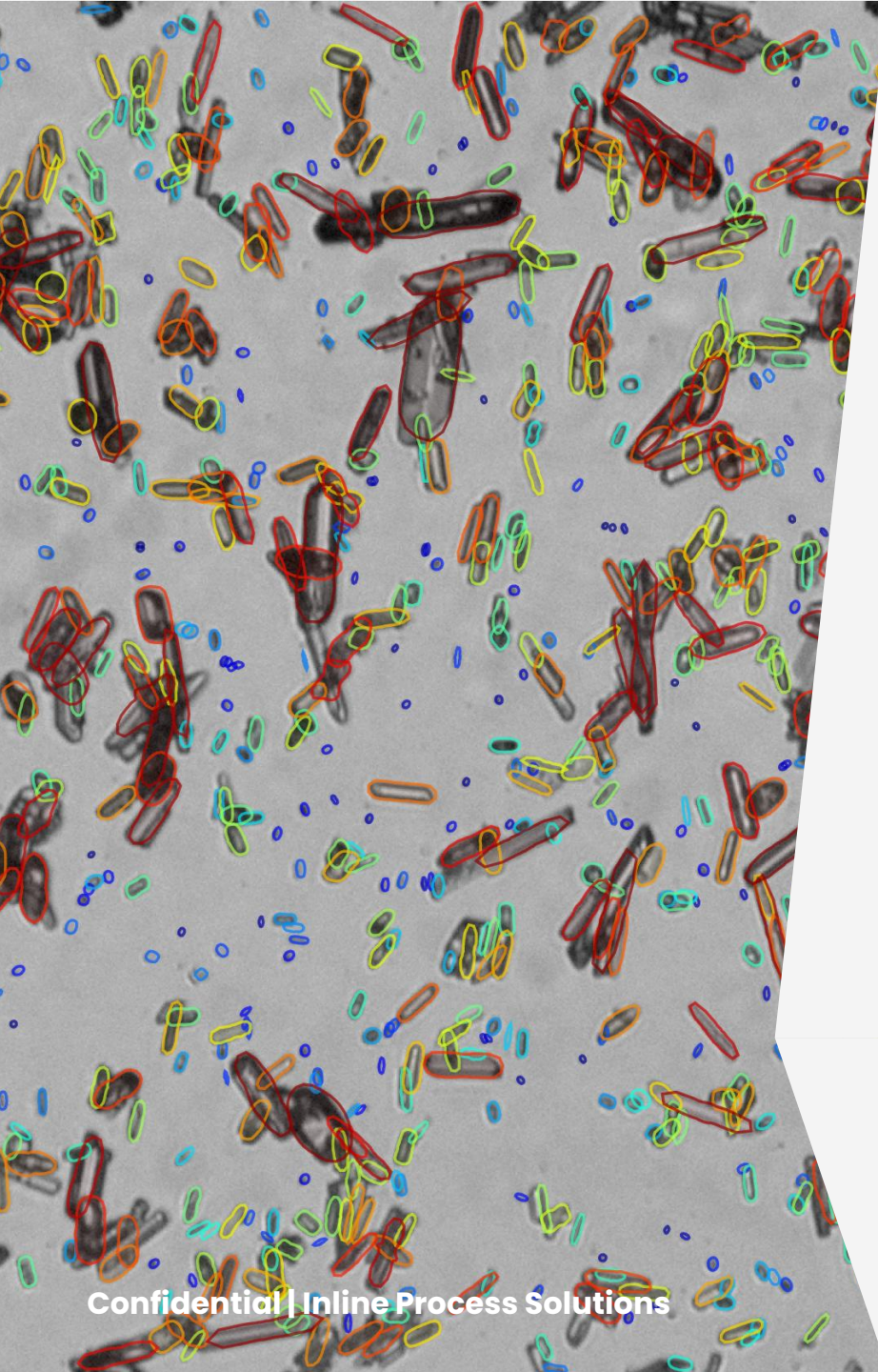**IPS**
turn process data
to value
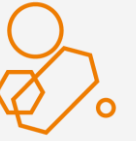
Product presentation

Inline Process Solutions GmbH

June 2025

INNOVATION

Rethink image-based measurements

Performant & reliable
Excellent images and precise particle shape detection

Plug & Measure
Standardized interfaces and without calibration
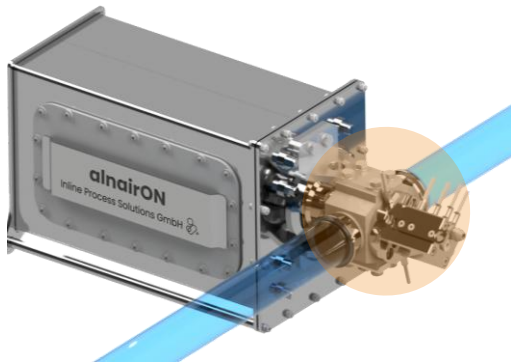
Robust design
Challenging conditions in industrial production

