

## Manufacturing Platform Process Development for Flexible Hybrid Electronics with Focus on Manufacturing Elements for Medical Devices

This project will address key FHE manufacturing technologies essential for fabrication of wireless integrated sensor systems, with a focus on low-cost medical devices. The project team includes researchers from GE Global Research, Binghamton University, i3 Electronics and Rochester Institute of Technology. Our approach will be to leverage critical capabilities of the team in printed electronics, flexible inorganic substrates, wearable stretchable electronics and vital sign monitoring system design and fabrication. The team will drive critical innovations to enable FHE manufacturing infrastructure and systems including:

- Passive circuit elements on flexible and stretchable substrates, meeting the reliability requirements for body worn and hospital applications
- Passive circuit elements on flexible high performance substrates, meeting the reliability requirements for harsh environment asset monitoring
- Robust manufacturing methods for integration of fine pitched solid state electronic devices with low cost flexible circuitized substrates.
- A Technology Platform Demonstrator consisting of a wearable wireless clinical grade 3-lead ECG monitoring system designed for disposability with a market acceptable price point.
- Cost Models and tradeoff analysis showing design and manufacturing options.

