

Mini-Symposium on: Advanced Materials based Energy Devices

For the practical use of various electrical devices in daily life and for the accomplishment of great performance, the devices need to have highly efficient power generating system such as energy storage or harvesting system. The reliability of the mobile devices in long term usage is required for supplying energy and inexpensiveness, processability, and high applicability. Thus, the mechanical robustness of nanocomposites from assembly of functional nanomaterials, such as graphene oxide (GO), carbon nanotube (CNT), and silk sericin (SS), is important to determine the overall performance of the corresponding energy system. Additionally, thermal performance and reliability of energy storage materials are also significant for harnessing various renewables. In this symposium, an introduction on the establishments of nanocomposites, power generating system, and wearable sensors, the novel approaches to be conducted which might produce outstanding performances, and propose the favorable properties of nanocomposites with nanomechanical analysis that can bring about significant developments in the field of wearable sensors, mechanical robustness, uniform property, and excellent flexibility. Moreover, microencapsulation-based energy storage materials are proposed for high-temperature and high-density thermal energy storage. This symposium aims to provide valuable insights into the current trends, challenges, and future directions in this field, contributing to knowledge exchange and collaboration among researchers.

❖ Mini-Symposium Developers:

- Prof. Sunghan Kim, Chung-Ang University (Korea)
- Prof. Byeongnam Jo, Ajou University (Korea)



Prof. Sunghan Kim
Chung-Ang University, Seoul,
Korea
Email: sunghankim@cau.ac.kr



Prof. Byeongnam Jo
Ajou University, Suwon,
Korea
Email: jo798@ajou.ac.kr

❖ Mini-Symposium Chair:

- Prof. Sunghan Kim and Prof. Byeongnam Jo

❖ Paper List (Tentative):

- Self-powered Wearable Pressure Sensor with Tunable Sensitivity, Hyeonho Cho and Sunghan Kim(Chung-Ang University)
- Tribological properties of Lubricant-based Self-powered TENG, Jongsuk Lee, Seh-Hoon Chung, Sangmin Lee and Sunghan Kim((Chung-Ang University)
- Multifunctional Wearable Sensors Responded to Humidity, Chanui Lee and Sunghan Kim(Chung-Ang University)
- Thermal Reliability of microencapsulated nitrate salts for thermal energy storage: effects of surfactant, Yun Hwan Ji and Byeongnam Jo (Ajou University)
- Parametric study on synthesis of paraffin microsheat for latent heat storage, Jongseok Son, Somin Kim, and Byeongnam Jo (Ajou University)