

Friction Melt Bonding: an innovative process applied to the joining of dissimilar materials in a lap-joint configuration

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Abstract- A dissimilar welding process, patented at UCLouvain, called Friction Melt Bonding [1-7], involves the local melting of a low melting point alloy (typically aluminum) to join it to a high melting point alloy (typically steel or titanium), Figure 1. The formation of the joint is insured by the formation of an intermetallic at the interface between both alloys and its composition is modified to lead to enhanced fracture toughness. Recent advances concern the robotization of the process and the welding of titanium to aluminum alloys.

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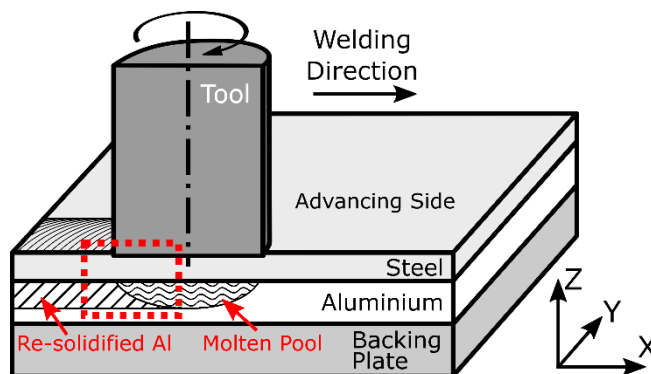


Figure 1: Schematic cut in the longitudinal direction of the FMB process. From [5].

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