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Corrosion behaviour of spark plasma sintered Ti-Al alloys

CORROSION BEHAVIOUR OF SPARK PLASMA SINTERED TI-AL ALLOYS
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Abstract
The research study focusses on the corrosion characteristic of titanium-aluminum (Ti-Al) sintered alloys in various electrochemical solutions, such as sodium sulphate (Na2SO4) and potassium sulphate (K2SO4), respectively. Strong corrosion resistant material offers a long lifespan during service, to avoid maintenance or replacement costs, thus material should be treated before material application. This is important excess corrosion affects the mechanical properties of the material, thus material not reaching its expected lifespan. Furthermore, the main aspect of the research study will be analyzing whether spark plasma sintering, which is a fast and efficient material fabrication method, will produce quality corrosion material when sintering the Ti-AL alloy as compared to conventional sintering and casting. Essentially, the rate of corrosion and the corrosion severity will be investigated through multiple quantitative experiments.
Key Words:
Ti-Al alloy, corrosion, spark plasma sintering, electrochemical

Apply to be considered for a student ; award (Yes / No)?

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