

Abstract Submitted
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Photo-excited charge separation in CuPc/GaAs investigated by pump-probe second harmonic generation HEUNGMAN PARK, Columbia University, MARLENE GUTIERREZ, University of Texas at Austin, XIAOXI WU, Columbia University, JEONG WON KIM, Korea Research Institute of Standards and Science (KRISS), XIAOYANG ZHU, Columbia University — We report photo-excited charge carrier separation between copper phthalocyanine (CuPc) and p,n-GaAs (001) probed by time-resolved second harmonic generation (SHG). Electric field induced SHG measurements show that when GaAs is excited by 1.55 eV photons, charge carriers are initially separated by GaAs surface band bending, and then holes are injected into CuPc from GaAs regardless of doping type. The interfacial band alignment between CuPc and GaAs is determined by ultraviolet photoelectron spectroscopy and supports the hole injection from GaAs to CuPc.

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