

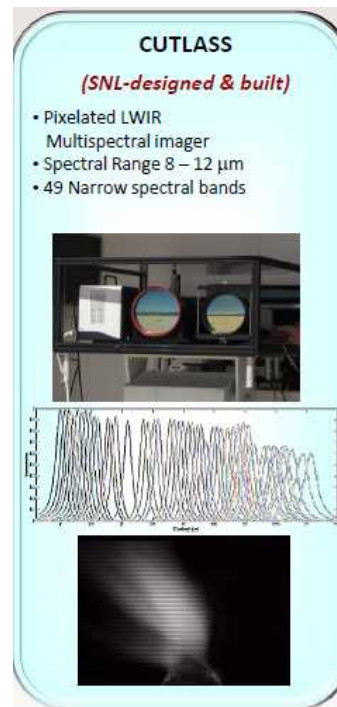
Dept. 5772 – Advanced Remote Sensing

- Develops innovative concepts for active and passive remote sensing systems, signatures, and exploitation.
- Maintains a breadth of remote sensing competencies including target phenomenology, scene simulation, radiative transport, optical sensor modeling, spectral & temporal data processing, and algorithm development.
- Concept through demonstration R&D for DOE and DOD customers.



Applications Include:

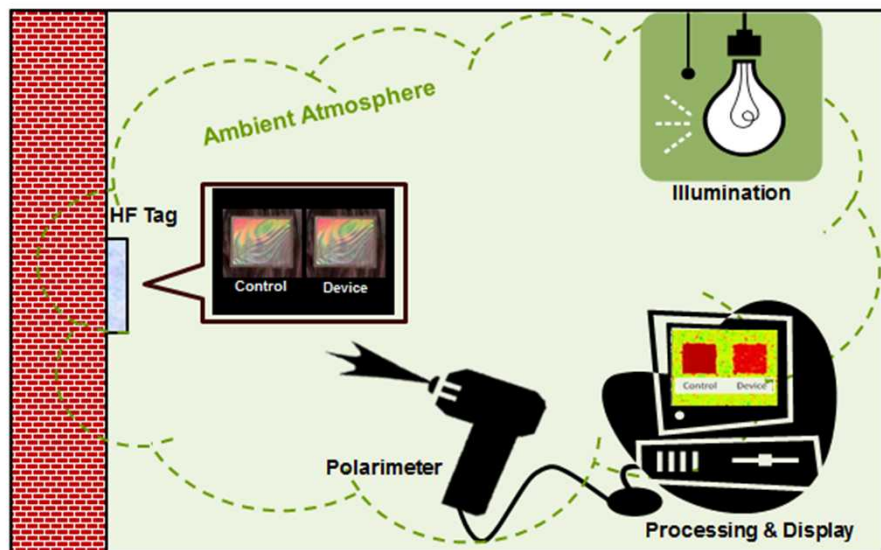
- Nonproliferation Remote Sensing
 - Combustion Phenomenology
 - Weaponization Research



Polarization tags for HF Monitoring

- There is a need for persistent, passive, and non-invasive monitoring systems for detecting hazardous chemical vapors.
- Sandia has developed a remote sensing system for monitoring an area for the presence of HF gas.

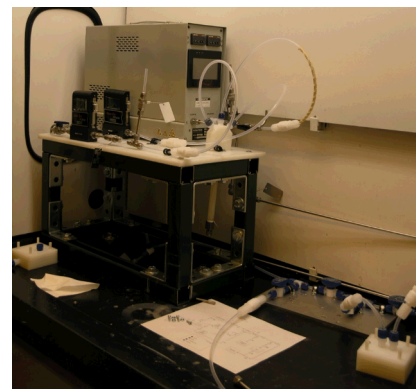
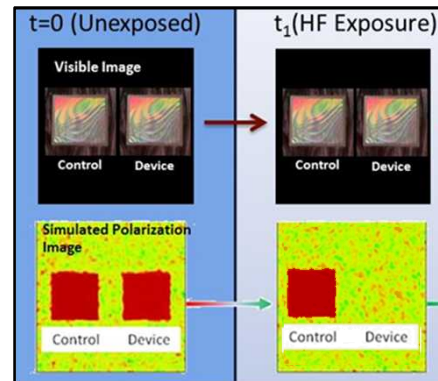
HF Monitoring Concept of Operations



