



SEMINAR

DEPARTMENT OF PHYSICS

- SPEAKER : Dr. Carlito S. Ponseca Jr.**
Associate Professor
Mathematics and Natural Science Dept
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- TITLE : Understanding Charge Carrier Dynamics in**
Photovoltaic Materials via Ultrafast
Time-Resolved Techniques
- DATE : Monday, March 20, 2023**
- TIME : 12:45 P.M.**
- PLACE : Conference Room – Physics Dept**

Abstract

Emerging photovoltaic technologies which include organic, dye-/quantum-dot sensitized, and hybrid perovskite solar cells is one of the promising strategies toward a more sustainable consumption of electrical energy. In this talk, the charge carrier dynamics of these material systems will be presented in the ultrafast time scale. Using a pulsed laser with energy above the bangap, photo-excited electron-hole pairs are created. The time scale of generation, injection, mobility, lifetime and recombination are probed using a terahertz pulse, in tandem with other optical spectroscopy techniques. It is surmised that the ultrafast spectroscopic techniques discussed here are of vital impotance in designing better performing photovoltaic systems.

All are cordially invited