Probing Nanoscale Energy Transport in Organic Semiconductors

Organic semiconductors are conjugated molecular materials whose facile thin film processing and tunable optoelectronic properties have made them of interest for applications in light-emission, detection, and solar photoconversion. In addition, devices made from organic semiconductors can be integrated with mechanically flexible substrates, enabling novel form and functionality. Indeed, light-emitting devices (i.e. OLEDs) based on these materials have already been widely commercialized in mobile phones, with effort growing for their use in televisions, lighting, and solar energy conversion. Contrasting conventional inorganic semiconductors, the excited state in these materials is a tightly-bound electron-