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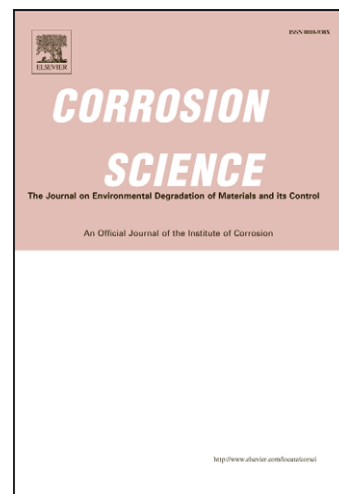
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Characterisation and understanding of the corrosion behaviour of the nugget in a 2050 aluminium alloy Friction Stir Welding joint

Vincent Proton^a, Joël Alexis^b, Eric Andrieu^a, Jérôme Delfosse^c, Marie-Christine Lafont^a,
Christine Blanc^{a,*}

^aUniversité de Toulouse, CIRIMAT, UPS/CNRS/INPT, 4 allée Emile Monso, BP 44362,
31030 Toulouse Cedex 04, France

^bUniversité de Toulouse, LGP, ENIT/INPT, 47 av. d'Azereix, BP 1629,
65016 Tarbes Cedex, France

^cEADS Innovation Works-IW/MS/MM, 12 rue Pasteur, BP 76,
92152 Suresnes Cedex, France

*Corresponding author at: Université de Toulouse, CIRIMAT, UPS/CNRS/INPT, 4 allée Emile Monso, BP 44362, 31030 Toulouse Cedex 4, France

E-mail address: christine.blanc@ensiacet.fr; fax: 33 (0)5 34 32 34 98; phone: 33 (0)5 34 32 34 07

Abstract

The corrosion behaviour of the nugget of a Friction Stir Welding joint employing a 2050 Al-Cu-Li alloy was investigated. The results showed that the nugget was susceptible to both intergranular and intragranular corrosion. Such corrosion behaviour was related to microstructural heterogeneities observed on a microscopic scale. Furthermore, heterogeneities in the corrosion behaviour of the nugget observed on a macroscopic scale were evidenced by a different corrosion behaviour from the top to the bottom of the nugget and by a localisation of the corrosion damage related to the "Onion ring structure". Critical microstructural parameters were identified to explain the results.

Keywords:

- A. Aluminium
- A. Alloy
- B. Polarisation
- B. TEM
- C. Intergranular corrosion
- C. Welding

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