



Non-Destructive Evaluation of Composite Materials

Guest Editor:

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Message from the Guest Editor

The production of composite materials is growing very rapidly, and it is expected to continue to increase at a rate of between 10 and 13 percent over the next few years. An even faster development in the use of polymer composites can be enhanced by non-destructive evaluation (NDE) techniques that can verify properties, determine structural integrity, monitor performance over time and test the quality of the products to ensure that their specifications are met. Composites are characterized by manufacturing techniques such as spray lay-up, filament winding, bag moulding, pultrusion, hand lay-up, injection moulding, resin transfer moulding and compression moulding, which can cause the formation of different types of defects and flaws in terms of porosity, delamination, air bubbles, cracks, blowholes and inclusion of foreign bodies in the matrix. The non-destructive techniques capable of detecting defects are numerous, for example: ultrasonic, thermography, acoustic emission, eddy current, X-ray, shearography, dielectric techniques, and vibration-damping method.





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