**Master's Thesis Positions in Microrobotic Bioengineering Lab: Antibody-functionalized microgels for cell delivery to the heart**

We are currently seeking a highly motivated Master's level students to join our vibrant research team in the field of Nano- and Microrobotics. The research topic focuses on designing microgels for the transplantation of cardiac cells to treat ischemic heart conditions. We offer a joyful working environment where you can interact with and learn from several Ph.D. and Master’s students with various backgrounds, and looking for team members who can adapt to our working environment and lab culture.

*Project Overview:*

The project aims to functionalize microgels with cardiac-specific antibodies, enabling them to adhere to the cardiac surface. The student will primarily focus on the synthesis of microgels using microfluidic techniques and the subsequent functionalization of these microgels with antibodies specific to ischemic heart tissue. Furthermore, the student will be responsible for encapsulating cardiac-related cells inside the microgels with microfluidics methods that are already utilized in the lab. The functionalized microgels will be evaluated in terms of their adhesion to *in vitro* or *ex vivo* beating hearts, and their residency ratio will be compared against non-functionalized microgels and non-treated cells. The successful candidate will be required to conduct thorough literature research to develop the project further and perform experimental work with the supervision of a PhD student.

*Requirements:*

* Currently pursuing a Master's degree in a relevant field (e.g., Biomedical Engineering, Molecular Biology, Mechanical Engineering, or a related discipline)
* Strong background and prior experience in cell culture techniques
* Familiarity with microfluidic techniques is desirable but not mandatory
* Self-motivated and able to work independently as well as within a research team
* Ability to conduct literature research and stay updated with the latest developments in the field

*Application Process:*

If you are interested, please send a brief email about your background, interests, and experiences, along with an attached CV and transcripts from your bachelor's and master's degrees. Please get in touch with Nergishan Iyisan at [nergis.iyisan@tum.de](mailto:nergis.iyisan@tum.de).

We look forward to receiving your application and welcoming a talented students to our research team!

Nergishan Iyisan

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