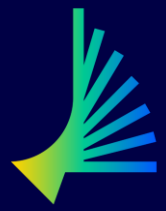
Examples of Turn-Key Industrial-Grade Spectroscopy-Based Solutions for Process and Quality Control

VISION 2022, Stuttgart
EPIC Meeting on New Machine Vision Developments and Emerging Applications



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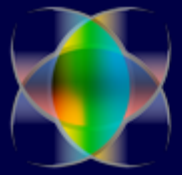

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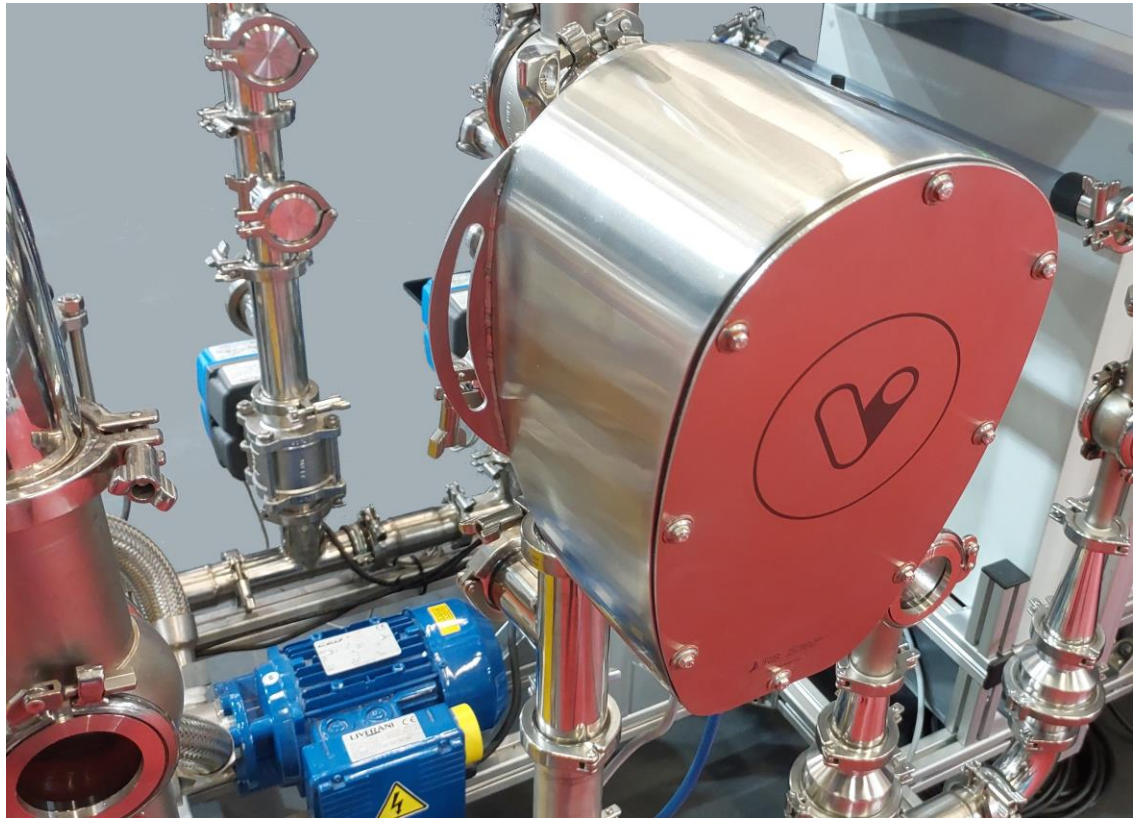
VISION

ABOUT US

IRIS Technology Solutions is a leading European manufacturer and integrator of Photonic-based **solutions for real-time industrial process control**.

We provide **turn-key** implementations of **NIR** and **Raman** spot spectroscopy as well as **hyperspectral imaging** and dedicated **vision** systems, engineered with **machine learning tools**, for industrial sectors such as food, pharmaceutical, chemical, wood, recycling…



- ✓ Facilities and offices in Barcelona
- ✓ 70 highly qualified multidisciplinary staff
- ✓ Among the top-5 European SMEs with H2020 granted R&D projects
- ✓ Manufacturers of industrial-grade NIR analyzers and hyperspectral imagers under the **Visum** trademark
- ✓ Developers of tailor-made software platforms with built-in AI engines
- ✓ Providers of advanced engineering services for addressing challenging needs

