

Energy Transport in Hybrid Nanoparticle Organic Light Emitting Devices

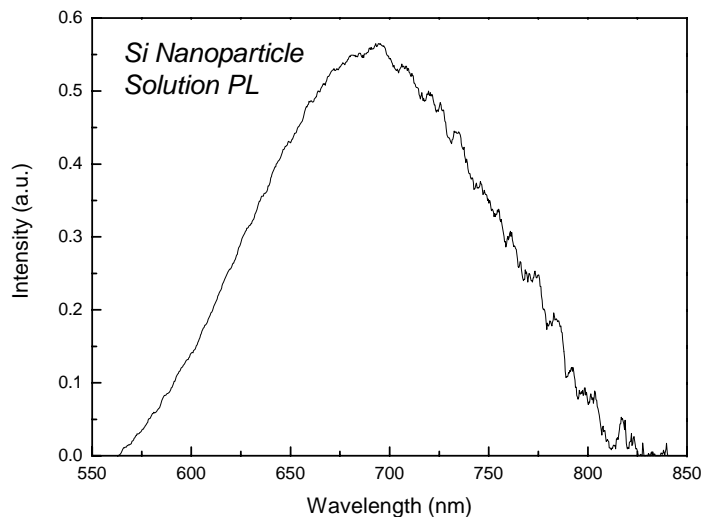
Russell J. Holmes (PI) & Kai-Yuan Cheng

Chemical Engineering & Materials Science, University of Minnesota

NNIN Facilities utilized: Characterization Facility & Nanofabrication Center

● Description of Work:

- ◆ Preparation of thin films containing mixtures of polymers and inorganic silicon nanoparticles
- ◆ Focus is on the study of energy and charge transport across hybrid interfaces
- ◆ Work includes:
 - Nanoparticle Device Fabrication
 - Electrical and Optical Characterization
 - Thin-film Optical Properties Study



● Major Results:

- ◆ Red-Infrared electroluminescence is observed
- ◆ Multiple polymer hosts are compatible with Si nanoparticles for efficient operation
- ◆ Current optimization is of external quantum efficiency

