TECHNISCHE UNIVERSITÄT DARMSTADT

At the Department of Chemistry, Technische Universität Darmstadt, Germany, **Institute for Macromolecular Chemistry – Smart Membranes**, one

Marie Skłodowska-Curie ITN "STIMULUS" Early Stage Researcher/PhD position

is available for 36 months, within the framework of the International Training Network "STIMULUS", starting earliest 1st March and latest 1st of September 2021.

The applicant will be paid a full-time salary, subject to Marie Skłodowska-Curie regulations. Moreover the applicant will get in touch with numerous labs and research facilities around Europe as well as visit and present their work at international conferences.

The position is supported by the EU funded Marie Skłodowska-Curie Innovative Training Network, STIMULUS (https://www.stimulus-etn.eu/), a joint project of different universities, companies and hospitals in Europe. The selected candidate will become a member of an inspiring, collaborative team across Europe that uses the latest technologies in a highly interdisciplinary work environment which offers a wide range of opportunities for professional development. The selected candidate will spend most of the time in Darmstadt, Germany with secondments to at least one University and one industrial partner each. Research will focus on innovative solutions for multifunctional wound dressings inheriting, e.g. signalling and release functions.

The research group “Macromolecular Chemistry – Smart Membranes” at TU Darmstadt is a dynamic, innovative team in search of new nanoporous materials, manufacturing methods and transport processes that deliver benefits in the areas of water, sensor technology and energy conversion. More information about our research is available here on our website: https://www.chemie.tu-darmstadt.de/brunsen/ak_brunsen/research_group_brunsen/index.en.jsp

Within the framework of the International Training Network "STIMULUS", we are searching for nanoporous materials and interfaces that feature multiple functions such as release, recognition and sensing on the basis of functionalized mesoporous silica coatings. Based on such multifunctional nanopores we aim to develop wound dressings able to signal critical amounts of bacteria or release antibiotics specifically upon reaching a critical bacterial colonization. With respect to the latter, a tailored preparation and functionalization of mesoporous materials with functional polymers becomes a major key-target within the prospective research period.

In this context we a searching for a PhD student interested to work in an international and interdisciplinary environment with knowledge in the field of nanoscale porous materials, surface and porous material (polymer) functionalization and characterization, transport, signalling, and release from porous materials and the medical application of porous materials.

Requirements:

- Master degree in chemistry or related subject not more than four years (full-time equivalent) ago and with very good to excellent grades. For more details please refer to: https://ec.europa.eu/research/mariecurieactions/sites/mariecurie2/files/msca-itn-fellows-note_en_v2.pdf
- Potential candidates should not have resided or carried out their main activity (work, studies, etc.) in Germany for more than 12 months in the 3 years immediately prior to appointment.
- Very good knowledge and experience of sol-gel chemistry, polymer chemistry, surface characterization.
- Knowledge in the field of medical application of nanoporous materials, fluid imbibition and ionic transport in mesoporous materials, sensing and release concepts in nanopores, as well as 3D printing is advantageous.

The ability to work in a team, outstanding skills in interdisciplinary work and communication, a very high degree of independence, the ability develop your own ideas within the project, a very high level of motivation, a very good knowledge of English and the willingness to present your own work in an international environment are desired.

Opportunity for further qualification (doctoral dissertation) is given. The fulfillment of the duties likewise enables the scientific qualifications of the candidate.

The Technische Universität Darmstadt intends to increase the number of female employees and encourages female candidates to apply. In case of equal qualifications applicants with a degree of disability of at least 50 or equal will be given preference.

Your full application should include a curriculum vitae, your letter of motivation and relevant qualification certificates. Please send these documents stating the reference number in one pdf to the Dean of the Chemistry Department, Prof. Dr. Harald Kolmar, Alarich-Weiss-Str. 4, 64287 Darmstadt, Germany (dekan@chemie.tu-darmstadt.de) and in copy by e-mail to the Chair of the Institute for Macromolecular Chemistry – Smart Membranes, Prof. Dr. Annette Andrieu-Brunsen, Alarich-Weiss-Str. 8, 64287 Darmstadt, Germany (annette.andrieu-brunsen@tu-darmstadt.de).

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