

## **Fabrication and Testing of Stretchable Conductive Electrodes for Soft Robotics (\*New - Winter 2019\*)**

**Faculty advisor:** Prof. Xinyu Liu

This project aims to fabricate highly-conductive electrodes for constructing stretchable electronics and sensors on soft-bodied robots. We are developing new types of stretchable materials integrating electronic components for constructing wearable electronic devices with multiple sensing modalities. A critical component of this types of devices is conductive electrodes that can seamlessly integrated onto the stretchable substrates and maintain its high conductivity under high strain (>100%). The candidate will evaluate the existing designs of stretchable electrodes in the literature and propose the most suitable solution for our devices. The fabrication of the stretchable electrodes will involve elastomer synthesis, material doping, electrode patterning, and stretchable device integration. The candidate will test the electronic properties of the electrodes under different working conditions, and finally generate a project report including all the experimental procedures and results.

**Laboratory:** Microfluidics and BioMEMS Laboratory

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**Research Areas:** flexible and stretchable electronics; wearable devices; physical sensors; advanced materials