

ABSTRACT

The various composition of alumina will affect the mechanical properties of aluminum matrix composite. The properties that affect were density, percentage of porosity, arrangement of the microstructure and also the hardness. The aluminum powder and alumina powder was mixed homogenously in roll mill for 3 hours. This mixing process was prepared using a wet method. After the powder mixed homogenously, it was dried in oven to dry out moisture before it undergoing compaction process. This mixing powder was then compacted with 210Mpa using axial-load into sphere shape mould. The green compact then heated to attain the final properties. In this process, the green compact was sintered at 610°C for 6 hours. Sintering process were then went throught a few testing include density and porosity, microstructure analysis and vickers hardness testing to observe the desired properties. According to the experiment, it was observed that with the increasing percentage of alumina, the bulk density and hardness value will increase and at the same time will decrease the percentage of porosity of the samples.