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(57) Abstract :
ABSTRACT EMPLOYING WIRE MESH AS REINFORCEMENT TO JOIN AI 5052 AND A2318 BY EXPLOSIVE WELDING: A NOVEL APPROACH This innovation involves the successful fabrication of magnesium (AZ31B alloy) and aluminium (A1 5052 alloy) composites with SS 304 wire mesh reinforcement through explosive/welding at different loading ratios (R = 0.7, 0.8, and 0.9). In wire mesh reinforced weld composite (Az3lB/WM/A15052), no weld defects (such as cracks, pores, and melted layers) were found,_ which are evident in conventional weld composite. The wire mesh reinforced composite exhibits a greater hardness than the conventional . weld of AZ31B and A1 5052. The wire mesh reinforced (AZ31B/WM/A15052) explosive weld exhibits superior tensile (225 MPa) hand shear (IZIMPa) strengths compared to the weaker parent material and the AZ31B/Al 5052 weld. Fabricated composite exhibits a low corrosion rate; therefore, it can be used in corrosive conditions.

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