



## Professor Liangbing Hu



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**Nanomaterials for Energy and Flexible Electronics**  
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**3:25 p.m.**  
**202 Gavett Hall**

I will start by giving an overview of active research activities in my research group located at University of Maryland Energy Research Center (UMERC). Then I will focus on three research topics.

In Topic One, I will discuss nanomanufacturing of different generations of **transparent paper substrates** with tailored optical and mechanical properties, followed by their applications in electronics, photonics and optoelectronics.

In Topic Two, I will discuss nanoscale **interface engineering for low-cost Na-ion batteries** toward Grid-scale energy storage. I will then extend similar interface engineering method in all **solid-state Li metal batteries** with Garnet electrolytes.

In Topic Three, I will display our pioneering research on **Intercalation Optoelectronics**, where the optoelectronic properties of two-dimensional materials (such as graphene, reduced graphene oxide and MoS<sub>2</sub>) are tailored reversibly with metal ions.