

# Thermographic non-destructive assessment for impacted Flax fiber-reinforced composite laminates

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## Abstract

Natural fibers are increasingly used for polymer composite intending to minimize the environmental impact. Bio-composite materials are increasingly being used in industrial transport structures, including aerospace and automotive. Natural fiber reinforces composites with equivalent performances of glass fiber composites, have higher amount of fiber, resulting in less pollution and much lighter weight, which reduces the fuel consumption. Also, They offer the ability to design complex parts and high mechanical properties structures. BVID represent a serious threat to the efficiency of bio-composite materials. Bio-based composite materials have insignificant impact resistance because of their limited strength properties in all directions. Therefore, identifying damage in composite structures at its earliest possible stage of initiation, to prevent its further propagation is essential. Infrared thermography (IRT) is considered as an advantageous non-destructive testing (NDT) for composite material. In this paper, IRT was used to evaluate impacted flax fiber-reinforced composite laminates in order to detect damage and anticipate perilous consequences through time.