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Sinopsis

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There are several well-known books on the market that cover biomaterials in a general way, but none provide adequate focus on the future of and potential for actual uses of emerging nanontechnology in this burgeoning field.

Biomaterials: A Nano Approach is written from a multi-disciplinary point of view that integrates aspects of materials science and engineering, nanotechnology, bioengineering, and biosciences. The book fills a glaring void in the literature by providing a comprehensive discussion of biomaterials and a scientifically plausible extrapolation of likely scenarios in which nanotechnology could play a significant role. The authors introduce and examine basic concepts, processing methodologies, and techniques involved in the preparation and characterization of nanobiomaterials that are specific to biomedical applications.

Spanning from the historical development of biomaterials to cutting-edge advances in the field, the text describes how basic concepts in nanotechnology are applied to the processing of novel nanobiomaterials, including nanostructured metals and alloys. With its illustrative examples and presentation of applications, this text offers a solid framework for understanding present and future trends of biomaterials in human healthcare systems. It is an ideal companion resource for students, researchers, and industrial scientists who specialize in biomaterials and nanobiomaterials.

About the Author
Dr. Seeram Ramakrishna is a professor of Mechanical Engineering and Bioengineering at the National University of Singapore (NUS). He is also Vice-President (Research Strategy) of NUS. He is the founding co-director of NUS Nanoscience & Nanotechnology Initiative (NUSNNI). His current research interests include biomaterials, tissue engineering and nanotechnology. He is advancing the materials science, manufacturing technology, and design aspects of nanobiomaterials to realize their full potential in human health care. His research output appeared in over 400 publications. The ISI Essential Science Indicators (ESI) places him among the top

110 materials scientists in the world based on citations. These include several peer-reviewed journal publications, book chapters, books and patents. He is board member of fifteen international journals. He is a scientific advisory board member to biomedical companies, Stem Life and Biomers International.

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Wole Soboyejo received his Bachelor of Science degree in Mechanical Engineering from King's College London in 1985, and a Ph.D. in materials science from Cambridge University in 1988. He then worked as a research scientist at the McDonnell Douglas Research Labs from 1988 until 1992. He worked briefly as a Principal Research Engineer at the Edison Welding Institute before joining the faculty in the department of materials science and engineering at The Ohio State University in 1992. He was a Visiting Martin Luther King Associate Professor in the departments of mechanical engineering and materials science and engineering at MIT from 1997 to 1998. In 1999, he moved to Princeton University as a professor of mechanical and aerospace engineering, and a faculty member in the Princeton Institute of Science and Technology of Materials (PRISM). He is the recipient of 2 National Young Investigator Awards (NSF and ONR), the Lumley Research Award of the Ohio State University and the Bradley Stoughton Award for young teachers of materials science. Professor Soboyejo is a Fellow of ASME and the Nigerian Academy of Science. He has published 250 journal papers and a textbook on the Mechanical Properties of Engineered Materials. He has also edited a recent text on Advanced Structural Materials and 18 special issues of journals/conference proceedings.