Image-based sensor & AI analysis

o Monitoring particle flows in real time and at the point of interest

o Precise optical image-based sensor technology combined with AI-driven image analysis
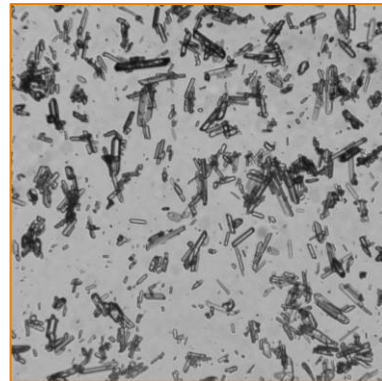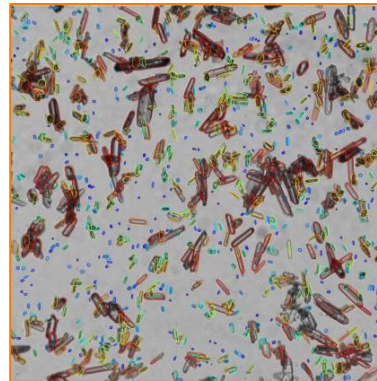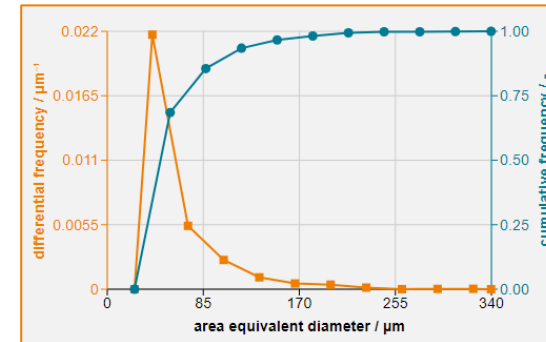

inline sensor

image data

AI-based particle detection

process data

➢ Monitoring

➢ Control

➢ Prediction

➢ Process optimization

VERSATILE APPLICATION

Use cases from the industrial production

CRYSTALLIZATION
API & fine chemistry

- Shorter development time
- Product quality
- Less rejects

PRECIPITATION
Sugar industry

- Dynamic process control
- Filtration: longer changing intervals

RECYCLATES USE
Construction materials

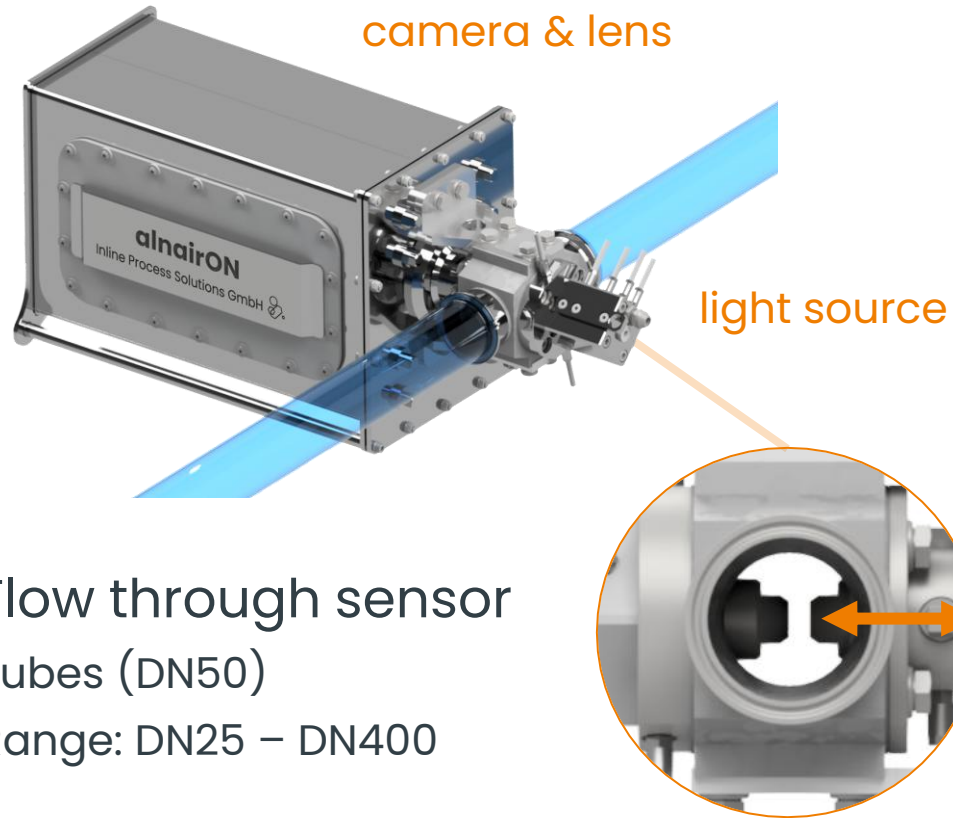- Dynamic process control
- Product quality
- Continuous QM

