

## Hybrid Nano Materials & Membranes for Water Purification, Energy, Medicine, Sensor, Catalyst

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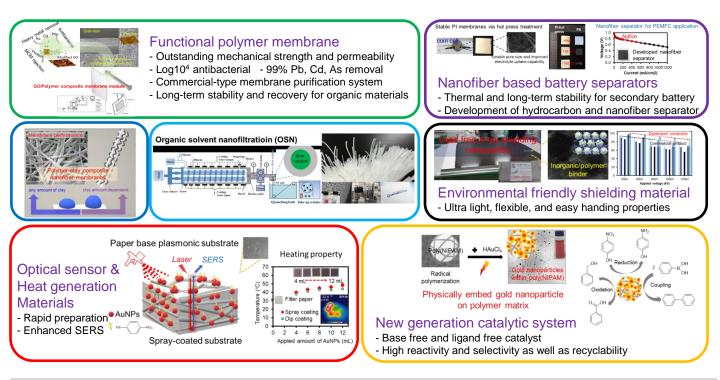


## **Descriptions of Research Topics**

- Graphene and clay composite nanofiber membranes for water purification
  - Removal of toxic materials: separation of heavy metals, dyes, and organic debris Antifouling and antibacterial properties
- Highly reinforced nanofiber separators for rechargeable batteries
  Thermally and mechanically stable PVdF and PI nanofiber membranes
- Nanogold and/or hydrogel polymer composites for biomedical sensors and catalyst systems
  Enhancement of sensing capability and quasi-homogeneous catalytic systems
- Lead free X-ray shielding materials for medical applications

## Applications:

- Water purification system, Battery separator, Medical device, Optical sensor, Catalyst



**Research Fields** 1 Nanoscale Material 2 Polymer Membrane 3 Environment 4 Optical Device **Keywords** Graphene, Nanofiber, Membrane, Nanomaterials, Polymer, Composite, Water purification, Electrospinning, Separator, Rechargeable battery, SERS, Catalysis