
Preface

Nanotechnology is influencing a great many disciplines that are essential to life and most significantly in health and Medicine. Nanotechnology applied to medicine, addresses significant challenges in advances in medical nanoscale-structured material, devices, biotechnology devices, molecular machine systems, as well as nanorobotics.

Molecular-nano fabrications, surface modifications, quantum developments, nanoformulations are some nanotechnology based methods by which systems are developed for biological and clinical application of Nanomedicine. Such systems are applied in imaging/visualizing for diagnostic and therapy, monitoring, drug delivery, tissue engineering applications, experimental and clinical therapeutics, targeting specific cells, for antibacterial effects, diagnostic methods in in-vitro models as well as diagnosis and treatment of cancer.

I believe Nanotechnology in Medicine is still at a stage of infancy but has a huge potential for ultra-rapid expansion and exciting developments over the next decade and beyond. Evidently, Nanotechnology is already making a significant impact in the current era, and with my multidisciplinary team, I implement this technology in research and development associated with Surgery, at my UCL Centre for Nanotechnology and Regenerative Medicine, at Division of Surgery and Interventional Sciences. We are applying nanotechnology in stem cell technology, cancer diagnostics, personalised Medicine, development of 'smart' biomimetic materials and human organ development.

The authors of this book, who are experts in the field, and are currently active in the state of the art developments of Nanotechnology and Nanomedicine. They are presenting these concepts, research and development activities as well as their experience as a most exciting read whilst highlighting the challenges and limitations in this field. This book I believe should entertain, educate as well as update you as an expert in the field or even if you are a general readership. I hope this book will thoroughly engage you in, Nanotechnology in Medicine, which is the most exciting development in this era in my opinion, and inspire you with the power of NANO!

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