


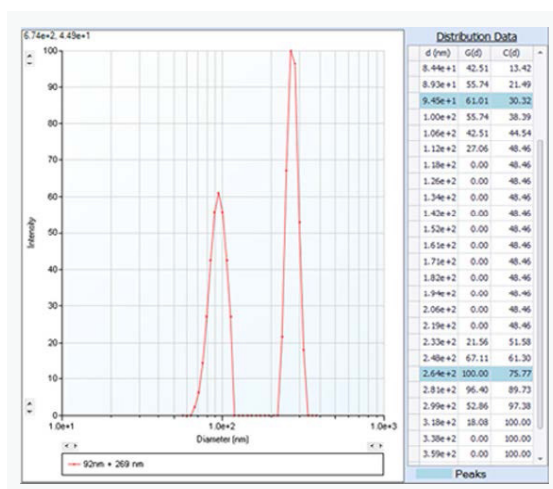


Rapid, Reliable, and Accurate Particle Sizing & Zeta Potential Analysis

The Brookhaven NanoBrook 90Plus Zeta combines our 90Plus and ZetaPlus instruments into one versatile package for routine particle size and zeta potential analysis of nanoparticles and other nanomaterials. It employs Dynamic Light Scattering (DLS) for size determination and Electrophoretic Light Scattering (ELS) for surface charge evaluation.

This instrument allows rapid measurements of both effective size and zeta potential, and provides additional information on multimodal distributions in size and surface charge in polydisperse samples. Brookhaven's NanoBrook 90Plus Zeta provides reliable measurements of zeta potential and electrophoretic mobility for low salt, low conductivity aqueous samples.

Core Functionalities		
Particle Sizing		Yes
Zeta Potential		Yes
Scattering Angles		15° & 90°



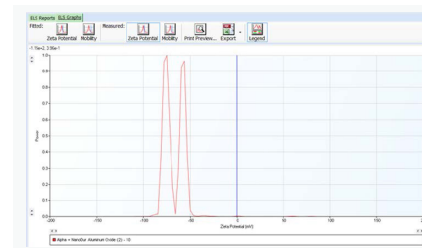
The NanoBrook 90Plus Zeta offers results in a variety of useful formats. For routine determinations, an average or effective diameter, and a measure of distribution width or polydispersity, are sufficient for many applications. This same information can be represented as a lognormal distribution, allowing the user to visualize the size distribution and to interpolate both cumulative and differential results. For more complex samples, a multimodal distribution can be produced as well.

The figure on the left shows an example of a data format suitable for more complicated, multimodal size distributions. Here, a numerical algorithm, including Mie theory, is used. These results are for a mixture of known latex particles. Positions of the measured particle sizes on the accompanying graph are in excellent agreement with the known sizes of 92 and 269 nm.

Zeta Potential using ELS

The NanoBrook 90Plus Zeta rapidly measures distributions of electrophoretic mobilities, including multimodal distributions.

In the example to the right, the results of analyzing a mixture of alpha and gamma Aluminas in 1 mM KCl at pH 10 is displayed. The leftmost peak is shown to have a zeta potential of -75 mV. If the other peak is selected, the value given is -55 mV. The ability of the 90Plus Zeta to provide this information distinguishes it from other methods which provide only an ensemble average zeta potential.



