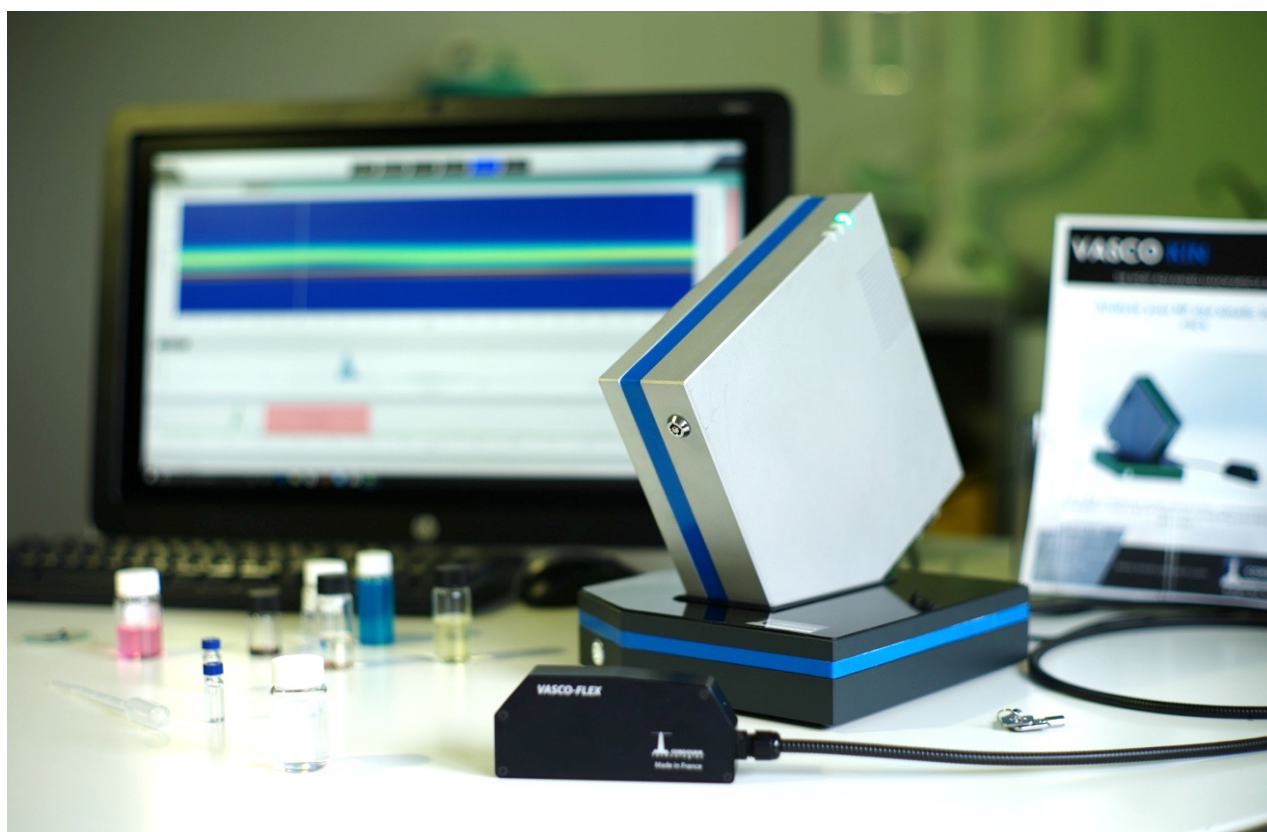# VASCO KIN

## THE MOST ADVANCED NANOPARTICLE SIZE ANALYZER

## Real Time Correlation for Time-Resolved analyses



For monitoring of NPs synthesis, agglomeration or suspension stability study, Vasco Kin™ helps you analyzing your Kinetics in real time !

