

## Continuous Synthesis of Metal nanoparticles using Supercritical Methanol

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Metal nanoparticles have attracted a great deal of attention due to their valuable physicochemical properties and wide varieties of potential applications in various areas. Various methods have been used to synthesis nanoparticles including chemical reduction, sonochemical reduction, radiolytic reduction, polyol process, solvent-extraction reduction, and supercritical hydrothermal synthesis. In this study, we propose a simple continuous synthesis of metal nanoparticles using supercritical methanol (scMeOH) without using reducing agents or surfactants. The influence of reaction temperature on the resulting particle metal was investigated. Nanoparticles of nickel (Ni), copper (Cu), silver (Ag) were synthesized in scMeOH at 30 MPa, 400oC and reaction time of 17 sec. The supercritical methanol acted both as reaction medium and as a reducing agent. The synthesized nanoparticles were characterized using a X-ray differaction(XRD) and a scanning electron microscopy(SEM).