

Theme : Hybrid System of Energy Harvesting and Battery

- Sub Theme : Integration of High Power Flexible Nanogenerator and Micro Battery

Internet of Things (IoT) is a framework having many sensors networks. IoT requires low power operation and stable power source. Some modern sensors are able to withstand extreme temperatures, or operate submerged in chemicals or underwater. It is necessary to reduce or eliminate the maintenance work such as battery charging or replacement. Therefore an independent power source in the IoT end node is required due to sensor network in remote and extreme environments.

Wireless sensors networks can harvest energy from vibration, pressure, or light to mitigate, or outright eliminate, the need to charge or replace wireless sensor battery packs. Self-powered, wireless sensors networks are extremely low maintenance, and can provide significant savings in operational expenses while providing similar reliability to that of existing wired sensor technology. We need power solution for wireless sensors networks which batteries and energy harvesting are integrated.

The topics we pursue through this GRO are as follows:

- Self Power Generation and Storage for IoT Sensor Networks
- Flexible/Wearable Structured Nanogenerator and Battery
- Packaging System Architecture of Battery and Energy Harvesting

※ The topics are not limited to the above examples and the participants are encouraged to propose original idea.

※ Funding : Up to USD \$150,000 per year