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**Title:** Discotic Liquid Crystalline Dimers: Chemistry and Applications

**Authors:** Setia, S. (/jspui/browse?type=author&value=Setia%2C+S.)  
Pal, S.K. (/jspui/browse?type=author&value=Pal%2C+S.K.)

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**Abstract:** Discotic liquid crystalline dimers have been attracting a great deal of interest in recent years both in theoretical and experimental studies not only for their ability to act as model compounds for semi-flexible main chain liquid crystal polymers but also due to their quite unusual properties as compared to conventional lowmolar-mass mesogens. They are formed by linking two identical/different discotic mesogens via a flexible spacer or through a rigid spacer. These dimers show interesting behaviour depending on the length of the spacer and on the structure of the linking group. Due to their ability of self-organisation into different phases, such systems are quite useful in various organic electronics such as light-emitting diodes, field effect transistors, solar cells as well as in wide-view displays. Thus, they are immensely significant in both fundamental science and practical applications. Hitherto, more than 100 discotic dimers comprising 11 different discotic cores have been realised. Discotic cores that have been explored to create dimers are anthraquinone, benzene, cyclotetra-*tert*-butylphenylene, hexa-*peri*-hexabenzocoronene, phthalocyanine, porphyrin, pyranose sugars, pyrene, scylloinositol, and triphenylene. In this chapter, we cover the different dimeric liquid crystals formed of two discotic units tethered via a spacer.

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