

Preface

Rubber science and engineering is an area that has a long history and a great tradition. It has also, through the years, become an area of high level science and manufacturing technology.

Scientific and engineering development is generally not associated with one nation or one region of the world. This is very true of rubber science and technology. The first rubber trees and technology were harvested by the Aztecs, Maya, and other natives of Central and South America. Today, natural rubber is primarily grown in Thailand, Malaysia, and Indonesia. The true importance and potential of rubber was first realized by the French, but the industry first developed in Britain, where the pneumatic tire was developed. Vulcanization was invented in the United States and synthetic rubber was invented and perfected in Germany. Many of the major scientific developments in new synthetic elastomers in recent years have come from Japan. Akron, Clermont-Ferrand, Hannover, Kobe, Kurumé, and Kwang-ju are all great rubber industrial cities.

A series of International Seminars on Elastomers was initiated in the late 1970s. In 1977, a U.S.–Japan Seminar on Elastomers was organized by Prof. M. Morton, Director of the Institute of Polymer Science at The University of Akron, and Prof. N. Yamazaki. On October 22–25, 1985, a second seminar was held in Japan after the International Rubber Conference in Kyoto at the Pegasus House near Ito, Shizuoka, on the Izu Peninsula. This meeting was chaired by Prof. J. Furukawa, President of the Synthetic Rubber Research Association, and Prof. N. Yamazaki, President of the Society of Rubber Industry of Japan, aided by an executive committee of Profs. K. Murakami (Chairman), S. Nakahama, T. Nishi, and Y. Tanaka. This was titled an International Seminar, although almost all participants were Japanese or American.

A third seminar, also entitled an International Seminar on Elastomers, was held at the University of Akron on October 25–28, 1988. The meeting was organized by Prof. J. L. White, Director of the Polymer Engineering Center at The University of Akron, and Prof. K. Marakami of the

Chemical Research Institute of Non-Aqueous Solutions at Tohoku University in Sendai, Japan. There were 35 papers presented at the seminar. All of the papers were presented by Japanese or American authors. The attendance was 230. The meeting was financially supported by the Edison Polymer Innovation Corporation, Firestone Tire and Rubber Company, Goodyear Tire and Rubber Company, Japan Synthetic Rubber Company, Monsanto Chemical Company, Ube Industries and The University of Akron, Polymer Engineering Center.

On October 7–9, 1990, a fourth International Seminar was held in Kurumé, Japan, at the Kurumé Research Building. The organizing committee was chaired by Prof. K. Murakami. The vice-chairmen were K. Kageyama, Prof. S. Kawabata, and Prof. Y. Tanaka. Prof. J. L. White was the foreign coordinator. At this seminar there were representatives of seven nations (Czechoslovakia, Germany, Hungary, Japan, Korea, the United States, and the United Kingdom, plus Malaysia indirectly through the Malaysian Rubber Producers Research Association). There were 37 papers presented and 109 total participants. The primary sponsors were The Society of the Rubber Industry of Japan, the Municipal Government of the city of Kurumé, the Kurumé Chamber of Commerce and Industry, and the Rubber Division of the Kurumé Chamber of Commerce and Industry. Support was also obtained from Asahi Glass Foundation, Eno Science Foundation, Suga Weathering Technology Foundation, Bridgestone Corporation, Asahi Corporation, Moonstar Chemical Corporation, Nichibeï Rubber Co., Ltd., Towa Corporation, Toyo Rubber Shokufu Co., Ltd., Kyushu Rubber Co., Ltd., Fukuoka Science & Technology Foundation, Kurumé-Tosu Technopolis Management Center, Association of Rubber Manufacturers, Kyushu, and Kurumé Research Park Co., Ltd.

On July 14–16, 1993, a fifth International Seminar was held in Akron, Ohio. The organizing committee was chaired by Profs. J. L. White and T. Inoue. There were 28 papers presented at the meeting. Attending the meetings were speakers from seven nations (Germany, India, Italy, Japan, the Netherlands, the United States, and the United Kingdom). The primary financial sponsor

was the Edison Polymer Innovation Corporation. Other sponsors included the Bridgestone–Firestone Corporation, GenCorp, Advanced Elastomer Systems, Monsanto Chemical Company, the Eno Science Foundation, and The University of Akron, Institute of Polymer Engineering. The attendance was 100.

A sixth International Seminar on Elastomers was held in Kyongju, South Korea, in August 12–13, 1996. The meeting was organized by Prof. Chang-Sik Ha of Pusan National University, Prof. Jin Kuk Kim of Gyeongsang National University and Mr. Pong Kee Paik of the Korean Institute of Rubber Industry. There were 30 papers presented at the meeting representing 6 nations (France, Germany, Hungary, Japan, Korea and the United States). The attendance was 100.

On December 16–17, 1998, the seventh International Seminar on Elastomers was held in Bangkok, Thailand. The organizing committee was chaired by Dr. Krisda Suchiva of National Metal and Materials Technology Center (MTEC), Thailand. International coordinators were Profs. J. L. White (USA), Y. Tanaka (Japan), E. L. Ong (Malaysia), J. K. Kim (Korea), J. C. Brosse (France), S. K. De (India) and W. Parasiewicz (Poland). There were 30 papers presented at the meeting. Attending the meeting were speakers

from 8 nations (France, India, Japan, Korea, Malaysia, Poland, Thailand, and the United States). The attendance was 120.

The following publication represents papers from the seventh International Seminar on Elastomers. The third meeting, held in Akron, was published as *International Seminar on Elastomers, Journal of Applied Polymer Science, Applied Polymer Symposia*, Vol. 44 (1989). It was edited by Profs. J. L. White and K. Murakami. The fourth meeting held in Kurumé was also published as *International Seminar on Elastomers, Journal of Applied Polymer Science, Applied Polymer Symposia*, Vol. 50 (1992), with same editors as in the publication of the third meeting.

The fifth meeting was published as *The International Seminar on Elastomers, Journal of Applied Polymer Science, Applied Polymer Symposium*, Vol. 53 (1994) with Prof. J. L. White and T. Inoue as editors. The sixth meeting was published by the Korean Institute of Rubber Industry with Prof. C. S. Ha as editor.

Krisda Suchiva
James L. White
Yasuyuki Tanaka
Guest Editors