

### What our lab does:

We investigate the chemistry and properties of polymeric and nanostructured materials for advanced optoelectronics and energy storage *via* design/development of:

- organic/hybrid semiconductors for flexible/stretchable optoelectronics
- materials systems for energy conversion and storage

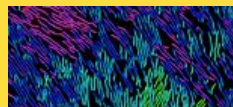
### How we do this:

- We design and synthesize new target materials
- We develop structure-process-property relationships using a suite of characterization techniques including UV-vis, IR, Raman, AFM, XPS, NMR, cyclic voltammetry, EIS, etc.
- We develop device fabrication processes and interrogate device performance attributes.

### Why we are investigating these areas:

- Solution processed materials offer opportunities for low-cost, flexible, large-area devices compatible with additive manufacturing for applications in displays, energy, sensors, etc.
- Advances in composite materials for storage are needed to address global energy needs

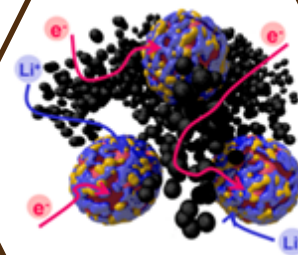
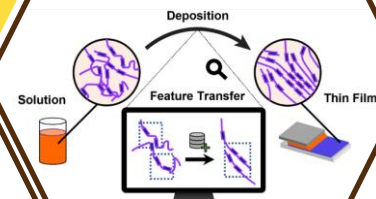
### Create low-cost sustainable advanced materials solutions



[DOI: 10.1021/acsami.1c20994](https://doi.org/10.1021/acsami.1c20994)

[DOI: 10.1021/acsmaterialslett.1c00320](https://doi.org/10.1021/acsmaterialslett.1c00320)

### Data science guided processing



### Composites for energy storage

[DOI: 10.1021/acsnano.7b08918](https://doi.org/10.1021/acsnano.7b08918)

[DOI: 10.1021/acs.chem.mater.9b00208](https://doi.org/10.1021/acs.chem.mater.9b00208)

### Polymer design and synthesis