Low Impact &
Passive
Measurement

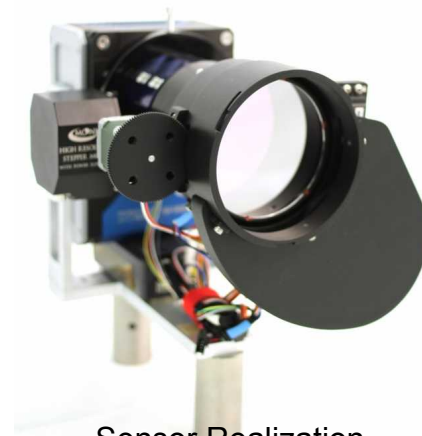
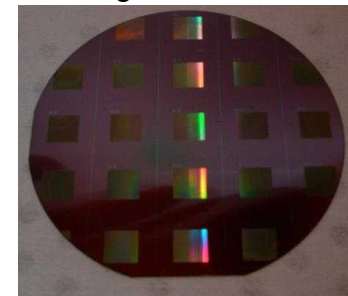
Persistent
Monitoring
Capability

Simplified
Data
Products



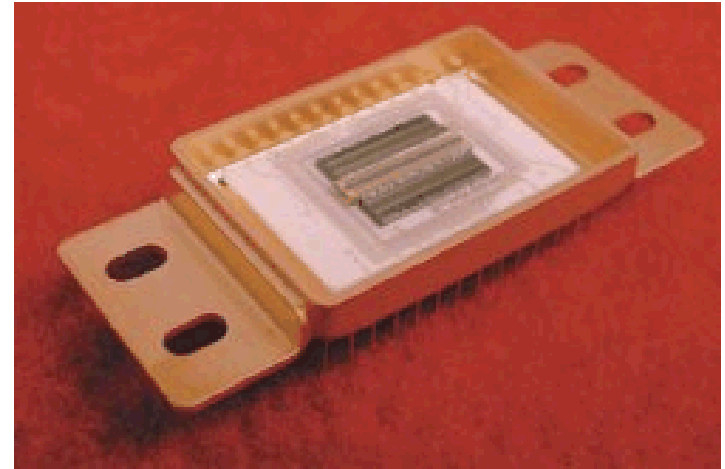
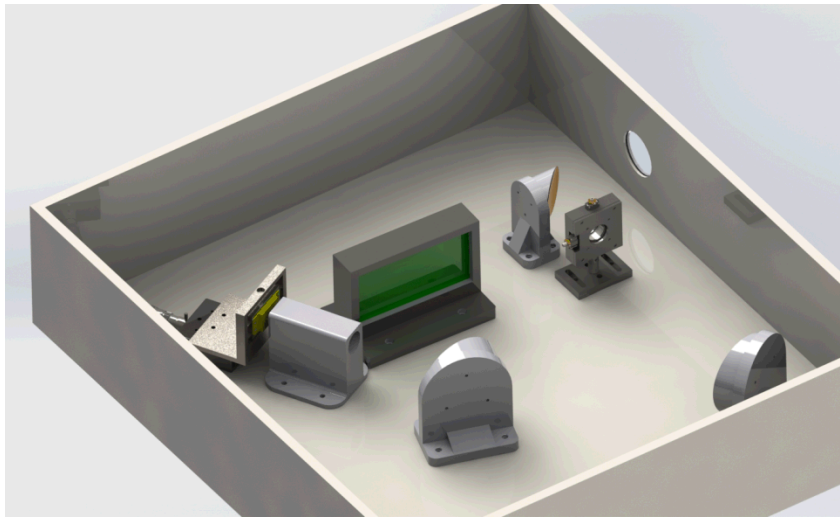
Chemical Testing

Tag Production



Sensor Realization

MSTIC Student Intern Project



- Design a high speed SWIR spectrometer
 - Spectral Range 1-5 μm
 - Spectral Resolution: 10 nm
 - Data Rate: 14.5 KHz
 - Non imaging, FOV 1°
- Motivation is to study transient phenomena, such as explosive tests
- Project concept was to have a student lead team of 3-5 students (mechanical, electroical, optical) and assigned mentors