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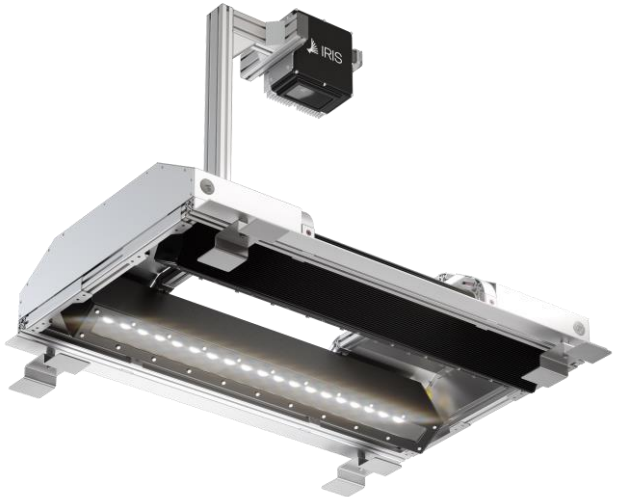
OUR SOLUTIONS

Handheld NIR analyzer

InLine NIR analyzer

InLine Raman analyzer



Hyperspectral imager

DeepSight

HPR-S1

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SOLUTION EXAMPLE

Need: Assessing organic (bio-sourced) content in recycling plants in order to decide about the suitability for biofuel production

Solution: In-line **hyperspectral imaging** for quantifying bio-sourced materials content.

Challenges: 24/7 operation in a harsh and very dirty environment

Reason for investing: Increasing the waste valorisation yields

SOLUTION EXAMPLE

Need: Real-time fat content control in fried pastries (crullers) production lines in order for the manufacturer to save oil while keeping the optimum trade-off between organoleptic features and healthy nutritional quality

Solution: In-line **hyperspectral imaging** for unit-by-unit fat content inspection after the frying operation.

Challenges: 24/7 operation in humid warm environments affected by oily aerosol pollution. Tolerated uncertainty < 1% w/w

Reason for investing: **9-months payback** in terms of raw material savings. Not to mention brand image improvements

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SOLUTION EXAMPLE

Need: Classification of frozen-fish-filets packaging lines according to a specific set of morphological quality indicators for quality grading.

Solution: In-line **deep-learning-assisted** optically-improved VIS artificial vision setup.

Challenges: 24/7 operation in humid (condensing) cold environment. Line speed > 2 units/s. Synchronized with an ad hoc sorting module.

Reason for investing: Reducing client (wholesalers) complains and adding value to raw material by means of quality grading.

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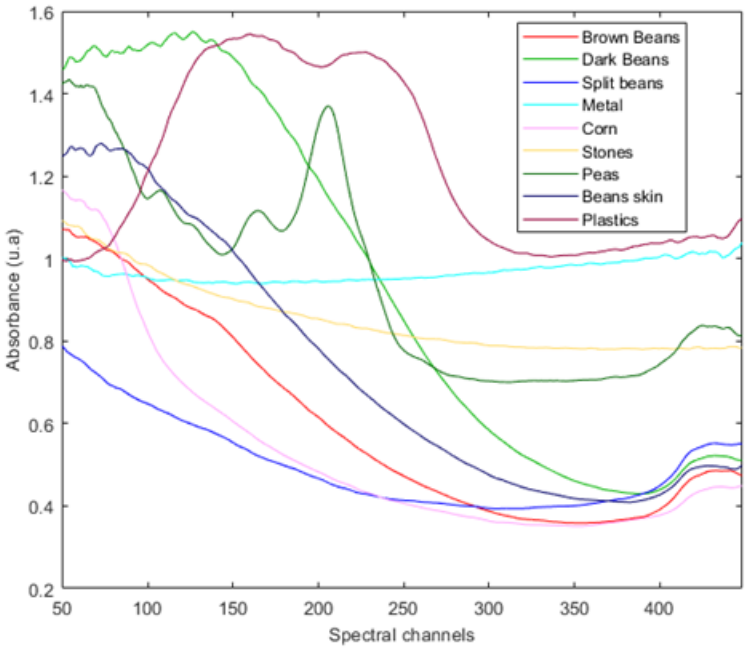
SOLUTION EXAMPLE

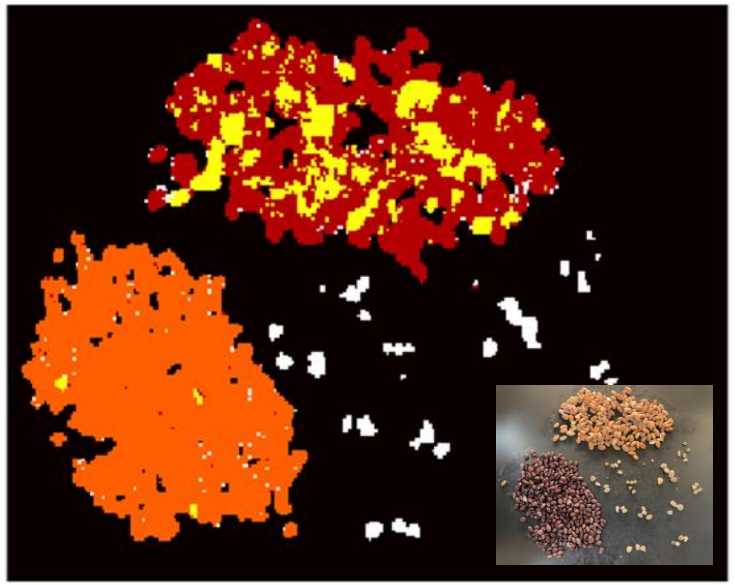
Need: Both **foreign bodies** and **defective units** detection and removal in beans packaging lines.

