

**Effect of Some Variables of Precipitation Process
on the Agglomerates Characteristics
of Zirconia Powders**

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Key words: zirconia, yttria, precipitation, agglomerates, powders. - The preparation of homogeneous and high density ceramics requires the control of physical and chemical homogeneity during powder synthesis, powder preparation, powder consolidation and sintering. The characteristics of agglomerates obtained during ceramic powder synthesis and processing affect the physical and/or chemical homogeneity in sintered material. There are various techniques to control agglomerates formation, which occurs during synthesis and processing of wet-chemically prepared powders. In this investigation, the characteristics of agglomerates obtained by precipitation of zirconium and yttrium with ammonium hydroxide were studied. The influence of some variables of the precipitation process, such as, concentration of ZrO_2 and NH_4OH in the start solution on the powder characteristics was investigated. Thermogravimetric analysis, data of average particles size analysis, X-ray diffraction and nitrogen adsorption (BET) techniques were employed to verify the powder characteristics.