ANALYTICAL LAB
Construction materials
Crop protection
Sugar industry

- Speed
- Reproducibility

Technology with transmitted light

camera & lens

light source

Flow through sensor
Tubes (DN50)

Range: DN25 – DN400

	alnairON
Temperature / °C	-30 up to +100
Pressure / bar$_a$	1.0 bis 5.0
Media-contacting parts	1.4404, NBR, sapphire glass
Measuring range*) micro / µm	(7) 10 – 280 (790)
Measuring range*) meso / µm	(15) 23 – 1,120 (3,170)

Precautions against:
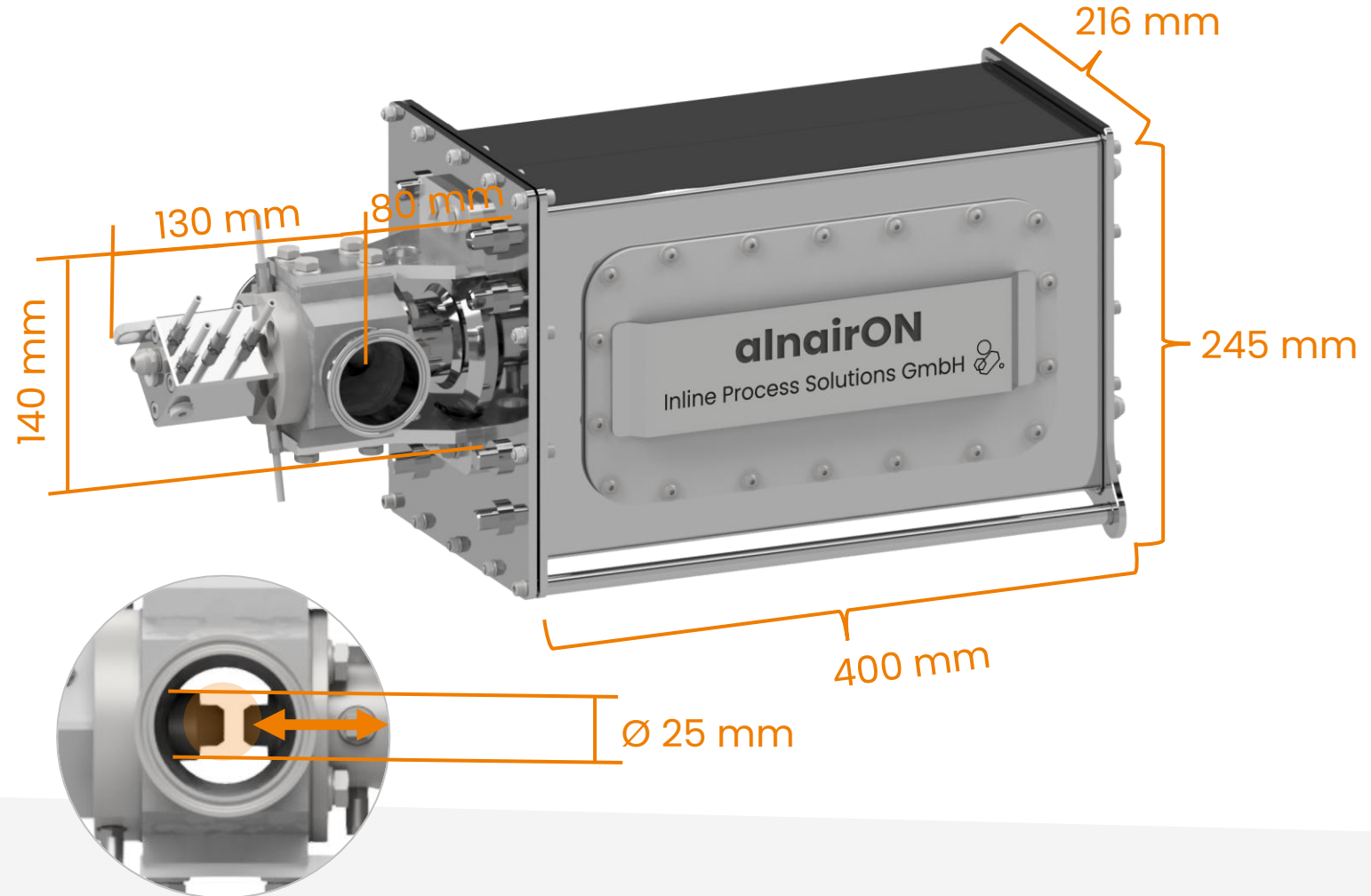- ✓ Blockage of the measuring gap, high dispersion rates possible
- ✓ Long run time

*) (lower detection limit) analysis limits (upper detection limit)

