

FIRE SAFETY SCIENCE— PROCEEDINGS OF THE FIFTH INTERNATIONAL SYMPOSIUM

Editor

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**INTERNATIONAL ASSOCIATION
FOR FIRE SAFETY SCIENCE**

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Preface

The Fifth International Symposium on Fire Safety Science was held at the World Congress Centre, Melbourne, Australia, from 3 - 7 March 1997. There were 311 registrants attending three parallel sessions in which 107 papers were presented and the poster session in which 40 posters were displayed. Twenty eight countries and districts were represented: Australia, Austria, Bangladesh, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Hong Kong, Hungary, Israel, Japan, Korea, the Netherlands, New Zealand, Norway, the Peoples Republic of China, Portugal, Russia, Slovenia, South Africa, Sweden, Taiwan, Thailand, the United Kingdom and the United States of America.

Opening remarks were given by Professor Vaughan Beck, Arrangements Committee Chair. Welcoming addresses were given by the Honorable R.Maclellan, MLA, Minister for Planning and Local Government of Victoria, and Professor J.Quintiere, Chairman of the International Association for Fire Safety Science. Following the opening ceremony, Dr. Tadahisa Jin delivered the Howard W. Emmons Plenary Lecture entitled "Studies on Human Behavior and Tenability in Fire Smoke".

Papers were accepted on the basis of their quality and originality in the science of fire safety and its applications. 100 papers from the 195 papers submitted were accepted after the peer review by international experts in fire safety science. In addition to these and the plenary lecture, six invited papers were also presented during the course of the symposium by Professor Vaughan Beck, Professor Sven Erik Magnusson, Professor Frank A. Albini, Professor A. Korolchenko, Mr. Cheng Yao and Professor Shin'ichi Sugahara. The importance of the poster presentation was emphasized at this symposium, especially for the introduction of the latest research findings, on-going research projects and other research results which can be more suitably presented in poster format. 40 posters, selected following a review process, were displayed.

At the Award Reception and Banquet, Dr. Tadahisa Jin was presented with the H.W.Emmons Invited Lectureship Award. The Kawagoe Award for a lifelong career achievement in and contribution to fire safety was presented to Dr. Philip H. Thomas by Professor Pagni. Professor Patrick J. Pagni presented the Philip Thomas Medal of Excellence for the best paper from the Fourth Symposium. The paper, by B.Z.Dlugogorski, J.R. Mawhinney and V.H.Duc, was entitled "The Measurement of Heat Release Rate by Oxygen Consumption Calorimetry in Fires Under Suppression". The award was received by Dr.Dlugogorski. A special award was presented for the best poster at the Fifth Symposium. Professor Vaughan Beck presented this award to Dr.Tokiyoshi Yamada, Ms.Keiko Suzuki, Dr.Akihiko Hokugo and Prof.Koji Shida for the poster entitled "Investigation into Fires and General Public Behaviors Following the Great Hanshin Earthquake".

These proceedings include all papers and poster abstracts delivered at the symposium with seven invited papers collected together in an opening section.

One invited paper, which was not presented at the symposium, is not included.

The Association would like to record its gratitude to all the committees appointed to organize the various aspects of this successful symposium and the international fire research experts who volunteered the review of the submitted papers. It would particularly like to thank Professor Vaughan Beck, Chair of the Arrangements Committee and his team for their efficient organization of an enjoyable and technically valuable symposium, and Professor T.Hirano, Professor G.Cox, Dr.A.Sekizawa, Professor S.E.Magnusson and Dr. J. Hall who coordinated the reviews of submitted manuscripts. The Chair of the Publications Committee would like to thank Dr.Yoshihiko Hayashi of Building Research Institute(BRI) and Dr.G.C.Ramsay of Scientific Services Laboratory for their valuable assistance and Ms.Yuko Higuchi of BRI for her unstinting support.

The Association acknowledges the support of the following organizations for their generous contributions which helped ensure the success of the symposium:

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Building Control Commission, Victoria
CSIRO Building Construction & Engineering
National Fire Laboratory, Institute for Research in Construction, National
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International Association for Fire Safety Science

The Association was founded in 1985 at its first Symposium with the primary objectives of encouraging research in the science of preventing and mitigating the adverse effects of fires and of providing a forum for presenting the results such research. Membership is open to all having these interests. In 1988, it became a registered charity in England and Wales.

The Association is governed by the Committee and its officers. At the 5th International Symposium on Fire Safety Science held in Melbourne, the following Committee and its officers were elected.

Prof. T. Hirano (Japan), Chair
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The Association would like to express its appreciation to retiring Committee members for their many contributions:

Dr. P. G. Seeger (Germany)	Dr. W. D. Wooley (UK)
Prof. T. Terai (Japan)	

We suffer grief at the losses of Professor K. Kawagoe and Professor D. J. Rasbash who were the members of the Committee at the foundation of the Association. On behalf of the Association, I express my sincere gratitude for their outstanding contribution to the Association.

