

PREFACE

This volume contains the manuscripts of the invited papers which were presented at the Fourth International Symposium on Magnetic Resonance. The Symposium was held under the auspices of the International Society of Magnetic Resonance and sponsored by the International Union of Pure and Applied Chemistry, the International Union of Pure and Applied Physics, the International Union of Biological Sciences and the Israel Academy of Sciences and Humanities. It took place at the Weizmann Institute of Science, Rehovot and at the Hebrew University of Jerusalem, Israel, August 25–31, 1971.

About 370 scientists participated in the Symposium from the following 28 countries—Argentina, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, India, Israel, Italy, Japan, New Zealand, Norway, Rumania, Spain, South Africa, Sweden, Switzerland, The Netherlands, Turkey, United Kingdom, United States of America, Venezuela, and Yugoslavia. There were 180 papers presented at the Symposium—3 were plenary, 36 invited, and 141 contributed. Most of the papers dealt with nuclear magnetic resonance and its applications to physics, chemistry, and biology. This Symposium offered an excellent opportunity for scientists of diverse disciplines to meet and discuss the developments in their fields. In this way the inter-disciplinary character of nmr became evident. The development of nmr since its discovery 25 years ago was summarized in the talks. Many of the most novel developments were discussed in detail. NMR studies of solids, liquids, and gases were described both from the physical and chemical point of view. Special sessions were devoted to novel experimental techniques, in particular, high resolution studies by pulse techniques and the advantages of the Fourier transform technique, chemical and optical dynamic polarization, recent developments in quantum mechanical calculations of nmr parameters, relaxation effects, nmr studies of rare isotopes and in particular of carbon-13, of metals, phase transitions, liquid crystals, membranes, haem proteins, and enzymes. Other fields discussed were electron spin resonance, quadrupole resonance, and ferromagnetic resonance.

This Symposium marked the 25th anniversary of the discovery of the phenomenon of nuclear magnetic resonance and one of its discoverers, Professor Felix Bloch, was present and gave the opening lecture in which he described the preliminary experiments which led to the discovery of the phenomenon of nuclear magnetic resonance. The welcoming address at the opening of the Symposium was given by the President of the Weizmann Institute of Science—Dr. Albert B. Sabin. Dr. Shizuo Fujiwara greeted the participants in the name of the International Union of Pure and Applied Chemistry. The second part of the Symposium held in Jerusalem was opened by the President of the Hebrew University, Dr. Abraham Harman.

The first of this series of meetings on magnetic resonance was held in Tokyo, Japan in September 1965 under the direction of Dr. Fujiwara.

The second was in Sao Paulo, Brazil in July 1968 and was organized by Dr. L. W. Reeves, Dr. E. Geisbrecht, and Dr. S. Mathias. In August the following year a third conference was held in Melbourne, Australia, organized by Dr. C. Coogan. At the present Symposium, it was decided to hold the next meeting at the Tata Institute of Fundamental Research in Bombay, India in the winter of 1974.

The Organizing Committee would like to thank the following contributors for their support of the Symposium—the Weizmann Institute of Science, the Hebrew University of Jerusalem, the Israel Academy of Sciences and Humanities, the Israel Ministry of Tourism, the Israel National Council of Research and Development, the University of Illinois, Varian Associates, Bruker-Physik AG, Japanese Electro-Optic Ltd. and many other institutes.
Rehovot, May 1972.

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