

Abstract Submitted
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Exploring Photocarrier Generation and Recombination in a Smectic Semiconductor *via* Transport Simulations SANJOY PAUL, Department of Physics, Kent State University, JARROD WILLIAMS, ROBERT TWIEG, Department of Chemistry, Kent State University, BRETT ELLMAN, Department of Physics, Kent State University — Photocarrier generation and charge transport in the smectic B phase of the liquid crystalline semiconductor 2-(4'-octylphenyl)-6-dodecyloxynaphthalene (8PNPO12) have been investigated by using the time of flight (TOF) technique as a function of light intensity, electric field, and wavelength. The results probe both the low-intensity and space-charge perturbed regimes. The sharply different hole and electron TOF transients are quantitatively analyzed using comprehensive transport simulations to explore exciton dynamics, exciton decay, and bimolecular recombination.

Sanjoy Paul
Department of Physics, Kent State University

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