

**Name of the Technology : “Immunochemical Explosive Detector**

<b>Laboratory Name</b>	CSIR-Central Scientific Instruments Organisation, Chandigarh
<b>Brief Profile of Technology</b>	<p>A highly sensitive and compact Immunochemical Explosive Detector based on displacement immunoassay technique has been designed &amp; developed for rapid detection of explosive compounds 2,4,6-trinitrotoluene (TNT) at nanomole levels (schematic shown below). The system consists of microreactor column containing antibodies tagged beads saturated with tracer (fluorophore2a-labeled TNT). TNT sample (standard) mixed with fix volume (~0.2 mL) of distilled water in a tube/well is then passed through the column and the amount of tracer displaced by target molecule (TNT) is measured and correlated with concentration of TNT in the samples. The developed system provides a reusable sensor, suitable for continuous monitoring of explosives, with an operating lifetime of over 10 positive samples. The micro-reactor column based immunochemical assay format exhibited a detection limit of approximately 100 ppb (~100 ng/mL) for TNT. The system is being upgraded for simultaneously monitoring all three explosives (TNT, RDX and PETN) by using suitable antibodies in the three individual columns. Also, a portable fluorescence system coupled with flow-through assembly consisting of a micro-reactor unit (150 uL capacity) has been developed for the on-line monitoring of explosives.</p>
<b>Returns/Benefits</b>	

<b>Validation Level</b>	Prototype
<b>IPR Status [also indicating the status of the patent (if any) in 2015]</b>	
<b>End product price (if not available, estimated price)</b>	
<b>Technology/Product Collaborator</b>	
<b>Relevance of Technology in present times</b>	
<b>Similar technology/product developed</b>	Available in international market
<b>Picture of the technology/product</b>	