

# Preface

Nanomaterials bear the promise of revolutionizing the development of biomaterials for the medical sciences and biosensing. However, prior to safe and efficacious translational applications of such materials in the clinic, comprehension of the nature of nanoparticles and the properties they impart to the materials that they are incorporated into them, is necessary. Hence, multidisciplinary collaboration amongst biologists, chemists, engineers, physicists, and clinicians is critical for designing the next generation of nanomaterials with improved biological activity and regenerative properties, and for moving these along the translational pipeline from “bench to bedside.”

Silver nanoparticles, in particular, have a special, almost unique, place among nano-sized materials. This is due to their unique and multi-functional properties that include their archetypical antimicrobial activity, excellent thermoplasmonic capabilities, and superior surface Raman properties. This book, authored by active researchers, reviews the latest research on silver nanoparticles and nanomaterials around the globe. We provide an overview of the current knowledge on the synthesis, uses, and applications of nanoparticulate silver. In short, students and researchers in the field will gain an up-to-date understanding of what silver nanoparticles are, their current uses, and future challenges and horizons of these nanomaterials in the development of new materials with improved properties.

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In the Fabrication and Design of Medical and  
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