Thermal Diffusivity of Basalt Fibre Epoxy Composites by Focused Gaussian Illumination Using Infrared Thermography

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Basalt is a natural material that is found in volcanic rocks and it has gained increasing attention as a reinforcing material when compared to traditional glass fibers due to its ecological safety and natural longevity. Basalt fiber composites has high potential and is getting a lot of attention due to its high temperature and abrasion resistance. In this work, basalt and glass fiber reinforced composite specimens were prepared by hand lay-up followed by vacuum bagging technique. The in-plane and in-depth diffusivity of the composites were measured simultaneously using focused Gaussian illumination methodology. The Infrared Signals emitted from the specimen showed the surface temperatures like a Gaussian profile. A standard laser flash method was adopted to validate the in-depth diffusivity measurement.

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Reference: