



## Editorial

Welcome to our “new look”—once again—for 1999 and beyond. The incorporation of *Advanced Cement Based Materials* into *Cement and Concrete Research* provides an opportune time for introducing important new changes into the journal. First, and most obvious, is the enlarged page size and double-column format that, being more efficient, will allow us to increase the number of papers published each year. Second is the introduction of fine-quality glossy paper, which substantially improves the resolution in reproduction such as in glossy prints and micrographs. Third, several new members have been added to the Board of Editors, increasing our expertise and breadth of coverage of subject matter in the journal. Fourth, beyond traditional venues—the subscription base and library readership—additional, widespread exposure of papers to the scientific and technical community will be made through the online access (available to authorized users of ScienceDirect<sup>1</sup> only for the time being).

At the same time, modern publishing, while enhancing the overall quality of publication and achieving increased circulation of the product, places more stringent demands upon authors. Thus to achieve a seamless process from author to reader, we would like to call the attention of authors to some features in the revised Notes for Authors in the journal (also available, together with a wealth of additional information, on the journal home page: <http://www.elsevier.com/locate/cemconres/>). Careful attention to the procedures outlined, some of which are significantly modified from the prior instructions, will reduce the time from initial submission by an author until the paper appears in print. In particular:

1. All submissions, including Communications, should be directed to the Editorial Office/Editor-in-Chief and will be peer reviewed. Short Communications will be reviewed anonymously by an Editor.
2. All original hard copies of manuscripts should be submitted in double-spaced format for easier review and editing.
3. Authors should select key words from the list in the journal.

4. Reference style now includes titles to papers (if readily available).
5. After any required revisions are completed, the author should supply a finalized computer disk of the manuscript, along with identical hard copy.
6. Figures and tables should be supplied on separate sheets (not disk).
7. Authors will receive proofs from the publisher.

Now, concerning the contents of the journal: The new enhanced *Cement and Concrete Research* will report the results of major new areas of innovative research. Some of these areas are described here. Many new cements and cementitious systems have become a significant part of the picture: DSP, MDF, alkali-activated, regulated set, alinite, belite, sulfoaluminate, and other specialty or nontraditional cements, along with deeper understanding of more traditional cements and their components. An understanding of the effects of crystal structure, defects, impurities, minor compositional variation, and strength-enhancing additives such as silica fume on the properties of such cements is important in both traditional and newer cements. New types of cementitious composites, including fiber and polymer composites employing specialized processing and knowledge of rheology, have resulted in improved properties. The advancement in concrete structures is phenomenal, as reported in recent conferences on high performance concrete and ultra-high-strength concrete. A wide variety of chemical admixtures has come into being to increase the workability and improve the performance of cement and concrete, and we expect the further development and optimal use of such materials to require a sounder understanding of their behavior.

A host of more sophisticated tools has been brought to the study of cements and concretes, such as SEM/EDX combined with image analysis, the beginnings of SAM, solid state and conventional NMR, TEM, TMS, FTIR, XPS, AFM, neutron scattering, various electrical methods, and enhanced analytical methods including fractal analysis and various approaches to modeling. Computer aided techniques are applied in a vast number of measurement techniques and analytical methods. Non-destructive evaluation is an important and growing area of development. Supplementary cementitious materials—and so-called chemically bonded ceramics—are a major part of the current scene. The durability of cementitious materials and concrete is of major concern, as is the prediction of concrete properties from ce-

<sup>1</sup> ScienceDirect (<http://www.sciencedirect.com>) is a searchable database of the electronic versions of all papers published in more than 1000 Elsevier journals since 1995. It is available to individuals from institutions that subscribe to it.



Prof. Della Roy (Editor-in-Chief of *Cement and Concrete Research*), Prof. Surendra Shah (Editor-in-Chief of *Advanced Cement Based Materials*), and members of the Board of Editors of *Cement and Concrete Research* during the Engineering Foundation Conference on Advances in Cement and Concrete in Banff, Alberta, Canada, 4-10 July 1998. Selected papers from the Conference will be published in this journal in the middle of 1999. (From left to right: D. Hooton, J. Beaudoin, S. Diamond, D. Roy, S. Shah, K. Scrivener, I. Richardson, P. Brown, H. Taylor, and C. Andrade.)

ment characteristics. Greater understanding is required of the diffusion and transport mechanisms of ions and other species, corrosion phenomena, and the relation between microstructure and performance, as is the science of fracture, creep, and shrinkage, and the relation of these phenomena to microstructure and matrix-aggregate interfacial characteristics. The nano-structure of cementitious materials has received much attention in studies up to the present time, and it will be important to bring increased understanding of its relation to macro-properties. Pore structure measurement and analysis, modeling, and their relation to properties and performance constitute another major growth area.

Finally, nuclear and hazardous waste management are now major areas of application of cementitious materials; responsible technologies will require increased understanding of the fundamentals. Coupled with the concern about waste, responsible resource management/by-product utiliza-

tion is an increasing challenge for the future with both cement and concrete providing major avenues for utilization. The effect of fuel type on cement kiln processes and on the nature of the cement is a major topic.

We would like to take this opportunity once again to thank all the contributors who make this publication possible: authors, Editorial Board Members, reviewers, publication staff, subscribers, readers, and occasional critics. We expect the pages of the enhanced *Cement and Concrete Research*, incorporating *Advanced Cement Based Materials*, to bring the newest understanding on the above subjects and many yet unanticipated topics as we approach the challenges of the year 2000 and beyond.

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