



## Joint LLC Seminar

Thursday March 12, 15:15  
The Rydberg Lecture Hall, Dep. of Physics

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### **Making Electrons Cheaper with Next Generation Photovoltaic Materials**

Assembling semiconductor nanostructures on electrode surfaces in a controlled fashion is an attractive approach for designing next generation solar cells. In recent years, quantum dot solar cells (QDSC) and Organic-Inorganic Halide Perovskites have emerged as the potential contenders for making transformative changes. By assembling different size CdSe quantum dots on mesoscopic TiO<sub>2</sub> films either by direct adsorption or with the aid of molecular linkers we have designed quantum dot solar cells. Upon bandgap excitation, CdSe quantum dots inject electrons into TiO<sub>2</sub> thus enabling the generation of photocurrent in a photoelectrochemical solar cell. Organometal halide perovskites have now emerged as new and promising candidates for developing low cost thin film solar cells. Efficient charge separation under visible light irradiation is probed through transient absorption spectroscopy. Recent advances that led to the development of high efficiency perovskite solar cells and water splitting tandem devices will be described.

**The seminar is suited for a broad audience  
and open for everybody**

**The Rydberg Lecture Hall is located at the Department of Physics,  
Professorsgatan 1  
Coffee and refreshments will be served  
before the seminar, from 15:00**

*Most Welcome!*

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