Effect of Cr2O3 on Mechanical Properties of Aluminum Produced Powder Metallurgy

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Abstract : In this study, effect of content of chromium (III) oxide on production of Al/Cr203 alloys were investigated. Experimental procedure was started with mixturing of powders in the presence of absolute ethanol, vacuum distillation technique was used for evaporation, by ultrasonic bath and mechanic stirrer. Pressing procedure was achieved by hydrolic press that has 100 tons forcing for production of 25 mm diameter compact green billets. Green bodies were sintered at 600 °C in argon atmosphere. Scanning electron microscope (SEM) analysis for characterization of microstructure, compression test for determination of strength and Vickers test for measuring of hardness of sintered billets were done. End of the study is concluded that, enhancement of physical and mechanical properties is observed by increasing content of chromium (III) oxide.

Keywords : aluminium, chromium (III) oxide, powder metallurgy, sintering
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