

INTRODUCTION

The objective of weight reduction for lightweight structures is explained by the motivation of reducing energy consumption in many industrial sectors and particularly transportation. In this context and because of their high specific properties, fibre reinforced composites as structural parts are expected to be one of the key-solutions. That explained an increasingly interest for their application in primary structures not only in the aircraft industry but also in general engineering and particularly in the energy sector. Although being already known for their good resistance in fatigue compared to metal materials, a better knowledge of their fatigue characteristics is needed to be extended to fully exploit their whole potential.

This special issue of the “Advanced materials and composite journal” (RCMA), is a collection of the French conferences presented during the Sixth International Conference on Fatigue of Composites (ICFC6), which has been organized by the French aeronautical competitiveness cluster ASTech from the region of Paris and Ile-de-France.

The purpose of the selected papers is to give a good idea of the new challenges which are waiting for the composite materials for a wider extension. Fatigue is one of them including design, experiences and methodologies. Beyond the papers, this issue try to relate what has been this conference: a forum of exchanges between scientists, designers, manufacturers and end users from academia and industry to discuss about fundamental and applied research on composite fatigue.

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