THROUGH FLOW SENSOR **alnairON**

Assembly space sensor

Length	600 mm
Weight	32 kg
Process access	DN50, Triclamp Ø53 x Ø50 mm (1.5 mm) DIN 32676-A
Volume measuring cell	Volume from flange to flange: 230 ml
Control cabinet	Rittal 500x500x300 3m | 5m cable length

216 mm

130 mm

80 mm

140 mm

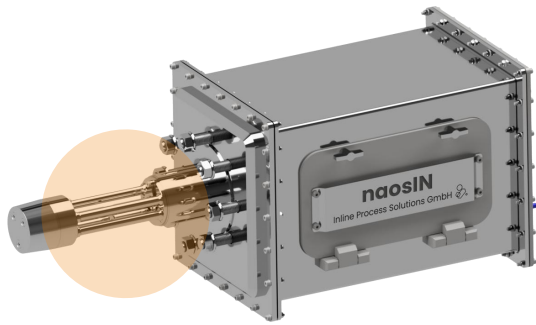245 mm

400 mm

Ø 25 mm

alnairON
Inline Process Solutions GmbH

Image-based sensor & AI analysis

o   Monitoring particle flows in real time and at the point of interest

o   Precise optical image-based sensor technology combined with AI-driven image analysis
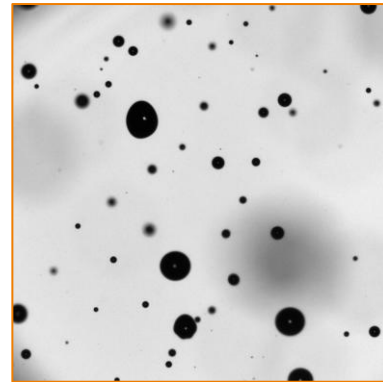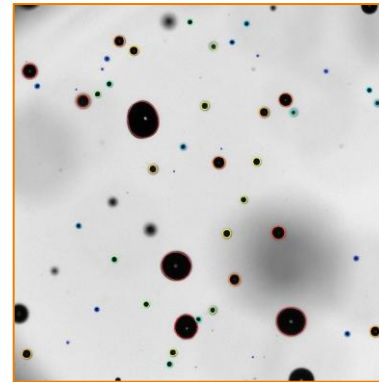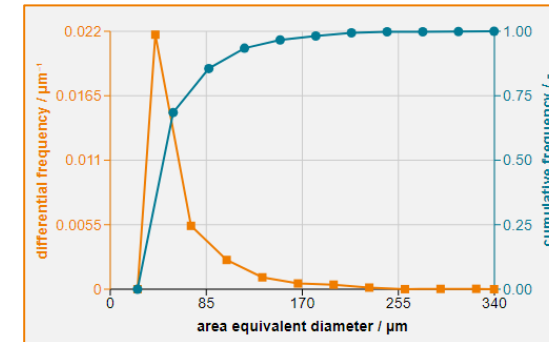

inline sensor

image data

AI-based particle detection

process data

➢ Monitoring
➢ Control
➢ Prediction

➢ Process optimization

Use cases from the industrial production

EQUIPMENT ENGINEERING
Chemical industry

o Quantification separator, filter, tray, nozzle

o Continuous QM

o Product validation

DISTILLATION / ABSORPTION
Chemical & energy industry

o Entrainment control
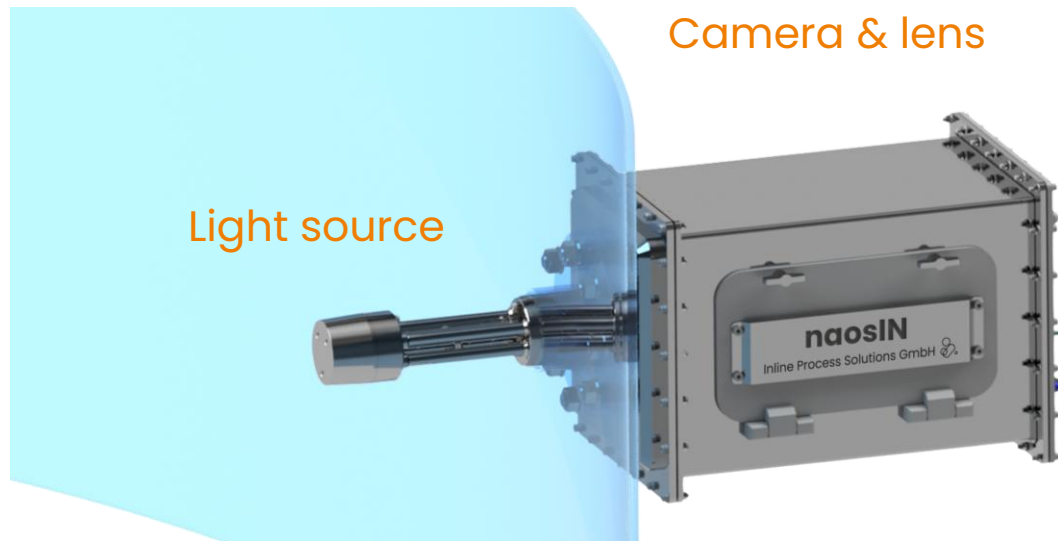
o Less product loss

