SOLAR QUEST

SEMINAR ANNOUNCEMENT

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MOLECULAR TRIPLET-TRIPLET ANNIHILATION UP-CONVERSION FOR PHOTOVOLTAICS - MODELLING AND EXPERIMENT

DATE: Tuesday, April 10, 2012
TIME: 10:00 am-12:00 pm
PLACE: Seminar Room A-502
CCR Building, 5F

ABSTRACT

Two-photon up-conversion is a process where the energies of two photons are combined to produce a single photon of higher energy. Successfully harnessing this phenomenon would allow more efficient harvesting of energy in photovoltaic cells, as more of the solar spectrum could be usefully absorbed. This talk will describe the molecular up-conversion process in detail, present data from experiments probing the key energy transfer steps and then describe work which allows the entire process to be modelled in the transient case. The efficiency of molecular two-photon up-conversion depends on the rates of energy transfer and combination between excited species. These rates have been investigated through prompt and delayed fluorescence spectroscopy and transient absorption spectroscopy. A brief description of these techniques will be provided followed by presentation and comparison of results.

Solar Quest Host: Dr. Daniel Farrell, Prof. Yoshitaka Okada, ext. 56501
Refreshments will be served.

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