Highly porous ZnO powder prepared by liquid drop fluidized reactor from citrate precursors

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Porous ZnO powder was prepared by liquid drop fluidized reactor from citrate precursors, which was composed of zinc nitrate and citric acid. The ratio of C/N was in the range of 0.6 ~ 0.8 in the precursor solution. XRD pattern of as-prepared ZnO powder was the same that of ZnO powder prepared from the zinc acetate precursors, indicating that the citrate precursors did not affect the crystallity of as-prepared powder. The surface morphology and BET surface area were influenced significantly with varying the C/N ratio by altering the content of citric acid added in the precursors. The citrate precursor could help the formation of ZnO powder in a very short time in the liquid drop fluidized reactor, since it could lead to the anti-ignition reaction. The optical and electrical properties of as-prepared ZnO powder prepared from the citrate precursor were enhanced.