Title:	Liquid Crystal Based Detection of Arsenic ions Using Aptamers as Recognition Elements
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Abstract:	Liquid Crystal(LC) based sensors are gaining more attention over the past few years, as they overcome few important drawbacks that are commonly found in other analytical techniques. The detection principle of LC sensors is based on the orientational changes that occur in LC molecules when there are minor disturbances in the interfacial regions. Moreover, LC sensors are capable of label free detection of analyte, do not require costly instrumentation and sample preparation. In this project, we are using LC system to detect As(III) ions in water samples. As(III) is one of the most toxic ions present in contaminated water and causes chronic poisoning when exposed. A lot of analytical techniques have been designed to detect the presence of As(III) in contaminated water, however they require costly instrumentation, time consuming sample preparation, have portability issues, require maintenance facilities, etc. A carefully designed LC sensing system will be capable of overcoming these drawbacks and prove to be useful for on-site detection of As(III). The first chapter gives a general introduction to Biosensing and Liquid Crystals; properties of LCs that make them good interfacial material for sensing experiments. The second chapter discusses the scheme that is used for sensing of As(III) ions and the last chapter enlists the observations made and concludes the results of the experiments.
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