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Title:	Blue Luminescent thiophene based C3-Symmetric star-shaped discotic liquid crystal
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Abstract:	Organic electronics is a relatively new branch of modern electronics and has immensely advantageous against inorganic electronics. Unlike them, organic electronics have comparatively low cost of production, high flexibility, high tunability and many more. One of the main fields emerging from this topic is Organic Light Emitting Diodes (OLEDs) and especially blue luminescence is one of the features which are pretty challenging and a very active research field within the topic itself. This thesis work was done in order to achieve blue luminescent discotic liquid. We used thiophene based discotic liquid crystals in order to achieve this very property since thiophene derivatives upon tweaking can show luminescence over a wide range of spectrum. We synthesized three different molecules of thiophene based benzene derivatives which show inconsistency only in the chain lengths at the periphery. The aim of the first chapter is to introduce readers to the basics of Liquid Crystals and primarily address Discotic Liquid Crystals (DLCs). The second chapter addresses the instrumentation techniques and summarizes the theories associated with it. Chapter three of the thesis deals with the synthesis and characterization of the derivatives. The details of the experimental procedures have been added, and spectral, thermal, photo-physical, electrochemical behavior has been analyzed. The results shown in this chapter confirms the blue luminescent behavior of the compounds synthesized along with its DLC properties. The final part of the thesis consists of the conclusions, future outlook and appendices.
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