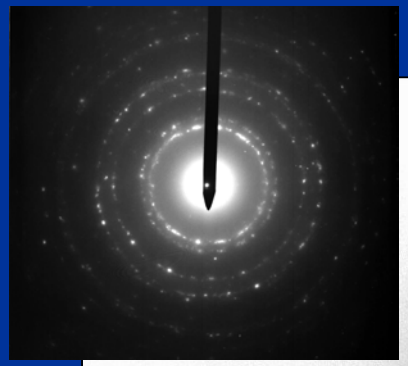
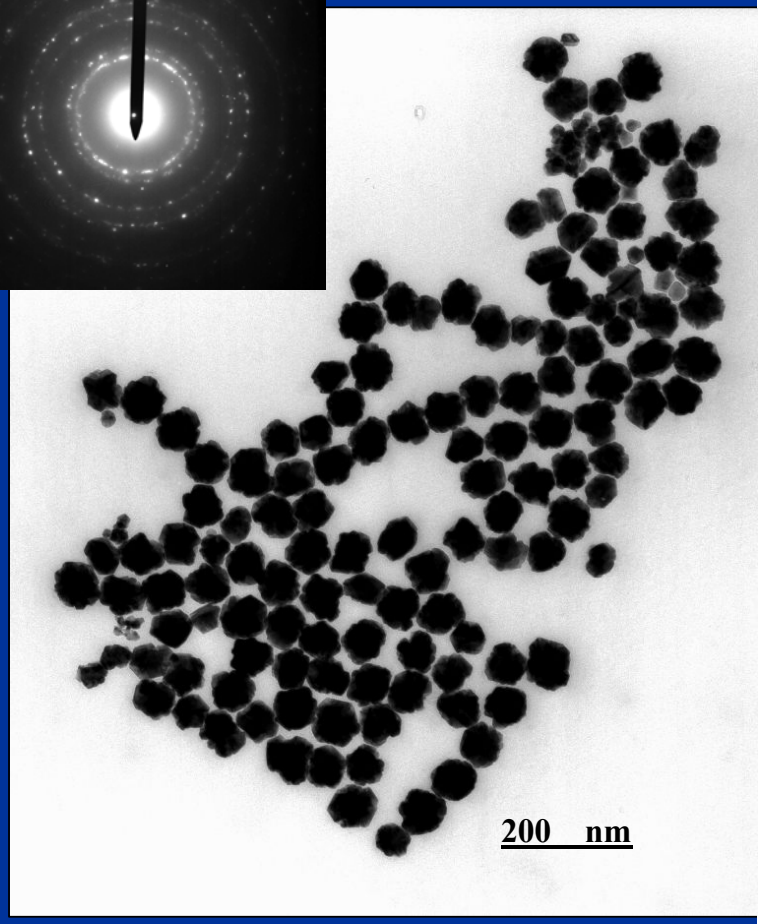
Novel Microwave-Polyol Process for Nanophase Metals

S. Komarneni and A. S. Bhalla, The Pennsylvania State University, DMR-0096527

Nanophse metals such as Ni are useful as electrode materials in multilayer capacitors. With this research support, we have been able to synthesize many nano-phase metals very rapidly using a microwave-assisted polyol process. Here we show more or less uniform Ni particles of about 100nm along with their diffraction pattern. These Ni metal particles were synthesized from Ni acetate and ethylene glycol as a reducing agent at 200°C/1 hr.





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Education:

One graduate student (D. Li) and two postdocs (Q. Lu and F. Gao) contributed to this work.

Outreach:

One of the Co-PIs (S.K.) has given several invited lectures at national and international conferences on this topic.

He is also co-organizing a symposium on Solvothermal Synthesis and Processing of Materials at the MRS Spring meeting, 2005 in San Francisco, CA.