

Fiber orientation assessment in complex shaped parts reinforced with carbon fiber

by H. Fernandes* and X. Maldague*

* Computer Vision and Systems Laboratory (CVSL), Department of Electrical and Computer Engineering, Laval University, 1065 av. De la Médecine, Quebec City, Canada, G1V 0A6. henrique-coelho.fernandes.1@ulaval.ca, xavier.maldague@gel.ulaval.ca

Abstract

The use of composite materials is growing more and more every day in several applications. The arrangement or orientation of the fibers relative to one another have a significant influence on the strength and other properties of fiber reinforced composites. Thus, evaluation techniques are needed for measuring material fiber orientation. In this work Infrared Thermography is employed to assess the material's fiber orientation. More specifically a pulsed infrared diode laser heating spot technique is used in order to assess fiber orientation on the surface of complex shaped parts made of carbon/PEEK (*Polyether ether ketone*) randomly-oriented strands (ROS).

This paper was published in the QIRT Journal 12.1