

Fractionation and Characterization of Sub-micro Particles and High Molar Mass

Macromolecules by Field Flow Fractionation with Multi-angle Light Scattering Detection

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Field flow fractionation (FFF) is a particle / macromolecule separation technique. While its fractionation mechanism is similar to that of GPC / SEC in that sample fractionation is based on the size difference among the sample's fractions, FFF offers many features that overcome some of GPC / SEC's limitations. Some of these features are: 1) a much wider fractionation range of particle / macromolecule size, from a few nm for samples such as BSA, to hundreds or even thousands of nm for samples such as nanoparticles; 2) no interactions between sample and stationary phase; 3) no shear degradation; 4) no need for multiple chromatography columns.

This paper presents data for a broad range of sub-micro particle systems such as latex particle suspensions, liposome and vesicles, virus particles as well as high molar mass macromolecules, fractionated by an asymmetric flow FFF system (the Wyatt Eclipse™), and characterized by a multi-angle light scattering (MALS) detector (the Wyatt DAWN EOS®).