

The first part deals with fundamental concepts of the physics and chemistry mostly of 1-D systems. The authors succeed in achieving the goal put forward by the conference organizers, particularly in making accessible ideas and results from solid state physics to a large audience of chemists. Short reviews illustrate effectively the current research trends and give a glimpse into the direction of future developments. The section ends with an interesting review on technological applications of organic conductors based on TCNQ which will certainly contribute to stimulate new research efforts in this field.

More specialized papers on specific systems are collected in the subsequent parts of the volume. The part on organic materials is mainly devoted to the synthesis and crystal chemistry of 1-D compounds based on TTF, TCNQ and new molecules derived from their chemical modification, in an attempt to clarify the relationships between solid state physical properties and molecular structures.

In addition to analogous attempts carried out by modifying the classical compounds of the Krogmann salt type, the inorganic section presents completely newly synthesized systems like partially oxidized metal bis(dioximates), phthalocyanine materials and transition metal tricalcogenides.

The last section on the so called 'covalent materials' is opened by a review article on the solid-state synthesis and electronic properties of large-dimension crystals of organic polymers belonging to the family of the polydiacetylenes. This is followed by many papers on halogen doping as an effective way of improving the electrical properties of the well known polymeric conductor  $(SN)_x$  and polyacetylene,  $(CH)_x$ , on which renewed interest is constantly growing. Also reported are some papers on the chemical characterization, crystal growing and the use of  $(SN)_x$  as an electrode material. The section is closed by two reports on new, quite unusual 1-D materials: the linear chain mercury compounds  $Hg_{3-5}AsF_6$ .

The efforts of the conference organizers and of the editors have produced a high caliber and largely comprehensive volume which succeeds in giving something between conference proceedings and a reference book reminiscent to some extent of the very famous *Discussions of the Faraday Society*. The book, mostly chemically oriented, is a timely complement to the available monographs devoted to 1-D systems. The reader finds a list of the latter in the very useful general bibliography given in the introductory remarks by the editor, J. S. Miller.

Careful and up-to-date lists of references at the end of each paper are precious guides to the literature whose scattering is typical of an interdisciplinary subject. In conclusion, the book can be strongly recommended to all researchers active in the field and is an invaluable tool for introducing newcomers into this research area which is continuously growing and rich in exciting perspectives.

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**Inorganic Molecular Dissymmetry**, by Y. SAITO. *Volume 4 of the series 'Inorganic Chemistry Concepts'*, published by Springer-Verlag, Berlin-Heidelberg-New York, 1979; clothbound, 167 pp. Price DM 78.

For a century, chemists have been fascinated by the geometrical properties of molecules and polyatomic ions lacking a centre of inversion. The first case of two enantiomers identified by anomalous X-ray scattering was a tartrate (in 1951) and this book gives an extensive survey of assignment of absolute configurations, with emphasis on cobalt(III) complexes of a large number of multidentate ligands. The theoretical models of conformational analysis involving the energy as a function of  $(3N - 6)$  spatial variables (when the species contains  $N$  nuclei) and of circular dichroism are discussed at length. Another subtle effect derived from X-ray scattering is the evaluation of electronic density distributions, and it is argued that Co(III) contains 26.3 electrons in the cation and 26.8 in the anion of the salt  $[Co(NH_3)_6][Co(CN)_6]$ . There is a minor discrepancy between these values and the 'ligand field' interpretation of the visible spectra suggesting between  $(Z - 1)$  and  $(Z - 2)$  electrons in most  $d$ -group compounds, but there are many conceptual and experimental difficulties in such an evaluation.

The book is the fourth in a series '*Inorganic Chemistry Concepts*' treating modern physical and quantum-mechanical techniques applied to interesting problems of inorganic chemistry, and it should be of wide interest to a great majority of the readers of *Inorganica Chimica Acta*.

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