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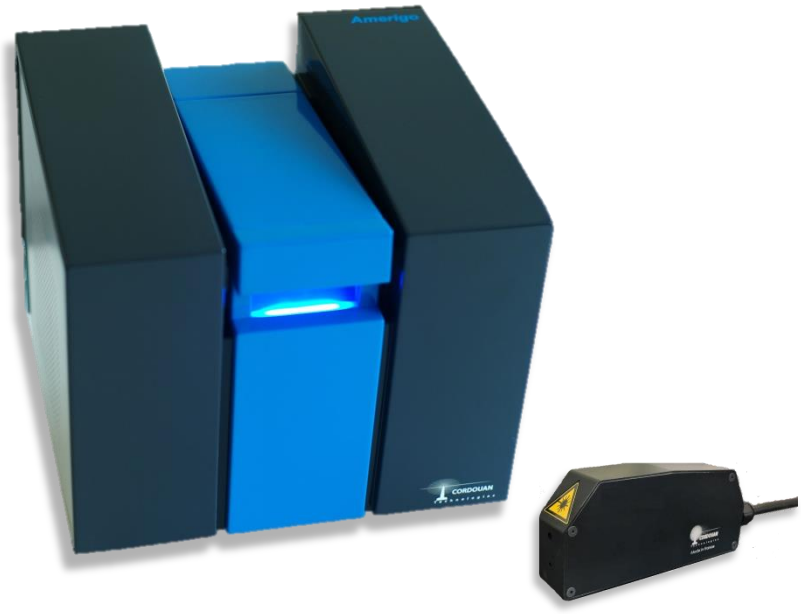
High resolution nanoparticle size & zeta potential measurements



Explore your nanoparticle suspensions with one instrument!

Unique: optical fiber output for an external *in situ* contactless probe

IDEAL FOR

Formulation stability
Nanoparticle aggregation
Emulsions dispersion
Pharmaceuticals
Petrochemicals
Polymers
Liposomes and bio-colloids
Pigments and inks
… and more

www.cordouan-tech.com

CORDOUAN Technologies

Enlight the nanoworld

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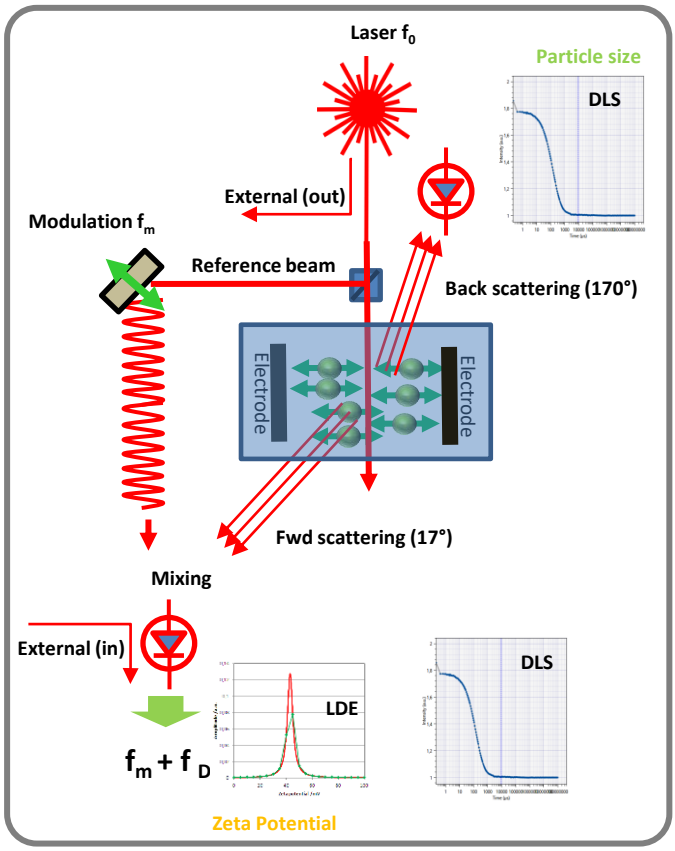
The three-in-one solution from Cordouan Technologies

