

# ***"Nano-Particle Dye-Sensitized Solar Cells"***

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**Abstract-**“Nanotechnology” is often given credit for being able to revolutionize a wide variety of high-tech fields, and photovoltaic energy collection is no different. This presentation will start with a broad view of photovoltaic energy collection and examine ways that nanotechnology may influence the overall efficiency of energy capture for a variety of different device architectures. This will lead to an overview of some of the coating and nanoparticle studies that we are currently conducting and our hopes for improving the solar cell efficiency and processing reliability – especially as related to future printable and flexible electronics. Our recent research has focused on dye-sensitized solar cells (DSSC’s) that incorporate nanoparticle titanium dioxide coatings as one component of the cells. Among other things, we are currently looking at templated titanium dioxide and the use of anisotropic shaped particles to overcome some possible limitations to the collection efficiency.