

Simple synthetic route towards nanostructured materials with potential catalytic applications.

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Precious metals and metal oxides have been used as efficient oxidation catalysts with high activity and stability to control exhaust gas emissions. In this study, simple approach for the synthesis of nanostructured material with potential catalytic applications have been investigated.

Due to the high cost and limited availability of precious metals, intensive work is being conducted on the usage of transition metals and their oxides to replace noble metals. Following this approach, a simple hydrothermal route was used to prepare nanostructured copper oxide. The influence of the temperature on the morphology of the materials isolated was investigated in a range of 50 to 200°C. The oxides were characterized by TEM/HRTEM, XRD, EDS, BET, TGA and DLS. Studies have shown that the morphology can be controlled simply by varying the reaction temperature. The possible formation mechanism and potential applications are under study.