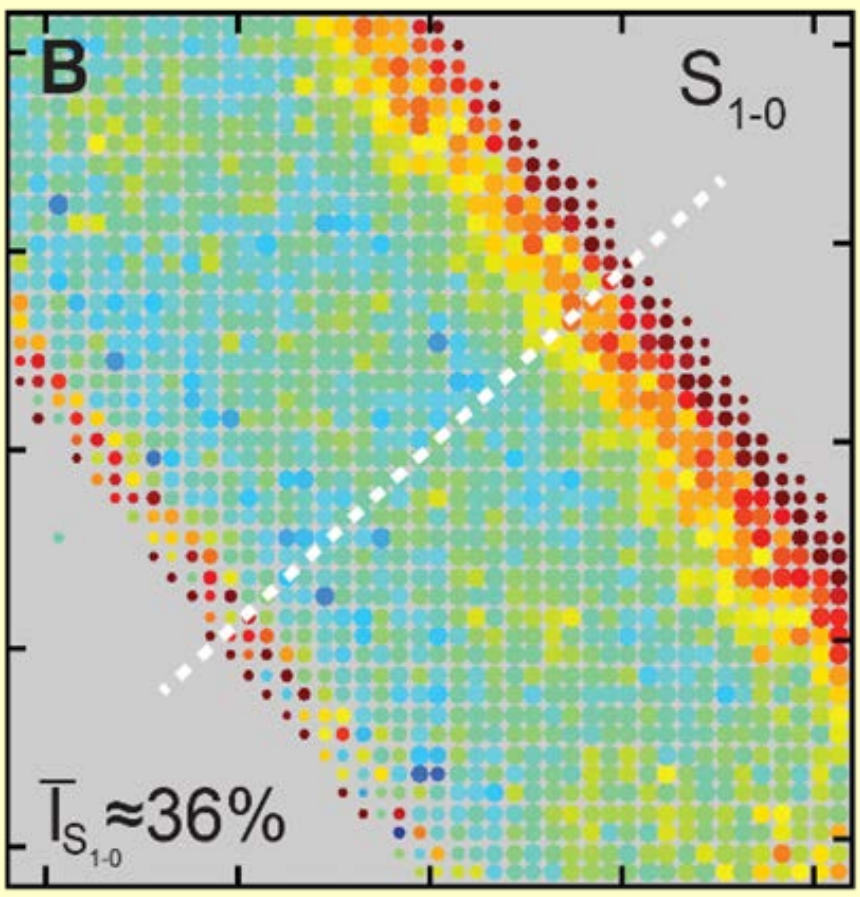
ZERNIKE INSTITUTE COLLOQUIUM

Thursday, February 1st, 2018

16:00h, Lecture Hall: 5111.0080 **Coffee and cakes from 15:30h**

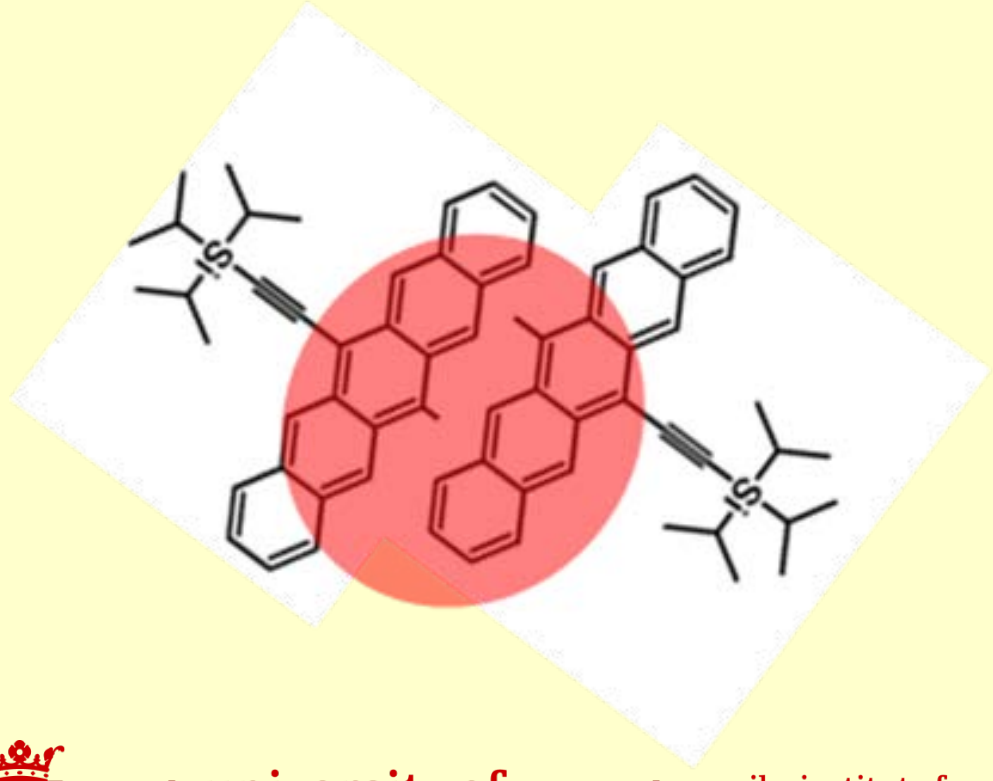
Exciton transfer in photovoltaic materials studied with ultrafast 2D White-Light Microscopy

Martin Zanni
Department of Chemistry
University of Wisconsin-Madison
USA



Understanding the movement of excitons and charges in thin films is central to developing next generation photovoltaics, photodetectors, and other devices. Most of these materials absorb across enormous wavelength ranges, which makes them challenging to study with standard time-resolved spectroscopies like transient absorption. I will report ultrafast 2D spectroscopy experiments in which white-light is used as both the pump and probe pulses. These continuum pulses span the visible and near-infrared, producing 2D White-Light spectra that capture the broad photoexcitation dynamics of these materials.

Results will be presented on exciton transfer in newly available mesoscale thin films of semiconducting carbon nanotube thin films. The spatial variation of singlet fission in pentacene crystals will also be shown, collected using a new microscope coupled to a 2D White-Light spectrometer. Surprising details of energy transfer have been found that have helped inform new device design.



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