Title:	Synthesis and characterization of thiophene fused phenazine based discotic liquid crystals
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Abstract:	Organic materials with aromaticity and π-π conjugation have gained popularity in the last two decades due to their potential use in semiconductors. Compared to inorganic electronics, organic materials score better in terms of low manufacturing cost, lightweight, flexibility, and solution-processability. Self-assembly in organic molecules increases their energy, creating a larger potential as compared to a single molecule. Till now, derivatives of phenazine have shown commendable performance in semiconductors as charge transporters. When fused with phenazine, thiophene increases charge mobility in molecular electronics due to S-S stacking in addition to π-π stacking. However, the synthesis of such molecules requires a number of complex steps. Due to the wide application of thiophene fused phenazine (TFP) derivatives in organic materials, we have synthesized a novel TFP-based discotic liquid crystal (DLC), which shows the liquid crystalline property at room temperature. The synthesis of TFP based DLC is achieved through metal-based Sonagashira coupling of TFP with flexible alkyne chains. The purity of the final compound has been analyzed using 1 H NMR. TGA has been used to check the thermal stability of the final compound. Its mesomorphic property has been investigated by POM, which was further established through WAXS studies.
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