

Academic staff (f/m/d) for the "Biopolymer Materials" group

07.09.2026, Wissenschaftliches Personal / Academic Staff

The lab for biopolymer materials (Prof. Dr. Lieleg) at the Technical University of Munich (Campus Garching) is looking for academic staff (f/m/d) to investigate the "*barrier properties of mucus and mucus model systems*"

Your responsibilities:

The Lieleg lab investigates – among other things – the physico-chemical principles governing the barrier properties of mucus and mucus model systems. In this context, we try to understand how the permeability of mucus-gels towards molecules is altered when the mucus is contaminated with environmental particles such as particulate matter or microplastic (<https://doi.org/10.1016/j.ijbiomac.2026.151566>), or when the molecular composition of mucus is changed in the context of pathological conditions (<https://doi.org/10.1021/acs.biomac.4c01629>). Moreover, we develop methods to improve the permeability of mucus, e.g., for the transport of drug carriers. This research is embedded into the CRC1449 and the Cluster of Excellence „BioSystem“.

You will employ different microscopy-based techniques (single-particle tracking, microfluidics) to characterize the permeability of different mucus (model) systems towards molecules and identify the molecular principles governing the selective barrier properties of those hydrogels. A main goal will be to correlate pathophysiologically relevant alterations in the composition of mucus with differences in its permeability and to find methods to rationally modulate those barrier properties.

In addition to those research tasks, you will also contribute to the teaching duties of the Lieleg lab.

Your qualifications:

You hold a very good Master's degree in a field related to the mentioned research area (e.g., biophysics, biochemistry, bioengineering, chemical engineering), and you can work well in an

interdisciplinary team. Very good English skills and experience with lab work as well as with light microscopy are required for this project. Moreover, you have experience with the chemical conjugation of biomolecules and data analysis programs such as MatLab. German skills are helpful.

Our offer:

We offer a 75% position as academic staff with the opportunity to pursue a doctoral degree. The position will be limited to four years. Payment will be based on the Collective Agreement for the Civil Service of the Länder (TV-L). TUM strives to raise the proportion of women in its workforce and explicitly encourages applications from qualified women. Applications from disabled persons with essentially the same qualifications will be given preference.

Your application:

If you are interested in working in our team, please send your application together with a strong CV and supporting documentation (e.g., transcripts of records) to:

bme.mw@tum.de

All application documents should arrive no later than October 6th 2026.

As part of your application, you provide personal data to the Technical University of Munich (TUM). Please view our privacy policy on collecting and processing personal data in the course of the application process pursuant to Art. 13 of the General Data Protection Regulation of the European Union (GDPR) at <https://portal.mytum.de/kompass/datenschutz/Bewerbung/>. By submitting your application, you confirm to have read and understood the data protection information provided by TUM.

Find out more about Prof. Lieleg's lab here: www.mae.ed.tum.de/bme