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**Nanoscale Photon Management for Solar Energy Harvesting**

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Nanophotonics is an exciting new field of science and technology that is directed towards making the smallest possible structures and devices that can manipulate light. In this presentation, I will start by showing how semiconductor and metallic nanostructures can mold the flow of light in unexpected ways and well below the diffraction limit. I will then continue by illustrating how such nanostructures can be used to enhance our ability to harvest solar energy with solar cells and photoelectrochemical cells for generating solar fuel. In this part of the talk, it will become obvious how very different ways of photon management can be achieved by controlling the size and spacing (wavelength-scale/subwavelength-scale), shape, and spatial arrangement (periodic/aperiodic) of the nanostructures.