

Multi-scale Reinforcement of Polymer Composite Materials for Performance Tailoring

Category: Materials

Reference: TDO0154

Broker Company Name: KiNNO
Consultants

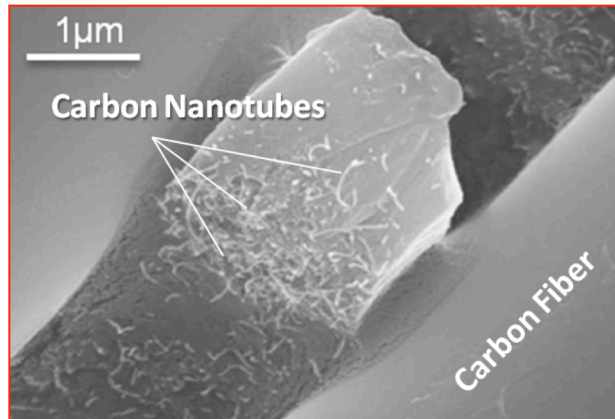
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Abstract

A highly specialized technological SME company from Greece has developed a methodology for integrating multi-scale reinforcement in composite materials for tailoring the performance (e.g. electrical, mechanical, thermal) of composites. The advantage of the technology is the nearly seamless integration of the multi-scale reinforcement. The technology has been proven on space composite materials. The aim of the offer is to transfer the know-how to other industrial sectors and applications. A collaborative investigation is sought with producers of end products in markets such as sports and transport.



Description

A highly specialized technological SME company from Greece has developed a methodology and has established in-house the related processing pilot line for integrating multi-scale reinforcement in composite materials. The rationale of the developed technology is to tailor the performance (e.g. electrical, mechanical, thermal) of composites. The methodology and the technology have been developed and proven on space approved composite materials for satellites and spacecraft.

Results to date indicate improvements in a series of critical properties such as: electrical conductivity, fracture toughness and thermal conductivity.

The aim of the offer is to transfer the know-how to other industrial sectors and applications (e.g. marine, sports equipment, energy). A collaborative investigation is sought where the offering company will work closely with producers of end products in such markets to create a unique proposition with improved performance based on existing production processes. The collaboration frame is flexible.

Innovations and advantages of the offer

The innovation offered is a result of internal proprietary know how developed under contract from the European Space Agency. The offer gives the opportunity to address performance drawbacks by tailoring the formulation of composites. The methodology and processing technology is compatible with pre-preg technology

targeting improved material performance (e.g. electrical/thermal conductivity, fracture toughness, damage tolerance). The advantage of the technology is the nearly seamless integration of the multi-scale reinforcement having minimal impact on existing composites production processes (e.g. autoclave) and other properties.

Application

Current Domain of Application: Structural composite materials for space applications

Potential Domain of Application: Sporting goods, Lightweight structures/vehicles, Composite components in marine.

Description of Space Heritage

The methodology and technology has been developed under contract by the European Space Agency. Presently it is at TRL 5.

Comments on the technology by the broker

This is a highly promising technology for many industries since it can improve crucial properties of composite materials while it can be easily integrated in existing composites production. It has already proven its value in demanding space applications making it ideal for industries where increased performance is crucial.

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