

A Comparative Assessment of Industrial Composites Using Thermography and Ultrasound

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Abstract : Thermographic inspection is a relatively new technique for Non-Destructive Testing (NDT) which has been gathering increasing interest due to its relatively low cost hardware and extremely fast data acquisition properties. This technique is especially promising in the area of rapid automated damage detection and quantification. In collaboration with a major industry partner from the aerospace sector advanced thermography-based NDT software for impact damaged composites is introduced. The software is based on correlation analysis of time-temperature profiles in combination with an image enhancement process. The prototype software is aiming to a) better visualise the damages in a relatively easy-to-use way and b) automatically and quantitatively measure the properties of the degradation. Knowing that degradation properties play an important role in the identification of degradation types, tests and results on specimens which were artificially damaged have been performed and analyzed.

Keywords : NDT, correlation analysis, image processing, damage, inspection

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