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4.4.1 Thermally Controlled Nanomotors4.4.2 Light Control of Catalytic Motors; 4.4.3 Potential Control of Catalytic Motors; 4.5 Alternative Fuels for Chemically Powered Micro/Nanoscale Motors; 4.6 Collective Behavior: Toward Swarming and Chemotaxis; 4.6.1 Triggered Self-Organization of Microparticles; 4.6.2 Chemotaxis: Movement along Concentration Gradients; 4.7 Biocatalytic Propulsion; 4.8 Motion Based on Asymmetric Release of Chemicals; 4.9 Polymerization-Induced Motion; References; 5: Externally Powered Nanomotors - Fuel-Free Nanoswimmers; 5.1 Magnetically Driven Nanomotors
5.1.1 Helical Propellers5.1.2 Flexible Swimmers; 5.1.3 Surface Walkers; 5.1.4 Magnetically Actuated Artificial Cilia Array; 5.2 Electrically Driven Nanomotors; 5.2.1 Motion of Miniature Diodes; 5.2.2 Micromotors Driven by Bipolar Electrochemistry; 5.3 Ultrasound-Actuated Micromotors; 5.4 Light-Driven Micromotors; 5.5 Hybrid Nanomotors; References; 6: Applications of Nano/Microscale Motors; 6.1 Cargo Towing: Toward Drug Delivery; 6.1.1 Cargo-Loading Schemes; 6.1.2 Cargo Release Strategies; 6.1.3 Drug Delivery: Realizing the Fantastic Voyage Vision; 6.2 Biosensing and Target Isolation
6.2.1 Biomotor-Driven Sensing: Toward "Smart Dust" Devices

Sommario/riassunto

This first-hand account by one of the pioneers of nanobiotechnology brings together a wealth of valuable material in a single source. It allows fascinating insights into motion at the nanoscale, showing how the proven principles of biological nanomotors are being transferred to artificial nanodevices.As such, the author provides engineers and scientists with the fundamental knowledge surrounding the design and operation of biological and synthetic nanomotors and the latest advances in nanomachines. He addresses such topics as nanoscale propulsions, natural biomotors, molecular-scale machin

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