Over the last two and half years the Association has taken steps to secure its operations and extend its activities. Several regional activities have been performed with great success. Those include the First European Regional IAFSS Symposium held at the Eidgenossische Technische Hochschule in Zurich,

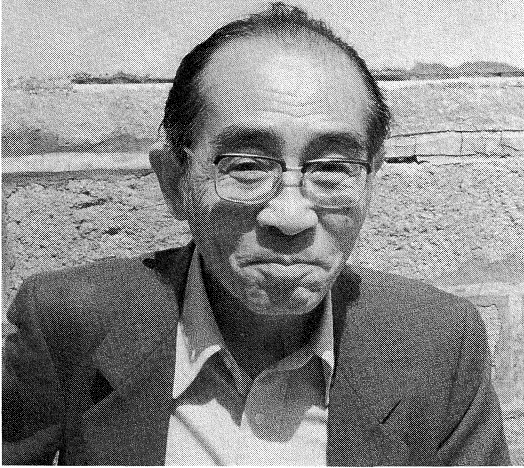
Switzerland, the Second Asia-Oceania Symposium on Fire Science and Technology held at the Khabarovsk State University of Technology in Khabarovsk, Russia, and the First International Seminar on Fire and Explosion Hazards of Substances and the Venting of Deflagrations, held in the Cosmos Hotels of Moscow, Russia. The contribution of the Organizing Committees of these meetings represented by Profs. Fontana, Bulgakov, and Korolchenko should be appreciated. In Asia-Oceania region, three seminars on fire science and technology were held at Bali Island, 1994, Khabarovsk, 1995, and Hefei, 1996 as a part of IAFSS regional activities. Prof. Quintiere visited the University of Sao Paulo, attending a conference on fire safety and discussing with them plans concerning the development of educational programs in fire safety. We look forward to our colleagues in South America joining in the activities of the IAFSS.

We should also appreciate the contribution of Dr. Hall as the editor of IAFSS Newsletters and that of Prof. Magnusson as the chairman of the IAFSS Education Subcommittee. The IAFSS Newsletters are a unique means of communication for fire researchers and engineers not only of IAFSS members but also for non-members. By the efforts of Prof. Magnusson, a group interested in fire education has been established, which is indispensable to grow up young fire researchers and engineers.

The Association seeks ways to use its resources to promote the exchange of fire research activities throughout the world, and to assist areas and individuals in need in order that they might participate. In 1995, gifts of \$ 8,500 each were bestowed on the fire education programs at the Fire Science Center, University of New Brunswick and at the Department of Chemical Engineering, University of British Columbia, Canada. These gifts were made in recognition of the successful Fourth Symposium held in Ottawa in 1995. Any comments for the Association are welcome.

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In Memoriam



Professor Kunio Kawagoe
12th December 1920 - 2nd November 1994

Only in a half year after the Fourth International Symposium on Fire Safety Science, the fire research community learned of the passing of Professor Kunio Kawagoe, one of the IAFSS founders. He served as an IAFSS Vice-Chairman from its founding in 1985 until 1991. For his role as an international pioneer in fire safety science and lifetime contribution to fire research and its application to practice, he received a numbers of honors including the Emmons Lectureship of IAFSS in 1988 and the Grand Prize of the Architectural Institute of Japan in 1994. The IAFSS medal in his name was also established at the Fourth International Symposium. He was very much looking forward to attending the Symposium, although his operation prevented him to come. However, he did not lose strong interest in fire research until the very end of his life. Professor Kawagoe graduated from the University of Tokyo in 1942, and began his illustrious research career at Building Research Institute in 1946 where he served as the Director General from 1969 to 1972. In 1973 he became a professor at the School of Science and Engineering of the Science University of Tokyo. He started there the Center for Fire Science and Technology in 1981 with Professor Takashi Handa. He served as the Dean of the School from 1980 to 1984 and the Director of the Center from 1986 to 1991. His interest covered quite wide areas and always encouraged young scientists to make a new attempt in fire research. He started his long international activity in 1960 when he spent a year at the Fire Research Station at Borehamwood as the first Japanese fire scientist to stay in Europe. He was the main prop of the bridge between the West and the East in fire research for long time. He was a good internationalist(Dr.P.H.Thomas,former IAFSS Chairman) and will be remembered for his personal warmth and his distinctive works in fire science.

In Memoriam



Professor David Rasbash
14th May 1921 - 27th January 1997

Professor David Rasbash passed away earlier this year after a long illness. All of his professional life was dedicated to fire research and education. His fund of knowledge and understanding of Fire Safety Science and his great enthusiasm for the subject will be greatly missed. He will be best remembered as the first Professor of Fire Engineering, a post which he assumed at the University of Edinburgh in 1973 after a long and distinguished career at the Fire Research Station, Borehamwood. His contributions to the field are numerous, and cover a wide range of topics, including the dynamics of pool fires, the suppression of fires by water sprays, and the propagation and venting of gas explosions. At Edinburgh University, he was responsible for creating the first post-graduate course in Fire Safety Engineering, and established a curriculum which has proved to be the foundation for others that have followed. In 1975, he organized a symposium on "Fire Safety of Combustible Materials" which brought together the international fire research community for the first time. From 1979 - 1988, he was Editor of Fire Safety Journal, a task which he undertook with characteristic enthusiasm and commitment, applying his own exacting standards to create a high quality research publication. Although he took early retirement in 1982, he continued to contribute to the field, nationally within the UK with the formation and development of the Society of Fire Safety Engineers (later to become the Institute of Fire Safety), and internationally with the IAFSS during its formative years. Sadly, his last years were plagued by ill health which he bore with courage and fortitude, while working as the lead author of a text book "The Evaluation of Fire Safety". This will be completed by others, and will be an appropriate professional memorial to a man who was a visionary in his field.

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T.Hirano

P.H.Thomas

P.Pagni

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