

There is an immediate opening for a dedicated ECE undergraduate student in the Interdisciplinary Microsystems Group (www.img.ufl.edu) working with a PhD student in Dr. Nishida's research group.

Available Position: Undergraduate Research Student on Flexible Hybrid Electronics Towards Wearables for Heat Exhaustion Monitoring

Research overview: In an industry supported project through the NSF Industry/University Cooperative Research Center on Multi-functional Integrated System Technology (MIST), we are developing a flexible hybrid electronic platform for heat exhaustion monitoring. The project involves designing multiple screen-printed sensors that will be integrated onto a flexible substrate with signal processing and Bluetooth circuitry. The Bluetooth circuitry is based on the reference design of the TI BLE Temperature Patch.

What are Flexible Hybrid Electronics (FHE)?

FHE is an emerging technology that enables the development of flexible electronic devices using a hybrid integration of traditional rigid circuit components on a flexible substrate instead of a rigid printed circuit board. By employing small surface mount components as well as novel screen printed sensors, greater flexibility and functionality may be achieved. Our research focuses on developing rigid component attachment techniques and improving functionality and manufacturability through investigation of novel materials and printing techniques. FHEs have broad applications in commercial and medical wearable devices, as they enable smaller, more comfortable wearable device technology.

Undergraduate Project

We are looking for an undergraduate student with experience in embedded systems development to help write the firmware for our Bluetooth-enabled sensing system. The project would consist of adapting the existing firmware for the TIDA-01624 BLE Temp Patch to accept input from our custom sensors, using TI's Code Composer Studio IDE. In this position, the student will also be exposed to the process of designing and printing new sensors and will have the opportunity to participate in the development and testing of devices. We are looking for someone who is interested in FHE and wearable device research in addition to embedded systems. There is potential opportunity to continue participating in our work beyond the initial scope of this project.

Minimum Qualifications

- Experience in C/C++
- Basic understanding of circuit design/layout and ability to read circuit schematics
- Desire to learn more about flexible electronics/wearable sensors

For more information, please contact Dr. Toshi Nishida, Professor, Department of Electrical and Computer Engineering, Director NSF MIST Center, Associate Dean for Academic Affairs (nishida@ufl.edu).