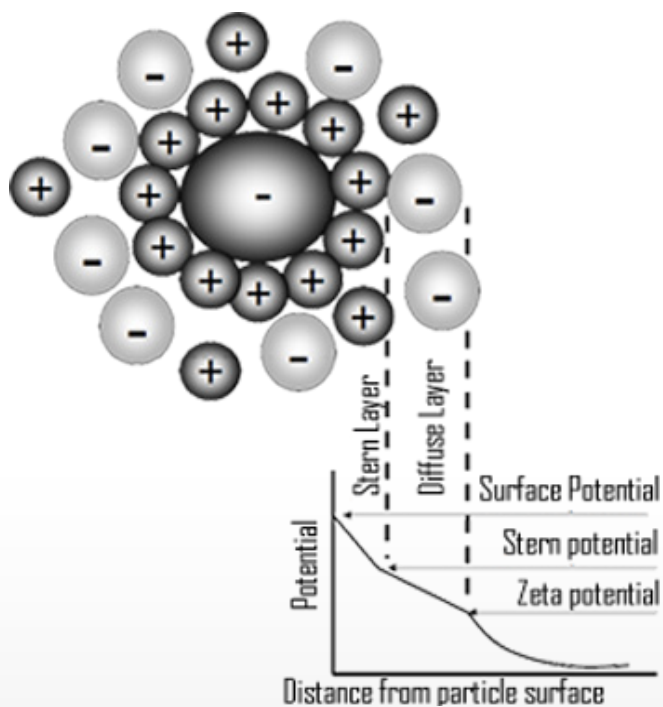


NanoBrook ZetaPlus

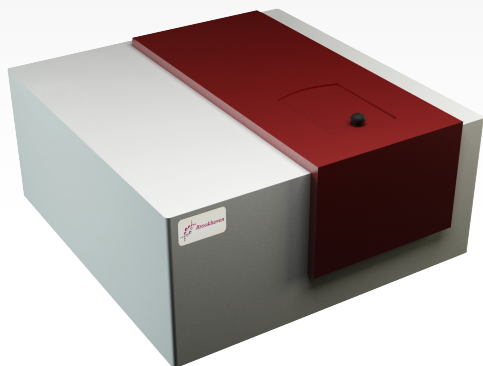
Zeta Potential Analyzer



Zeta Potential of Nanoparticles

NanoBrook ZetaPlus

zeta Potential Analyzer

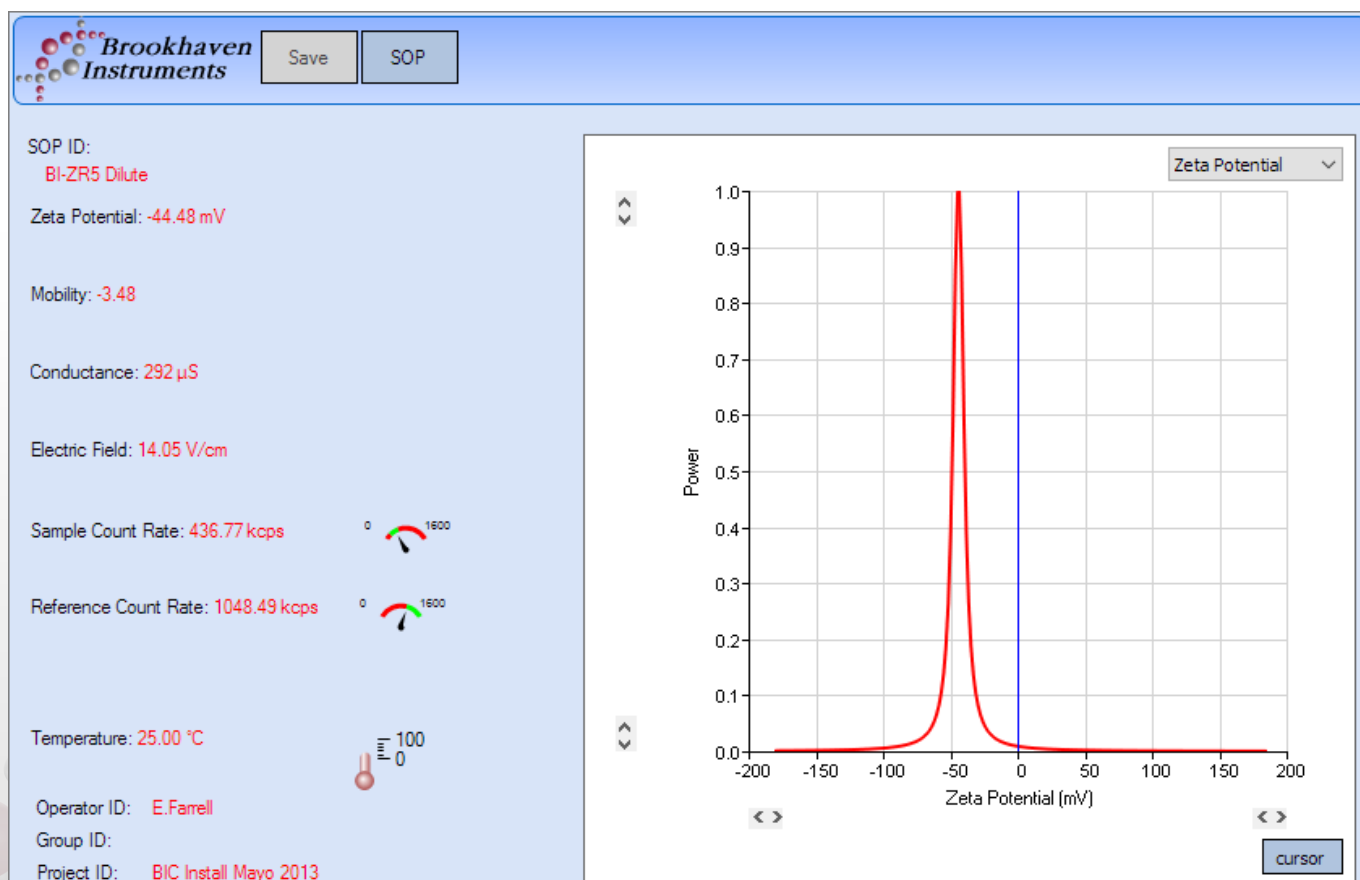


Zeta Potential

- Zeta potential in low salt aqueous solutions/suspensions
- Accurate, rapid, and simple measurements
- One piece, easy-fill disposable sample cells
- No cell alignment or calibration
- Zeta potential at 15°
- Temperature control, -5 °C to 110 °C
- Customizable reports, two parameter plots, graphical overlays
- Can resolve multi-modal distributions
- Built-in automatic procedures and parameters (SOP)

Reliable and Accurate Analysis

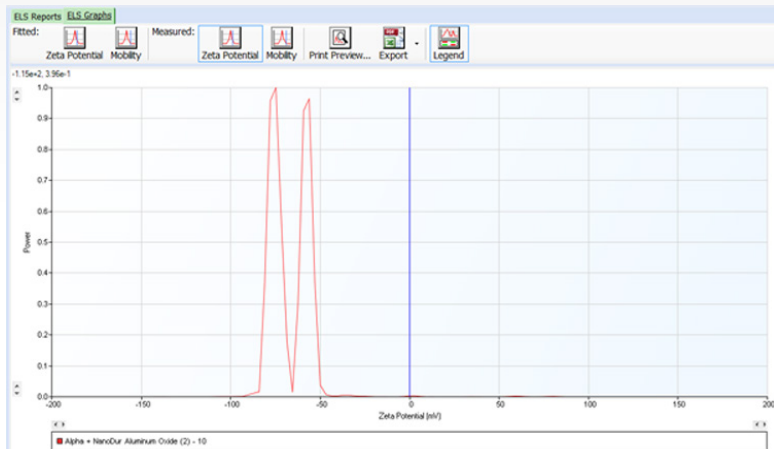
The NanoBrook ZetaPlus is the simplest, most accurate particle electrophoresis system available. This revolutionary instrument has been designed