

Advanced Topics in Materials Science and Engineering

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To the memory of Francisco Mejía-Lira and John K. Tien

Preface

This volume contains the papers presented at the First México-U.S.A. Symposium on Materials Sciences and Engineering held in Ixtapa, Guerrero, México, during September 24–27, 1991. The conference was conceived with the primary objective of increasing the close ties between scientists and engineers in both México and the U.S. with an interest in materials. The conference itself would have not taken place without the drive, determination and technical knowledge of John K. Tien of the University of Texas at Austin and of Francisco Mejía Lira of the Universidad de San Luis Potosí. This book is dedicated to their memory.

The event brought together materials scientists and engineers with interests in a broad range of subjects in the processing, characterization and properties of advanced materials. Several papers were dedicated to structural materials ranging from ferrous alloys to intermetallics, ceramics and composites. The presentation covered properties, processing, and factors that control their use, such as fatigue and corrosion. Other materials and properties were also explored by U.S. and Mexican participants. Several papers dealt with the characterization and properties of magnetics, optical and superconductor materials, nanostructured materials, as well as with computational and theoretical aspects likely to impact future materials research and development.

In addition to the technical presentations, the Conference provided a forum for numerous discussions and on-going materials research programs carried out in each country individually and cooperatively. These discussions were supplemented by oral presentations and by two plenary panel discussions on Cooperative Programs and on Materials Science and Engineering Education. The Symposium was significantly enriched by participation of different Agencies and Organizations from México and the U.S., which included representatives from Consejo Nacional de Ciencia y Tecnología, Secretaría de Educación Pública, National Science Foundation, Air Force Office of Scientific Research, National Institute of Standards and Technology, The Metallurgical Society of AIME, National Materials Advisory Board (National Research Council), ASM International, and the Materials Research Society (México).

We thank the participants for their interest in all aspects of the Symposium. We would also like to acknowledge the sponsorship of Consejo Nacional de Ciencia y Tecnología, Secretaría de Educación Pública, National Science Foundation, and the Organization of American States.

Finally, we wish to thank Dr. J.M. Montejano-Carrizales for his role in the technical review, organization and editing of this book.

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