Flexible Piezoelectric Energy Harvesters and Sensors

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DESCRIPTION

Flexible Piezoelectric Energy Harvesters and Sensors

A systematic and complete discussion of the latest progress in flexible piezoelectric energy harvesting and sensing technologies

In Flexible Piezoelectric Energy Harvesters and Sensors, a team of distinguished researchers delivers a comprehensive exploration of the design methods, working mechanisms, microfabrication processes, and applications of flexible energy harvesters for wearable and implantable devices. The book discusses the monitoring of normal force, shear force, strain, and displacement in flexible sensors, as well as relevant artificial intelligence algorithms. Readers will also find an overview of design and research challenges facing professionals in the field, as well as a variety of perspectives on flexible energy harvesters and sensors.

With an extensive focus on the use of flexible piezoelectric material technologies for medical applications, Flexible Piezoelectric Energy Harvesters and Sensors also includes:

- A thorough introduction to the working principles of piezoelectric devices, including discussions of flexible PEH and piezoelectric sensors

- Comprehensive treatments of the design of flexible piezoelectric energy harvesters, including the challenges associated with their structural design

- Fulsome explanations of the fabrication of flexible piezoelectric energy harvesters, including piezoelectric ceramic thin and think films
• In-depth treatments of cantilever piezoelectric energy harvesters, including optimized cantilever, bimorph, and optimized bimorph PEH

Perfect for materials scientists, electronics engineers, and solid-state physicists, Flexible Piezoelectric Energy Harvesters and Sensors will also earn a place in the libraries of sensor developers, and surface physicists.

About the Author

Bin Yang is the Professor in the National Key Laboratory of Science and Technology on Micro/Nano Fabrication, Department of Micro/Nano Electronics, Shanghai Jiao Tong University in China. His research interests include micro/nano energy harvesting and piezoelectric actuators and sensors.

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