Preface

Dermatology is at the leading edge of discoveries related to nanotechnology. The skin is the first point of contact of nanomaterials, and many of the greatest advances of nanotechnology over the past decade have taken place in dermatology. Nanotechnology represents a convergence of many scientific disciplines, and in nanodermatology these include biology, chemistry, physics, engineering, information science, pharmacology, and manufacturing. In dermatology, nanotechnology discoveries, tools, and techniques include consumer products, novel drug delivery methods, and diagnostic devices. The outcome of these advances is already being seen in more precise and targeted methods of skin health maintenance, skin disease prevention, earlier and more accurate skin disease diagnosis, and more effective disease management. These advances have crossed an inflection point, and are expected to grow exponentially over the coming decade. The successful implementation and integration of nanotechnological innovations has challenged regulatory and public policy officials trying to keep abreast of a rapidly moving target.

Our aim in this book is to bring together the most current understanding of nanotechnology in dermatology in a format that is clear and succinct and one that encompasses the many facets of nanodermatology in a manner which is useful to clinicians, basic scientists, biologists, physiologists, pathologists, industry experts, public safety and regulatory policy experts. Ideally, the broad approach taken in this text will enable stakeholders from a variety of overlapping fields to have the necessary fundamentals to delve into their particular area of interest in greater depth while gaining a solid foundation in related subjects outside their area of expertise. We hope that this approach will serve as a springboard for readers to further their work, whether it is grasping the fundamentals of nanotechnology in dermatology, advancing their own research, or broadening their horizons through collaborations with experts in related fields. The ultimate goal, of course, in addition to the advancement of science, is to improve the quality of life of consumers and patients.

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