

DLScat

Nano Particle Sizing

More Precise. More Flexible. More Reliable.



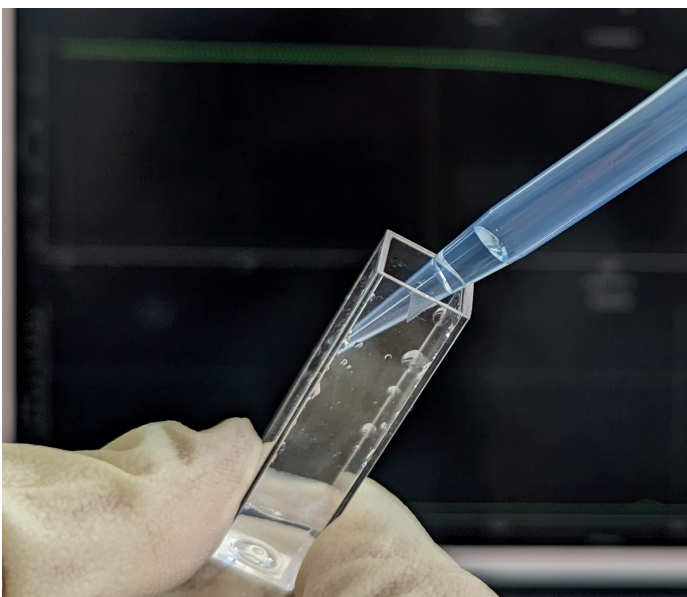
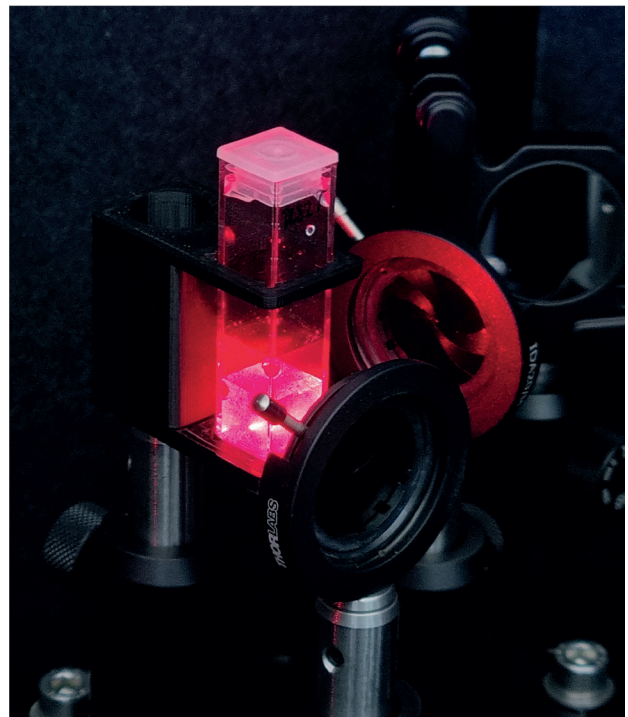
DLScat

DLScat is an enhanced particle size measurement solution, which exploits multi-angle dynamic light scattering (MADLS) combined with an intelligent intensity spike filtering algorithm. It determines particle size more accurately and reliably in a large variety of samples, especially those containing contaminants, agglomerates, or polydisperse particles.



Dynamic Light Scattering - Benefits and Challenges

Dynamic Light Scattering (DLS) is a fast, convenient, non-invasive optical method for assessing particle sizes in solution, widely used for sample quality validation. The main limitation of existing DLS systems is susceptibility to large particles such as dust or agglomerates, which bias the apparent particle size towards erroneous larger values. DLScat offers not only a solution for such contaminated samples but also gives you unparalleled control over advanced analysis parameters, allowing you to access the latest capabilities of DLS.



DLScat Applications

Industries

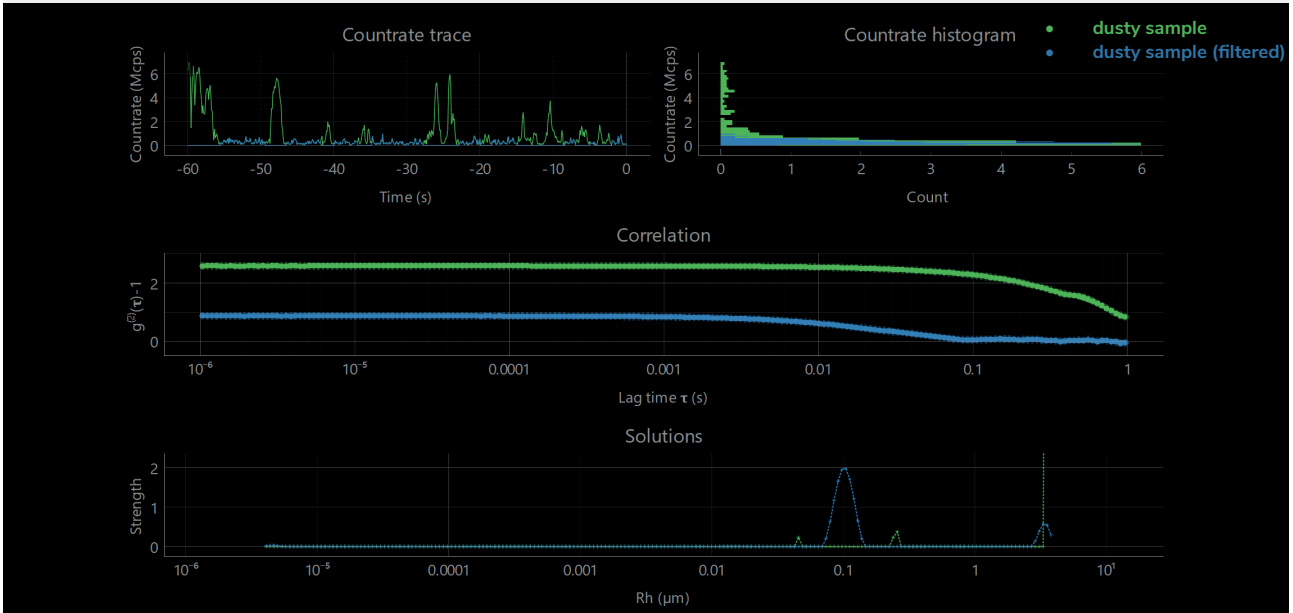
- life sciences
- food industry
- beauty industry
- pharma industry
- nanotechnology

