ENLIGHTEN SCIENTIFIC

Mastering Zeta Potential

One-Day Workshop

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INTRODUCTION

Zeta potential is an important property of colloidal formulations in many industries and is most commonly measured by electrophoretic light scattering (ELS). Commercial instruments are available, but they are sold as black boxes. Measurements are made every day without the necessary understanding of the technique, the exact role of zeta potential in any application and, critically, confident interpretation of the results. This can lead to wrong – and expensive – decisions in product development and manufacturing environments.

The *Mastering Zeta Potential One-Day Workshop* teaches essential concepts of colloid chemistry to understand zeta potential, the ELS technique, the challenges presented by real-world formulations, and how to best deploy ELS to meet the needs of product development and lifecycle management.

By the end of the workshop, participants will possess the necessary knowledge to fully master the concept of zeta potential, the measurement limitations inherent in current ELS devices and how to use zeta potential appropriately and confidently in applications throughout their organizations.

Who should attend?

The *Mastering Zeta Potential One-Day Workshop* is recommended for anyone involved in the design, development, implementation, and interpretation of formulation activities requiring zeta potential measurements and team leaders responsible for making, or recommending, business decisions based on such testing. Current users of zeta potential instrumentation and colloid scientists will also benefit from the latest subject matter.

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FUNDAMENTALS

Colloid chemistry

Why are colloids important?
Interparticle forces
Interfacial phenomena

Zeta potential

Origin of zeta potential
Calculating zeta potential from electrophoresis
Its practical uses and limitations
Measurements in aqueous and non-polar media

Electrophoretic Light Scattering

General laser light scattering
Basic requirements for an apparatus
Typical commercial configurations
Classical Laser Doppler Electrophoresis (LDE)
Phase Analysis Light Scattering (PALS)
Complex and unsuitable formulations
Electrode effects and ionic strength
Practical limitations of the method

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BEST PRACTICES

Instrument selection/configuration
Sample preparation
Interpreting and sharing data
Quality by Design considerations

SIMULATOR

Do you find sitting in a classroom environment trying to learn about the practical aspects of a complex analytical method effective, satisfying and enjoyable? Probably not. Do you retain the important information and use it to add value to your work? Probably not. Wouldn't it be great if real instruments could be available to each participant during the workshop? Of course! But that is simply impractical.

So how can participants experience a hands-on, enjoyable and memorable way to learn? The answer is Enlighten Scientific's unique virtual electrophoretic light scattering instrument simulator (VirtualELS). Each participant in the workshop will receive a complimentary copy of the simulator software. VirtualELS allows a user to vary the most important formulation parameters, instrument parameters, and data processing methods to see how they affect the measured zeta potential. This hands-on ability allows participants to investigate "what if?" scenarios.

As new concepts are introduced during the workshop, participants can use VirtualELS to reinforce learning and discuss their findings with the group.

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INSTRUCTOR

The *Mastering Zeta Potential One-Day Workshop* is led by John F. Miller, PhD, founder of Enlighten Scientific LLC. John's in-depth understanding of the theory of ELS, its practical limitations, and extending the technique beyond current commercial capabilities makes him the foremost expert in the field. In addition, John's 24-year career as a colloid scientist in the pharmaceutical industry gives him a deep understanding of the challenges faced by practitioners of zeta potential measurement. John invented PALS – the *de facto* method for measuring zeta potential with high accuracy and reproducibility in many industries; at least five commercial instruments use the technique. More recently, John has designed a next-generation instrument that overcomes the significant challenges that have prevented analysis of dispersions at high ionic strength.

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PRICING

For closed on-site training, a flat rate is offered independent of the number of participants.

For open training, a fee is charged per participant.

Contact Enlighten Scientific to discuss pricing and options.

CONTACT

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