

Microemulsions as Reactors for Nanoscopic Materials

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Inorganic nanoparticles for catalytic applications are synthesized by co-precipitation processes in submicrometer-sized aqueous domains of reverse microemulsions. To tailor the particle structure, morphology, and surface area of the metal oxides, studies on the influence of synthesis parameters such as composition of the microemulsion (reactants, surfactants, water, oil ratio), aging time, drying and calcination temperature of the precipitates are presented.

The produced metal oxides are characterised by X-ray diffraction (XRD), and electron microscopy (EM). The phase formation, reactivity and stability is monitored by high temperature X-ray diffraction-, and thermoanalytical (TA) experiments.