

عنوان مقاله:

Investigation of Microstructure weld zone of Hastelloy X Pulsed Nd-YAG laser welds

محل انتشار:

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نویسندگان:

Farrokh Najafzadegan - *Department of Materials Engineering, Najafabad Branch, Islamic Azad University, Isfahan, Iran*

Hojatallah Mansori - *Department of Materials Engineering, Malek-E-Ashtar University, Isfahan, Iran*

Morteza shamanian - *Department of Materials Engineering, Isfahan University of Technology, Isfahan, Iran*

خلاصه مقاله:

In the present study, the microstructure of welded zone of Hastelloy X sheets with thickness of ۱ mm via pulsed Nd-YAG laser welding were studied. This welding process was done by autogenous and conductive method. Microstructure were observed by metallurgical OM and SEM. Results shown Solidification of the weld metal is dendritic. The dendrites in the central zone of the welding are fine and equiaxed while they are larger and columnar in the fusion boundary. Epitaxial growth was observed in the interface of base metal and weld metal. Alloy elements Segregation did not occur during the solidification process and the fine cracks were not observed in the welding zone of the alloy. Micro hardness results indicated that the hardness of welded metal were more than base metal and cause to decrease grain size at welded metal more than base metal. This phenomenon was occurred due to more differences between heating and cooling rate in this welding process.

کلمات کلیدی:

Nd-YAG laser, Hastelloy X, Microstructure

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