



crystals



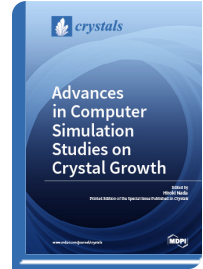
Special Issue Reprint

Advances in Computer Simulation Studies on Crystal Growth

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Crystals are indispensable in technology, nature, and our daily lives. For example, cooking uses many kinds of crystallized products, such as salt, sugar, and fat crystals; electronic devices contain semiconductor crystals; living organisms produce mineral crystals to maintain biological processes; and snow and ice crystals play a crucial role in climate change. For these and other topics related to crystals, an especially important area of research is crystal growth.

Computer simulations of crystal growth have become increasingly important as a result of rapid increases in available computing power. Computer simulations can analyze and predict various aspects of crystal growth, including molecular-scale growth and nucleation mechanisms, the structure and dynamics of surfaces and interfaces, and pattern formation.

This book presents state-of-the-art research and reviews of computer simulation studies on crystal growth for hard-sphere particles, organic molecules, ice, and functional materials. The studies use a variety of simulation methodologies, including molecular simulations, first-principles simulations, continuum simulations, and multiscale simulations. This book will interest graduate students and researchers in crystal growth science and technology and will provide a helpful reference for scientists who want to familiarize themselves with simulations of crystal growth.



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