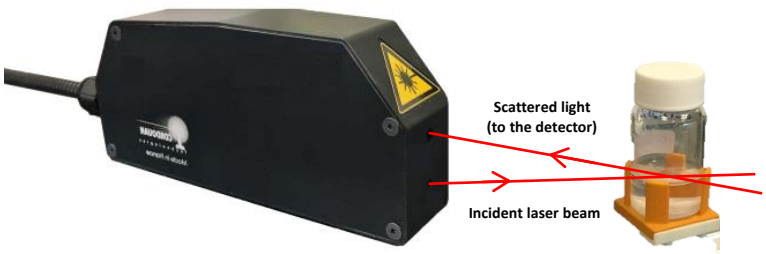
1. **Particle size**
2. **Zeta potential**
3. **Remote measurements**



Based on state of the art version of **Dynamic Light Scattering (DLS)** and **Laser Doppler Electrophoresis (LDE)** techniques offering high resolution, accurate and rapid measurement.

- ❑ High quality fibered laser for better precision
- ❑ Fast APD detector
- ❑ Measurements at 170° and 17°
- ❑ Software correlator
- ❑ Advanced and original calculation algorithms

Optical fiber output for remote measurements



In situ remote head for contactless measurements. It can be used in any custom measurements including a limited access and/or harsh environment.

Measurement in a custom container – no batching

In situ monitoring in a double jacket glass reactor

Analysis of injectable vaccine in a prefilled syringe

High concentration remote head based on the patented technology Dual Thickness Controller (DTC) designed for measurements of absorbing or highly concentrated samples.

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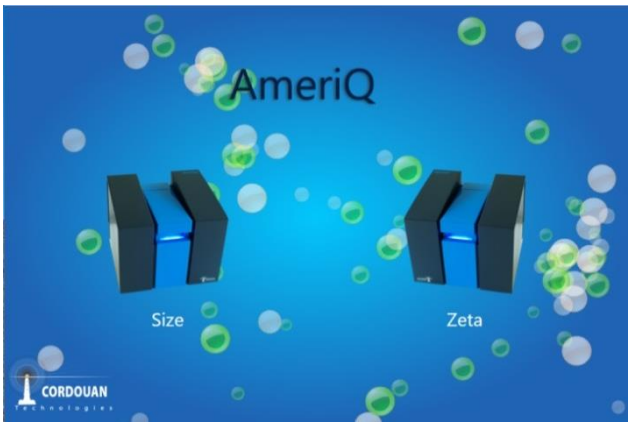
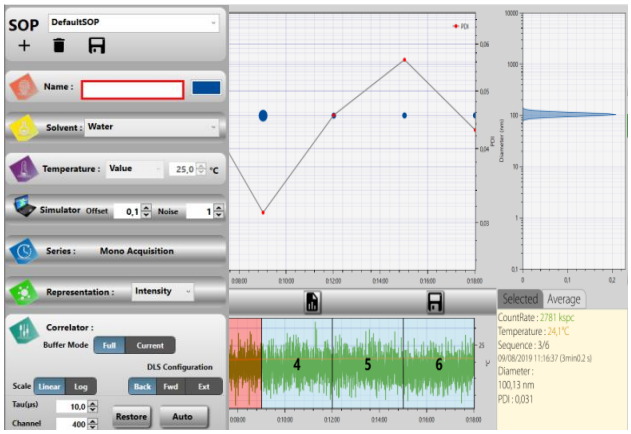
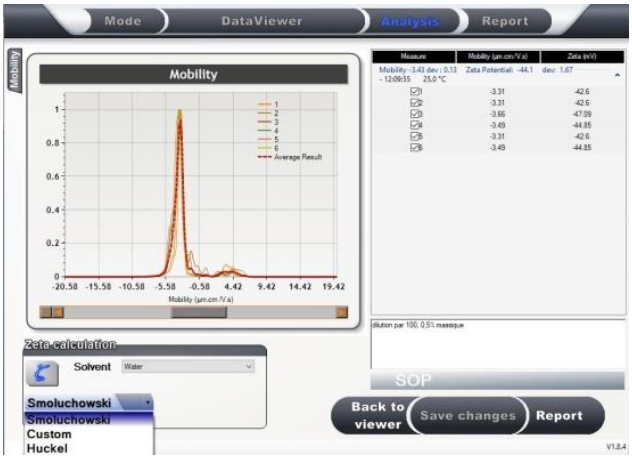
AmeriQ Software



