

Abstract Submitted  
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**Photoluminescence anisotropy of excitons in sexithiophene cofacial chiral stacks** BENOIT GOSSELIN, RICHARD LEONELLI, CARLOS SILVA, Universite de Montreal, Regroupement Quebecois sur les Materiaux de Pointe (R.Q.M.P) — We have investigated exciton dynamics in a thin film of sexithiophene molecules assembled in chiral H-aggregate stacks. The energetic disorder and the strong phonon-electron interactions leads to high localization of the photoexcitations. The initial photoexcited species branches into self-trapped exciton (95% yield) and charge-transfer excitons (5% yield). To characterize exciton diffusion and recombination mechanisms, we have carried out photoluminescence anisotropy measurements where the difference between the parallel and perpendicular components of the photoluminescence was monitored as a function of time. We measure an anisotropy of 0,1 after 20 ns which stays constant for 50 ns. Charge-transfer states induce a rise of the anisotropy up to 0,15 after 50 ns. These measurements show that exciton localization is very strong at 14K and higher for the charge-transfer states than the self-trapped excitons. A simple kinetic model based on a system of differential equations with radiative and depolarization time constants can reproduce the experimental data.

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