imec

embracing a better life

SNAPSHOT MOSAIC HYPERSPECTRAL IMAGING CAMERA

Imec's snapshot mosaic hyperspectral imaging technology offers seamless integration of spectral imaging when integrated in to compact and robus standard GigE machine vision camera like the PhotonFocus MV1-D2048x1088-HS01-96-G2 series.

READY-TO-USE HYPERSPECTRAL CAMERA FOR MEDICAL & INDUSTRIAL APPLICATIONS

HYPERPSPECTRAL TECHNOLOGY FOR REAL-WORLD APPLICATIONS

Hyperspectral cameras, compared to traditional cameras, divide the light spectrum in many small wavelength bands. Therefore, a hyperspectral camera captures the spectral fingerprint of any object, a unique spectral curve signature giving very detailed information about its exact constitution.

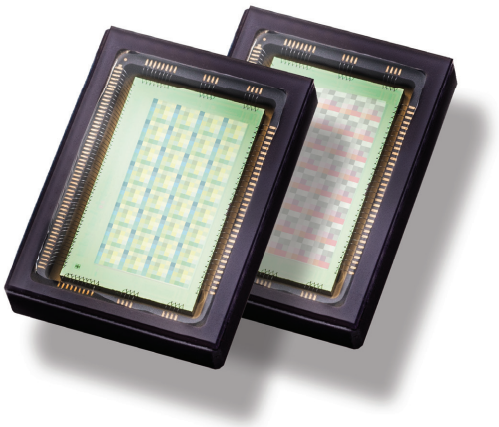
imec's hyperspectral filters processing capabilities enables snapshot acquisition and reconstruction and classification of HSI datacubes at video rates.

HYPERPSPECTRAL EVALUATION SYSTEM

Our hyperspectral evaluation systems enable efficient evaluation and use of imec's unique hyperspectral imagers. Althought linescan system needs a translational movement to capture the different hyperspectral bands of an object, no scanning movement is needed with our snapshot design to capture the hyperspectral datacubes.

The OEM camera consists of the following elements:

- imec snapshot mosaic hyperspectral image sensor
- PhotonFocus GiGeVision camera
- Custom band-pass rejection filter on glass with 25.mm mount
- Lens
- Cable interface



Packaged hyperspectral snapshot mosaic, 16 and 25 bands, hyperspectral image sensor from imec

POTENTIAL APPLICATIONS

- Optical sorting in machine vision
- Chemical analysis of material composition
- Food safety & inspection
- Medical & healthcare
- Pharmaceutical manufacturing
- Semiconductor & photovoltaic
- Security & surveillance
- Waste recycling
- Human-machine interface
- Mineralogy, mining
- And more ...

IMEC HYPERSPECTRAL IMAGER & CAMERA HARDWARE SPECIFICATIONS

Acquisition mode	snapshot mosaic
Wavelength range	460-630nm (SNm4x4 VIS version) 600-1000nm (SNm5x5 NIR version)
Number of spectral bands	16 bands (VIS version) 25 bands (NIR version)
Bandwidth per band (FWHM)	< 15nm, collimated
Imager type	CMOS imager, CMOSIS CMV2000
Imager size	2.2Mpixels
Spatial resolution (RAW)	409x216 pixels per band (VIS version) 512x272 pixels per band (NIR version)
Frame rate	Up to 42 fps hyperspectral cubes/second at full resolution
Interface	GiGeVision & triggering
Pixel pitch	5.5µm
Bit depth	8 or 10bit
Optical input	(near) telecentric
Dimensions	50x50x50mm
Weight	120g without fore-optics

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