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Foreword

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FOREWORD

It is our great pleasure to compile this special issue, *Festschrift*, dedicated to our teachers, Professors Yusei Maruyama and Fumio Ogura, on the occasion of their retirements from the Institute for Molecular Science (IMS) in Okazaki and from Hiroshima University in Hiroshima, respectively.

Professor Yusei Maruyama has contributed a great deal in the field of solid-state chemistry, from organic to inorganic compounds, from new materials preparation to new methods of characterization, for more than 35 years. On the measurement technique, he applied a tunneling spectroscopy to organic conductors and superconductors. Later, he combined this technique with STM and extended it to the study of the electronic structures of organic superconductors. On the other hand, concerning the thin film preparation he is again one of the pioneers who have applied a modern and elegant technique, molecular beam epitaxy (MBE), to the organic molecular materials. It should be emphasized as well that he has been continuously interested and devoted in varied novel compounds, which is illustrated by his early work on black-phosphorus; he succeeded in the preparation of the gem-like beautiful single crystals using a bismuth flux. Similarly, when C_{60} came out, he lost no time in measuring the electrical properties. It has been widely acknowledged that he achieved significant contribution to the characterization of various C_{60} compounds. While he paid much attention to the current scientific interest and topics, he always paid no less attention to the subject that is not spotlighted. Such attitude crystallizes, for example, in a series of his early work on the amorphous or later molten states of the organic compounds. It should be added that there are only a limited part of his wide scientific career. From the fruits of his continuous endeavor first at ISSP of the University of Tokyo, then at Ochanomizu Women's University through to IMS, we have inherited kaleidoscopic aspects of organic molecular materials in addition to his newly introduced powerful techniques.

Professor Fumio Ogura has contributed markedly to the development of novel organic materials with particular structures and electronic properties for years. After his early brilliant work at Osaka University in cooperation with Professor J. Tanaka for determination of the absolute configurations of optically active triptycenes using circular dichroism, he, at Hiroshima University, energetically designed and elegantly synthesized a variety of novel electron donors and acceptors, which were greatly used for the formation of a number of conductive molecular complexes. Especially, his study on a series of the hetero-TCNQs in the pioneer work of electron acceptors with effective reduction of on-site Coulombic repulsion, in which he successfully took advantage of extensive conjugation of the heteroquinoid system.

Concerning novel electron donors, he made much efforts on the preparation of novel heterocycles containing selenium and tellurium atoms. The specific characteristics of these heterocyclic systems, in particular, peri-chalcogen bridged condensed aromatics, are very useful for the construction of non-TTF types of novel conducting materials. His current interest has been focussed on a new topic on dimeric and oligomeric TTFs including tetrathiafulvalenophanes, which possess beautiful and artistic structures. Such sophisticated compounds are expected to provide an opportunity to control the stoichiometry, band filling, and molecular assembly in desired conducting complexes.

With Professors Maruyama and Ogura we have associated for long time in the field of physical and synthetic chemistry of organic materials. G.S. had the close collaboration with Professor Maruyama on the physical properties of BEDT-TTF compounds. T.I. collaborated with Professor Maruyama as a research associate of Maruyama's group at IMS and, after taking a position of Professor at Hokkaido University, has continued the collaboration on the conductive organic solids including fullerides. T.O. collaborated with Professor Ogura as an associate professor of Ogura's group at Hiroshima University in the field of synthesis of novel functional organics and has succeeded the professorship after Ogura's retirement. We all had many occasions to discuss with Professor Maruyama on the electronic properties of organic solids, especially in the scientific meeting conducted by him supported by a Grant-in-Aid for Scientific Research from Ministry of Education, Science, and Culture, Japan. We also had many valuable discussions with Professor Ogura, who was a key member of a group "Design and Synthesis of Molecular Conductors (group leader G.S.)" in the special project "Novel Electronic States of Molecular Conductors (chairman Seiichi Kagoshima)" of Science Research of Priority Area, Ministry of Education, Science, Sports, and Culture, Japan in the period of April 1994–March 1997. Many contributors to this special issue are the members of this project group.

This special issue is featured on contributed papers to Professors Maruyama and Ogura from a number of researchers who have been affected and stimulated by their excellent works on molecular sciences. This issue consists of design, synthesis, chemical and physical properties and structures of "New Electron Donors, Acceptors and Organic Conductors", "Organic Metals and Neutral-Ionic System", "Molecular Magnets" and "Oligomers, Polymers, Fullerenes, Thin Films and Amorphous Molecular Materials"; all of them are among the subjects of Professors Maruyama and Ogura's interests.

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