Self-powered and soft polymer MEMS/NEMS devices

Abstrak

This book explores the fabrication of soft material and biomimetic MEMS sensors, presents a review of MEMS/NEMS energy harvesters and self-powered sensors, and focuses on the recent efforts in developing flexible and wearable piezoelectric nanogenerators. It also includes a critical analysis of various energy harvesting principles, such as electromagnetic, piezoelectric, electrostatic, triboelectric, and magnetostrictive. Included are chapters that:
- Describe self/low-powered MEMS devices that are developed through biomimetic and bio-inspired approaches;
- Review the recent progress in kinetic MEMS/NEMS-enabled energy harvesters as self-powered sensors;
- Comprehensively review the ongoing research done in the field of nanofiber-based flexible and wearable energy harvesters;
- Explore the current trends in the field of soft materials research and future challenges.