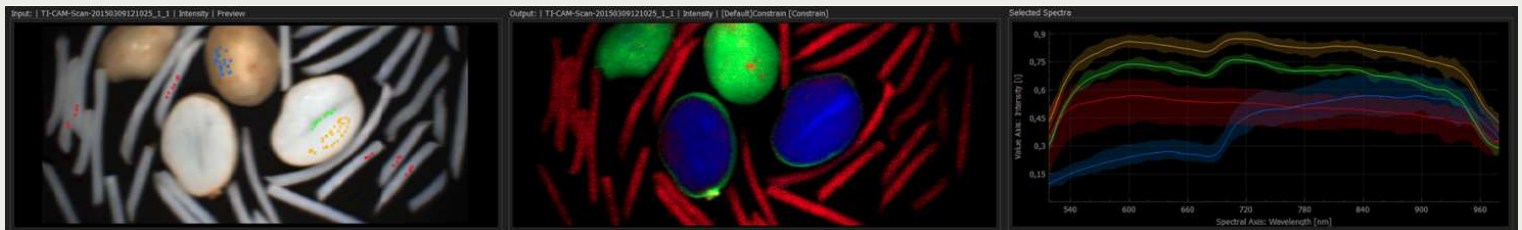


Chemical Cameras and Chemical Color Imaging

» High Performance Hyper Spectral Imaging

The TI-CAM Chemical Camera acquires full, continuous hyperspectral data cubes with **high spatial and spectral resolution**. The system works in the visible & very near infrared (VIS/VNIR - CMOS technology) or near infrared (NIR - InGaAs technology). It brings for the first time high performance hyperspectral imaging in a compact camera system with excellent sensitivity.



The images (3 dimensional Data Cubes) are scanned within a few seconds, depending on system settings like resolution and integration time. Chemical results are displayed directly after scanning. A continuous acquisition mode (Cube sequences) with slightly reduced image resolution is one application mode.

Applications

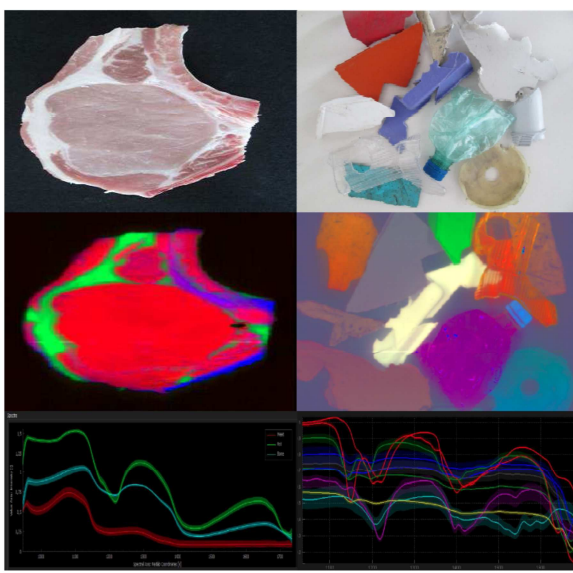
- >> Food Inspection
- >> Medical diagnostics
- >> Chemical Analysis
- >> Biological tissue characterization
- >> Agriculture
- >> Forensics
- >> Security
- >> Chemical quality control



Color Image

Chemical Color Image

Chemistry



S|P|E|K|L|E|D

SPEKTRALE TECHNOLOGIEN

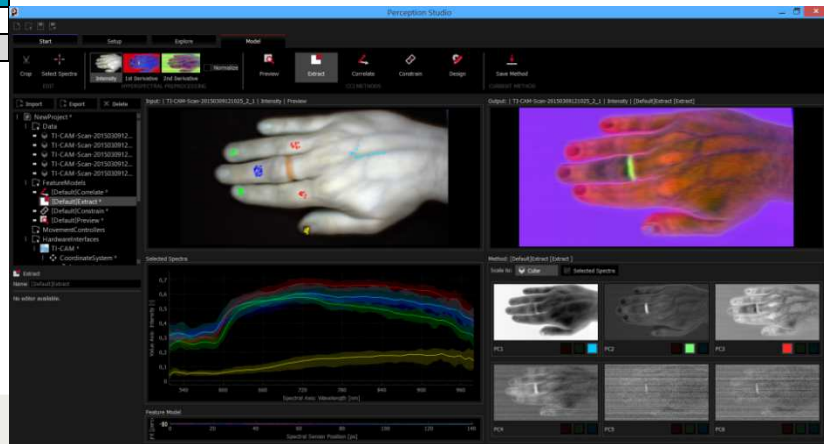
In Hyper-Spectral Imaging (HSI) Technology three dimensional (X [spatial], Y [spatial], λ [spectral]) data cubes are generated. Based on the data cubes different chemical color images and chemical information (concentration maps) can be extracted.

Specifications

| TI-CAM System | VIS and VIS/VNIR System | NIR System |
|------------------------------|--------------------------------------|--------------------|
| Spectral properties | | |
| Wavelength range | 400 nm - 750 nm or 500 nm – 980 nm | 1000 nm – 1700 nm |
| Sampling interval | 0,5 nm | On request |
| Spectral resolution | About 6-8 nm | On request |
| Channels | Up to 1000 | On request |
| Smile | Software corrected | On request |
| Slit width default | 30 μ m | On request |
| Camera properties | | |
| Detector | CMOS | InGaAs |
| Digitization | 10 bit / 12 bit | 14 bit |
| Measurement time | 5 sec - 100 sec | On request |
| Camera Interface | USB3 | On request |
| Cube rate | typical 1-10 /min | On request |
| Cube resolution | typical 1 Megapixel | Typical 320 x 400 |
| Spectra per cube | typical 1 Million | On request |
| Processing software | Included, based on Perception Studio | On request |
| Objective Lens Mount | C-mount | C-mount |
| Data | | |
| Calibration | Factroy calibrated | Factroy calibrated |
| Chemometric Imaging Software | Included, based on Perception Studio | |
| Export Format | RAW, Envi, MATLAB, ASCII, HSD | |
| Physical properties | | |
| Operat. Temperature | -5 °C – 40°C | 5 °C – 35°C |
| Supply | 24V DC | 24V DC |

- » High Image Cube resolution
- » Digital CMOS /InGaAs Sensor array (Windowing and Skipping/Binning possible)
- » Different spectral ranges based on a high performance imaging spectrometer unit
- » Full spectroscopic image acquisition (no multispectral photometry)
- » Integrated LED based lighting unit optimized for physiological imaging (no thermal lighting)
- » High Speed communication (USB3 or GigE)
- » 24 V power supply
- » Image cube export to MATLAB, ENVI and ASCII format
- » C-mount objective lens adapter

The basic Chemical Color Imaging Software from Perception Park is delivered with the system. So you can immediately start your Chemical Imaging work. The system offers a direct pathway to expand your VIS/VNIR/NIR chemical analysis to chemical image analysis with spatial resolution and to transfer the results in a further step directly on automated control systems.



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In collaboration with Perception Park

