

Abstract Talk Karl Mandel at ChemSpec Europe 2018

Supraparticles - complex particles as additives for new properties in advanced materials

During the last decade nanoparticles have demonstrated great potential in making materials and processes more advanced for a variety of potential applications.

Yet, challenges are faced in real applications with respect to handling and processing these particles and moreover, often, a single functionality only is added to a material by introducing such particles.

Thus, the next step further is to shift from dealing with individual nanoparticles to dealing with so-called supraparticles, i.e. particles made from particles, the latter being nanoparticulate building-blocks.

Building more complex particles from nano-building blocks can help to ease handling and processing of nanoparticles as additives for instance to create advanced polymer composites. Examples include mechanically enhanced elastomers or flame retardant materials.

Furthermore, novel processes are possible with such particles. For instance by merging magnetic and adsorber functionalities in one supraparticle system enables new approaches of water purification and substance detection.

Eventually, completely new, multifunctional properties emerge from creating supraparticle architectures that might pave the way to interactive materials such as smart surfaces.



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