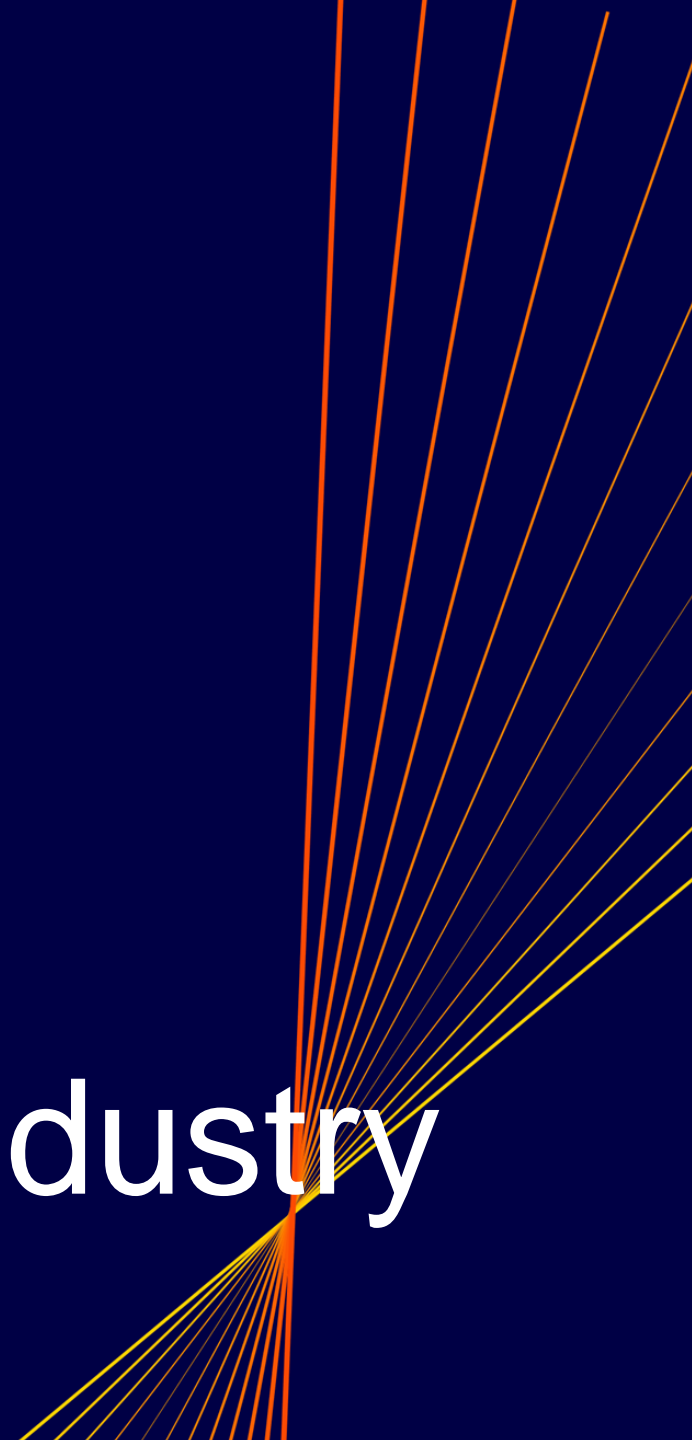


# IRIS

Photonics & Industrial AI Solutions

# Digitally Engineering Industry

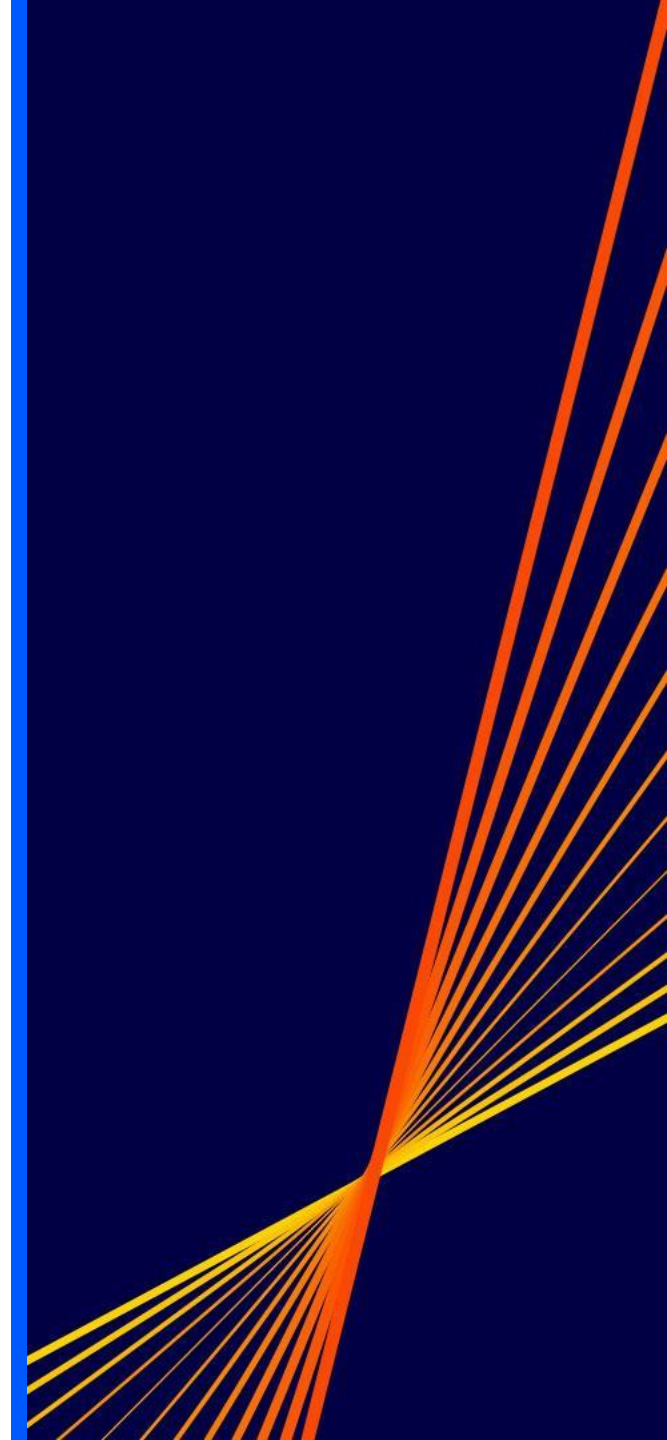
[www.iris-eng.com](http://www.iris-eng.com)



## ABOUT US

IRIS is an advanced engineering company specialised in Photonics and Artificial Intelligence key enabling technologies for the digitisation of industrial processes:

Making industry Smarter, more Sustainable & Efficient in Industry 4.0



- ✓ Founded in 2007 in Barcelona
- ✓ +65 highly qualified multidisciplinary staff
- ✓ > R&D: >45M€, > 100 projects, > 15 patents
- ✓ Providers of advanced engineering services integrating turn-key solutions
- ✓ Combination of Photonics and AI to develop and integrate inline monitoring solutions with Spectroscopy-based analyzers
- ✓ Manufacturers of industrial-grade NIR analyzers under the Visum trademark
- ✓ Developers of Data Management Platforms, Industrial AI Decision Support Tools and Digital Platforms
- ✓ Innovation lab for pioneering in industry. Key Enabling Technologies (KETs) introduction through international and collaborative R&D Projects





# Experts in Real-time Monitoring

Helping food, pharma, chemical, bio-based & process industries to improve their quality control and process standardisation

- Engineer IR absorption spectroscopy-based analysers and other photonics tools (e.g. fluorescence) into rugged devices for in-line integration into manufacturing lines or for at-line use and along the value chain
- Chemometric models for extracting actionable information from the spectral data
- Machine Learning, Deep Learning & Data fusion for augmented IR and model predictive control

- ✓ Improved Process Understanding
- ✓ Improved Quality Control & Standardisation
- ✓ Increased Process & Resource Efficiencies
- ✓ Prevent Off-Spec Product
- ✓ Reduce Waste & Losses

Non-destructive, accurate and real-time analytical solutions.  
**Get to know our Visum® line of devices.**



**Visum Palm™**

The most efficient portable NIR analyzer for determining the chemical composition of a wide variety of materials and mixtures. Real-time, accurate, on-the-go analysis.



