

Foreword

It was the aim of the interdisciplinary conference on *Crystallographic Groups*, held at the Center for Interdisciplinary Research at the University of Bielefeld from September 2 to September 16, 1979, to bring together chemists, physicists, crystallographers and mathematicians interested in crystallographic groups and their various applications. They tried to clarify various methods of description as well as concepts of equivalence for (perfect and imperfect) crystal structures, including higher-dimensional analogues. Another focal point was the discussion of the applicability of these concepts (group theory, representation theory, graph theory, wreath-products, tessalations ...) with respect to the description, characterization, and classification of continuous and discontinuous changes of crystals and their variables of state - in particular of symmetry breakings and phase transitions - from the theoretical as well as from the experimental point of view.

After the first week, used mainly for presenting and discussing review lectures, the second week was used for workshops covering the main areas of present research.

Most of the papers collected in these proceedings were submitted after these discussions and thus, hopefully, reflect - at least to some extent - whatever progress may have been achieved during the conference. They have been reviewed from an interdisciplinary point of view, with particular emphasis on understandability.

Whereas some papers present original recent research in this field, in other contributions some basic ideas and results are outlined for the use of the non-specialist while still others try to do both.

It is hoped that these proceedings will help to strengthen the mutual understanding of chemists, physicists, crystallographers and mathematicians with respect to their various approaches towards a theory of crystals and that they may stimulate further joined work.

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