

ELECTRICAL CONDUCTIVITY MEASUREMENT TO ASSESS STRUCTURAL MODIFICATIONS IN FSW JOINTS IN ALUMINIUM ALLOYS

T. G. Santos¹, R. M. Miranda¹, P. Vilaça^{2,3}

¹UNIDEMI, Departamento de Engenharia Mecânica e Industrial, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal, Tel. +351212949618

²IDMEC, Instituto de Engenharia Mecânica – Pólo IST, Portugal

³IST, Instituto Superior Técnico, Universidade Técnica de Lisboa, Portugal

rmiranda@fct.unl.pt

ABSTRACT

This study aims to present research work that demonstrates the beneficial use of the electrical conductivity measurements to evaluate the extent of structural modifications in the different zones of Friction Stir welds. The results were compared to microhardness profiles of transverse sections and the structural modifications were observed by optical microscopy. A good fit between the electrical conductivity field, the microhardness profile and the microstructure was observed, suggesting a potential use of electrical conductivity to assess structural modifications substituting hardness.

KEY WORDS: Electrical conductivity, Eddy currents, non-destructive testing, Friction Stir Welding, aluminium alloys.

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doi: 10.1007/s00170-011-3308-4