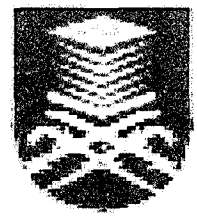

EFFECT OF SINTERING TEMPERATURE ON MECHANICAL PROPERTIES OF ALUMINA COMPONENT

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ABSTRACT

Sintering is one of most important process in powder metallurgy technology. Sintering process is very important in powder metallurgy technology because by sintering process, many of mechanical properties such as density, strength and hardness can be increased. The increasing in mechanical properties will make the product produced is better. Every powder metallurgy product which is not undergoing sintering process can be assumed as non-complete product. This study attempts to investigate the effect of different sintering temperature on mechanical properties of ceramic components. This property includes strength, density, microstructure and shrinkage. In this study, Alumina powder has been used as testing material where this material can be categorized as ceramic material. Experimental works were carried out for a single cylindrical die and bar die of compacted alumina powder using a conventional compaction machine at room temperature. After compaction, sintering process was carried out in a furnace and mechanical properties of sintered part were investigated. In this study, three sintering temperature were applied; 1500 °C, 1550 °C and 1600 °C. Result obtain show that sintering temperature given a great influence on the mechanical properties of the sintered products.