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Preface

SHMUEL YARIV– one of the most enthusiastic representatives of thermal analysis

Professor Shmuel Yariv was born on June 1, 1934 in Petah-Tiqwa, Israel, where he completed high school in 1952. In 1954, after his military service, he pursued his studies in Chemistry, Mineralogy and Geochemistry at the Hebrew University of Jerusalem. In 1964 he was awarded his PhD for research which dealt with the adsorption of organic compounds (amines) by several clay minerals, the effect of exchangeable cations on this process, and the formation of *d*-block metal complexes in the interlayer space of smectites. His thesis, entitled 'Organo-Metallic-Clay Complexes', was written under the supervision of Prof. B. Kirson and Prof. L. Heller-Kallai of the Hebrew University and Prof. W. Bodenheimer of the Israel Geological Survey. Since that period, clay minerals, their colloidal behavior, and the adsorption of organic matter by clay minerals have been his principal areas of research and culminated in 2001 with the publication of the book, *Organo-Clay Complexes and Interactions*, to which he contributed four of the eleven chapters, and co-edited with Dr. Harold Cross.

In 1965 he spent a post-doctoral year with Dr. V.C. Farmer at the Macaulay Institute for Soil Research in Aberdeen, Scotland, where they developed the use of Thermo-IR--spectroscopy analysis techniques for the study of the fine structure of organo-clay complexes. During that year, he collaborated with Dr. R. Mackenzie and Dr. B. D. Mitchell from the same institute, studying the interactions between organic compounds and minerals by DTA, and the effect of grinding on these interactions.

Between 1969 and 1977, Shmuel was a Senior Lecturer in the Department of Geology at the Hebrew University of Jerusalem. At that time, his research work concentrated on applications of colloid science to geochemical research. These applications were based on the idea that in geologic systems and laboratory experiments, 'time' and 'dimensions of the reaction vessel' have different meanings, which means that many reactions, which in the laboratory are characteristic of colloid systems only, may in nature control the geochemical behavior both of particles having diameters much greater than classical colloid size and of solutions that are in contact with these large particles. In 1979, together with Dr. Harold Cross, he published the monograph, 'Geochemistry of Colloid Systems'.

In 1977–1979 he spent two years in Caracas, Venezuela, where he worked with Dr. E. Mendelovici on the thermal transformations of various minerals present in the Venezuelan Laterites.

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Since 1980, Shmuel has served as Professor of Inorganic and Geochemistry at the Department of Inorganic and Analytical Chemistry at the Hebrew University of Jerusalem. In 1985-1986 he spent a year in Edmonton, Canada, where he measured the heat of adsorption of organic compounds by clay minerals with Prof. L. Hepler. In 1990 he spent six months with Prof. H. Seifert in Kassel studying mechanochemical synthesis of double halide salts. In 1997 he returned to Edmonton to study vibrational spectroscopy of clays with Dr. K. H. Michaelian.

Shmuel has published over 220 research and review papers on various topics. His research has covered areas such as the surface acidity and wettability of clays, pillared clays (together with Prof. N. Lahav), infrared and Raman spectroscopy of clay minerals, mechanochemistry of clay minerals, thermal treatment of clays, adsorption of organic and inorganic compounds by clay minerals, visible spectroscopy in the study of organo-clays and the role of clays in solving environmental problems. Examples of Shmuel's contribution to the applicability of thermal analysis methods to the investigation of organo-clays, include his studies on the use of three techniques: (1) By using simultaneous DTA-mass spectrometry in the study of these complexes, he showed that in air environment, information on the type of interaction between the organic matter and the clay could be obtained from exothermic peak temperatures. Depending on the type of organic matter-clay interaction, he showed that during thermal treatment different varieties of charcoal were obtained with different combustion temperatures. (2) In his studies on thermo-XRD-analysis of organo-clays (together with Prof. I. Lapides), he showed that this method could determine whether the adsorbed organic compound was located inside the interlayer space. (3) In his studies on thermo-IR-spectroscopy analysis of organo-clays, he showed that this method could give information on the fine structure of the complex and on the type of interaction between the organic matter and the functional group on the clay surface.