to eliminate the shortcomings inherent in other zeta potential instruments. The ZetaPlus software is simple and intuitive to operate, yet offers a full range of features and options to handle any experimental application. The image shown below is an actual presentation of a measurement- clear and concise. Information obtained from the sample is updated in real time and the user can select from several display formats. A table of physical constants for many common suspending fluids is pre-loaded, but the user has the freedom to provide their own values.



Comprehensive Information

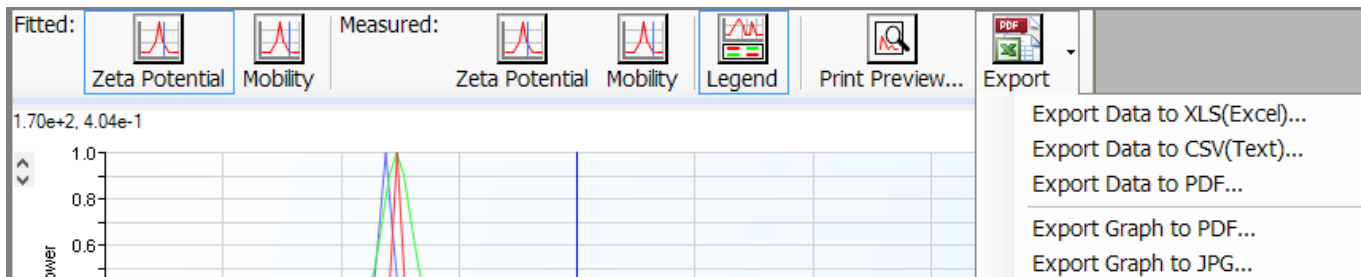
The NanoBrook ZetaPlus measures complete electrophoretic mobility distributions in seconds, including multimodal distributions. An example of a bimodal zeta potential sample can be seen on the result screen after analysis of a mixture of charged particles.