## IDEAL FOR

- Real-time nanoparticle synthesis process monitoring,

- *In situ* measurement (inside reactor),

- Coupling particle size measurements with other instruments (SAXS, spectroscopy, etc),

www.spectraresearch.com

# VASCO KIN

## A new generation of Time - Resolved instrument for accurate kinetic analyses

SRC Spectra Research Corporation
Toll Free : 1-866-753-4433    www.spectraresearch.com

### PLUG & PLAY,
AND AUTOMATIC SETTINGS

### IMPROVED REPEATABILITY
OF MEASUREMENT

### IN SITU AND CONTACTLESS MEASUREMENT

### CUTTING-EDGE TECHNOLOGIES

- **Frequency stabilised Laser**
- Artefact-free Avalanche Photodiode (APD) detector
  - ➙ **High measurement accuracy**
  - ➙ Measurement of diluted & sub-nanometer samples (i.e. proteins)
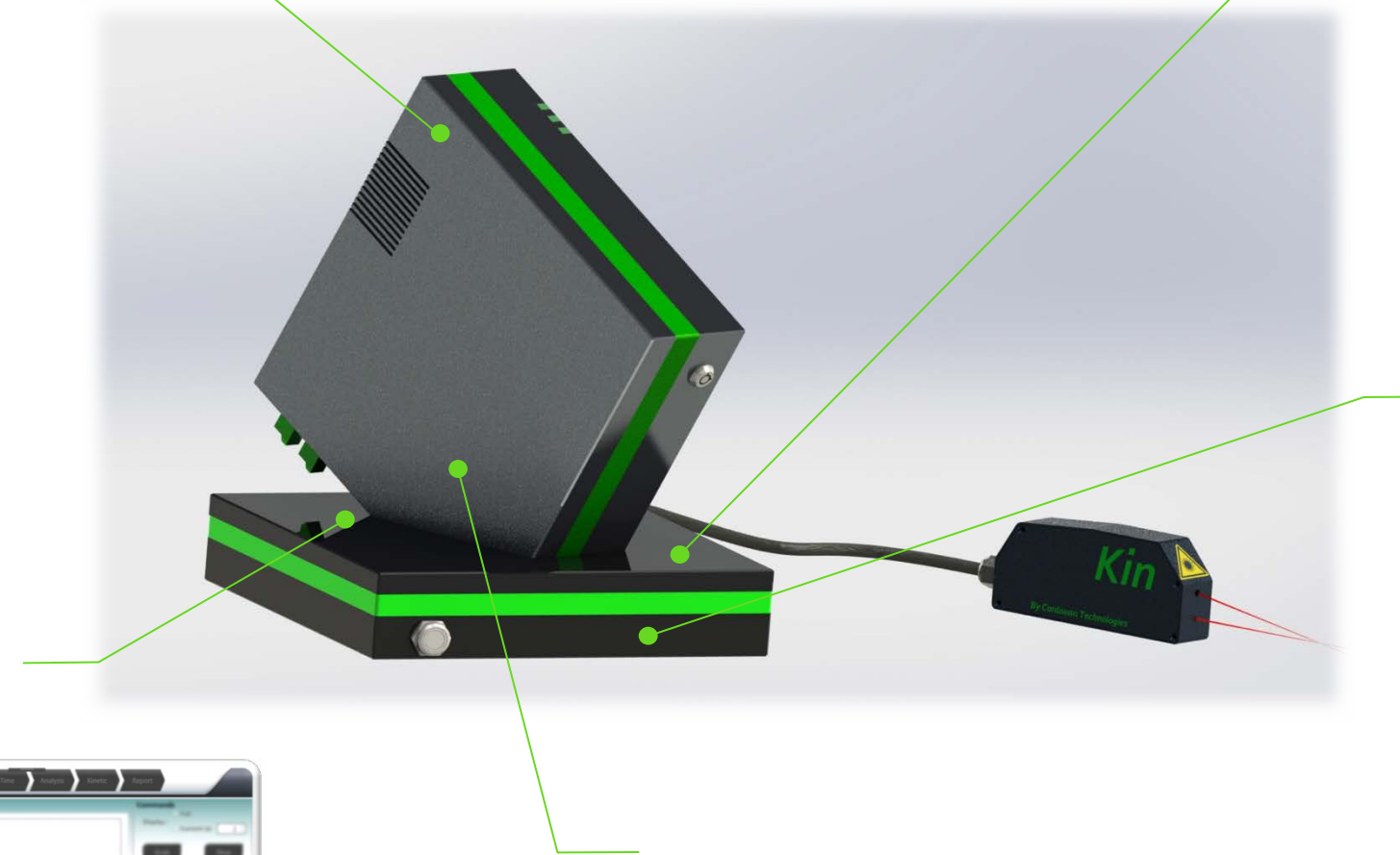
### NANO KIN™

- Complete & **user-friendly software**
- Dedicated to dynamic analysis
  - ➙ With a **unique « time slicing » function**
  - ➙ A Full report including kinetic analysis

