

JOB POSTING

Marie Curie Initial Training Network "CONTACT" (FP7-PEOPLE-ITN-2008-238363) for the tailored supply-chain development of CNT-filled composites with improved mechanical and electrical properties

Recruiting organisation: Amroy Europe Oy, Finland

Subproject title: Optimizing carbon nanotube-epoxy dispersions for enhancing mechanical properties in laminates designed for wind turbines

Starting date: from 1st January 2012

Background information:

"Marie Curie Initial Training Networks" (ITNs) are joint research and training projects funded by the European Commission. Funding is provided for researchers from both inside and outside Europe to carry out individual project work in a European country other than their own.

The "CONTACT" ITN is made up of 10 partners (coordinated by the Fraunhofer ICT in Germany), and will recruit a total of 15 postgraduates and 3 post docs for project work lasting for 1-3 years. The aim of the project is the tailored industrial supply-chain development of the mechanical and electrical properties of CNT-filled polymer composites. Project work in the network will include the optimisation of CNT synthesis and functionalisation, dispersion in thermoplastics and thermosets, the processing of CNT compounds, modelling, characterisation and application.

For more details please visit: www.contactproject.eu

Subproject description:

This subproject will be carried out by one early-stage researcher (postgraduate) at the Amroy Europe Oy and Tampere Technical University (TUT), Finland over a period of approximately 20 months (depending on the starting date).

The objective of the proposed project is the investigation and optimization of the effect of the ultrasonic treatment parameters such as treatment time, power, concentration and used polymer constituent on the properties, on CNT hybrid resins to be used in wind mill blade applications.

The research is carried out in three overlapping stages. Stage one is the determination of the properties of neat resins. The effect of ultrasound treatment parameters are studied by using neat resin tests. The candidate will study the curing, mechanical properties, thermal properties and microstructure of resins provided by Amroy Europe Oy. Stage two is the selection of the best resins for the further testing as composite matrix resins based on the requirements of wind turbine blade manufacture and applicability in large blades. Stage three is the testing of glass fiber reinforced laminate properties using the most promising of the CNT hybrid resins optimized and selected in stage one and two. The measured properties include compression, shear, impact and fatigue strength.

The scientific impetus for the research is the correlation between dispersion and neat resin properties and properties and processability of laminates.

Requirements:

Qualifications / experience:

- Early-stage researcher (in the first four years (full-time equivalent) of his/her research career, measured from the date when he/she obtained the degree which would formally entitle him/her to embark on a doctorate)
- Researchers must have a master in science level degree in materials engineering, polymer engineering or similar and prior knowledge on composite materials and their testing.

Mobility:

- The applicant can be of any nationality except Finnish
- The applicant must not have resided or carried out his/her main activity (work, studies etc.) in Finland for more than 12 months in the past three years.

For further details about eligibility, please check the Marie Curie website:

http://cordis.europa.eu/fp7/mariecurieactions/home_en.htm

How to apply:

Please send your CV by post or e-mail to the following address, quoting the reference "CONTACT-AMR-ESR1":

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Application deadline: 15th December 2011