o QM & safety

SPRAY DRYING
Crop protection

o Shorter development time

o Product quality

o Less rejects

Technology with transmitted light

Camera & lens

Light source

naosIN
Inline Process Solutions GmbH

Insertion probe sensor

Vessels & apparatus

> DN200

	naosIN
Temperature / ℃	0 up to +121
Pressure / bar$_a$	0.1 up to 4.0
Media-contacting parts	1.4404, FKM, borosilicate
Measuring range*) micro / µm	(6) 9 – 380 (1,090)
Measuring range*) meso / µm	(15) 23 – 770 (2,180)

Precautions against:
- ✓ Droplets and turbidity on the glasses, high liquid loads possible
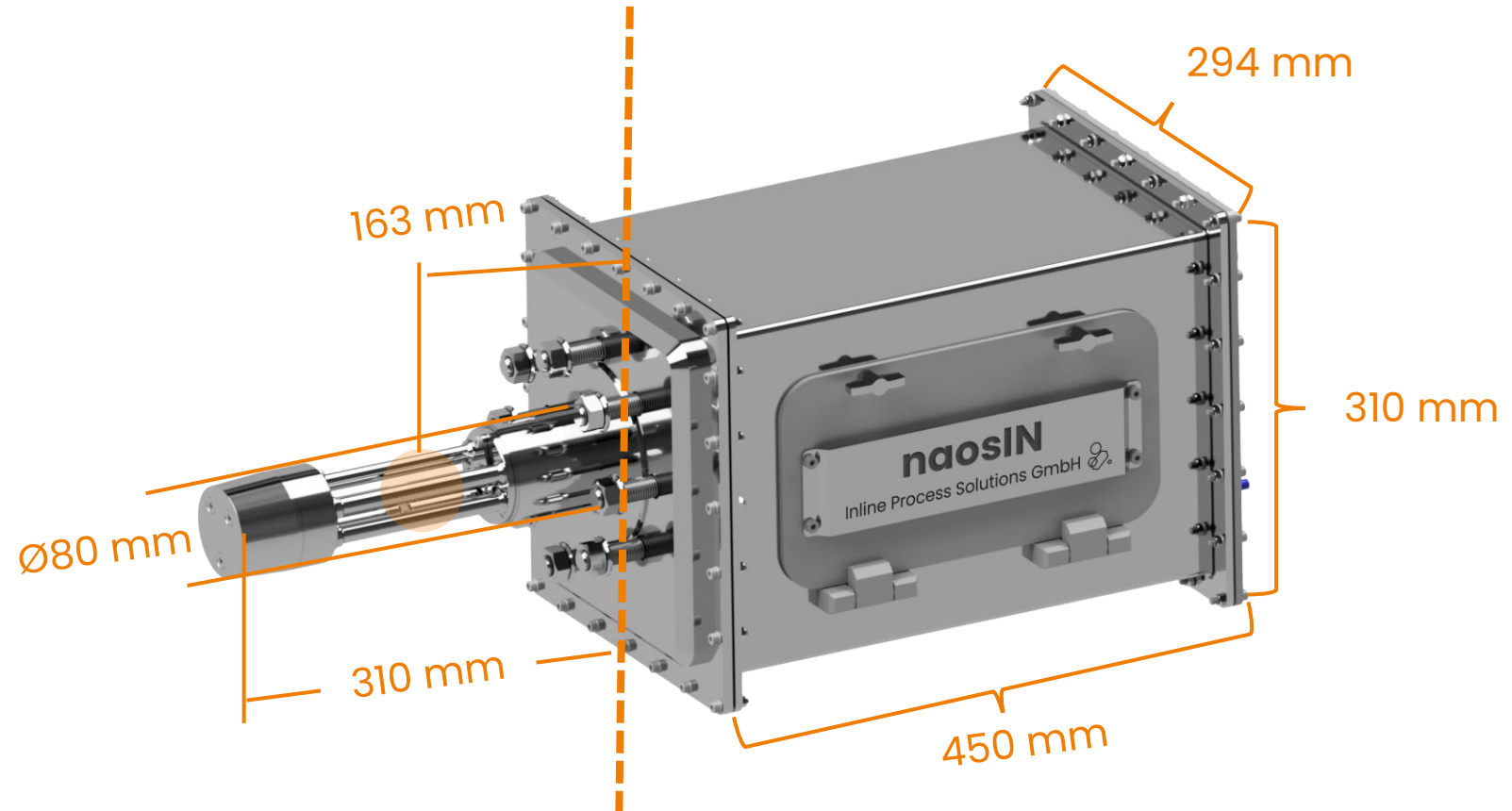- ✓ Long run time

