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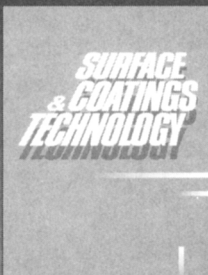
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Editors: A. Matthews, Hull, UK

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Surface and Coatings Technology is a principal forum for the interchange of information on the science, technology and applications of thin and thick coatings and modified surfaces which alter the properties of materials. The scope includes all types of coatings and surface modification techniques (including physical vapour deposition, chemical vapour deposition, electroplating and surface modification by directed energy



techniques). Of particular emphasis are the emerging advanced processes such as thermal spraying, sputter deposition, activated reactive evaporation, ion plating, molecular beam epitaxy, ion implantation and laser surface modification. Contributions range from original scientific papers concerned with applied research or direct applications of coatings to reviews of current technology in specific areas.

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The discussions of implantation-induced modifications to graphite (Chapter 6) and graphite-related materials (Chapter 7) are extensive and present a coherent analysis of the state of knowledge relative to both lattice damage and impurity effects. The authors' suggestions of opportunities and the need for further studies enhance the value of this publication.

The book contains a thorough treatment of implantation into diamond and diamond-related materials that is especially valuable in view of current attempts to produce wide bandgap semiconducting CVD diamond films. This critical assessment of results obtained to date indicates that success in this area will require close control of experimental parameters and a thorough understanding of the many ion-beamed-induced structural modifications.

This volume presents a critical and integrated assessment of the literature. It appears that structural modifications are reasonably well-understood in terms of lattice damage and impurity effects. The effects on properties appear to be less well-defined. Further research on mechanical properties would seem to offer a fruitful area for study. The volume should be of value to graduate students entering this field of research, researchers in either carbon materials or implantation interested in expanding into the other area, and anyone desiring to become familiar with the state of the art in this field.

Reviewer: Carl J. McHargue is a professor of materials science and engineering and director, Center for Materials Processing, at the University of Tennessee-Knoxville. His research involves surface modification of ceramics using ion beams.

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