

Fundamentals of microfabrication and nanotechnology

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Abstrak

"Providing a clear theoretical understanding of MEMS and NEMS, Solid-State Physics, Fluidics, and Analytical Techniques in Micro- and Nanotechnology covers all aspects of solid state physics behind nanotechnology and science. After exploring the rise of Si, MEMS, and NEMS in a historical context, the text discusses crystallography, quantum mechanics, the band theory of solids, and the silicon single crystal. It concludes with coverage of photonics, the quantum hall effect, and superconductivity. The text offers end-of-chapter problems, worked examples throughout, extensive references, and PowerPoint slides for download, along with a solutions manual for qualifying instructors"--

"In Solid State Physics, Fluidics and Analytical Techniques in Micro- and Nanotechnology we lay the foundations for a qualitative and quantitative theoretical understanding of micro-and nano-electromechanical systems, i.e., MEMS and NEMS. In integrated circuits (ICs), MEMS and NEMS, silicon (Si) is still the substrate and construction material of choice"--