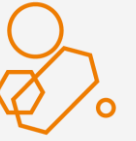*) (lower detection limit) analysis limits (upper detection limit)

INSERTION PROBE SENSOR **naosIN**

Assembly space sensor

Length	760 mm
Weight	30 kg
Process access	DN80, PN10 Flange EN 1092-1 Typ01
Control cabinet	Rittal 500x500x300 3m | 5m cable length

294 mm

163 mm

310 mm

Ø80 mm

310 mm

450 mm

naosIN
Inline Process Solutions GmbH

THE PROBLEM

Time-consuming evaluation of complex image data in everyday laboratory work

o   Large amount of image data

o   Complexity of the images

o   Variety of images and target information

➢   Classic algorithms for image analysis reach their limits

➢   Image evaluation often manual and not automated

➢   High susceptibility to errors

➢   Poor reproducibility of results

➢   Image analysis is more expensive, more time-consuming and less reliable than it could be

Logan Gutierre @Unsplash

WORKSPACE WITH AI-BASED ANALYSIS

Reliable evaluation of complex image data

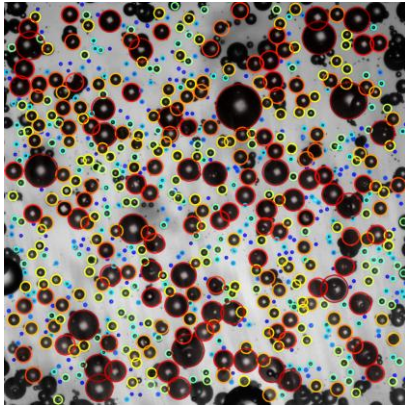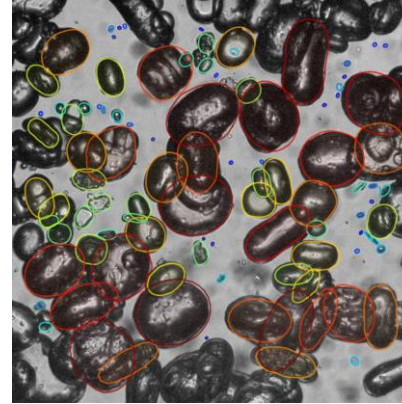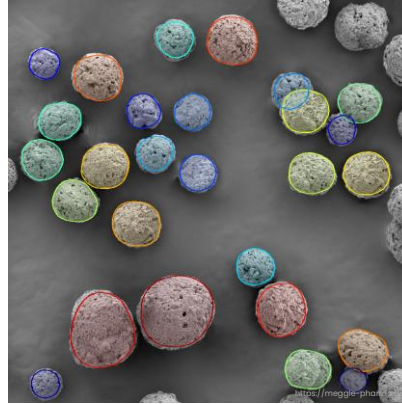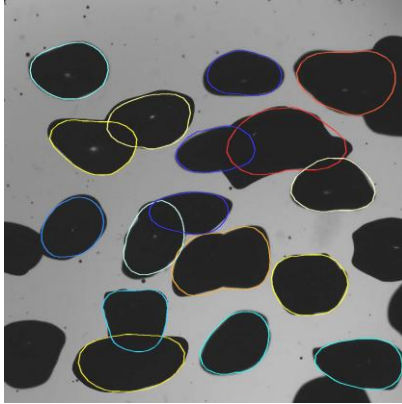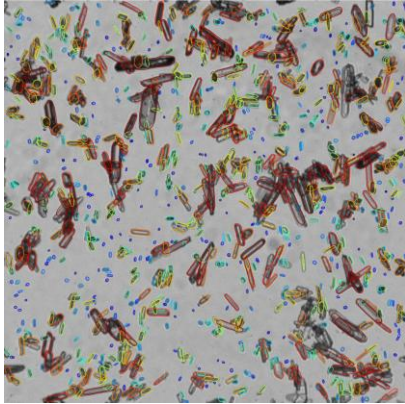o Precise and fast particle size & shape

