Field-Flow Fractionation: Frequently Asked Questions (FAQs)

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The field-flow fractionation (FFF) family of techniques is increasingly recognized for its ability to address complex sample mixtures. Broad size, composition, and architecture distributions and the presence of dynamic/transient analytes present challenging systems that require new analytical approaches and the use of orthogonal techniques to obtain a more complete picture. FFF’s ability to separate and elute analytes based on different attributes has positioned it well to meet these challenges.

This presentation will showcase our research in the areas of macromolecular and nanoparticles analyses [1,2] related to polymers [3], therapeutic proteins [4,5], biomarkers [6], and renewable energy [7] particularly from the perspective of frequently asked questions (FAQs). What are the primary and secondary analyte attributes that can be measured by asymmetrical flow FFF (AF4) and thermal FFF? The development of thermal FFF’s distinctive capabilities will be a main focus. How much sample can AF4 handle and how does it compare to ultracentrifugation as a sample preparation method for lipid biomarkers? Does the dilution that occurs as part of the separation process affect analyte subpopulations and how to evaluate? These last two questions require a closer look at channel dimensions and the FFF separation process itself.

References