



Nanoparticles - Nanocomposites – Nanomaterials: An Introduction for Beginners

By Dieter Vollath

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Meeting the demand for a readily understandable introduction to nanomaterials and nanotechnology, this textbook specifically addresses the needs of students - and engineers - who need to get the gist of nanoscale phenomena in materials without having to delve too deeply into the physical and chemical details.

The book begins with an overview of the consequences of small particle size, such as the growing importance of surface effects, and covers successful, field-tested synthesis techniques of nanomaterials. The largest part of the book is devoted to the particular magnetic, optical, electrical and mechanical properties of materials at the nanoscale, leading on to emerging and already commercialized applications, such as nanofluids in magnetic resonance imaging, high-performance nanocomposites and carbon nanotube-based electronics.

Based on the author's experience in teaching nanomaterials courses and adapted, in style and level, for students with only limited background knowledge, the textbook includes further reading, as well as information boxes that can be skipped upon first reading.

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Editorial Review

From the Back Cover

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About the Author

Professor Dieter Vollath has more than 20 years experience in the research of synthesis and properties of nanomaterials. He was Department Head at the Forschungszentrum Karlsruhe, Germany, and gives lectures at the Technical University Graz, Austria. Since 2003 he is acting as nanotechnology consultant with his own company NanoConsulting. His courses on nanomaterials formed the basis for this textbook.

Users Review

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