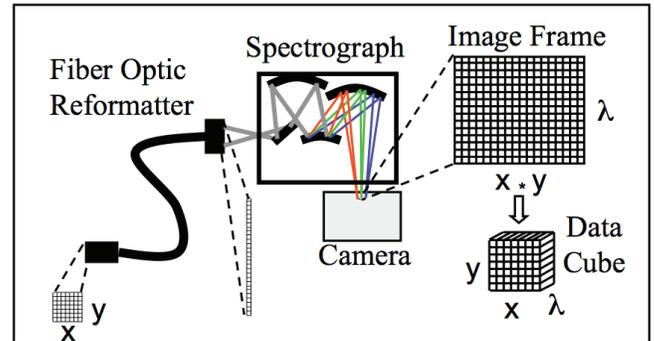


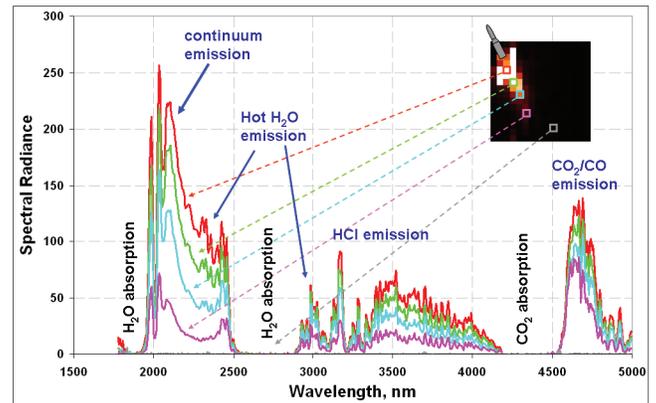
HyperVideo / 4DIS

Spectral imaging without scanning



Four dimensional imaging spectrometer (4DIS)

Fiber fed spectrometer captures a full image cube with each camera frame



Key Features

Spatial, spectral, and temporal resolution of dynamic scenes

Flexible fiber optics for remote location of imaging lens from sensor electronics

Wide range of fore-optic options including microscope objectives, c-mount lenses, and telescopes

Real-time display and processing of hyperspectral data (does not require intensive computations to deconvolve)

Configurations available covering various wavelength ranges including UV/VIS, NIR, SWIR, and MWIR

Spectral fovea mode with narrow field of view (FOV) HyperVideo system cued by wider FOV context camera

Full spectral and radiometric calibrated data

Scalable design amenable to higher spatial resolution.

Spatially and temporally resolves spectra of fast events

Opto Knowledge

Recipient of the 2011
Tibbets Award



Specifications for select models

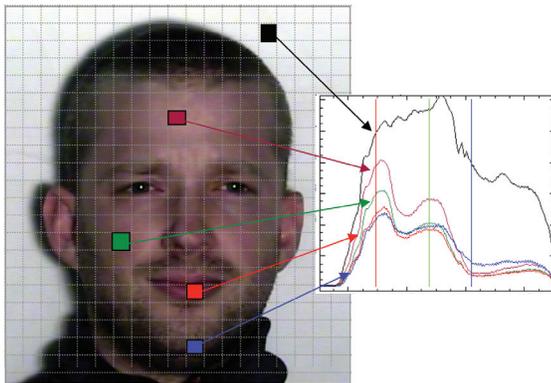
Parameter	4xVNIR	VNIR	HS VNIR	SWIR1700	SWIR2500	MWIR
Detector type	silicon CMOS	silicon CMOS	silicon CMOS	InGaAs	InSb	InSb
Spectral range, μm	0.4 - 1.1	0.4 - 1.0	0.4 - 1.0	0.95 - 1.7	1.0 - 2.5	1.8 - 5.0
Spectral resolution, nm	2.4	2.2	5	3.8	7.2	6.3
Spectral bands	300	270	120	190	210	500
Spatial resolution, pixels	44x40	21x19	21x19	21x19	32x32	16x16
F/number	f/8	f/8	f/8	f/8	f/8	f/4
Max cube rate, Hz	30	10,000	100,000	1,000	120	100



4xVNIR



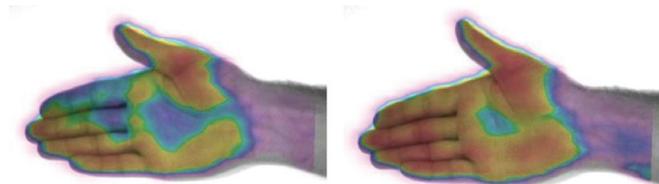
SWIR-1700



Spectra fused with context camera

Fusion with Context Camera

Spectral information from HyperVideo
 Spatial information from context camera
 Real-time processing and display



Spectral analysis displaying blood oxygenation

Applications

- Real-time automated target recognition
- IED / explosives / chemical detection
- Biometrics / biomedical devices
- Missile plume, intercept, reentry analysis
- Analysis of explosions, muzzle flash, lightning
- Combustion diagnostics

