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Processing and Characterization of Materials Using Ion Beams

Editors: Lynn E. Rehn, Joe Greene and Fred A. Smidt

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Processing and Characterization of Materials Using Ion Beams

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Processing and Characterization of Materials Using Ion Beams

Editors: Lynn E. Rehn, Joe Greene and Fred A. Smidt

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Preface

This volume contains papers presented at the Materials Research Society symposium entitled "Processing and Characterization of Materials Using Ion Beams" which was held in Boston, Massachusetts from November 28 to December 2, 1988. The symposium, which focused on ion-target interactions, was the eleventh in the series of MRS symposia on energetic-beam interactions with solids that has evolved from the original "Laser Annealing" meeting. Clearly, our fundamental understanding of ion-solid interactions has matured considerably during the intervening years. However, as pointed out particularly in the invited presentations, several older questions remain unanswered. The present symposium began with a half-day plenary session, organized jointly with the symposium on "Laser and Particle-Beam Chemical Processes on Surfaces," which was attended by over 500 people. In this opening session, four internationally recognized scientists reviewed recent experimental and theoretical progress in understanding the effects of low-energy ions on surfaces. A second joint session, co-organized with the symposium on "New Materials Approaches to Tribology: Theory and Applications," was held Wednesday morning. Eleven papers on tribological aspects of ion- and laser-modified surfaces were presented and discussed in this session; additional joint papers were presented at the poster session on Thursday evening.

In total, 116 papers were accepted for publication. All papers published in this volume were refereed using the peer review process. The proceedings have been divided according to content into five sections covering the main topics addressed at the meeting: Ion-Beam-Assisted Deposition, Ion-Beam Mixing, Microstructural Changes and Characterization, Properties (Tribological, Optical, Chemical), and Electronic Materials. Please note that although many papers fit appropriately into more than one of these categories, they are for obvious reasons only published in one.

February, 1989

Lynn E. Rehn
Joe Greene
Fred A. Smidt

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Acknowledgments

We wish to thank the many participants who contributed to the success of this symposium. In particular we wish to acknowledge the authors and referees, whose efforts made rapid publication of a quality proceedings possible. We also recognize the excellent overviews of currently important topics that were provided by the invited speakers. They are:

- | | |
|-----------------|----------------|
| J. Dieleman | J.R. McNeil |
| B. Dodson | J.M. Poate |
| D.M. Follstaedt | J.W. Rabalais |
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We wish to acknowledge the session chairs, both for insuring that the individual sessions flowed smoothly and for providing direction during the discussion periods. They are:

- | | |
|--------------|---------------|
| S.A. Barnett | C. McHargue |
| J.J. Cuomo | S.T. Picraux |
| J. Mayer | I. Singer |
| | H. Wiedersich |

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