

Accommodation was provided in hotels situated near the conference halls, and social meetings for participants and accompanying persons were organized for all evenings.

SUBJECT AND SCOPE OF THE SYMPOSIUM

The subject of the Symposium was composite materials with matrices having brittle behaviour in normal or special conditions. Brittle matrix composites are applied in various fields (civil infrastructure, mechanical equipment and machinery vehicles, etc.), and in recent decades, their importance has been increasing together with their variety. Examples of the materials covered in the accepted papers include:

- aggregate-binder composites (concretes and high performance concretes, fibre concretes),
- sintered materials (ceramics),
- high strength composites with brittle matrices.

Applications of brittle composites in structures are also included in the papers. Various approaches to the material engineering problems are presented in the papers, including:

- design and optimization of the structure of materials,
- theoretical considerations and computational methods,
- models of materials and prediction of material properties,
- test methods and new test results,
- manufacturing processes,
- applications of new materials and their behaviour in service,
- durability assessments and environmental effects.

The BMC Symposia provide an opportunity

to bring together scientists and engineers interested and actively working in the title subject. Several outstanding personalities in the field of composite materials actively participated in all five BMC Symposia.

PAPERS AND LECTURES

At BMC5, sixteen countries were represented by 80 participants. Only unpublished papers presenting original results of research, reports concerning the new applications and excellent review papers were initially accepted on the basis of the abstracts. Then, the final drafts were again reviewed by the members of the International Advisory Panel in conjunction with the Symposium Organizing Committee. Full texts of nearly 60 papers were published in hard cover as the Symposium Proceedings and copies were given to all participants at registration. The Proceedings were later distributed by Woodhead Publishing Ltd., Cambridge, UK.

Papers were presented, discussed and published exclusively in English. Presentations were organized in 18 sessions, starting on Monday morning, October 13, and closing on Wednesday afternoon, October 15. On Tuesday, parallel sessions were run in two neighbouring halls.

The following invited plenary papers were presented in the morning sessions:

- H. Stang (Denmark) related the results of tests, analysis and pilot application concerning the extrusion of fibre-reinforced cement pipes.
- H.C. Wu and V.C. Li (USA) considered the influence of modification polyethylene fibres by plasma on the properties of the fibre/matrix interface.

S.P. Shah and co-authors (USA) pre-

sented important test results of the transportation of gases and liquids across the structure of cement-based materials, considering their microstructure.

P. Stroeven (The Netherlands) analysed the damage evolution due to stress release in cements and concretes.

J.L. Chermant (France) presented an exhaustive review on the creep characteristics of ceramic matrix composites.

B. Cox and F. Zok (USA) related in a very comprehensive form the recent advances in fibrous ceramic composites.

In addition to these plenary papers, several other important contributions with original experimental and theoretical results were presented, co-authored among others by A. Bentur (Israel), D. Van Gemert (Belgium), K.P. Herrmann (Germany), J.L. Granju (France), J. Kasperkiewicz, W. Kurdowski, L. Kucharska and W. Radomski (Poland), K. Kromp (Austria), D.A. Lange (USA), C.K.Y. Leung (Hong Kong), S. Mindess (Canada), Y. Ohama (Japan).

After all sessions, the discussions were lively and interesting, and were continued during breaks and social meetings. Thanks to the ability of the session chairmen, the discussions were run in an informal but penetrating way, enabling the exchange of opinions and criticisms in a friendly atmosphere.

In addition to the opening cocktail and traditional symposium dinners, on one evening a piano recital was organized in the 18th century Royal Theatre in Łazienki Park with a programme devoted to Frederick Chopin.

As in the past, the organizers intend to continue the BMC series at 3-year intervals; the next event is scheduled for October 2000.

IN MEMORIAM

Dr. WILLIAM C. CULLEN
1919-1997

It is with deep regret that we announce the death in November 1997 of Dr. William C. Cullen (USA), an active member of RILEM. During a long and distinguished career, Dr. Cullen worked continuously to improve roofing performance, first with the U.S. National Bureau of Standards, then with the National Roofing Contractors Association. Long-standing members of RILEM will know him as the founder of the Joint CIB/RILEM Roofing Committee in 1982. He continued to participate actively in the subsequent joint CIB/RILEM Committees on roofing materials and systems. He was chairman of TC 17-EVS

and 75-SLR, as well as a member of 120-MRS.

