

JOB POSTING

Marie Skłodowska-Curie European Training Network "TheLink" (H2020-MSCA-ITN-2014) to Accelerate the Development Chain of Nanostructured Polymers

Recruiting organisation: Fraunhofer ICT, Germany

Subproject title: Creation of oriented nanostructures in thermoplastic composites during processing

Starting date: 1st June 2015 (or earlier if preferred)

Background information:

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

The training network "TheLink" is made up of 10 partners, coordinated by the Fraunhofer ICT in Germany. The network will recruit a total of 15 postgraduates for project work lasting for 36 months.

Nanostructured polymers, composites and phase-separated materials are attracting scientific and industrial interest due to the outstanding properties and functionalities that can be achieved. However, in order to exploit their potential an in-depth understanding of the relationship between nano/micro structures and macro-level properties is required. TheLink therefore aims to generate this knowledge along the material development chain from design to production, combining the disciplines of simulation, characterization and processing. The postgraduate researchers recruited by the network will move the development of polymeric nanomaterials towards a knowledge-based, industrially-feasible approach. Three case studies (phase separated polymers, separation membranes, composites for electrical conductivity/self-diagnosis/EMI shielding) will be used to guide research and training and to demonstrate the project developments.

The advertised subproject will be carried out by one postgraduate ("early-stage researcher") at Fraunhofer ICT over a period of 36 months.

Different possibilities for the orientation of nanofillers will be investigated based on the application of defined flow patterns during moulding of parts. Not only nanofillers which are delivered in a random state like CNTs and oriented by defined measures but also ordered structures like platelets, lawns of tubes or CNT yarns will be used. Processing methods which are capable of preserving the ordered initial configuration of the nanostructures will be developed. The produced composites and parts will be investigated in view of their anisotropic properties. The materials will be designed with the help of simulations made by another postgraduate from TheLink, and characterized within the network.

This subproject is fully funded by the Marie Skłodowska-Curie European Training Network "TheLink" (H2020-MSCA-ITN-2014). The recruited researcher will have the opportunity to work as part of an international, interdisciplinary team of 15 postgraduates, based at universities and industrial firms throughout Europe. He/she will receive theoretical and

practical training in the three project disciplines of simulation, characterization and processing. He/she is expected to finish the project with a PhD thesis and to disseminate the results through patents (if applicable), publications in peer-reviewed journals and presentations at international conferences.

Requirements:

Qualifications / experience:

- Early-stage researcher: a researcher without a PhD, who is in the first four years (full-time equivalent research experience) 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.
- Graduate degree in the technical area or in natural sciences (Mechanical Engineering, Chemical Engineering, Materials Sciences, Plastics Engineering, Physics)
- Open for interdisciplinary approach regarding computational sciences, engineering and measurement techniques
- The ability to work in an internationally-oriented environment, including fluency in English

Mobility:

- The applicant must not have resided or carried out his/her main activity (work, studies etc.) in Germany for more than 12 months in the past three years.

How to apply:

Please send your CV by post or e-mail to the following address, quoting the reference "TheLink-ICT-ESR2":

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Application deadline: 1st February 2015