Applying FFF to latex and other emulsion polymers involves much more than just determining particle size distributions. Bhajendra Barman of Utah's FFF Center used SdFFF to identify aggregated latex particulates. John Ho of the University of Utah presented methods for estimating the thickness of an adsorbed layer on colloidal particles. Ho—along with Dennis Nagy from Air Products & Chemicals—applied SdFFF to the determination of the densities of materials, whereas Milton McDonnell from Allied-Signal used SdFFF to characterize the size and density of a complex polyethylene copolymer wax emulsion.

One area of active interest is the use of thermal FFF (TFFF) for characterizing polymers. This powerful new method for quantifying the molecular weight distribution of soluble organic polymers extends to a higher molecular weight range than do more conventional methods. Retention in TFFF is believed to be dependent on the ordinary diffusion coefficient D as well as the thermal diffusion coefficient D_T. D_T is a difficult parameter to assess, and the physicochemical parameters governing the thermal diffusion of polymers in solution are not well understood. Without an understanding or knowledge of D_T for various polymer systems, it is difficult to predict retention in TFFF experiments under a variety of operating conditions.

In an empirical approach to this problem, Kirkland studied retention effects in TFFF over a range of experimental conditions and offered better definitions of the limitations of the method. He also presented techniques for conducting more effective TFFF experiments. Kirkland suggested that TFFF has other potential applications that follow from determining Mark–Howink constants for calculating the radius of gyration of molecules and intrinsic viscosity distributions.

For polymers with a known value of D_T, Yushu Gao of Academia Sinica in Beijing, China, described a universal calibration procedure that holds for a single set of experimental conditions. Martin Schimpf, Bend Research, used TFFF as a method for determining D_T of polymers, and Marcus Meyers of Utah's FFF Center pointed out that large errors in determined molecular weights can arise from inexact D and D_T values.

Many researchers believe that applications for biological materials will be important to the future success of commercial SdFFF instrumentation because the number of potential users in this market could be greater than those for industrial applications. In one example, Samuel Mozersky of the U.S. Department of Agriculture used SdFFF to determine the effect of sucrose and lactose on the size of casein micelles. Most of the other biological applications rely on alternate fields or hybrid techniques. Examples include fractionation of living blood cells by gravitational FFF, reported by Michel Martin from Ecole Supérieure de Physique et Chimie Industrielles in Paris, and the separation of B and T immune system cells using a hybrid of cellular adhesion chromatography and FFF, presented by James Bigelow from the University of Vermont.

Flow FFF appears to be another promising subtechnique with a broad range of applications. Kim Ratanathanawongs of Utah's FFF Research Center described the development and applications of flow FFF in particle characterization. Separation of particles is based on size and is independent of density,