Preface

These two volumes contain the Proceedings of the International Conference on Martensitic Transformations (ICOMAT '89) held in Sydney, Australia, 3-7 July, 1989. The conference was the sixth in a series of international conferences on martensitic transformations, following successful meetings in Kobe, Japan in 1976; Kiev, U.S.S.R. in 1977; Boston, U.S.A. in 1979; Leuven, Belgium in 1982 and Nara, Japan in 1986. It was thus the first time in which an ICOMAT Conference had been convened in the Southern Hemisphere. That such an international conference should be held in Australia is in large part a tribute to the pioneering work of J.S. Bowles and J.K. Mackenzie into the crystallography of martensitic transformations and to the sustained research of Professor John Bowles and his students that has commanded international recognition for almost four decades.

While early conferences in the ICOMAT series were directed almost exclusively toward the improvement of basic scientific understanding of martensitic transformations, recent meetings have tended to also include significant contributions on the applications of martensitic transformations. This has been particularly evident with the emergence of commercial alloys exhibiting the shape memory effect and their successful commercial application. The Proceedings of ICOMAT '89 contain a collection of 9 invited and 114 contributed papers covering key areas of research ranging from fundamental transformation mechanisms to practical applications of martensitic transformations in both metallic and ceramic alloys. A majority of the papers (60) are devoted to martensitic transformations and the shape memory effect in Cu-based, NiTi and Fe-based alloys, and to the application of shape memory alloys. However, there are reports of important new contributions in the area of premartensitic behaviour and the traditional field of ferrous martensites. The conference was also noteworthy as the first in which an invited lecture and two conference sessions were devoted to martensitic transformations in ceramics. This reflects the

expanding interest in the contributions of martensitic transformations to transformation plasticity and transformation toughening in important engineering ceramics.

The conference was attended by 130 scientists, representing 16 different countries. The Organizing Committee takes this opportunity to express its sincere appreciation to those who accepted invitations to present Keynote lectures, and to all those who contributed to and participated in the conference. It is also appropriate to recognize with gratitude all members of the Organizing and Technical Committees for their contributions to a successful meeting. Special mention should be made of the work of Dr. P.M. Kelly as Chairman of the Organizing Committee and of Professor N.F. Kennon who, as Conference Secretary, worked tirelessly to co-ordinate the conference organization. A special thanks also to members of the Technical Committee and Mrs. Joan Juliff for their assistance in the preparation of these Proceedings.

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