

<b>Project Id</b>	132
<b>Project Title</b>	Theoretical Investigation of a Portable New Chemical/Biological Sensor
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<b>Additional Faculty</b>	
<b>Faculty Department</b>	Physics
<b>Project Description</b>	<p>This project will investigate the design and feasibility of a novel liquid crystal sensor that could be used to detect the presence and amount of foreign biological and/or chemical airborne agents. Such a sensor would have the advantage of being very portable. As such could have particular value in detecting biological or chemical weapons in the field of military operations. It would also be of use in a rapid response to a chemical or biological terrorist attack.</p> <p>The device would operate on the basic principal that when certain types of molecules bind to a liquid crystal molecule, the conformation of the liquid crystal molecule changes. This would in turn lead to a change in the overall arrangement of the liquid crystal, which could be detected using polarized light.</p>
<b>Interdisciplinary Nature Description</b>	The initial investigation will primarily involve physics and math. If the investigation indicates that the sensor is feasible, a future project to build such a sensor would also involve chemistry, biology and engineering.
<b>Links</b>	
<b>Number of Honors Students Requested</b>	2
<b>Applicable Majors</b>	PHYS, MATH
<b>desired_res</b>	Mathematical, Physics and Computer (Matlab) skills.
<b>Date Added</b>	2008-10-20 16:55:34
<b>Active</b>	1