o Non-spherical particles, many overlaps, classification of different shapes

o Suitable for light and electron microscopes
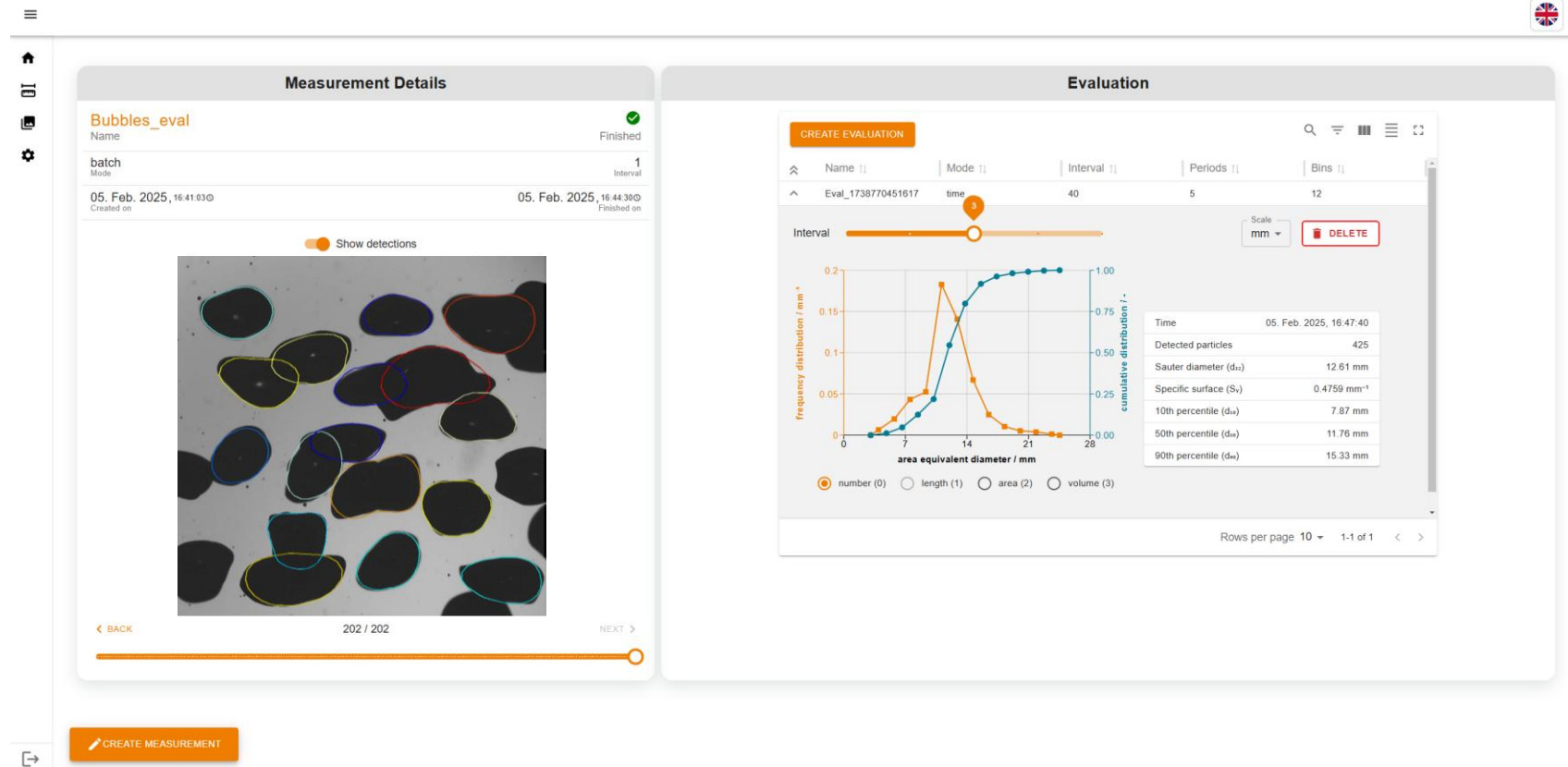
Versatile use for every industry
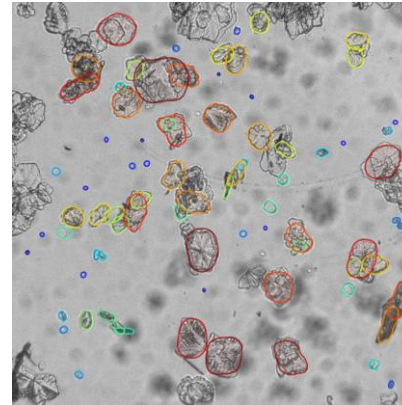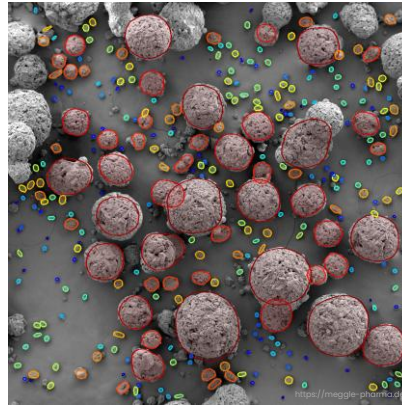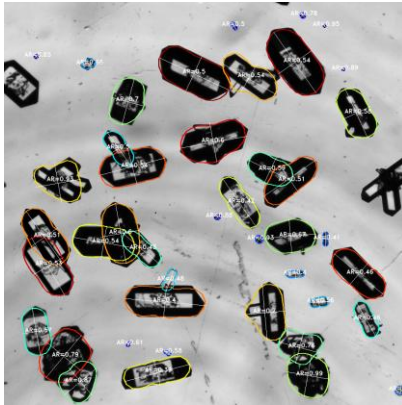
- Water analysis
- Food analysis
- Pharmacy
- Biotechnology
- Building materials
- Material analysis
- ...

