



DUAL-SENSOR SNAPSHOT MOSAIC HYPERSPPECTRAL IMAGING CAMERA

Imec's hyperspectral evaluation system offers simple, fast and easy application set-up for your hyperspectral imaging data acquisition and analysis of sample materials. Our solution is flexible and designed to enable application development using hyperspectral imaging technology, delivering relevant test data already within a few minutes after initial installation. It includes all required components, from spectral imager to camera, optics, software and can be easily rebuilt into different configurations.

HYPERSPPECTRAL TECHNOLOGY FOR REAL-WORLD APPLICATIONS

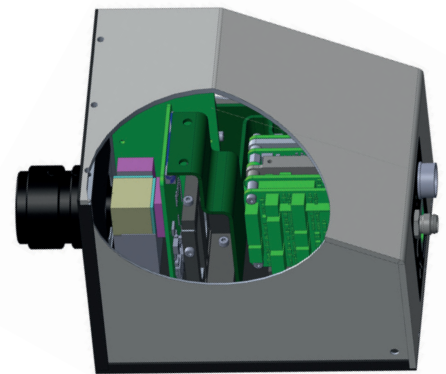
Hyperspectral cameras, compared to traditional cameras, divide the light spectrum in many small wavelength bands. Therefore, hyperspectral camera captures the spectral fingerprint of any object, a unique spectral curve signature giving very detailed information about its exact constitution.

Combining imec's hyperspectral filters processing capabilities with its extensive image processing and system design expertise, this dual-sensor snapshot mosaic camera architecture enables extended wavelength range coverage while preserving single lens optical path and HSI cube acquisition at video rates.

HYPERSPPECTRAL EVALUATION SYSTEM

The evaluation camera consists of the following elements:

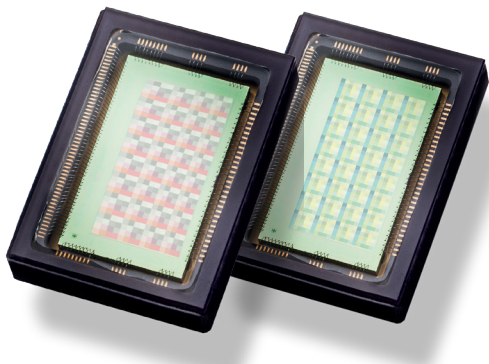
- x2 imec hyperspectral image sensors (to cover VIS + NIR ranges)
- Optical beam splitter inside camera with tight assembly
- Gigabit ethernet interface output and cables
- Programmable interface provided along with hyperspectral image acquisition software
- Standard C-mount and selection of fore-optics available (35mm lens and cut-off/blocking filters)



Internal optical beam splitting camera architecture developed to enable dual-sensor synchronous HSI data acquisition at video-rate

KEY BENEFITS

- **Easy set-up** of complete system
- **Ready-to-use** solution: instantly collect hyperspectral data from your samples and determine spectral band differentiators.
- **Customizable design** to match filter band selection with your final application requirements



Snapshot mosaic VIS + NIR hyperspectral sensors of imec integrated into the dual-sensor mosaic camera

IMEC HYPERSPECTRAL IMAGER & SOFTWARE

The specifications of this dual-sensor camera architecture are summarized here below

Acquisition mode	2x snapshot mosaic VIS + NIR
Wavelength range	450-875nm (VIS to NIR)
Number of spectral bands	40+
Bandwidth per band (FWHM)	<10nm, collimated
Imager type	x2 CMOS imager, CMOSIS CMV2000 based
Spatial resolution	450x270 pixels per band RAW
Frame rate	Up to 10 hyperspectral cubes/second. More with ROI
Pixel pitch	5.5 μm
Bit depth	8 and 10 bit
Optical input	(near) telecentric
Dimensions	150x70x50mm
Weight	500g with optics

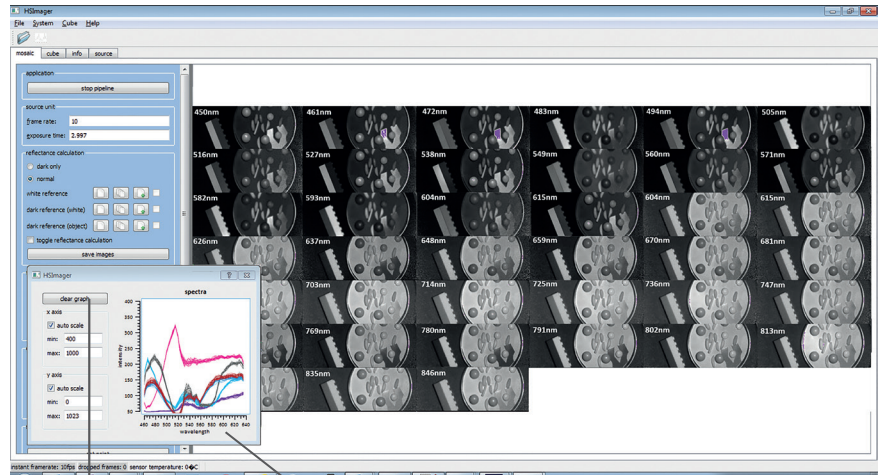
User interface of imec's in-house software is designed for user-friendly hyperspectral imaging operations with integrated camera controls and visualization of captured objects.

APPLICATIONS

- Medical guided surgery
- Medical characterization of wounds, burns and skin imaging
- Waste recycling
- Food sorting & quality grading
- Precision agriculture
- Industrial machine vision

HSI SOFTWARE TO SUPPORT APPLICATION DEVELOPMENT

- License** available to all demo-tit customers & partners
- Support** including installation, training and Q&A (remotely and on-site)
- Source-code** available for OEM integration for the following blocks:
 - cube registration
 - reflectance calculation
 - spectral corrections



Main control pane

- Camera (fps, t)
- Cube/frame dump
- Reflectance calculation

Visualization panel

- Saturated pixels
- False color image
- Spectral plotting

HSI SALES

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