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# Wear Behavior of $B_4C$ reinforced Al6063 matrix composites electrode fabricated by stir casting method

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**Abstract**

The aim of the study is to predict the surface topological characteristics of Al-$B_4C$ composite electrodes and the OHNS Die steel in the Electrical Discharge Machining (EDM) Process. The surface characteristics of Composite electrodes are evaluated by using Scanning Electron Microscopy (SEM) and EDAX Analytical Method. Surface roughness and hardness of the OHNS die steel was measured by the Stylus probe and Brinnel hardness. The composite electrodes prepared by the Aluminium 6063 and $B_4C$ materials. Both elements are mixed at molten state in the stir casting process at different compositions. The chemical composition properties of the Composite electrode is analyzed by the SEM and EDAX testing. The surface Roughness of the OHNS steel measured by the Brinell hardness tester. Based on the SEM and EDAX results, the 92% Al 8% $B_4C$ was producing the good surface roughness in OHNS die steel.

**Key Words:** Composite Electrode; Electrical Discharge Machining; Scanning Electron Microscopy; EDAX Analysis.