### SOFTWARE CORRELATION

- **Photoncounts storage**
  - ➙ Time-resolved analysis and post-analysis
  - ➙ For an innovative approach for dynamic study
- **Rapidity**
  - ➙ Realtime measurement
  - ➙ Higher number of acquisitions ➙ higher statistic

### ENHANCED MATHEMATIC MODELS

- **Sparse Bayesian Learning algorithm**
  - ➙ For a better reliability of results
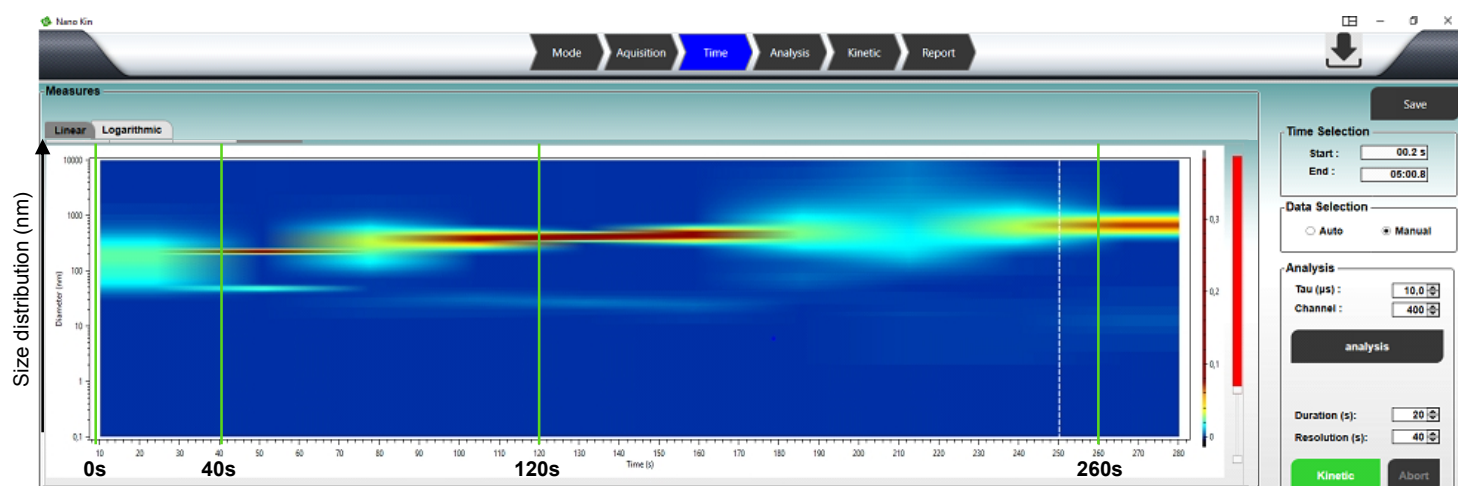  - ➙ **Colormap** of size distribution over time
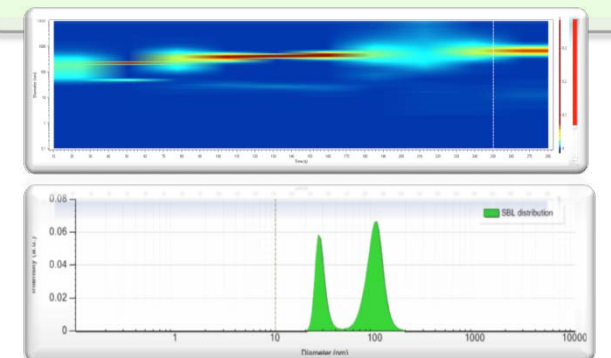
### SMALL FORM FACTOR (SFF)

