Special Issue

Wearable Electronics and Self-Powered Sensors

Message from the Guest Editors

This Special Issue, "Wearable Electronics and Self-Powered Sensors," explores harvesting ambient mechanical energy (e.g., body motion) to create battery-free, autonomous systems. Core technologies, such as Triboelectric Generators (TENGs) and Piezoelectric Generators (PENGs), enable intrinsically self-powered sensing for physiological, biochemical, and environmental parameters. Innovations in flexible materials and fabrication facilitate wearable integrated technologies (patches, e-textiles). Key challenges include system integration (harvesters, power management, sensors, ultra-low-power electronics, and wireless communications like BLE/NFC) into robust, autonomous packages. Addressing stability, biocompatibility, and scalable manufacturing is crucial for deployment. The Special Issue highlights self-powered technology's potential to enable pervasive, sustainable wearable and IoT sensing networks, which are essential for future digitalization and societal progress.

Guest Editors

Dr. Yang Jiang

Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing, China

Dr. Jianjun Luo

1. Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing 101400, China
2. School of Nanoscience and Engineering, University of Chinese Academy of Sciences, Beijing 100049, China

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Sensors
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
sensors@mdpi.com

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Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

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