

Preface

It is said that some of the biggest surprises often come in small packages such a statement fits perfectly in the case of nanotechnology. This interesting new field of science and technology is getting more and more intertwined with the thread of our daily lives by means of nanoscale devices in consumer electronics, nanomaterials, and composites in textiles, aerospace, automobile, rehabilitation aids, and various other products. Not only nanotechnology is employed in the high-tech products, but also it is actively pursuing pressing global problems such as safe drinking water, better crops, and cleaner energy.

As nanotechnology builds momentum to become the game changer of the twenty-first century, the study of nanoscience and technology as an interdisciplinary subject in academic institutions also holds a key to its success. People and ideas from various fields of natural and applied sciences and engineering can come together under the aegis of the nanotech wave to transform the future for the better.

In this wave, this book is but a tiny ripple to provide students new to the field of nanoscience and technology the basic skill sets and building blocks to form a better understanding of the subject. With a special focus on nanoelectronic devices, this book is likely to be useful for early-stage researchers working in the domain of nanoelectronics as well. The materials and chapters for this edited volume have been collected from various experts and researchers working actively in the concerned fields. We hope the students would find it a suitable companion as they take their first steps into the marvelous world of nanoscience and technology.

Finally, we would like to express our sincere thanks to all the contributors and authors, and colleagues without whose active participation it would not have been possible to bring out this book. Our special thanks to our students for their enthusiasm which motivated us in the first place to initialize such an effort.

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Introduction to Nano

Basics to Nanoscience and Nanotechnology

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