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Photons and Low Energy Particles in Surface Processing

Editors: Carol I. H. Ashby, James H. Brannon and Stella W. Pang

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MATERIALS RESEARCH SOCIETY SYMPOSIUM PROCEEDINGS VOLUME 236

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# Photons and Low Energy Particles in Surface Processing

Symposium held Decmber 3-6, 1991, Boston, Massachusetts, U.S.A.

EDITORS:

**Carol I.H. Ashby**

Sandia National Laboratories, Albuquerque, New Mexico, U.S.A.

**James H. Brannon**

IBM Almaden Research Center, San Jose, California, U.S.A.

**Stella W. Pang**

University of Michigan, Ann Arbor, Michigan, U.S.A.



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## Preface

This volume is a collection of 85% of the papers presented at the Materials Research Society symposium entitled "Photons and Low Energy Particles in Surface Processing" held in Boston, Massachusetts, from December 3-6, 1991. This symposium focussed on the chemical and physical processes that occur in the surface and subsurface regions of solids when irradiated with beams of photons, low-energy ions, electrons, or high-energy neutrals. Many excellent papers were presented covering a broad spectrum from the fundamental science of such interactions to important technological applications. Fundamental studies were reported on a wide range of process mechanisms: the influence of energy deposition on final film properties was a prominent theme. Materials damage resulting from beam-based processes was treated both at a fundamental level and in terms of its vital importance in technological applications. Several novel beam-based processes for hard-to-fabricate materials and structures were presented.

Advances in laser etching and ablation, pulsed laser deposition, electron-beam-induced decomposition and growth, plasma etching, and ion-induced effects were presented. Pulsed laser deposition and ion-assisted and plasma deposition sessions were held jointly with the symposium on "Phase Formation and Modification by Beam-Solid Interactions". Papers have been divided in this volume in accordance with the topical divisions employed for the oral sessions. The number of high quality papers greatly exceeded the number of available time slots so many papers were presented as posters. They have been included in this volume under the appropriate topical heading.

The advances reported at this symposium and the enthusiasm of the many participants clearly indicate that beam-based processing will continue to be a lively research area for the foreseeable future.

Carol I.H. Ashby  
James H. Brannon  
Stella W. Pang

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Photons and Low Energy Particles in Surface Processing

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