

Leticia Hosta-Rigau, PhD.

Assoc. Prof. and Group Leader

Biomimetics, Biocarriers and Bioimplants Group (The 3Bs)

DTU Nanotech, Department of Micro- and Nanotechnology

Technical University of Denmark

Email: leri@nanotech.dtu.dk

<http://www.nanotech.dtu.dk/research-mega/forskningsgrupper/3bs>

PhD scholarship in “Assembly, characterization and in vitro evaluation of haemoglobin carriers towards the creation of universal blood substitutes”

DTU Nanotech (Department of Micro- and Nanotechnology), is an international research and education nanoscience Department based at the Technical University of Denmark (DTU). DTU Nanotech undertakes interdisciplinary research involving scientists from relevant areas in physics, chemistry, molecular biology and engineering.

The Biomimetics, Biocarriers and Bioimplants Group (The 3Bs) is a highly interdisciplinary and positive group with open-minded and supportive members. The 3Bs research areas are focusing on drug delivery, tissue engineering and cell mimicry.

The 3Bs group at DTU Nanotech is searching for a highly motivated PhD student with strong ambition and commitment to a very productive environment. The 3Bs comprises the fields of organic chemistry, materials science and cell biology.

The position will be for 3 years and it is available as soon as possible.

Background

Blood is crucial for our survival and the only way to substitute for blood loss occurring during accidents or surgery is by using blood from donors. However, blood transfusions have some limitations and risks: before blood can be transfused, there is a need for typing and matching due to the different blood groups causing fatal delays in emergency situations. Also, blood has a short storage lifetime, which makes it impossible to create large blood supplies to be used in acute disasters such as earthquakes or plane accidents. Furthermore, blood transfusions can help spreading new viral infections, like it happened with HIV in the 80s. Thus, developing a new oxygen-carrier solution for use when red blood cells are neither an option or available persists as one of the foremost important challenges in biomedicine.

The successful candidate will work in a highly interdisciplinary project in the interface of polymer chemistry, materials science together with molecular and cell biology. The research project will be focused in the fabrication of a new class of microcarriers with potential to serve as Red Blood Cells Substitutes (RBCS).

Qualifications

The successful applicant should hold a master's degree (or a similar degree with an academic level equivalent to master's degree) in Chemistry, Pharmacy, Materials Science or related disciplines, with a strong background in organic chemistry and cell and molecular biology.

Experience in the drug delivery field will be considered as an advantage.

The candidate should demonstrate evidence of:

- Self-driven and independent prior research productivity
- Excellent collaboration and communication skills
- An interest in working in an interdisciplinary research environment
- A strong motivation to succeed within a competitive research field
- Fluent in spoken and written English
- Flexibility and ability to work in a team environment

Responsibilities and tasks

The 3Bs group at DTU Nanotech wishes to employ a PhD student for 3 years to work in a highly interdisciplinary project focusing on the development and characterization of a new type of RBCS.

The PhD student will work in a highly interdisciplinary project in the interface of polymer chemistry, materials science together with molecular and cell biology.

In particular, the PhD research project involves the assembly of polymeric microcarriers encapsulating the essential components for the creation of RBCS as well as their in vitro characterization with model cell lines.

The job also involves co-supervision of bachelor and master students.

Approval and Enrolment

The scholarships for the PhD degree are subject to academic approval, and the candidates will be enrolled in one of the general degree programmes of DTU. For information about the general requirements for enrolment and the general planning of the scholarship studies, please see the DTU PhD Guide: <http://www.dtu.dk/english/Education/PhD/Rules/PhDguide>.

Assessment

The assessment of the applicants will be made by Associate Professor Leticia Hosta-Rigau.

We offer

We offer an interesting and challenging job in an international environment focusing on education, research, scientific advice and innovation, which contribute to enhancing the economy and improving social welfare. We strive for academic excellence, collegial respect and freedom tempered by responsibility. The Technical University of Denmark (DTU) is a leading technical university in northern Europe and benchmarks with the best universities in the world.

Salary and appointment terms

The salary and appointment terms are consistent with the current rules for PhD degree students. The period of employment is 3 years.

The main workplace will be at DTU Lyngby Campus.

Further information

Further information may be obtained from Associate Professor Leticia Hosta-Rigau, leri@nanotech.dtu.dk.

You can read more about DTU Nanotech on www.nanotech.dtu.dk and about The Biomimetics, Biocarriers and Bioimplants Group (The 3Bs) on <http://www.nanotech.dtu.dk/research-mega/forskningsgrupper/3bs>.

Application

Please submit your online application no later than **31st May 2017**. Apply online at www.career.dtu.dk.

Applications must be submitted as **one pdf file** containing all materials to be given consideration. To apply, please open the link "Apply online," fill in the online application form, and attach **all your materials in English in one pdf file**. The file must include:

- A letter motivating the application (cover letter)
- Curriculum vitae
- Grade transcripts and BSc/MSc diploma
- Excel sheet with translation of grades to the Danish grading system (see guidelines and excel spreadsheet here: http://www.dtu.dk/english/Education/phd/Applicant/Pre_acceptance-1-)

Candidates may apply prior to obtaining their master's degree, but cannot begin before having received it. All interested candidates irrespective of age, gender, race, disability, religion or ethnic background are encouraged to apply.

DTU Nanotech is a department at DTU, dedicated to conduct research, education and innovation within micro- and nanotechnology at the highest international level. Being an active player in close to 100 collaborative research projects of which many includes national and international leading companies and institutions, DTU Nanotech has a high degree of external cooperation, urging our professionalism and our competencies to the forefront.

We promote academic excellence by fostering a team-based scientific environment building on the passion, talent and skills of our international and cross-disciplinary staff. DTU Nanotech has around 220 people on its staff of which 90 are PhD students and with 40 % international employees the department constitutes an international environment.

At DTU Nanotech, we exploit sciences across the traditional boundaries of technology enabling innovative solutions for the benefit of society. Micro- and nanotechnology is applied within the biomedical, life sciences, environment, energy, security, and sensing areas.

DTU is a technical university providing internationally leading research, education, innovation and scientific advice. Our staff of 5,800 advance science and technology to create innovative solutions that meet the demands of society; and our 10,300 students are being educated to address the technological challenges of the future. DTU is an independent academic university collaborating globally with business, industry, government, and public agencies.