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电流辅助钛/铝异种合金激光熔钎焊的特性

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摘 要： 采用电流辅助激光熔钎焊的方法对钛/铝异种合金的焊接特性进行研究。结果表明：激光功率对钛/铝异种合金接头的力学性能及微观组织有着明显的影响；辅助电流可有效地降低焊接过程中所需的激光功率，促进焊丝及铝合金母材的熔化，提高液态金属对母材的润湿铺展能力，在一定程度上促进了界面反应。

关键字： 激光熔钎焊；辅助电流；钛/铝异种合金；界面反应

Laser welding-brazing characteristics of Ti/Al dissimilar alloy with assistant current

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Abstract: The welding characteristic of Ti/Al dissimilar alloy by laser welding-brazing with assistant current was investigated. The experiment results indicate that laser power has a significant influence on mechanical properties and interfacial microstructures. The assistant current effectively decreases laser power required for joining Al alloy to Ti alloy, and significantly enhances the melting of filler wire and Al substrate as well as the wettability of liquid metal on Ti substrate. In addition, the interfacial reaction is improved by increasing assistant current to some degree.

Key words: laser welding-brazing; assistant current; Ti/Al dissimilar alloy; interfacial reaction

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