

## PREFACE

To our great sorrow, Professor Felix Bloch passed away on September 10, 1983. In addition to his many important contributions to the advancement of science, he had been a great humanist and a good friend to many of us. It is well known that Professors Felix Bloch and Edward Mills Purcell shared the 1952 Nobel prize in recognition of their observation of the nuclear magnetic resonance phenomena and for introducing and developing nuclear magnetic resonance. Professor Bloch maintained a continuous interest in nuclear magnetic resonance and its applications, and was very impressed to see the recent utmost important applications of NMR in biology and medicine.

I had known Felix Bloch personally for many years. Initially, I met him at the Weizmann Institute of Science, Rehovot, Israel, at the beginning of my academic career, as he served on the board of Governors of the institute and subsequent to this at scientific meetings. He actively participated in the activities of the International Society of Magnetic Resonance and had been on its Council since its beginning and until the last year of his life. I had consulted him frequently and followed his advice closely. He would find time to answer every letter and to think carefully about the implications of the subject discussed. His greatness was shown in his modesty and in fulfilling all duties, never feeling that he had or deserved some special privilege.

This special issue contains the ISMAR tribute to Professor Bloch — The Felix Bloch Commemorative Lectures — held at many institutes and universities throughout the world. The first part opens with an article written by Erwin Hahn who spent many years with Felix Bloch. The article is based upon a commemorative lecture given at the American Physical Society in Washington, D.C. in April 1984. Next are some reminiscences of Martin Packard who was the first graduate student of F. Bloch and who also participated in his pioneering studies. An article by N. Ramsey describing the early history of magnetic resonance precedes a description by I. Ursu of recent nuclear magnetic resonance investigations in Romania. A paper by A. Saika presented at the 22nd NMR Symposium at Kyoto University in Japan, a paper by R. Basosi, N. Niccolai, E. Tiezzi and G. Valensin, and an article by C. Khetrapal, K. Ramanathan and M. Lakshminarayana conclude the first section of this issue. The second part of our special issue contains excerpts from letters and abstracts received from organizers and

participants of the commemorative lectures.

The following is a short description of the Felix Bloch Commemorative Events:

— on *November 15, 1983*, "The 22nd NMR Symposium" was held at Kyoto University Japan. J. Sohma and his colleagues organized the event, and A. Saika presented a lecture. The paper is included in this issue.

— On *January 17, 1984*, "The Analytical Conference" of the Hungarian Chemical Society was held in Budapest, and P. Sohar delivered a brief curriculum vitae of Felix Bloch and presented a talk entitled "Structure determination by NMR."

— A ten-week course from *February to April 1984* was organized by L. Conti for undergraduate and graduate students in "Physical Chemistry of Solids" and dedicated to the memory of Felix Bloch at the Institute of General and Inorganic Chemistry at the University of Rome.

— On *March 17, 1984* at a "Felix Bloch Commemorative Session" of the Romanian National Committee for Physics, I. Ursu presented a paper at the National Center for Physics in Bucharest. The paper is included in this issue.

— On *April 4, 1984*. A Memorial Symposium in honor of F. Bloch was sponsored by the School of Pharmacy and the College of Science of the University of Siena. About fifty people attended the meeting which provided discussions on the theoretical and practical aspects of magnetic resonance. The following presentations were given:

"The contribution of Felix Bloch to the understanding of electron and nuclear relaxation phenomena," E. Tiezzi

"A multifrequency ESR approach in the electron spin relaxation studies on copper complexes in solution," R. Basosi

"A multinuclear NMR study of dipolar relaxation parameters: internuclear distances in biomolecular solutions," N. Niccolai and

"NMR relaxation investigations of drug-receptor site interactions," G. Valensin.

Selected portions of these papers are presented as a single article in this issue.

— On *April 12, 1984*, "Modern NMR Spectroscopy," a session of the Committee of Molecular Structure of the Hungarian Academy of Sciences took place in Budapest with invited lectures by K. Tompa, A. Neszmelyi and P. Sohar. The following presentations were given:

"Nuclear spin tomography," K. Tompa

"Determination of carbon-carbon couplings and some other new high-resolution techniques for direct measurement of topology of organic molecules in solution," A. Neszmelyi and

"Up-to-date NMR methodology in structure elucidation," P. Sohar The abstracts of Drs. Neszmelyi and Sohar are included in this issue.

— On *June 12, 1984*, "The Felix Bloch NMR Symposium" organized by the Polish Biophysical Society and the Institute of Biochemistry occurred at the University of Wroclaw. Eighty scientists participated and K. Maskos and J. Hennel presented the following papers:

"The History of the NMR phenomenon and the Work of Felix Bloch," K. Maskos

"New methods in NMR — Zeugmatography and NMR in the Zero-field." J. Hennel

— On *September 15, 1984*, a one-day symposium on "Magnetic Resonance" held in memory of Professor Bloch at the Indian Institute of Technology in Madras included the paper by V. S. Murty, "Principles of Nuclear Induction."

— On *September 25, 1984* at the Indian Institute of Science in Bangalore, a Winter School on Biological Applications of Magnetic Resonance was dedicated to F. Bloch. The inaugural lecture, "Movement of NMR from physical phenomenon to chemistry, biology, and medicine," was given by E. D. Becker of the National Institutes of Health, Bethesda, Maryland, USA. A brief write-up by C. L. Khetrapal and G. Govil in regard to the Felix Bloch Memorial Lecture is included.

— In *autumn of 1984* at the Kazan State University in the USSR, a magnetic resonance seminar took place in which Y. Samitov presented a commemorative lecture entitled "Frequency non-invariability of NMR chemical shifts in exchanging populated systems and its explanation on the basis of F. Bloch's equation."

— A Felix Bloch Memorial Lecture was organized by X. Yuanzhi and held in Zhejiang University in Hangzhou, China with about thirty people in attendance during *October, 1984*.

— A two-term course on magnetic resonance theories has been organized at the Institute of Physical Chemistry of the Slovak Technical University in Bratislava, Czechoslovakia by A. Tkac. The lectures, *begun in 1984 and continuing into 1985*, are being delivered by P. Pelikan for scientists and advanced students devoted to the memory of Felix Bloch.

— *During 1985* on the occasion of the 150th anniversary of the founding of the Institute of Physics at Karl-Marx-University in Leipzig, A. Losche is to present an historical review of the last century with recognition and appreciation of the work of Felix Bloch.

We thank Mrs. Lore C. Bloch for her support and suggestion to use one of her favorite photographs of her late husband.

Daniel Fiat