

Synthesis of Pt Nanoparticles and Nanorods by Microwave-assisted Solvothermal Technique

Dongsheng Li and Sridhar Komarneni

Materials Research Institute, Materials Research Laboratory, The Pennsylvania State University,
University Park, Pennsylvania 16802, USA

Reprint requests to Prof. Dr. S. Komarneni. E-mail: komarneni@psu.edu

Z. Naturforsch. **61b**, 1566 – 1572 (2006); received June 29, 2006

Platinum nanoparticles and nanorods were synthesized by microwave-assisted solvothermal techniques. Changing the reaction conditions controlled particle size and morphology. The effects of the reaction conditions, such as the molar ratio of the polyvinylpyrrolidone (PVP) repeating unit to the metal sources, the concentration of metal sources, the reaction temperature, and the presence of distilled water were investigated. Nanoparticles of Pt were approximately 3 nm in size. Produced nanoparticles and nanorods were characterized by transmission electron microscopy. Image JTM software was used to calculate the particle size and size distribution.

Key words: Nanoparticles, Nanorods, Platinum, Microwave-assisted Techniques