

SOLVE the challenges of nanomaterial properties and performance

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Nanomaterials are becoming increasingly prevalent in our lives and are found, for example, in protein therapeutic formulations, as drug delivery vehicles, as contrast agents for high resolution imaging, as functional food ingredients and in many other applications. The strategies required to characterize the properties and performance of today's materials can be as unique as the material itself. Our expertise at SOLVE lies in the characterization of materials at the nanoscale and to explain their behavior in solution.

We build our custom characterization strategies around the state-of-the-art separation method asymmetrical field-flow fractionation which allows us to probe structure-property-performance relationships of complex materials. We can provide information on structure, size, molar mass, apparent density etc. across the entire sample distribution from single nanoparticles to large micron-sized aggregates. Field-flow fractionation is a commercial method, although not yet that widely spread.

We have experience working with noble metal nanoparticles; core-shell nanoparticles; silica, zinc, and iron oxide nanoparticles; polysaccharide-based nanoparticles etc. We are part of the FP7 EU-project NanoMag which goal is to standardize, improve, and redefine analysis methods of magnetic nanoparticles for biomedical applications. In this project, field-flow fractionation has been chosen as one of the standard characterization methods.