Videos on Carbon Particle Formation Prepared via Spray Pyrolysis

*Title of Manuscript

Recent Advances in the Fabrication and Functionalization of Nanostructured Carbon Spheres for Energy Storage Applications

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carbon spheres, nanostructured particles, energy storage, batteries, supercapacitors

*Data Description

These videos demonstrate the nanostructured carbon particle formation mechanism prepared through ultrasonic spray pyrolysis based on the self-assembly behavior of phenolic resin and polystyrene latex (PSL). By adjusting the attractive or repulsive forces between the phenolic resin and PSL particles, the morphology of the prepared carbon particles can be precisely controlled. Strong electrostatic attraction between the highly positively charged PSL and phenolic resin resulted in hollow carbon particles, while the electrostatic repulsion occurred in the presence of negatively charged PSL formed porous carbon particles. Depending on the requirements of different applications, using our strategy will in turn guide the synthesis of nanostructured carbon particles with desirable architectures and compositions.

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