

Preparation and Electrical Properties of Calcium Carbonate Nano-particle

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Calcium carbonate powders were prepared by precipitation method under the different annealing temperature etc. 300 °C, 350 °C, 400 °C and 450 °C. Surface morphologies and crystal structures of synthesized $CaCO_3$ powders were analyzed by SEM and XRD, respectively. The result show that the particle size is to be reduced with increase annealing temperature. The approximately particle size of annealed $CaCO_3$ powder was about 50-70 nm. X-ray diffraction analysis showed that the $CaCO_3$ powders were polymorph with the calcite and vaterite phase. Dielectric property of desired $CaCO_3$ was investigated. It was found that the dielectric constant decrease when the frequency of applied signal increases. In this study shows that, the precipitated nano-particle $CaCO_3$ properties are suitable for a humidity detector or fillers.

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