

Microwave sintering of pure iron with addition of stearic acid as binder

Abstract

The purpose of this study is to investigate the effect of the stearic acid as binder in sintering pure iron using a microwave furnace. The study was focused in mechanical properties such as porosity, density and micro-hardness of sintered product. The experiment was done by varying weight percentages of stearic acid and controlling the sintering parameters such as sintering temperature and sintering time. Increasing the percentage of stearic acid resulted in higher porosity and lower bulk density. Hardness has increased by increasing sintering temperature and sintering time. The optimum material properties were found at 1300°C sintering temperature with addition 2 % stearic acid within 30 minutes sintering time.