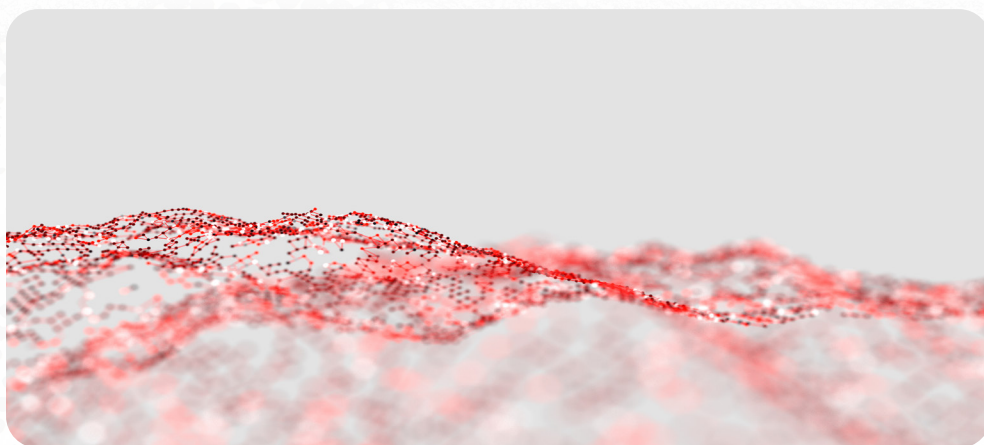
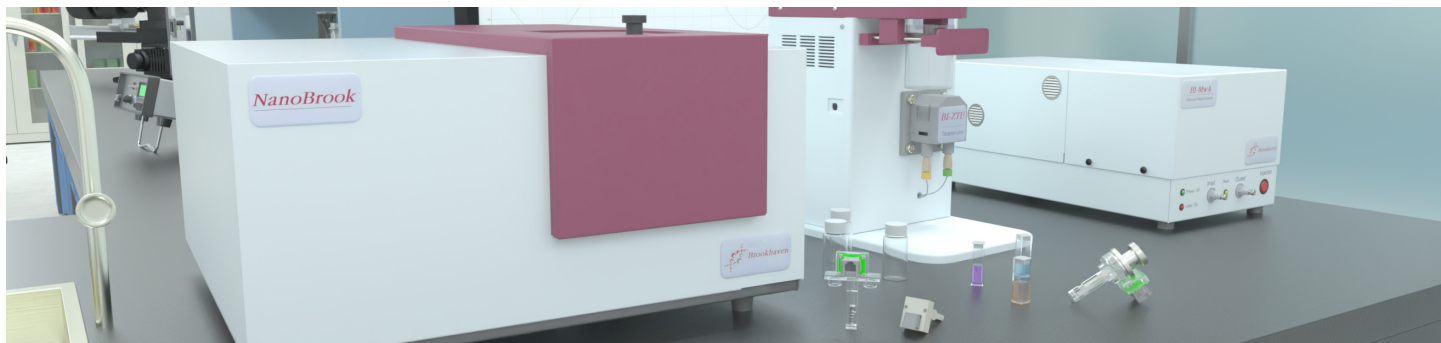
Key Features & Specifications	
Size Range	1 nm to 6 μm diameter*
Mobility Range	10^{-9} to 10^{-7} $\text{m}^2/\text{V}\cdot\text{s}$
Zeta Potential Range	-500 mV to 500 mV*
Maximum Sample Conductivity	7.5 mS/cm*
Concentration Range	2 ppm to 50 mg/mL*
Technique	Sizing: Dynamic Light Scattering, DLS Zeta Potential: Laser Doppler Electrophoresis/Electrophoretic Light Scattering (ELS)
Algorithms and Models	NNLS, Contin, Cumulants, Lognormal
Correlator	Brookhaven's TurboCorr, multi- τ , research grade with 510 hardware channels, 100% efficiency, real-time operation over the entire delay-time range.
Detection Angles	15° & 90°
Test Standards	Conforms to ISO13321 and ISO22412

* sample dependent

About Brookhaven Instruments

Our talented team of scientists and engineers is dedicated to delivering the most accurate, reliable, and easy-to-use particle characterization instruments on the market. Our modular instrument design allows us to fully customize every aspect of our products, ensuring that our customers receive precisely what they need to meet their research goals. We are continuously improving our products based on feedback from customers, building on our legacy of innovation in particle science.

We strive to act as partners with our customers to ensure they get the most benefit and maximum value from their Brookhaven equipment. We offer extensive post-sale support to educate and empower customers. Whether you have questions about a specific function or are trying to set up a new experiment, our experts will be there to help you every step of the way.



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