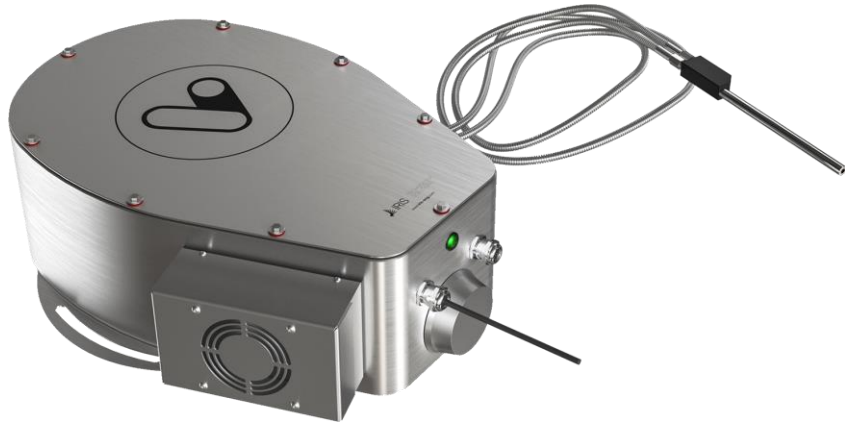
**Visum NIR In-Line™**

In-line NIR analyzer to determine chemical composition in real time in production lines. Versatile and adaptable to conveyor belts, pipelines and specific requirements.



**Visum HSI™**

VISUM HSI™ is the most versatile and efficient hyperspectral imaging system on the market. Designed for analysis, detection and sorting on any production line.



## Visum Raman In-Line™

In-line analyzer based on Raman spectroscopy for the analysis and characterization of formulations and materials mainly in aqueous media or in low concentrations of the analytes of interest.



## Visum DeepSight™

Visum DeepSight™ is a machine vision system with deep learning for the analysis and detection of complex and indeterminate visible defects.



**NANOPAT:**

# Process Analytical Technologies for Industrial Nanoparticle Production

Online real-time characterisation solutions for  
nanoparticle production processes

[www.nanopat.eu](http://www.nanopat.eu)

# Turbidity spectrometry (TUS)

Iris is developing a device, based on the principles of turbidity spectrometry, to measure the size of nanoparticles in suspensions

TUS is based on the scattering of light by particles

Can be used for nanoparticles from 30 nm up to a few microns

## **Benefits of Iris TUS device**

Device is placed inside particle reactor, providing real-time in-line measurement

Can be used for a wide range of concentrations/dilutions of suspension

Can be used with low scattering nanoparticles

Can be used for various types of nanoparticle suspensions such as polymers, silicon and titanium dioxide

Control of nanoparticle flow inside the reactor is not required





# Thickness uniformity monitoring in clear mono or multilayer films



## IRIS Solution:

In a multilayer films production plant VISUM monitors the PET and Polyolefin thickness of each layer (up to 5) to ensure product standardisation.


## Client current control methodology:

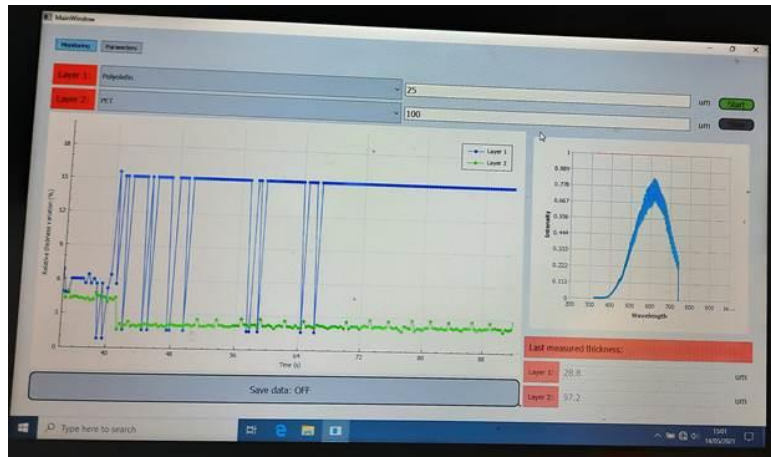
Total thickness monitoring.

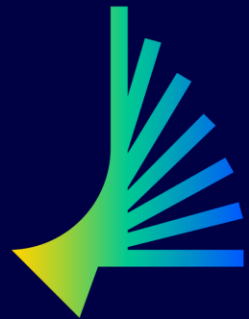
## Benefit:

Production increase and waste optimisation: raw material and additives reduction

## Technical data:

Device	VISUM In-Line 
Measurement thickness range	10µm - 150µm
Readout speed	5Hz
Precision	<5% around target value
Connectivity	PLC, SCADA, MES
ROI	4 Months





# IRIS

## **Contact details:**

[jbolton@iris-eng.com](mailto:jbolton@iris-eng.com)

Carretera d'Esplugues 39-41, Cornellà de  
Llobregat 08940 (Barcelona), Spain  
Phone: +34 93 554 25 00

[www.iris-eng.com](http://www.iris-eng.com)

