Title:	Design of a Liquid Crystal based sensor for Dopamine detection
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Abstract:	Dopamine is an important neurotransmitter and its abnormal levels are associated with a variety of mental disorders. Considering the importance of this molecule, we designed a sensor for dopamine using a boronic acid based amphiphile to align the LC film. The boronic acid head group of the amphiphile interacts with the cis diol of dopamine , thus disrupting the LC interface resulting in appearance of bright appearance under cross polars. We have designed a system consisting of two point selective sites by exploiting the amine group of dopamine as the cis diol interaction with boronic acid is not very specific. This was linked with an amine selective crosslinker dithio(bissuccinimidylpropionate) which was functionalized on a GNP. This, in turn, disrupts the LC alignment more creating an enhancement in optical signals Chapter 1 deals with the basics of liquid crystals and its properties which are responsible for its application in biosensors. Descriptions of dopamine and the formation of cyclic boronate esters from interactions of boronic acids and cis diols are given in this chapter Chapter 2 talks about the materials used and experimental protocols adopted in designing the sensor.
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