

## ABSTRACT

Powder metallurgy has been extensively investigated due to high mechanical strength and potentially for cost reduction. The current investigated the performance of aluminium and silicon carbide powder in producing alternative materials for engineering applications. The research focuses on the influence of porosity on the Al-SiC metal matrix composite. Aluminium Al 5082 and silicon carbide mixture was produced using conventional ball milling, cold compaction under static loading and sintering process. Various ball-milling durations was introduced for 1, 24 and 48 hours. The characteristics of porosity under different milling time, density, hardness and microstructure were analysed. The results indicate different percentage of porosity occurred for different milling time. The best milling time was 24 hours which produced the highest hardness value. This indicates the presence of pores during ball milling process influenced the overall performance of powdered material.

**Keywords:** Powder metallurgy, Porosity, Ball-milling