- ➙ OEM integrability, remote control
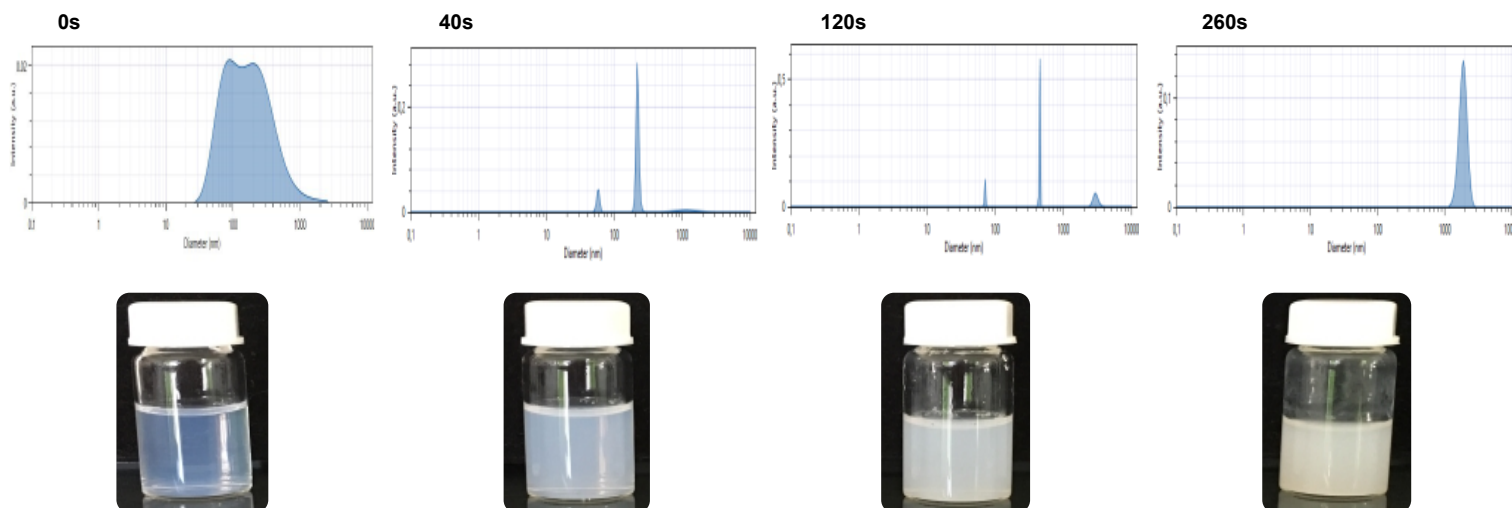- ➙ Very small footprint

# DYNAMIC SAMPLE TESTING

Example: **Kinetics study** of reaction and gel structure monitored by pH, salinity and particles concentration.

*Colormap of size distribution over time*



*Size distribution for the chosen times*



With a **single** and **continuous** measurement, VASCO KIN™ gives you access to all characterization data of your reaction (size distribution evolution over time).

# Resolved instrument for accurate kinetic analyses

## TIME SLICING AND ACCURATE MEASUREMENTS

The unique "time slicing" function allows VASCO KIN™ users to **choose measurement's resolution**, by selecting **a posteriori** the analysis' time scale.

Users then obtain corresponding correlogram & size distribution for the chosen time scale.

Example: *Historical data recorded*
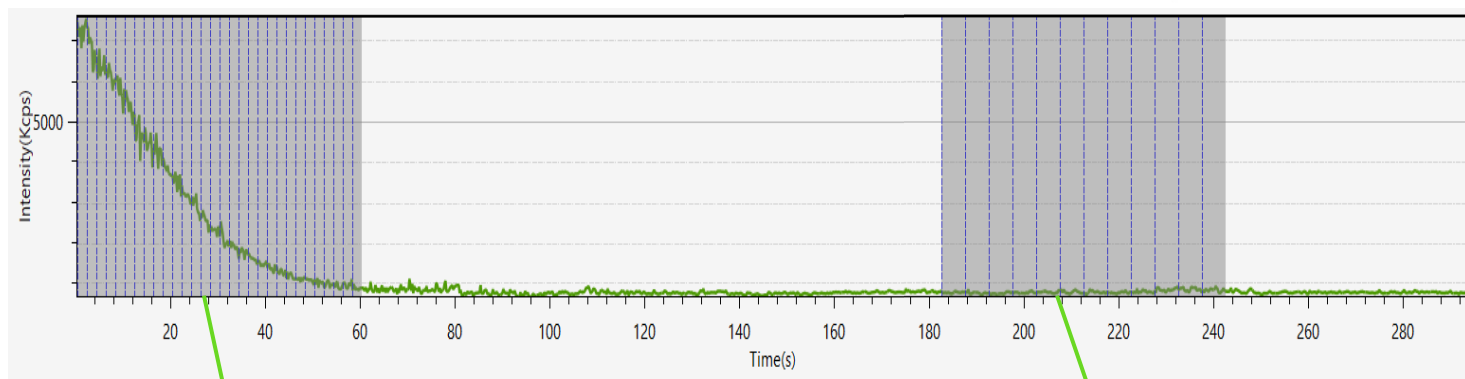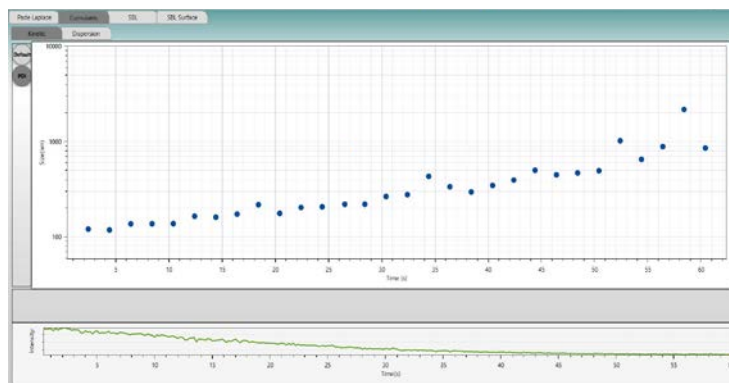


