PROCEEDINGS OF THE 10TH INTERNATIONAL CONGRESS ON THE CHEMISTRY OF CEMENT Gothenburg, Sweden, June 2-6, 1997

VOLUME 1

PLENARY LECTURES

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CLINKER
AND
CEMENT
PRODUCTION



Edited by

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# FOREWORD TO THE PROCEEDINGS

I extend a most cordial and fraternal welcome to all delegates to the X Congress.

In this, the Jubilee Congress, it is appropriate to note some special features of the X Congress relating to the proceedings. Many Congresses publish a written transcript of their proceedings which is ephemeral, but those on the Chemistry of Cement are rightfully regarded as landmark publications. They are virtually unique in terms of their frequency of citation by the relevant scientific Community. Most workers in the field regard the published proceedings as affording an unique insight of current awareness and of progress in all aspects of cement science.

The Scientific Committee have taken steps to assure that the Conference proceedings retain this position of eminence. Amongst the steps which have been taken are the following;

- o to ensure high but fair standards of refereeing,
- o promote uniformity of format and good legibility of the individual contributions,
- o reduce the time between final receipt of manuscripts and publication, to ensure that the Congress reflects the state of art up to 1997,
- o provide subject indices for the Proceedings to assist rapid retrieval of information and, to facilitate library cataloguing, by providing an ISBN number.

We hope this measures meet with the approval of readers.

I would like to express my thanks to the many individuals and organisations who have facilitated publication of the Proceedings.

First and foremost to Dr. Harald Justnes who has had the major task of receiving manuscripts, and ensuring their orderly progress through refereeing, collation and, finally, despatch to the printer. Many individuals have contributed to the refereeing and it is a tribute to the Scientific Community that so many individuals have contributed generously of their time and energy. Their efforts have immeasurably improved the free communication of ideas and results, and the clarity of the written discussions.

Ultimately the success of the Congress is decided by those who attend as well as by those who use these Proceedings. It is not for me to decide whether future Congresses will be held or, if held, what form they will take. But, if there is a next Congress, it will be held in a new millennium. Never has the pace of change in communication been so rapid: I speculate that this might be the last paper proceedings which will ever be published! But whatever form future Congresses may take, and however its proceedings are disseminated, the fraternity of science and the principle of peer review will, I am confident, continue to be a hallmark of future proceedings.

F.P. Glasser President of Scientific Committee 23 March 1997

## **EDITORIAL REMARKS**

The papers of the five main themes and sub-topics of the Congress has been distributed between the 4 volumes of the Proceedings in a manner to compromise between two conflicting interests; to make it easy for the reader to find the wanted paper and to have volumes about equal in size. This resulted in proceedings comprising about 2,200 pages distributed in 4 volumes ranging from about 400 to 700 pages each. Volume 1 contains Plenary lectures and Theme I, the content of Volume 2 is Theme II (except additives) and Volume 4 includes Theme IV. The only mixed volume is Volume 3, encompassing Additives from Theme II, Theme III and Theme V.

The volumes are not paginated, but the first page of each paper is marked with a code and number of pages in the upper right corner. If the number of pages are uneven, a blank page is inserted in order to ensure that every paper starts on a right hand page. Since the papers are relatively short (usually 4 or 8 pages) it should be easy to go from one code to the next to find the required paper. The code consists of three parts; volume (arabic numerals), theme (roman numerals) and 3 digits giving the paper number within the corresponding theme. For instance, 3ii091 means paper no. 91 within Theme II found in Volume 3.

Every volume starts with a list of contents for that volume only where authors, titles, code and number of pages are listed in the order they appear. At the end of every volume there is an author index as well as a key-word index giving the corresponding paper codes for the total proceedings. Volume 4 also includes a few colour figures with reference to the corresponding papers after the author and key-word indices.

Finally, I would like to express my sincere thanks to the individuals who in addition to myself have taken active part in the reviewing process of abstracts and/or draft papers:

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