

عنوان مقاله:

تأثیر دما بر ریزساختار و لایه واکنشی فصل مشترک Zr/Ti در اتصال نفوذی ZrV_{0.2} به فولاد A516

محل انتشار:

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خلاصه مقاله:

In this study, the effect of temperature on the microstructure and reactive layer at the interface between the Ti interlayer and the base metal related to the diffusion bonding of ZrV_{0.2} to A516 low alloy steel was investigated. The joining was done using the spark plasma sintering technique at temperatures of 900, 950 and 1000°C for 30 minutes. Field Emission Scanning Electron Microscope (FESEM) equipped with EDS analysis was used to investigate the microstructure of the interfaces in various joints. Investigations showed that at all temperatures, with the diffusion of atoms and the formation of a reactive layer between the Ti interlayer and ZrV_{0.2}, no intermetallic phases, cracks, porosity and discontinuities were formed at their interfaces. . It was found that increasing the bonding temperature did not cause the formation of new phases and compounds in the interface and only increased the thickness of the reaction layer. The measurement of the thickness of the reactive layer showed that the maximum and minimum amounts of diffusion were 84 microns at 1000 °C and 64 microns at 900 °C respectively

کلمات کلیدی:

,Diffusion bonding, Interlayer, diffusion Interface, reaction layer, ZrV_{0.2}, SPDB
اتصال نفوذی، لایه میانی، فصل مشترک نفوذی، لایه واکنشی، تکنیک SPDB

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