Job posting

Type of position
☒ scientific  ☐ administrative

Target group
☒ graduates  ☐ post docs  ☐ other

Title
PhD project on bioprinting and acoustic assembly methods

Institution
Within the Cluster of Excellence 3D Matter Made to Order (3DMM2O), which is supported by the DFG (German Research Foundation) as part of the Excellence Strategy, there is 1 open position for Doctoral Researchers (f/m/d).
In the group of Prof. Fischer (IMSEAM (uni-heidelberg.de)), we are looking for a PhD and a Postdoctoral candidate for an exciting project on bioprinting and acoustic assembly methods. The Cluster of Excellence 3D Matter Made to Order (3DMM2O) combines the competencies of Karlsruhe Institute of Technology (KIT) and Heidelberg University to advance 3D Additive Manufacturing to the next level. The goal is to break current barriers of scale, precision and speed to unleash the true potential of the technology. The work is aligned alongside three interdependent Research Areas: Molecular Materials (A), Technologies (B) and Applications (C). More on the Cluster and its research on our website: www.3dmm2o.de.

Position
The project will include:
• Developing methods to assemble cells into tissues in 3D using novel ultrasound technologies.
• Examining the functioning of the assembled cells and tissues using a variety of imaging and biomechanical techniques.

The key goal of the project is to establish a general method that permits the instantaneous assembly of cells from solution into a pre-defined shape using ultrasound. This “one-shot” fabrication method promises to be faster and more benign that traditional bioprinting. The technology is based on a recent invention by the group (see for instance Nature 537, 518-522 (2016) and Adv. Mat. 32: 1904181 (2020)). Application areas range from tissue engineering to cancer screening. The successful candidates will benefit from a vibrant research environment at Heidelberg University and close connection to the Max Planck Institute for medical Research.
Responsibilities

Doctoral position 3 years at 75% TV-L E13 and PostDoc: 100% TV-L E13, 2 years in the first instance with a chance for extension. Upon acceptance, the Doctoral Researchers will be part of the structured doctoral program offered by the HEiKA Graduate School on Functional Materials, which brings together Young Scientists in an interdisciplinary environment. The participating disciplines encompass chemistry, physical chemistry, physics, biophysics, biology, biomechanics, mechanical engineering, and electrical engineering.

Requirements

Requirements for the application include a degree (MSc or equivalent) with above-average marks in a participating or related field (Physics with biophysics, mechatronics / mechanical engineering, biomedical engineering) as well as openness to interact in a multi-disciplinary team. Furthermore, excellent English skills as well as the ability to work independently and a good portion of curiosity are required. Additional information about the research topics and requirements on our website. Further questions about the research projects should be directed to Peer Fischer directly. See also: https://www.imseam.uni-heidelberg.de/fischer/research

Application procedure (deadline etc.)

Applications should be handed in only through our Application Portal. Please indicate the position you are interested in so we can make sure to evaluate your application accordingly. The following documents and data are required for your application:

- CV
- School and University (as applicable: Bsc, MSc, Doctorate) certificates
- Transcripts (BSc and MSc)
- Cover Letter
- Letter of Motivation & Abstract of Research Interest

Qualified women are strongly encouraged to apply. Disabled persons with equivalent aptitude will be favored.

Dec. 15th, 2022 via the Application Portal:
https://functionalmaterials.applicationportal.org/home.html

Contact

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