

# Understanding the World of Nanoparticles by Dynamic Light Scattering

Seminar at Adolphe Merkle Institute in Fribourg

Thursday April 3, 2025

09:00 a.m.	<b>Welcome &amp; Introduction</b> <ul style="list-style-type: none"><li>▪ Anton Paar &amp; Swiss NanoAnalytics introduction</li><li>▪ Overview of the seminar objectives</li></ul>
09:30 a.m.	<b>Fundamentals of Light Scattering on Particle Systems – Part 1</b> <ul style="list-style-type: none"><li>▪ Rayleigh Scattering</li><li>▪ Mie Scattering</li><li>▪ Fraunhofer Diffraction</li></ul>
10:00 a.m.	<b>Coffee Break</b>
10:15 a.m.	<b>Fundamentals of Light Scattering on Particle Systems – Part 2</b> <ul style="list-style-type: none"><li>▪ What is DLS, SLS, &amp; LD? What do they measure?</li><li>▪ What do you need to know for an analysis?</li><li>▪ The role of important parameters such as refractive index, viscosity and temperature.</li></ul> <ul style="list-style-type: none"><li>▪ Ultimate/attainable accuracy and reproducibility in DLS/SLS?</li><li>▪ Averages and polydispersity. What do they signify?</li><li>▪ Neat and not so neat particle system. What one can achieve?</li></ul>
11:30 a.m.	<b>Coffee Break</b>
11:45 a.m.	<b>Fundamentals of Light Scattering on Particle Systems – Part 3</b> <ul style="list-style-type: none"><li>▪ Characterizing particles in complex milieu</li><li>▪ The role and weight of complementary and orthogonal experimental techniques.</li><li>▪ What about optically anisotropic particles? Diffusion: translation and rotational.</li></ul>
12:30 p.m.	<b>Lunch</b>
02:00 p.m.	<b>Hands-On Experiments with Litesizer DLS</b> <ul style="list-style-type: none"><li>▪ Mono and polydisperse systems</li></ul>
04:00 p.m.	<b>Coffee Break</b>
04:30 p.m.	<b>Closing Remarks</b> <ul style="list-style-type: none"><li>▪ Summary of key takeaways</li><li>▪ Feedback session: What did participants find most valuable?</li></ul>
05:00 p.m.	<b>End of Seminar</b>