Systems

- nanoparticles
- micelles
- colloids
- vesicles
- proteins

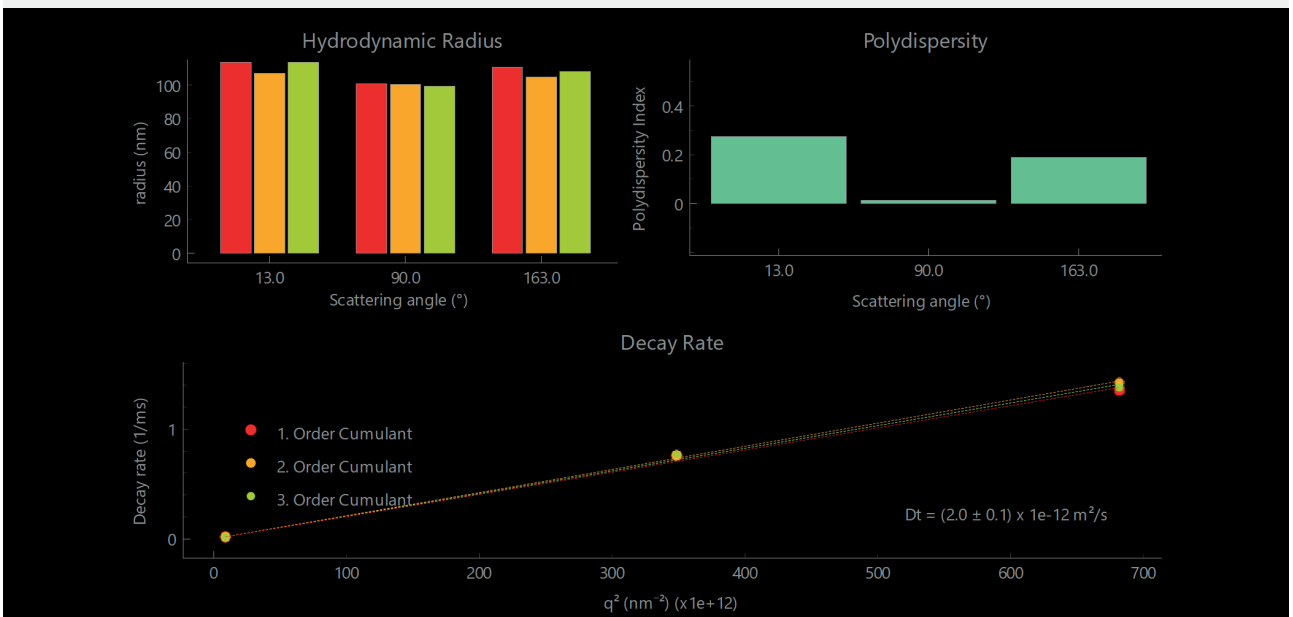
Intelligent Intensity Spike Filtering - Advanced Solution Made Easy

Intensity spikes arise from contaminants or agglomerates. A single spike can be enough to distort a measurement due to its overwhelming magnitude. It will lead to an erroneous large particle size. As shown in the figure below, DLScat effortlessly eliminates these spikes from scattered light, thereby recovering the correlation function of the nanoparticles and ensuring precise measurements.



Immediate Consistency Checks with up to 6 Scattering Angles

The most stringent method to confirm that a DLS particle size measurement was correct is to check the similarity of the measurements across multiple scattering angles. That is what makes MADLS so powerful. Existing DLS instruments allow to measure only one angle at a time. Therefore, a multi-angle measurement is tedious and time-consuming, preventing users from performing this valuable consistency check. DLScat measures at up to 6 angles in one shot, enabling effortless consistency checks promptly and routinely.



Specifications

Dynamic Light Scattering

| | |
|-------------------|--|
| Size Range | 0.3 nm to 10 μ m |
| Scattering Angle | 15°, 90°, 163° (optionally up to six angles) |
| Analysis | Intensity Spike Filtering, CONTIN, CUMULANT analysis |
| Temperature Range | 0 °C - 100 °C (+/- 0.05 °C) |

Fluidics

| | |
|-----------------------|-----------------------------|
| Minimum Concentration | 0.1 mg/mL (lysozyme) |
| Maximum Concentration | 40 % w/v (sample-dependent) |
| Minimum Sample Volume | 4 μ L |
| Cuvette Maximum Size | 12.5 x 12.5 x 40 mm |

Optics

| | |
|--------------------|--|
| Laser Wavelength | 561 nm or 633 nm (other wavelength available upon request) |
| Laser Power | 30 mW (wavelength dependent) |
| Attenuation Range | 1 - 10000 |
| Detector | Single Photon Avalanche Diode |
| Laser Safety Class | Class 1 |

Other characteristics

| | |
|-----------------------|---|
| Dimensions | L: 485 mm, W: 330 mm, H: 230 mm, weight approx. 16 kg |
| Digital Communication | USB 2.0 Type C connection |
| Correlator | Time Tagger, auto- or cross- correlation |
| Computer | Windows 10/11 (included upon request) |
| Software | Grafical user interface and API available |

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