

Abstract Submitted
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Charge conduction in partially fluorinated discotic liquid crystals MITCHELL POWERS, ZHE LI, ROBERT TWIEG, BRETT ELLMAN, Kent State University — Motivated by the role of electrostatic interactions on stacking of partially fluorinated conjugated compounds, we present mobility measurements of, e.g., 1,4-difluoro-2,3,6,7,10,11-hexakis(pentaloxy)triphenylene (2F-HAT5) in discotic mesophases across a wide range of temperature and applied electric field. Charge conduction in this case is well described by a disorder driven hopping model. 2F-HAT5 exhibits a mobility of approximately 2×10^{-3} cm²/Vs, similar to the parent triphenylene, and has a weak temperature dependence throughout its discotic mesophase, which extends below room temperature. We compare results on this and related compounds to various theoretical models.

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