

The characteristics of ZnO Nano-powder Prepared by Precipitation Method

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Nano-sized ZnO powders have recently attracted considerable attention in ceramic semiconducting, optoelectronic, and cosmetic industry owing to their useful electronic and physical features. Recently, many reports have been published on the various synthesis methods of ZnO nano-powders. A lot of research have been performed for the analysis of the structural features of the ZnO nano-powder prepared by various process parameters. However, It is necessary to understand the relations of the structural and physical features with the process parameters. In this study, the nano-structural and physical features of the ZnO nano-powders, which were prepared by precipitation method, were investigated as a function of the concentration and the kinds of starting materials, precipitants, and pH conditions. The particle size of ZnO was sensitively related with concentration of the reaction materials. The structural features and the shape of particle, such as spherical, hexagonal, quasi-cubic, needle type, could be controlled by the variation of process parameters. This material(ZnO) should be applied for cosmetics and varistors