

Abstract Submitted  
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**Probing the Correlated Triplet Pair in TIPS-Pentacene Using Transient Absorption Microscopy** BRENDAN D. FOLIE, NAOMI S. GINSBERG, UC Berkeley — Singlet fission, the process by which a singlet exciton splits into two triplet excitons, has been shown to increase the efficiency of photovoltaics made from organic semiconductors. Fission is believed to occur via a correlated triplet pair intermediate, but direct measurements of this state remain scant. We use polarization-resolved white light transient absorption microscopy to observe the correlated triplet pair in TIPS-Pentacene, a common model system. We are able to measure the binding energy of the triplet pair, and find that this interaction tends to diminish the triplet absorbance spectrum. Our results shed light on the kinetics and electronic structure of the correlated triplet pair, which have important implications for the creation of singlet fission based photovoltaic devices.

Brendan Folie  
UC Berkeley

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