In 1980, together with Prof. M. Steinberg, he founded the Israel Group for Thermal Analysis and Calorimetry (IGTAC). He was initially the secretary and between 1981 and 1984, the Chairperson of the Group. In 1990, together with Prof. E. Gutman and the late Prof. I. Lin, he founded the Israel Group for Mechanochemistry and was its first Chairperson.

In 1980 he joined the Council of the International Confederation for Thermal Analysis (ICTA) as the Councilor from Israel. In the period 1982–1996, he served as ICTAC Secretary, a period of significant development in the Confederation. For example, the number of affiliated National and Regional Societies or Groups increased from 12 to 20, and ICTA became ICTAC, the International Confederation of Calorimetry, in addition to Thermal Analysis. The ICTAC Scientific Commission was created. In 1988 he was one of the organizers of the Ninth ICTA Congress in Jerusalem. He was the editor of the three volumes of the Pre-Congress Proceedings and the Post-Congress Proceedings. In 2000, after four years of being inactive in ICTAC Council, he again joined the Council as the Councilor from Israel. For his scientific contribution in thermal analysis and for his service, in 1991 he received the Kurnakow-Medal of the Moscow Institute of Chemistry of the Soviet Academy of Science, in 1996 a Special ICTAC Certificate in recognition of his long and outstanding service as Secretary of ICTAC and in 2000, the ICTAC Distinguished Service Award.

Since 1984, Shmuel has published regularly in the Journal of Thermal Analysis and Calorimetry. Since 1987, he has been a member of the Editorial Advisory Board of the Editorial Board of the Journal. In this role, he has been responsible for the publication of re-

view articles on different topics in thermal analysis in the journal. Recently he edited five special issues of the journal dedicated to distinguished thermal analyzers, Vol. 37, No. 6 & 7, 1991 (dedicated to Prof. Hans Seifert), Vol. 39, No. 3, 1993 (dedicated to Prof. Slade St. John Warne), Vol. 42, No. 1, 1994 (dedicated to Prof. Lisa Heller-Kallai), Vol. 50, No. 1–2, 1997 (dedicated to Prof. Menachem Steinberg) and Vol. 69, No. 1, 2002 (dedicated to Prof. György Liptay). He has also edited papers presented at the meetings of the Israel Group for Thermal Analysis and of the Israel Group for Mechanochemistry for publication.

I met Shmuel for the first time in 1973 when I was a student in the Department of Geology at the Hebrew University. He was my supervisor for my MSc and PhD theses. We became good friends and since then we have continued our scientific collaboration on various topics, such as intercalation of kaolin-like minerals, adsorption of pesticides by clay minerals, mechano-chemistry of mixtures of halide salts and formation of double halide salts, Raman and FTIR spectroscopy of minerals and on many other subjects. Together we take part in the activities of the Israel Group for Thermal Analysis, the Israel Group for Mechanochemistry and the Israel Clay Society, organizing the scientific meetings and seminars of these groups.

Shmuel's interests are multitudinous. He is a lover of classical music and together with his wife Sara, who is a ballet pianist and a piano teacher, is deeply involved in the musical life of Jerusalem. His hobby is Hebrew literature and in the last two years he has published some Hebrew poetry. He is also interested in biblical archeology and history, especially that of Jerusalem.

On the occasion of his retirement, the Editorial Board of the Journal decided to dedicate a special issue in recognition of his distinguished contribution to the Journal of Thermal Analysis and Calorimetry as an author, reviewer and editor. I am grateful to the authors who contributed papers for this special collection. I am also grateful to the referees for their dedicated reviews.

We wish Prof. Yariv continued good health and success in his endeavors and in his activities in ICTAC and on the Editorial Board of the Journal.

Guest Editor

Prof. S. Shoval
The Open University of Israel, Tel-Aviv

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