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Inhomogeneity of microstructure and mechanical properties in radial direction of aluminum/copper friction welded joints

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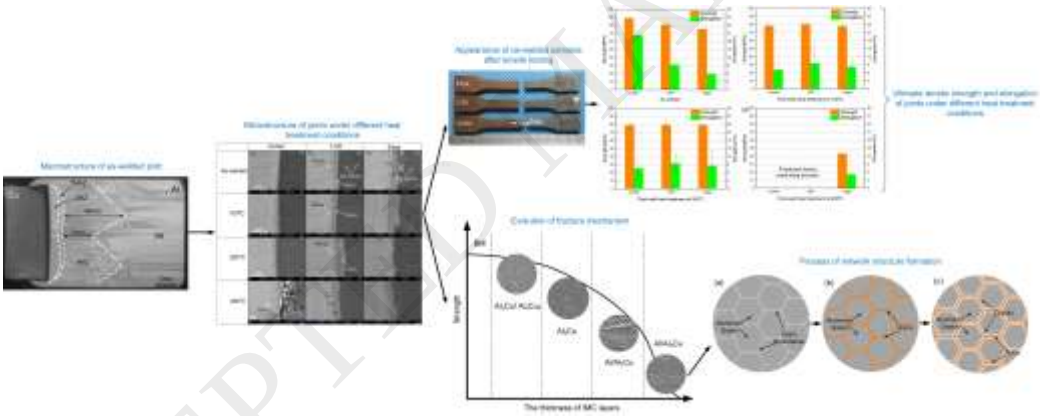
Graphical abstract



Abstract

The sample in center position of friction welded aluminum/copper joints has the highest tensile strength and elongation, which are 88 MPa and 20.2%, respectively. The tensile properties decrease with the increase of thickness of intermetallic compounds along radial direction. Fracture position transfers from aluminum side for samples from the center to the interface for samples from 1/2R and edge positions of