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**Exciton Transport in Nanostructured Solids**

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Transport of nanoscale energy in the form of excitons is at the core of operation of nanostructured optoelectronic devices such as solar cells, light-emitting diodes and excitonic transistors. Of particular importance is the relationship between exciton transport and nanoscale disorder, the defining characteristic of molecular and nanostructured materials. The talk will present recent advancements in directly visualizing exciton transport, with spatial, temporal and spectral evolution recorded for molecular crystals, disordered thin films, and colloidal quantum dot solids. Our measurements demonstrate that the mechanism of exciton transport depends strongly on the nanoscale morphology and the design of nanoscale building blocks. In addition, the talk will show that the excitonic energy landscape can be directly manipulated in solid-state thin films using dipole−dipole interactions, which can be increased under mechanical pressure, or molecular doping with polar molecules, leading to dramatic shifts in the exciton energy structure.