

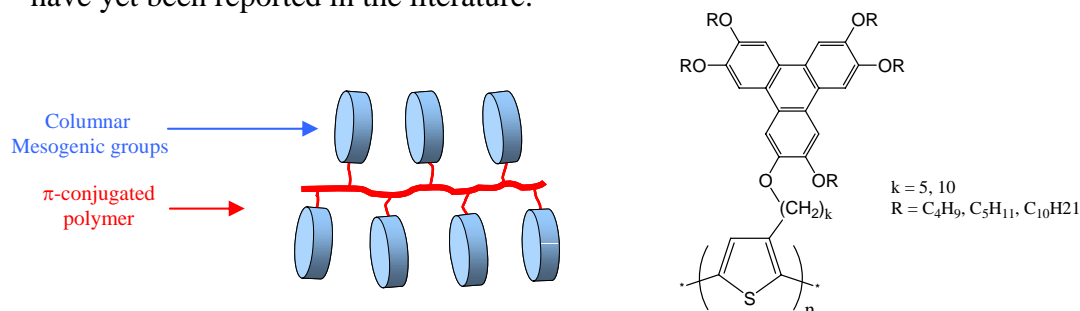
## Side-Chain Liquid Crystal Polymer based on $\pi$ -Conjugated Backbone for Organic Electronics

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On one hand, columnar liquid crystals based on discotic  $\pi$ -conjugated core have emerged as a promising class of materials due to their high charge carrier mobility related to their high electrical and structural anisotropy.<sup>1</sup> On the other hand, although Side-Chain Liquid Crystal Polymers (SCLCP) with calamitic mesogens have been extensively reported,<sup>2</sup> rather few examples of SCLCP with discotic mesogens have been described in the literature. Moreover, these latter involved saturated polymer backbones.<sup>3,4</sup> But to the best of our knowledge, no columnar side-chain liquid crystal polymer consisting of both a well-defined  $\pi$ -conjugated backbone and discotic mesogens (see figure below) have yet been reported in the literature.



In this work, the preparation of several polymeric homologues of triphenylene mesogens and regioregular polythiophene chains with low polydispersity will be described. Their thermotropic properties studied by DSC, POM and XRD indicated that these compounds exhibit a spontaneous self-organisation in lamello-columnar phases. Moreover, the photophysical properties of these materials will also be depicted in view of applications for organic optoelectronics.

### References

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