The image to the right is an example of results collected from a measurement on a mixture of alpha and gamma Aluminas in 1 mM KCl and pH 10. The left peak is identified with the green cursor and shown to have a zeta potential of -75 mV. If the other peak is chosen, the zeta potential value is -55 mV. The NanoBrook ZetaPlus has an advantage with its ability to distinguish mixtures such as these, unlike other methods which only provide an average.



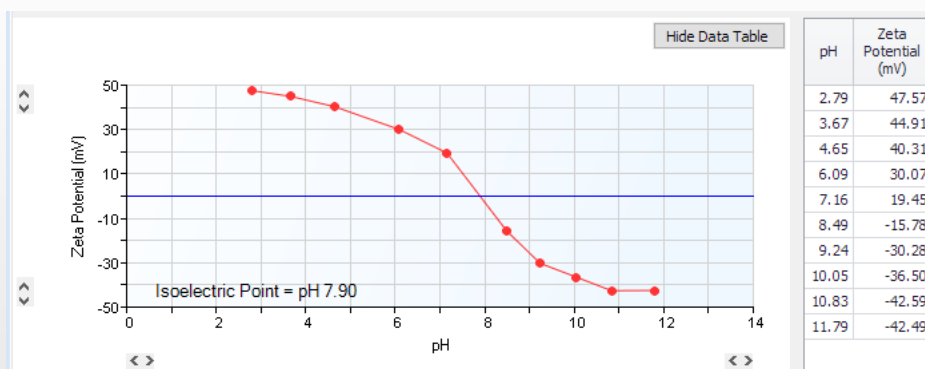
Simple Clear Presentation

With Brookhaven Instruments Particle Solutions Software Suite, the user can easily produce a customized report based on the information desired, or select from one of the pre-designed templates. Furthermore, exportation of data to multiple formats (i.e: XLS, CSV, PDF) is both quick and simple.



Derive Extended Information

The user can tabulate or graph any appropriate pair of parameters allowing, for example, the determination of the isoelectric point (IEP) as in the example below.



Unique Cell Design

The unique cell configuration eliminates the electroosmotic effect: no stationary levels, no alignment, and no calibrations are required. This is evidenced by the excellent agreement with NIST1980, a standard reference material. NanoBrook ZetaPlus uses low cost, disposable sample cells. There is no assembly or maintenance required as cross-contamination is eliminated. Glass and quartz cells are available. The same basic cell design is used in the NanoBrook 90Plus Zeta, ZetaPALS, 90Plus PALS, and Omni.

NanoBrook ZetaPlus

Zeta Potential Analyzer

Specifications

Sample Type	Most proteins, nano particle and colloidal-sized materials, suspended in any non-absorbing liquid, with relative permittivity (dielectric constant) > 20 and viscosity < 5 cP.
Size range suitable for zeta measurement	1 nm to 100 µm, sample dependent
Mobility Range	10 ⁻⁹ to 10 ⁻⁷ m ² /V*s
Zeta potential range	-220 mV to 220 mV, sample dependent
Sample Cells	210 µL, 450 µL, 1250 µL
Maximum sample concentration	40% v/v, sample dependent
Signal Processing	Electrophoretic Light Scattering, ELS
Maximum sample conductivity	7.5 mS/cm
Precision	± 3%, depending on salt concentration
Temperature control range	-5 °C to 110 °C, ± 0.1 °C, active control. No external circulator required.
Condensation Control	Purge facility using dry air, nitrogen preferred
Standard laser	40 mW 640 nm temperature-controlled red semiconductor laser. Alternative wavelengths available.
Scattering Angle	15°
Data Presentation	Doppler Frequency Shift, electrophoretic mobility, zeta potential using Smoluchowski, Hückel, or Henry
Compliance	ISO13321 and ISO22412 compliant results for sizing
Power Requirements	100/115/220/240 VAC, 50/60 Hz, 150 Watts
Dimensions	23.3 x 42.7 x 48.1 cm (HWD)
Weight	15 kg
Environmental Characteristics	Temperature 10 °C to 75 °C Humidity 0% to 95%, non-condensing
CE Certificate	Class I laser product, EN 60825-1:2001, CDRH