

Determination of particle size and zeta potential of materials

Features:

- Size range from 0.6 nm to 7 μm
- Size range for zeta potential measurement from 0.6 nm to 30 μm
- Sample concentration ranging from 10 ppm to 40%
- Dual 30 mW laser separately for size and zeta potential measurements
- Three scattering angles for more complete information
- Two correlators either in log or linear scale for greater accuracy and resolution
- Zeta potential of flat surfaces
- Autotitration ready for suspensions and flat surfaces



Measurement Process (Particle Size)

As the particles of interest diffuse within the sample cell due to Brownian motion, an incident beam of laser light illuminates the particles. The particles scatter the light, producing fluctuations in the scattering intensity as a function of time. The scattered light is collected at a chosen angle, and is measured by a highly sensitive detector. Since the diffusion rate of particles is determined by their size, information about their size is contained in the rate of fluctuation of the scattered light. So, by correlating the fluctuation, we can determine the particle size distribution of the population present.

Measurement Process (Zeta potential)

When an electric field is applied to charged particles in the suspension, particles move toward an electrode opposite to their surface charge. Since the velocity is proportional to the amount of charge of the particles, zeta potential can be estimated by measuring the velocity of the particles.

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