Integrated Master in Mechanical Engineering (MIEM) at FEUP

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TITLE: Adopting Multifunctional Composites

Objetives:

The project main objective is to identify the potential of **Multifunctional composites** as a tool for **INNOVATIVE** ideas to develop healthier, safer, cost effective and more environmental friendly products

PROJECT OVERVIEW AND BACK GROUND

Composite systems are MULTI_FUNCTION Materials (e.g. the matrix transfers the load to the fibre and also has the role of aggressive environment protection).
Multi-functions may include mechanical, electrical, chemical and thermal functions

One may consider:

- Multi-function structure
- Multi-function materials
- Functionally Graded Materials (FGM)
- Hybrid materials (either referring to two constituents at nano and molecular level or laminates with different type of fibres)

Multi-functional composites go from molecular to macro scale and include working at different, more or less extreme, environments

This project seeks to make a state of the art review and propose methodologies in order to answer to the challenges of adopting the use of multifunctional composite systems.

TASKS

Task 1: Identification of multifunctional composite systems
Task 2: Challenges in adopting multifunctional composites
Task 3: State of the art review
Task 4: Proposed methodologies as a tool for **INNOVATIVE** ideas to develop healthier, safer, cost effective and more environmental friendly products

WORKING PLACE: FEUP

DEADLINE: 2015.06.30

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