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Beam-Solid Interactions and Phase Transformations

Editors: H. Kurz, G. L. Olson and J. M. Poate

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Symposium held December 2-4, 1985, Boston, Massachusetts, USA

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Preface

This volume contains papers presented at the Materials Research Society symposium on "Beam-Solid Interactions and Phase Transformations" which was held in Boston, Massachusetts, December 2-4, 1985. This symposium was devoted to the fundamental aspects of beam-solid interactions and beam-induced phase transformations in materials. It was the eighth in a series of MRS symposia which have evolved from the original symposium on "Laser Annealing." The symposium began with a full day plenary session organized jointly with the symposium on "Beam-Induced Chemical Processes." This session consisted of eight invited papers by internationally recognized scientists who reviewed recent work in the fields of laser-solid and surface interactions, ion-solid interactions and phase transformations. The final two days of the symposium consisted of both oral and poster sessions on the interaction of photon, ion and electron beams with solids and the thermodynamics and kinetics of rapid phase transformations between metastable and stable states.

Except for the section devoted to plenary reviews, the papers published in this volume are ordered according to content and do not reflect the order of presentation at the meeting. All papers in this volume were refereed using the peer review process. An important element in this symposium was the emphasis on fundamental issues relating to interactions between a wide variety of energy beams and materials. For example, in addition to research results in the field of laser interactions with metals, semiconductors, and insulators, new developments in the areas of ion-induced epitaxy, metastable phase formation by ion irradiation, and ion beam mixing for production of new phases were also presented at this meeting. The symposium revealed not only how the understanding of beam-solid interactions has matured over the last eight years, but also showed how such understanding is leading to important new developments in this expanding field.

Symposium Co-Chairmen

H. Kurz G.L. Olson J.M. Poate

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