عنوان مقاله:

Dissimilar friction stir lap welding of Al-Mg to CuZn34: Applicationof grey relational analysis for optimizing process parameters

محل انتشار:

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نویسندگان:

Saman Khalilpourazary - *Department of Mechanical Engineering, Urmia University of Technology, Urmia, Iran*

Reza Abdi Behnagh - *Department of Mechanical Engineering, Urmia University of Technology, Urmia, Iran*

Ramezanali Mahdavinejad - *School of Mechanical Engineering, College of Engineering, University of Tehran, Tehran, Iran*

Nasib Payam - *Department of Mechanical Engineering, Urmia University of Technology, Urmia, Iran*

خلاصه مقاله:

This study focused on the optimization of Al—Mg to CuZn34 friction stir lapwelding (FSLW) process for optimal combination of rotational and traversespeeds in order to yield favorable fracture load using Grey relational analysis(GRA). First, the degree of freedom was calculated for the system. Then, theexperiments based on the target values and number of considered levels,corresponding orthogonal array, Grey relational coefficient and Grey relationalgrade were performed. In the next step, Grey relational graph of each level wassketched. The performed graph and analysis of Grey results proved the impactof rotational speed and traverse speed on fracture load of resultant joints.Finally, the optimum amount of each parameter for better strength of the weldswas obtained. This study showed feasibility of the application of Greyrelational analysis for achieving dissimilar friction stir lap welds with .thehighest quality

کلمات کلیدی:

FSLW,Dissimilar,Optimization,Grey relational analysis