A dedicated software **AmeriQ** allows analyzing the nanoparticle size and Zeta potential without any compromise.



- ❑ Original and performant Multimodal Continuous Algorithm (MCA) and Multimodal Discrete Algorithm (MDA)
- ❑ Dynamic time slicing
- ❑ Kinetics analyses of nanoparticle size
- ❑ Post data processing
- ❑ Programmable kinetic experiments of zeta potential (zeta vs T°, zeta vs pH, zeta vs time)
- ❑ An exhaustive solvent database
- ❑ A simulation tool
- ❑ User management and programmable SOPs
- ❑ CFR21 compliant



Measurement dip cell

- ❑ Innovative oxidation-free vitreous carbon electrodes, easy to clean
- ❑ No specific consumables
- ❑ Compliant with a standard 10 x 10 mm cuvette
- ❑ Available in different materials: quartz, glass or polystyrene, fully compatible with a wide range of solvents
- ❑ No artifacts like electro-osmosis effects by suppressing solvent induced displacement along the wall of the cuvette

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Particle size & Zeta potential analyzer

SPECIFICATIONS	
Particle size range	Particle size : 0.5 nm up to 10 µm Zeta potential : 1 nm to 100 µm
Sample concentration	0.0001% to 10% w/% (solvent dependent)
Zeta potential range	-500 mV to +500 mV
Temperature control range inside the cell	10°C to 70°C; +/-0,1°C (depending on cuvette cell material)
Mobility range	10^{-10} to 10^{-7} $m^2/V.s$
Sample cell	Cuvette cell with optical quality windows compatible with organic solvents
Sample volume	Typically 750 µL (Hellma cell: 10 mm light path)
Sample type	Aqueous & organic solvents; pH: 1-14 (depending on cuvette cell material)
Maximum sample conductivity	300 mS/cm
Optical fiber output (optional)	**Possibility to connect an external *in situ* head or high concentration head**
SIGNAL PROCESSING	
Measurement technology	Dynamic Light Scattering (DLS) Laser Doppler Electrophoresis (LDE)
Laser source	Highly reliable 50 mW diode @635 nm coupled to automated optical attenuation system. Other wavelengths available upon request.
Measurement angles	Particle size : 170° (backscattering) and 17° Zeta potential: 17°
Data processing algorithm	Real time correlation (DLS) Fast Fourier Transform (Zeta)
Resolution (Zeta)	Mobility = 10^{-10} $m^2/V.s$ or Zeta = 0,1 mV (in water)
Detector	Avalanche Photodiode (APD)
HARDWARE	
Computer interface	USB 2.0 – Windows 10 32 & 64 bits
Dimensions	33 cm x 33 cm x 38 cm (HWD)
Weight	17 kg
Power supply	100-115/220-240 VAC, 50/60 Hz, 100 W max
SYSTEM COMPLIANCE	
CE certification	CE marked product - Class I laser product, EN 60825-1:2001, CDRH
ISO norm	ISO 13321 (1996) & ISO 22412 (2008) compliant, CFR 21 part 11 (option) ISO 13099-2 : 2012 – Colloidal system – methods for zeta-potential determination – Part 2 : Optical methods

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