

## Preface

The Small Molecules Commission of the International Union of Crystallography and the American Crystallographic Association combined forces to hold a 3 day symposium entitled 'New Trends in Small Molecule Crystallography' at the 1994 ACA Meeting held in Atlanta, Georgia, from Sunday 26 June to Friday 1 July. The Symposium Organizing Committee [F. H. Herbstein (Haifa), Chairman, W. L. Duax (Buffalo), G. Ferguson (Guelph) and Yu. T. Struchkov (Moscow)] set up a programme emphasizing the tremendous qualitative and quantitative changes to be expected in the nature of the next century's structural information because of current and anticipated advances in experimental and computational diffraction techniques. An important parallel aspect is the integration and complementation of structural information from diffraction with that obtainable in other ways, especially by theoretical and resonance methods. With this aspect in view, about half of the chosen topics were not pure single crystal diffraction, and about half of those invited would not class themselves as professional diffractionists. The choice of speakers was rather international, ten from North America, 13 from Europe and two from Asia. Four of the contributions came from young scientists (under 35) on a competitive basis. We asked speakers to look critically at how their topics had developed and, hopefully, to dare to peer some way into the future. All contributions were refereed in the normal way. The published papers are not *verbatim* reproductions of the spoken lectures, but cover the same ground in more extended fashion.

The papers delivered can be arranged on the basis of content into four groups, starting with the most fundamental features of the crystalline state, and the methods used for analysing its structure: Group 1: New Approaches to Crystals and the Analysis of Their Structures (Janner; Coppens; Karle; Hauptman; Sheldrick & Gould), through Group 2: New Opportunities Presented by Advances in Techniques (Harding; Finney; Larsen; Hart; Amelinckx; Somorjai & Van Hove), then passing to the advantages provided by the combination of methodologies: Group 3: *Ex Unitate Vires* – The Combination of Methodologies (Ripmeester, Ratcliffe, Enright & Brouwer; Weiss; Grant, Liu, Iulicci, Phung, Facelli & Alderman), and ending up with a variety of examples of recent applications: Group 4: Recent Applications and Results of Diffraction Studies (Burdett; Destro & Merati; Bürgi; Iversen, Larsen, Souhasso & Takata; Frey; Rao & Ganguli; Dunitz; Brammer, Zhao, Lapidó & Braddock-Wilking). The symposium programme included three other papers ('Molecular Rotations in Crystalline ANSA Metallocenes' by A. J. Edwards, K. Prout, S. J. Heyes & C. M. Dobson; 'Jumping Crystals. A Study of a Single Crystal to Single Crystal Reversible Phase Transition' by S. Zamir & D. J. Greenwood; 'The Arrangement of Atoms and Molecules in Crystals' by R. Nesper), the content of which will appear elsewhere.

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