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(54) Title of the invention : METHOD FOR SYNTHESIS OF METAL-OXIDE NANOPARTICLES BY TEMPERATURE GRADIENT CO-PRECIPITATION TECHNIQUE

(51) International classification	:B01J 23/00 C08L 69/00 B01J 37/00	(71)**Name of Applicant :** **1)KOUTU,VAIBHAV** Address of Applicant :18/5, Chemical Staff Colony, Birlagram, Nagda - 456331 Distt.:- Ujjain (MP) Madhya Pradesh India **2)MALIK, MOHAMMAD MANZAR**
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(57) Abstract :
The present invention belongs to the field of Synthesis of Nanomaterials (Nanoparticles/Nanorods/Nanostructures) under the category Liquid/Solution Synthesis Route. In the previous art phenomenon of quenching (where temperature gradient is of order 102°C) is utilized in synthesis of nanomaterials but is confined to Solid-state and Vapor-based routes only. In solution-based synthesis techniques, especially in co-precipitation technique, the phenomenon of temperature gradient has not been utilized so far. It is for the first time effect of temperature gradient is utilized in the co-precipitation method. It was the motive of the inventors to establish a phenomenon that moderate temperature gradient (=10°C) also play crucial role in governing the growth mechanism and properties of the nanomaterials. This method could pave way for synthesizing nanomaterials with smaller dimensions and better properties.

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