

Synthesis of Prussian Blue-Based Iron Oxide Particles

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Magnetic iron oxide particles, are widely used due to their unique electronic/magnetic properties, non-toxicity, and abundance. Many researchers attempted to tailor the morphology of iron oxides such as size, shape, and porosity to suit their needs.

Prussian Blue (PB; ferric ferrocyanide) is a coordination compound that was used as a pigment, currently used as a functional inorganic material due to its unique arrangement upon crystallization.

Spherical and cubic Prussian Blue-based iron oxide particles are synthesized in several size regimes via a PVP-aided morphology control method. The as-synthesized Prussian Blue particles are then calcined to form specific iron oxide phases. The synthesized iron oxide particles are further functionalized by cationic polyelectrolytes and tested for microalgae harvesting to observe shape and size effects.