

Preface

These volumes represent the Proceedings of the Twentieth Rare Earth Research Conference, which was held at Monterey, California, September 12–17, 1993. The Conference had eight oral symposia supplemented by seven poster sessions. Oral symposia focussed on recent research directions, innovative concepts, and contemporary applications in rare earth and actinide research. This Conference had as its themes: (a) lanthanides in biochemistry and medical diagnostics; (b) electronic structure and dynamics in crystals, glasses, and optically opaque materials; (c) molecular lanthanide systems for new materials and catalysts; (d) research on and applications for magnetic and superconducting properties of rare-earth based materials; and (e) comparison of lanthanide and actinide chemistry and physics.

The program sought to achieve a balance among chemical and physical topics, reflecting an increased emphasis on applications of lanthanides and actinides that have characterized much work in recent years.

The Proceedings of the Conference are being published as bound volumes and also as regular issues of the *Journal of Alloys and Compounds*. All papers that appear in the Proceedings are subject to two peer reviews and must meet all standards of the Editorial Board.

The papers appearing in the Proceedings are grouped into the same areas as the Conference symposia. Invited papers (presented orally at the Conference) are followed by contributed papers. The Conference policy is that only papers actually presented at the Conference may appear in the Proceedings. Researchers who wish to read the abstracts from other presentations are referred to the Conference Program and Abstracts Booklet.

The Program Chairman and the Editors take this opportunity to thank the chairs of the symposia, who organized the oral sessions, and to the session chairs, who organized the poster sessions. These chairs also participated in the reviewing process by reviewing papers or by recommending others as reviewers. We also express our appreciation to the authors and to the many reviewers who generously gave of their time to make this a successful conference.

Professor LeRoy Eyring received the Frank H. Spedding Award at this Conference. To symbolize his research achievements on the many nonstoichiometric oxides of the f-elements, these Proceedings are bound in tan, the color of many of these remarkable materials.

We look forward to the participation of many f-element researchers from throughout the world at the Twenty-first Rare Earth Research Conference, Charlottesville, Virginia, in 1996.

Fred S. Richardson (University of Virginia)

Program Chairman

Lester R. Morss (Argonne National Laboratory)

Proceedings Editor-in-Chief