Diamond Nanotechnology
Synthesis and Applications

by James C Sung (Kinin Company, National Taiwan University & National Taipei University of Technology, Taiwan) & Jianping Lin (City of Hope National Medical Center, USA)

• First book on the field of nanodiamonds
• Fundamentals and applications are explored thoroughly with numerous case studies and examples
• Plenty of illustrations to explain complex concepts

Reviews
“The reader will re-realize how many properties diamond have of best characteristics amongst the materials, how wide are its applications, how are the new technology items coming out, in spite of its natural born history, with the fascinating introduction of “Diamond in the Sky”!

- Dr Shinichi Shikata (AIST, Japan)

Description
This book on nanodiamonds is the first of its kind. Nanodiamonds are indispensable for polishing industrial materials (e.g. computer hard drives and read heads) and advanced ceramics (e.g. silicon carbide and gem diamond). This book is valuable for those dealing with nanodiamonds, as well as those interested in a general education of nano-sized materials.

Contents
Diamond in the Sky • Dawn of the Diamond Age • Diamond Synthesis in Perspective • Micron Fines and Nanodiamonds • Dynamite Diamond • Nanodiamond Applications • Biological Applications of Diamond • Amorphous Diamond as Thermionic Energy Converters • Fluorinated DLC for Tribological Applications • Gem Diamond Growth

About the Authors
Dr. James C. Sung received his Ph. D. degree from MIT in 1976. Subsequently, he joined General Electric (the largest diamond maker) and became Manager of Diamond Engineering until 1984. Dr. Sung later helped Norton (the largest diamond user) establish diamond synthesis capabilities. In late 1980s he also transferred diamond technology to Iijin of Korea (the largest diamond maker in Asia). In early 1990 Dr. Sung developed novel diamond tools at Industrial Technology Research Institute in Taiwan. Since 1996, Dr. Sung has developed state-of-the-art diamond technologies for Kinik in Taiwan. As a result, Kinik became the world’s largest producer of diamond disks that was indispensable for the manufacture of semiconductor products. Dr. Sung holds over 100 US patents. He has published more than 200 papers and has also authored 20 books.

Jianping Lin was born in Jiangxi province, China in Nov. 1975. He received his B.Sc. and M.S. in Chemistry (1997 and 2000) from Beijing University, China and his Ph.D. in theoretical biophysics from Duke University, USA under the supervision of Prof. David N. Beratan (2005). He is now holding a postdoctoral appointment with Prof. Nagarajan Vaidhi in Beckman Research Institute of the City of Hope, Duarte, CA, USA (2006 to present). His research interests are computational drug design in cancer, modeling of drug delivery system, electron transfer in proteins.