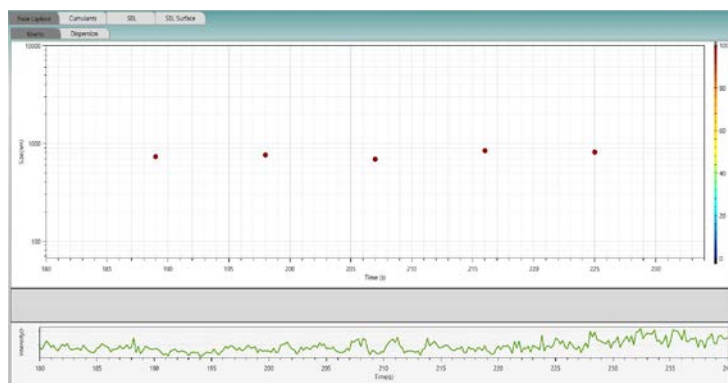Resolution: **2s**          Time scale: **1min**          Resolution: **9s**

*Size distribution over time for the chosen time scales*



**High resolution** for fast kinetics analysis

**High measurement's stability** over time

# VASCO KIN

## OPTICAL HEADS' SPECIFICATIONS

| | |
|---|---|
| **Measurement principle** | Optical Fiber Dynamic Light Scattering (DLS) |
| **Min. Sample Volume (µL)** | <50 µL (cell dependant) |
| **Sample Cells** | In situ – Contactless remote probe |
| **Solvent compatibility** | Aqueous & Organic solvents (Cell dependent) |
| **Scattering Angle (°)** | 170° |
| **Particle size range** | 0.5 nm – 10 µm (sample dependent) |
| **Sample concentration range** | $10^{-5}$ % to 5~10% volume (sample dependant) |
| **Dimensions / Weight** | 50 x 25 x 120 mm (HWD) / < 0,5 kg |

## HARDWARE SPECIFICATIONS (central unit)

| | |
|---|---|
| **Laser source** | High stability laser diode (option blue and green) |
| **Detector** | Artefactfree Avalanche Photodiode (APD) |
| **Computing** | Embedded dedicated PC |
| **Data processing** | Correlation and analysis software: NanoKin® |
| **Measurement time (typ)** | Starting from 200 ms, depending on sample and measurement settings |
| **Operating conditions / Storage conditions** | 15°C to 40°C / -10°C to 50°C – Relative humidity < 70% non condensing |
| **Dimensions / Weight** | 220 x 220 x 64 mm (upper part) / 2,5 kg<br>220 x 220 x 48 mm (lower part) / 2,8 kg |

## SYSTEM COMPLIANCE

| | |
|---|---|
| **CE certification** | CE marked product – Class 3b laser product – EN-60825-1: 2001, CDRH |
| **Normalization** | ISO 13321 (1996) & ISO 22412 (2008) compliant, CFR 21 part 11 (option) |

## ACCESSORIES & SERVICES

| | |
|---|---|
| | 1 year warranty, on site installation and training, online support |
| | NanoKin® (already installed) & instruction manual |
| | Pelicase ™ transportation case (option) |
| | NIST Certified latex suspension kit (option) |
| | Monitor display, keyboard, mouse |



Distributor details



SRC Spectra Research Corporation
Toll Free : 1-866-753-4433    www.spectraresearch.com

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Technologies

**Enlight the NanoWorld**