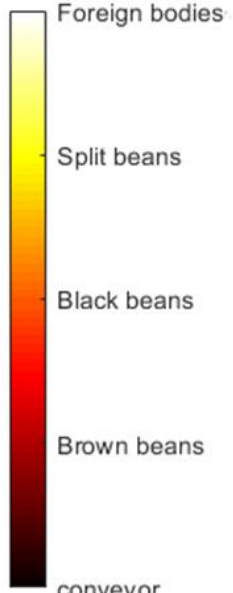
Solution: In-line **hyperspectral imaging** for unit-by-unit inspection

Challenges: 24/7 operation in food compliant environment. Line speed > 35 m/min. Accurate synchronization with an ad hoc rejection module.

Reason for investing: Fulfilling food safety regulations (IFS knock-out 6) and avoiding brand prestige issues due to claims from consumers







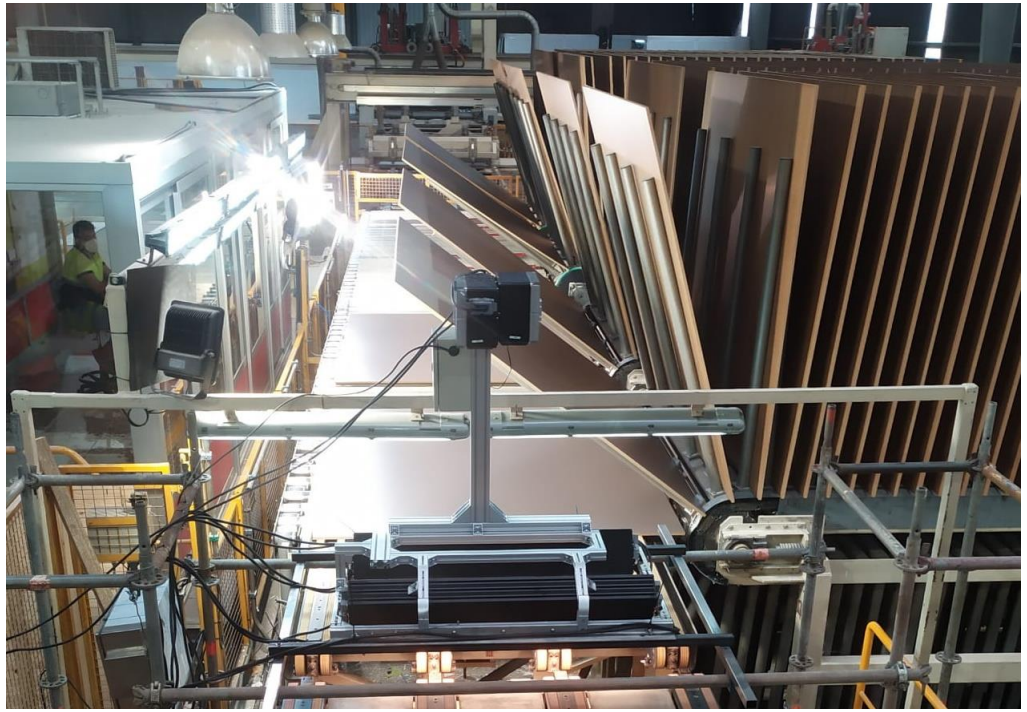
SOLUTION EXAMPLE

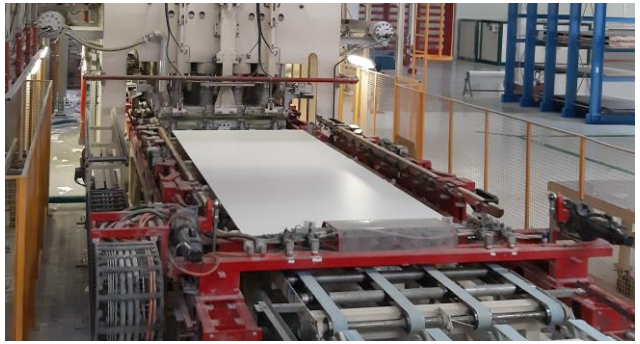
Need: Real-time spatial-wise both moisture content determination in paper impregnation and melamine curing quality control in chipboards for furniture manufacturing

Solution: In-line **hyperspectral imagers** for unit-by-unit quantitative inspection with spatial resolution

Challenges: 24/7 operation in a harsh environment affected by suspended dust. Tolerated uncertainty for moisture content < 1% w/w

Reason for investing: Reducing client (wholesalers) complains and recalls that could jeopardize brand prestige





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Thank you for your interest

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