

The DFG Research Training Group (RTG) 2723 *“Materials-Microbes-Microenvironments (M-M-M): Antimicrobial biomaterials with tailored structures and properties”* at Friedrich Schiller University Jena and Jena University Hospital (UKJ), Germany, combines expertise in materials, life, optical and computational sciences to research and develop completely new antimicrobial biomaterials. Our core mission is to elucidate fundamental principles of the interactions of materials, microbes and bone cells. We aim to design and create novel antimicrobial biomaterials that reduce the number of biomaterials associated infections (BAI) by using physical materials properties. This will allow the development of novel antimicrobial biomaterials with tailored structures and properties.

The RTG offers together with the JSMC and the Jena graduate academy an ambitious, structured and interdisciplinary post-graduate training based on top-level highly competitive research and training activities.

The RTG 2723 M-M-M invites applications for
12 Doctoral Researcher Positions

We are recruiting engaging and motivated individuals to join our RTG. Important for all candidates will be the willingness to collaborate widely and to look beyond traditional disciplines to advance our mission.

How can novel antibiotic free antimicrobial biomaterials based on physical principles be designed? What is their working principle? Can materials be designed in a way that suppresses microbes and promote bone cells? Are the current biological test methods for antimicrobial biomaterials sufficient or do they require new materials new test methods? How can we use advanced microscopy methods to understand the material-microbe-cell interactions in depth? Can computational materials science and advanced image analysis help to develop these new materials?

Answering these questions requires that we come together as a scientific community to which we contribute expertise as well as a curiosity about unfamiliar subjects.

We expect:

- An outstanding MSc. in natural sciences (material sciences, physics, chemistry, materials engineering, microbiology, cell biology, molecular biology, biochemistry or closely related fields). Candidates in the final stages of obtaining their degree are eligible to apply
- Desirable methodological skills: materials creation and synthesis, materials characterization and testing, PVD, microscopy methods, handling of proteins and nanomaterials, organic and inorganic materials preparation, computational materials science, data base experience, materials engineering skills (materials science) or basic training in microbiology and bacterial culture; experience in cell culture and infection experiments; basic knowledge in molecular biology, FACS-analysis, advanced automated image data analysis, programming skills (life sciences)
- Highly motivated individuals with an interest in joining one of the interdisciplinary research areas of the RTG
- The ability to work creatively and independently towards developing your own research project
- A collaborative personality with enthusiasm for actively participating in the dynamic RTG community
- Excellent English communication skills, both written and spoken

We offer:

- Research in a clinically highly relevant topic
- A highly communicative atmosphere within a scientific network providing top-level research facilities
- An international competitive interdisciplinary training program in materials science and life science
- A competitive theoretical and hands on training in antimicrobial biomaterials
- A comprehensive mentoring program and soft skill courses for early career researchers
- *Jena – City of Science*: a young and lively town with a vibrant local cultural agenda

The positions will be funded through the German federal and state governments. Friedrich Schiller University Jena is an equal opportunity employer. Disabled persons with comparable qualifications will receive preferential status.



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Applications are exclusively accepted via the JSMC Online Application Portal:

<https://apply.jsmc.uni-jena.de/>

Please familiarize yourself with the currently available projects (<https://www.jsmc-phd.de/vacant-positions.html>) and the application process as described in the Online Application Portal. Selected applicants will be invited to a recruitment meeting taking place in Jena on 1. December 2022. Awarding decisions will be announced shortly thereafter, and candidates are expected to be available to start their projects on **1. February 2023**.

Application deadline: 10. October 2022