Elaboration des nanoparticules métalliques par co-précipitation et caractérisation structurale

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Abstract: Nanoparticles are now part of everyday life; researchers have developed new tools with their structural and magnetic properties interesting for various fields ranging from health as well as the environment. The objective of this study is the elaboration of metallic nanoparticles in order to optimize the working conditions and the properties of these nanoparticles, and the structural and magnetic characterization. We used a weakest and least expensive synthesis method that co-precipitates. We found that pH value, working temperature, and precursor nature influence particle size, morphology, chemical composition, and magnetic behavior. We have shown that increasing pH, temperature, and sulfide-type precursor utilization decreased the size of nanoparticles and led to improved properties such as chemical composition, morphology, and saturation magnetization.

Keywords : metallic nanoparticles