Polymers and Composites Technology
& Mechanical Engineering Department

PhD POSITION

Topic : Calorimetric analysis of dissipative effects associated with the fatigue damage of continuous fiber reinforced polymer composites

Fiber-reinforced laminated composites have been used in many structural applications such as airplanes, ships and sports goods because of their superior specific properties compared to metallic materials. Typical damage behaviors in the laminated composites are transverse microcracking, fiber-splitting, fiber-breakage and delamination. The damage is complex to study due to the fact that the ultimate failure results from interactions between the different types of damage occurring at different scales (micro-meso-macro).

The main objective of the thesis is to develop a fully coupled full field kinematic and thermal measurements to built up a coupled energy balance. Strains and temperature measurements will be performed respectively by image correlation technique and infrared thermography method. The evaluation of the heat sources due to the damage will be done by an inverse method.

Successful candidate for this position should have a master degree in Mechanical Engineering along with strong background in one or several of the following areas: Finite Element Method, Matlab Programming language, Experimental methods like infrared thermography or strains measurement, Composite material.

Interested candidates should submit detailed curriculum vitae with the name and address of one referee, and a cover letter to Prof. S. Panier.

Net Salary: 1423 €/month (1st year), 1526 €/month (2nd year), 1662 €/month (3rd year)

Starting date: October 2011

Contact

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