OUR OFFER

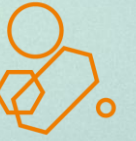# A solution that fits your requirements

Get familiar

o Measuring campaign
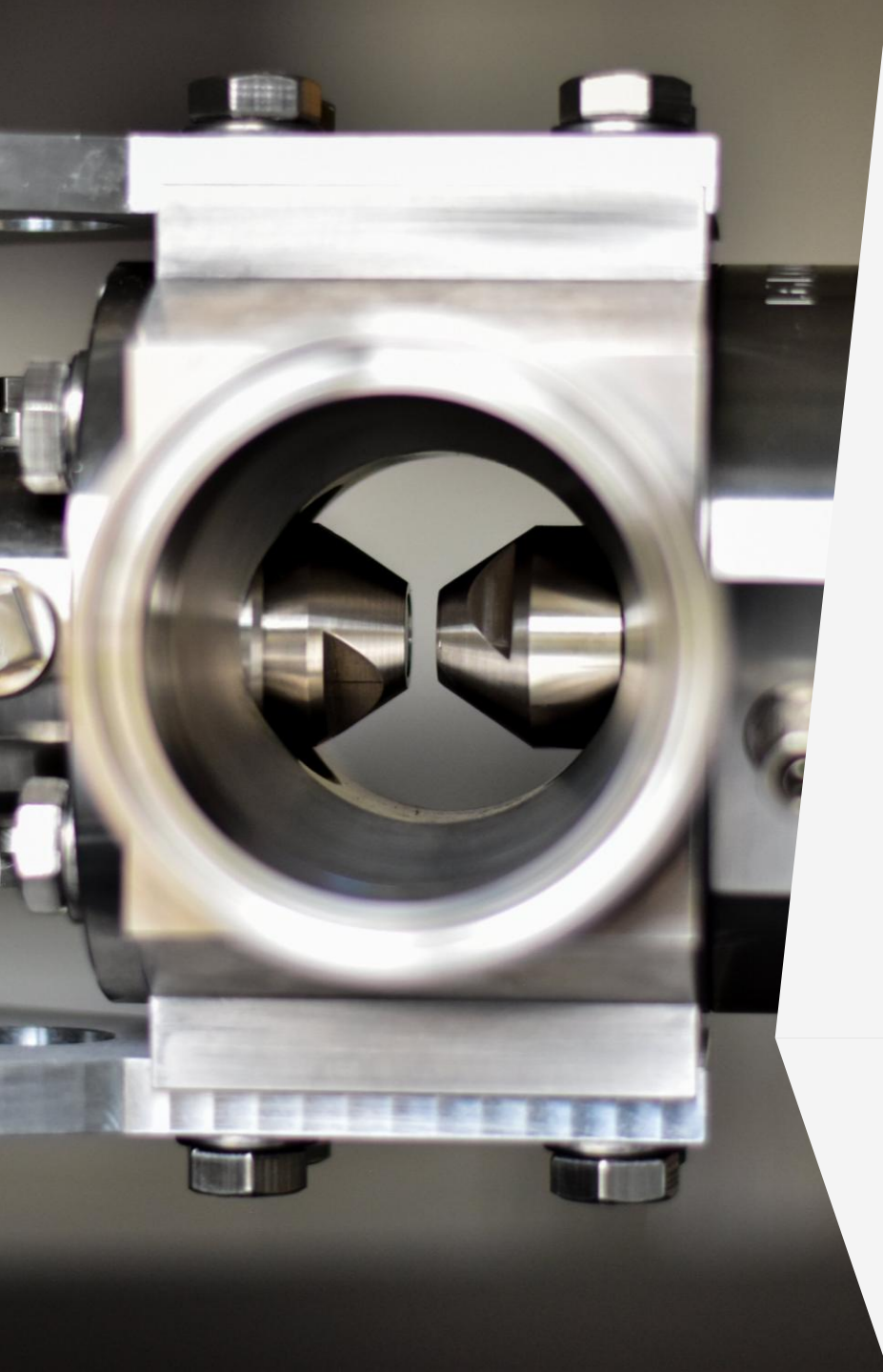
o Samples quick check

o Image analysis quick check

Try it out

o Rent hardware

o Image analysis by order

Use it regularly

o Buy hardware

o Licensing software

Scott Graham @Unsplash

Contact

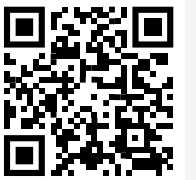**INLINE PROCESS SOLUTIONS**
turn process data to value

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✉️ anne.friebel@inline-process.solutions

SHAPE THE INTELLIGENT PRODUCTION OF TOMORROW WITH US!

IPS