of quantitative optical microscopy in clinker evaluation.

The use of SEM/EDX combinations in the examination of cements and concretes is still at an early stage of development, and good, quantitative work can only be carried out by a limited number of specialist laboratories. It is encouraging to see a paper by Sarkar which makes a valiant attempt to advise prospective users of these systems how best to approach the work. Unfortunately, one of the most important parameters in X-ray microanalysis, that is the tilt of the specimen and its effect on the take-off angle of X-rays to the detector is mentioned but not sufficiently explained. In view of this omission, one must be sceptical of the results in another paper by Sarkar and Cossette, where Ca:Si ratios are quoted from unpolished specimens, where the TOA cannot be known. Even a qualitative assessment of the ratios of two elements on similar materials must be open to question unless the parameters are accurately measured. The qualitative use of SEM/EDX is demonstrated in another paper by Sarkar, where general conclusions can be drawn from rapidly prepared and examined clinker, which may potentially be of use in production control.

With these conference proceedings the reader should be aware that what is being presented is a cross-section of work being carried out at a given time rather than a series of complete research reports. In this they are very valuable if read with a degree of caution.

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