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| Titolo | Molecular Modeling and Multiscaling Issues for Electronic Material Applications : Volume 2 // edited by Artur Wymyslowski, Nancy Iwamoto, Matthew Yuen, Haibo Fan |
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| Disciplina | 620 620.1 620.11295 620.11297 |
| Soggetti | Electronics Microelectronics Mechanics Mechanics, Applied Optical materials Electronics - Materials Nanoscience Nanostructures Electronics and Microelectronics, Instrumentation Solid Mechanics Optical and Electronic Materials Nanoscale Science and Technology |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references at the end of each chapters. |
| Nota di contenuto | Molecular Modeling of pH-Dependent Properties of Emeraldine Base Polyaniline for pH-Based Chemical Sensors -- Two Approaches of Study Cu/Epoxy Interface Enhancement with Benzenethiol Promoter -- Molecular Dynamics Simulation of Pore Formation Mechanism for Deposition of Poly (vinylidene fluoride-co-trifluoroethylene) on Gold Substrate -- Investigating the Influence of Moisture by Molecular |

Dynamics Simulations -- Analysis of the Adhesion Work with a Molecular Modeling Method and a Wetting Angle Measurement -- Using Coarse-Grained Molecular Models (Molecular-Mesocole) of a Copper Oxide-Epoxy Interface to Obtain Stress-Strain Failure Predictions which Include Interfacial Roughness, Water and Filler Effects -- Establishment of the Mesoscale Parameters for Separation: A Non-Equilibrium Molecular Dynamics Model -- Mechanics of Graphene and Carbon Nanotubes under Uniaxial Compression and Tension -- Analysis of an Influence of a Conversion Level on Simulation Results of the Crosslinked Polymers.

Sommario/riassunto

This book offers readers a snapshot of the progression of molecular modeling in the electronics industry and how molecular modeling is currently being used to understand materials to solve relevant issues in this field. The reader is introduced to the evolving role of molecular modeling, especially seen from the perspective of the IEEE community and modeling in electronics. This book also covers the aspects of molecular modeling needed to understand the relationship between structures and mechanical performance of materials. The authors also discuss the transitional topic of multiscale modeling and recent developments on the atomistic scale and current attempts to reach the submicron scale, as well as the role that quantum mechanics can play in performance prediction. This book also: Discusses multiscale modeling of materials at the mesoscale Highlights current state-of-the-art, novel research topics and achievements in the area of molecular modelling and multiscaling problems of electronic materials and their applications as well as atomistic modeling of mechanical properties Provides practical examples for engineers interested in molecular modeling using simulations drawn from electronic packaging, dielectric materials, and thermal and mechanical properties.
