

Preparation of Nanosized Mixed-Oxide Powders using Organic Amines / Acids as Co-ordinating Agents

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Abstract: A novel and versatile chemical technique has been developed for the preparation of nanosized ceramic powders by thermolysis of aqueous precursor solutions of coordinated metal compounds via the formation of mesoporous-carbon precursors. The co-ordinating agents are triethanolamine/ diethanolamine/ tartaric acid/ nitrilotriacetic acid /EDTA. Calcination of the mesoporous-carbon rich precursor powders, at temperatures below 800K, results in the desired phase of the ceramic oxides. Various ferrite, chromite, aluminate, tungstate, vanadate, molybdate, phosphate, zirconate, titanate, manganate and cuprate systems have been prepared and the respective powders have been characterized in terms of the particle size and their distribution. All the particles have sizes less than 100nm.