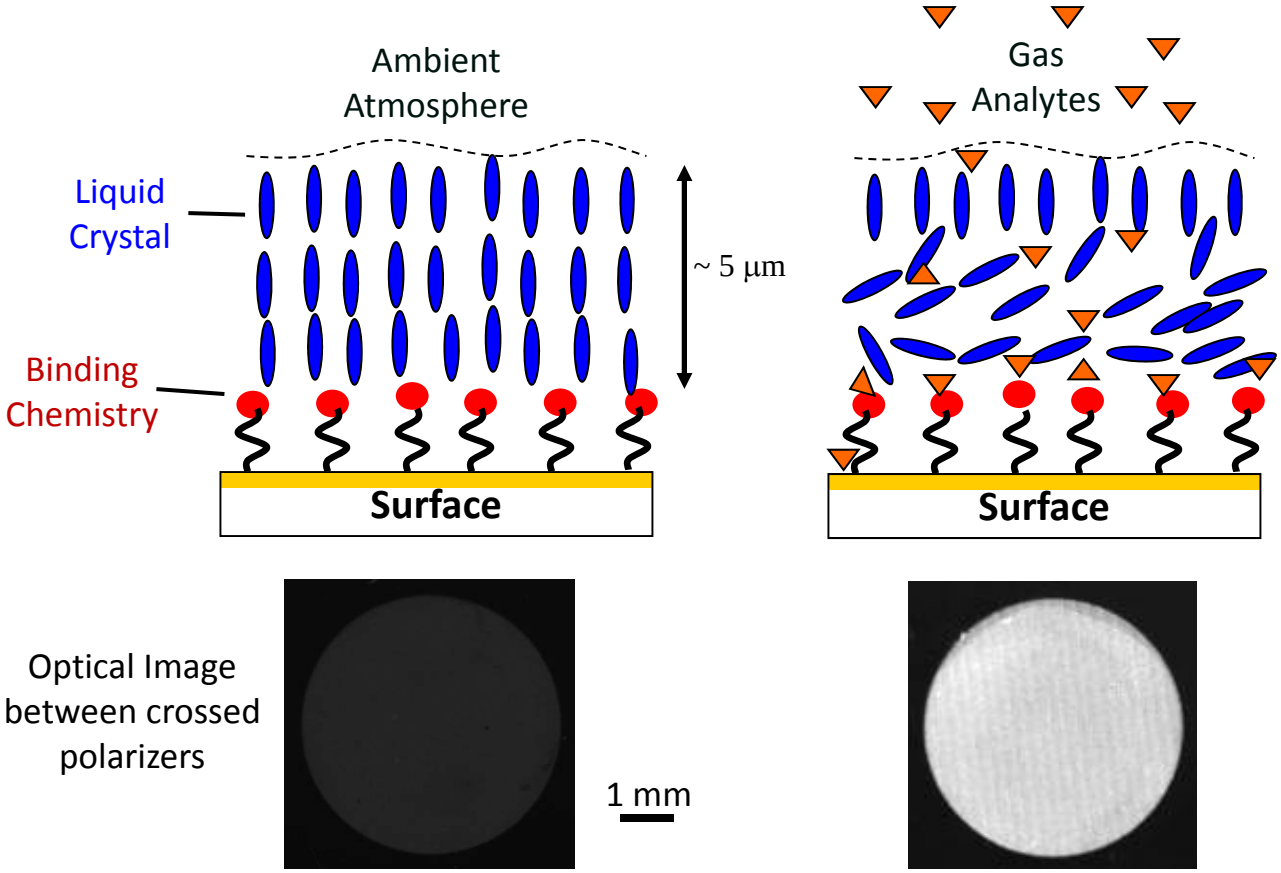
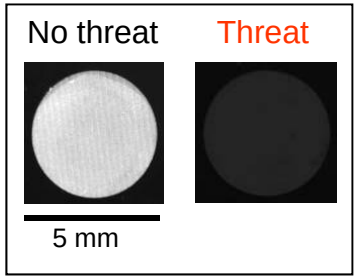
Principle of Detection of Gas Using LC Sensors



- Interactions at the surface are communicated through the bulk
- Liquid crystals detect, amplify and report presence of analytes
- The transition can be from homeotropic to planar or *vise-a-vesra*

Liquid Crystal-based Sensor

Technology	Liquid crystal film supported on engineered surfaces Platform technology with broad applications Real-time response to chemical and biological threats
Support	DOD: US Army ECBC phase I & II contracts DARPA, USAMRIID, NIH SBIR
Benefits	Miniature footprint (5 mm) with multi-analyte detection Rapid, selective, and sensitive response Unequivocal results without need for calibration Inexpensive materials and manufacturing process based on LCD industry Easy to use, handheld device with no/low power requirements Continuous (reversible) or cumulative (irreversible) monitoring
Targets Detected	Simulants of chemical warfare agents, organophosphate pesticides, sulfur/nitrogen /amine–based compounds, ozone, viruses, bacteria
Applications	Defense – Military installations, UMV Homeland Security - Aviation, seaport & border inspections Industrial - Toxic industrial chemicals Biomedical – Early diagnosis, disease management
Formats	Personal monitor, wall-mounted in buildings, portable wand, wireless, networked, remote detection, military installations
Future Directions	Explosives detection, environmental monitoring, biomedical testing



PLATYPUS TECHNOLOGIES

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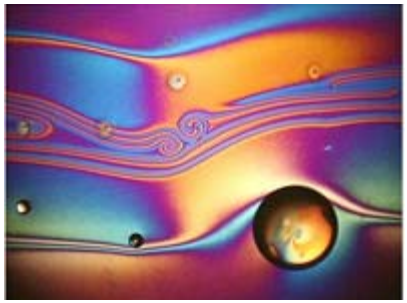

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