

IEEE-International Conference on Advanced Materials for Sustainable Clean Energy and Healthcare Technologies 2026 (AMSCEHT-2026)
(Conference with IEEE Record Number #69651)
11-13 September 2026
(Hybrid Mode)

Special Session

Special Session 12: Advanced Materials and Devices for Energy Storage, Energy Harvesting, and Biosensing Applications
Organized & Co-Chaired by:



Dr. Vinay Budhraja,
Northern Illinois University, USA
vbudhraja@niu.edu

CALL FOR PAPERS

This special session aims to highlight recent advances in materials, nanotechnology, and device engineering for energy storage, energy harvesting, and biosensing applications. With the increasing demand for sustainable energy solutions and rapid growth in healthcare diagnostics and monitoring technologies, the development of multifunctional materials and integrated devices has become crucial for enabling efficient, reliable, and environmentally sustainable systems. The session focuses on innovative materials, hybrid architectures, and device-level solutions that improve energy efficiency, power density, sensitivity, stability, and long-term performance, particularly for applications in portable, wearable, and self-powered systems. Researchers working at the intersection of energy technologies and biosensing platforms are encouraged to contribute their latest findings.

TOPICS OF INTEREST, BUT NOT LIMITED TO:

This special session invites original research papers, case studies, and review articles on, but not limited to, the following topics:

- Advanced materials for electrochemical energy storage, including batteries, supercapacitors, and hybrid energy storage systems
- Nanomaterials and functional composites for energy harvesting technologies (piezoelectric, triboelectric, thermoelectric, photovoltaic, and hybrid systems)
- Self-powered and low-power biosensing devices
- Nanostructured materials for electrochemical, optical, and wearable biosensors
- Two-dimensional materials (MXenes, graphene, TMDCs) and metal oxides for energy and biosensing applications
- Flexible, stretchable, and wearable devices integrating energy storage/harvesting with biosensing
- Bio-compatible and bio-inspired materials for healthcare sensing and diagnostics
- Energy management and power solutions for implantable and portable biosensors
- Sustainable, green, and low-cost material synthesis approaches for energy and biosensing devices
- Smart and multifunctional materials enabling integrated energy-biosensing platforms
- Device fabrication, performance optimization, and real-world applications in healthcare and environmental monitoring

IMPORTANT DATES:

Paper submission opens: November 1, 2025

Paper submission closes: June 10, 2026

Paper acceptance notification: July 10, 2026

Registration deadline: July 20, 2026

Last Date of Camera-ready paper submission: August 10, 2026

Conference Date: 11-13 September 2026

(Note: Authors can register only after their papers have been accepted)

The detailed information can be found here:

Conference URL: <https://amsceht2026.opju.ac.in/>

Paper Submission Link: <https://cmt3.research.microsoft.com/AMSCEHT2026>

(Please Submit Under **Special Session 12: Advanced Materials and Devices for Energy Storage, Energy Harvesting, and Biosensing Applications.** For query mail: - vbudhraja@niu.edu)