UPPSALA
UNIVERSITET

PhD student position in biomedical engineering focused on fabrication of organs-on-chip systems - with one year placement abroad in USA

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Uppsala University is a comprehensive research-intensive university with a strong international standing. Our ultimate goal is to conduct education and research of the highest quality and relevance to make a long-term difference in society. Our most important assets are all the individuals whose curiosity and dedication make Uppsala University one of Sweden's most exciting workplaces. Uppsala University has over 54,000 students, more than 7,500 employees and a turnover of around SEK 8 billion.

Admission to postgraduate education in the subject Engineering Sciences with specialisation in Biomedical Engineering

The position is located at the Division of Biomedical Engineering in the interdisciplinary research group EMBLA, which is led by Professor Maria Tenje. The group conducts successful and internationally-recognized research in organs-on-chip and droplet-based microfluidics in collaboration with research teams at several different Swedish and overseas universities. Research funding has been obtained through several prestigious awards, including a *Wallenberg Fellowship*, *ERC Starting Grant* and *ERC Consolidator Grant*. Today we are approx. 15 people in the group and having recently received extended funding from the Knut and Alice Wallenberg Foundation for a project focused on the development of microfluidic solutions for the production and culture of organoids, we are now looking for motivated and results-oriented research talents for the group who would be willing to undertake a research exchange to UC Santa Barbara during 2022/2023.

Further information about the research group is available on the website: http://www.materialvetenskap.uu.se/embla.

Research project

Organ-on-chip is a growing field of research with the ambition to eventually replace traditional animal experiments. Organ-on-chip systems are microfluidic systems that reproduce the microarchitecture of human organs so that cells can be cultured in them and enable functional studies *in vitro*. One of the research projects within the EMBLA group is focused on developing microfluidic methods with integrated acoustics for organs-on-chip. This is an interdisciplinary project involving five of the group's members, funded by the Knut and Alice Wallenberg Foundation.

Work duties

The main duties of doctoral students are to devote themselves to their research studies which includes participating in research projects and third cycle courses. The work duties can also include teaching and other departmental duties (no more than 20%).

Your duties will be to undertake research in so-called organs-on-chip system in which cells can be grown under controlled conditions. Special focus is on the fabrication of microfluidic systems in biological materials using advanced and high-resolution manufacturing processes, incl. development and optimization of new processing techniques.

You will also evaluate the developed systems in terms of both biological and mechanical properties. Biological evaluation will take place in the form of biocompatibility studies and evaluation of the systems' ability to support the growth and differentiation of stem cells. Mechanical evaluation includes various techniques for material analysis, especially focused on the acoustic properties of the materials.

Qualification requirements

MSc or MSc Eng. degree (by agreed starting date) with specialization in biomedical engineering, engineering sciences, nanotechnology, materials science, biotechnology or equivalent and where a larger part of your degree project was focused on *at least one* of the following areas:

1. culture and characterization of cells, preferably stem cells or
2. microfluidic systems for biomedical applications

We require good knowledge of English, both oral and in writing.

We are looking for a creative person with a strong motivation to complete doctoral studies in this interdisciplinary subject. We attach great importance to personal qualities and are looking for someone with the ability to work both independently and in groups, as the nature of the research regularly changes between these two forms of work. In addition, you need to be strongly motivated to complete a doctoral education and want to learn new techniques and methods. You must be able to communicate your research results, have good analytical skills and be structured and easily able to plan and lead your own work.

Additional qualifications
Documented knowledge of fabrication of and experimental work in microfluidics is meritorious. Documented experience of cell culture, staining protocols and microscopy is an advantage, as is knowledge of various cell analysis techniques and biomaterials.

Admission requirements
A person meets the general admission requirements for third-cycle courses and study programs if he or she:

- has been awarded a second-cycle qualification, or
- has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second cycle, or
- has acquired substantially equivalent knowledge in some other way in Sweden or abroad.

Rules governing PhD students are set out in the Higher Education Ordinance chapter 5, §§ 1-7 and in Uppsala University's rules and guidelines.

Instructions for application:
Your application must include:

1) A short letter describing yourself, your previous research experience and why you want to do a doctorate. Describe in particular what a research exchange to UCSB would mean to you
2) CV (max. 2 pages)
3) A copy of your master's degree and your course grades
4) Names and contact details (address, e-mail address and telephone number) of at least two reference persons
5) List of relevant publications (including master's thesis)

The application will preferably be written in English.

We will during the application time continuously read the applications and hold interviews.

Salary: According to local collective agreement for doctoral students.

Type of employment: Temporary position according to the Higher Education Ordinance chapter 5 §7

Starting date: Autumn 2022 or by agreement.

Scope of employment: 100%.

Placement: First year placement abroad at UCSB thereafter in Uppsala.

For further information about the position please contact: Professor Maria Tenje, (maria.tenje@angstrom.uu.se) or Dr. Susan Peacock (susan.peacock@angstrom.uu.se).

Information about the Division of Biomedical Engineering is available at https://www.materialvetenskap.uu.se/medicinsk-teknik/.

Please submit your application no later than June 3, 2022, UFV-PA 2022/1377.

Are you considering moving to Sweden to work at Uppsala University? Find out more about what it´s like to work and live in Sweden.

Please do not send offers of recruitment or advertising services.

Submit your application through Uppsala University's recruitment system.

Placement: Department of Materials Science and Engineering

Type of employment: Full time , Temporary position longer than 6 months

Pay: Fixed salary

Number of positions: 1

Working hours: 100 %

Town: Uppsala

County: Uppsala län

Country: Sweden

Union representative: ST/TCO tco@fackorg.uu.se
Seko Universitetsklubben seko@uadm.uu.se
Saco-rådet saco@uadm.uu.se

Number of reference: UFV-PA 2022/1377

Last application date: 2022-06-03

Apply for position