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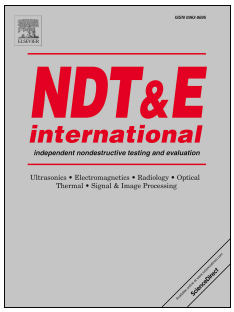

NDT-based design of joint material for the detection of bonding defects by infrared thermography

M. Barus, H. Welemane, V. Nassiet, M.L. Pastor, A. Cantarel, F. Collombet, L. Crouzeix, Y.H. Grunevald

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NDT-based design of joint material for the detection of bonding defects by infrared thermography

M. Barus[a,b], H. Welemane[b,*], V. Nassiet[b], M.L. Pastor[c], A. Cantarel[c], F. Collombet[a], L. Crouzeix[a], Y.H. Grunevald[d]

[a]*Institut Clément Ader (ICA), Univ. de Toulouse, CNRS, UT3, Toulouse, France*
[b]*Laboratoire Génie de Production (LGP), INP-ENIT, Univ. de Toulouse, Tarbes, France*
[c]*Institut Clément Ader (ICA), Univ. de Toulouse, CNRS, UT3, IUT de Tarbes, France*
[d]*Composites Expertise & Solutions (CES), Castanet Tolosan, France*

Abstract

Non Destructive Testing (NDT) by active InfraRed Thermography (IRT) of bonded Carbon Fibers Reinforced Plastic (CFRP) laminates is a very challenging issue. Difficulties come from the weak contrast between the thermal properties of constitutive parts, the small thickness of the epoxy joint and also the depth of the bonded interface. The strategy considered in this work is to design a new joint material specially adapted to the NDT detection of bonding defects. Using a numerical model, it is suggested to reinforce the epoxy joint material with conductive boron nitride particles. Experimental investigation of defective assemblies confirms the interest of such approach through a clear improvement of the IRT defect detection capacity.

*Corresponding author
Email addresses: matthias.barus@enit.fr (M. Barus), helene.welemane@enit.fr (H. Welemane), valerie.nassiet@enit.fr (V. Nassiet), marie.laetitia.pastor@iut-tarbes.fr (M.L. Pastor), arthur.cantarel@iut-tarbes.fr (A. Cantarel), francis.collombet@iut-tlse3.fr (F. Collombet), laurent.crouzeix@iut-tlse3.fr (L. Crouzeix), yh.grunevald@composites-expertise-solutions.com (Y.H. Grunevald)