

## Lap joint welding of dissimilar materials

### KEYWORDS

- Dissimilar materials
- High strength joint
- Optimised structural design

### Technology Market :

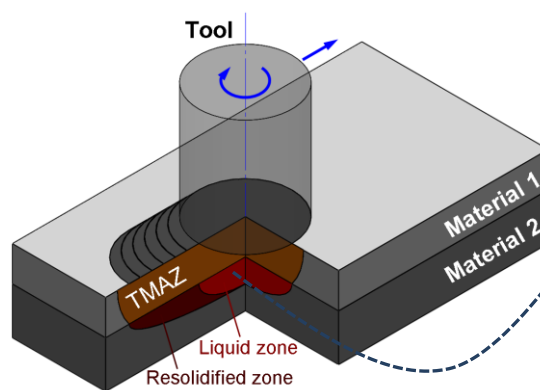
Welding of dissimilar materials is the key technology to improve productivity and quality in different fields including:

- **Transportation:** reduction of vehicle weight, and hence gas emissions, by joining light alloys (e.g. aluminum as material 2 with high strength steels as material 1, see scheme of process)
- **Energy production:** joining of different steel grades difficult to weld

The welding technology proposed by the UCL meets the market demand for joining with high-strength joints dissimilar materials that are traditionally difficult to weld.

### The UCL invention

UCL has patented (developed) a friction based welding process called **friction melt bonding** that ensures obtaining a high-strength joint between dissimilar materials, even for dissimilar materials that are traditionally difficult to join (such as steel and aluminum). This high-strength joint avoids premature cracking. The production rate can reach a weld of 1 meter long produced in less than 2 minutes.



### Technology Status

This work is the subject of one patent application: VAN DER REST C., SIMAR A., JACQUES P.J., Method for welding at least two layers; EP12166124.3, april 2012, and PCT/EP2013/058844, april 2013.

Reference publication:

VAN DER REST C., JACQUES P.J., SIMAR A., On the joining of steel and aluminium by means of a new friction melt bonding process, *Scripta Mater.*, 77, 25-28 (2014).

Louvain Technology Transfer Office would like to talk to companies interested in developing and commercializing this opportunity.

