

Novel Technology For Characterizing Nanoparticle Assemblages

University of California, San Diego (UC San Diego)



Nanoparticles are the most abundant particle-like entities in nature, and commonly associated with many human activities/applications and typically encountered as assemblages of particles of different sizes. Unfortunately, present methods for determining nanoparticle size-distributions are inaccurate for samples of mixed nanoparticles sizes, a problem facing many nanotechnology application areas.

With the widespread use of nanoparticles in industrial processes there is an urgent, yet unmet need, for a routine method to accurately and reproducibly characterize nanoparticle concentration and size distributions.

Scientists and engineers from UC San Diego have developed a new technology to accurately characterize the concentration and sizes of nanoparticle assemblages.

“ Referred to as the Multi-sizing Apparatus for Nanoparticle Tracking Analysis (MANTA), this technology ensures that the concentration and size of nanoparticles can be determined over a broad range of nanoparticle sizes.

Superior to existing commercial technologies, MANTA's novel approach leverages patent-pending sample illumination and imaging technologies to characterize nanoparticle assemblages in unperturbed samples.

Tests with nanoparticle standards have confirmed that the MANTA technology is poised to advance research in a broad range of health and environmental applications, including the diagnosis of disease and pathological conditions, development of efficient and specific therapies, environmental risk assessment, food safety, and occupational health and safety risk management strategies.

This invention offers a major competitive advantage over existing technologies and should find use in a variety of industrial nanotechnology applications (*e.g.* production and manufacturing of drugs, cosmetics, pigments, inks, catalysts, and textiles, and also in diagnostics, printing, and milling).

Detailed information about this technology is available under a secrecy agreement.

To see available technologies from research institutions, click here to visit the AUTM Innovation Marketplace.