Dr. Cullen also served as a member of the RILEM Coordinating Committee for 5 years, the last year as chairman. He was the RILEM National Delegate to the United States of America and secretary of the RILEM US National Group from 1979 to 1983. He participated in the Scientific Committee for the RILEM journal, *Materials and Structures*.

Dr. Cullen's many contributions to RILEM, as well as to the international roofing community, will long be remembered.

PROFESSOR HEIKKI POIJÄRVI, D.TECH

An active RILEM member and internationally known researcher and research manager, Professor Heikki Poijärvi has left us. He and his brother died tragically on 26 November 1997 in a traffic accident on an icy road.

Professor Poijärvi was born in Helsinki, Finland in 1930. He graduated in Civil Engineering in 1953 and worked as a structural designer for 5 years before joining the Technical Research Centre of Finland (VTT) in 1962, where he completed his doctoral dissertation in 1967. In addition to his long and successful career in research at VTT, he occasionally also taught at Helsinki University of Technology. Although his area of expertise was primarily concrete technology, he was well-versed in building technology as a whole. His work on fine aggregates back in the early 1960s was ground-laying in this field of research, which became very popular and fruitful later in the 1980s and 1990s. He is also known in Finland for his pioneering work on shotcrete in the 1970s. In 1979, he was elected Research Director of the Division for Building Technology and Community Development at VTT. Under his leadership, the Division expanded greatly in both size and outreach, forging international contacts and cooperation in research.

His special areas of interest were Nordic cooperation and the work of RILEM. His involvement in RILEM included participation in TC 39-BH, "Winter Concreting", in the late 1970s and early 1980s, representing Finland as a National Delegate from 1987 to 1993, membership in

the Management Advisory Committee (MAC) and later, chairmanship of the Concrete Coordinating Committee (CCC) from 1988 to 1992. He will be also remembered, particularly by members of the RILEM Standing Committees, for his much appreciated musical entertainment skills both in his home and on conference premises. His contacts with RILEM continued well beyond his retirement in 1993. In September 1997, he participated in the 50th Anniversary celebrations in Zürich.

Retirement also enabled Professor Poijärvi to engage in his favourite hobby: the crafting of violins. At the time of his death he had completed four and was working on two more. He was fascinated with the vibration mechanics of the instrument and made numerous dimensional and elastic measurements of violin materials.

We deeply regret the premature death of a still active and innovative member of the building research community. His memory will remain with us for a long time.



Third International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures (FRPRCS-3)

14-16 October 1997 - Sapporo, Japan

Prepared by Toshiyuki Kanakubo, Ph.D., Member of Task Committee of the Japan Concrete Institute

1. INTRODUCTION

This was the third International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures (FRPRCS), which has been held every two years since 1993. The first symposium was held at the Spring Convention of ACI in Vancouver, Canada, and the second at the University of Ghent, Belgium. This was the first time that the symposium was organized only on FRPRCS by institutes. At the same time, it was the first international symposium organized by the Japan Concrete Institute (JCI).

Development and research have been underway since the late 1980s on applying continuous fiber in concrete structures. Since 1988 especially, research became more active, stimulated by the integrated project of the Ministry of Construction, as well as other related associations in Japan, leading to Japanese initiatives on this theme. Moreover,

after the Hanshin Awaji Earthquake in January 1995, continuous fiber attracted increased attention as a means to repair and strengthen concrete structures.

This was the first continuous fiber related symposium held in Japan since the earthquake. Consequently, JCI started the preparation very early. The Organizing Committee, the Task Committee, and the International Scientific Committee (ISC) were organized in early 1995. The symposium was co-sponsored by ACI, CSCE, CEB, EASEC, RILEM and others.

More than 220 abstracts were submitted from 23 countries (including Japan), which represents much more than the papers received for the first and second symposium combined (55 and 82, respectively). Approximately 70 papers presented repair and strengthening by continuous fiber sheet, demonstrating the increasing attention to continuous fiber.

2. LOCATION AND PARTICIPANTS

The symposium was held at the Garden Palace Hotel, Sapporo, Japan. Hokkaido, the northern island of Japan, is renowned for its beautiful scenery. The city and its suburbs offer many attractions such as Ohkurayama Jump Hill, Sapporo Beer Garden and Museum, and numerous hot springs. The autumn leaves are at their best in October.

A total of 340 people from 20 countries participated in the symposium. There were 92 participants from outside Japan, which can be considered very good for this type of international symposium. Participants received the proceedings, program, brochure, report pad, and a knapsack to carry them. The knapsack must have been quite useful since the proceedings consisted of two heavy volumes of 800 pages each!