

The **Leibniz Institute for Food Systems Biology at the Technical University of Munich (Leibniz-LSB@TUM)** is a research institution of the Leibniz Association that combines methods of biomolecular basic research with analysis methods of bioinformatics and analytical high-performance technologies to investigate the complex interplay between the human organism and food ingredients.

Our research group "Transcriptome & Proteome Profiling" at Leibniz-LSB@TUM is looking for

1 doctoral student

to start on November 6, 2023 (65% TV-L 13). The position is to be filled for initial 1 year with the option to extend it by another 3 years.

Research project:

The position will be in the interdisciplinary nucleic acid chemistry group led by Dr. Mark M. Somoza and is funded by Horizon Europe EIC Pathfinder Challenge on DNA-based digital data storage. The research will focus on the design and chemical synthesis of ultra-large-scale nucleic acid oligonucleotide libraries by means of maskless photolithography. Emphasis will be on modifying the chemistry and photochemistry to find optimal conditions specific to encoding digital data in DNA, and to implement new technologies to improve both synthesis throughput and information density. The oligonucleotide libraries will be tested using standard nucleic acid analytical approaches, as well as by nanopore and next generation sequencing. The research will complement the overall goals of the Pathfinder Challenge to build a complete DNA-based storage system to serve many different industries, including agriculture, food, pharma, and healthcare.

Your area of responsibility includes

- Development of optimized (photo)chemistries for ultra-large-scale synthesis of DNA
- Design of large and complex DNA sequence libraries, including the use of non-canonical and degenerate bases
- Photolithographic synthesis of DNA libraries for digital data storage, in-product information storage and DNA-based cryptography
- Coordination of research with national and international partners

Requirements:

The ideal applicant holds a degree in chemistry, molecular biology, biochemistry, or related field, and solid English language skills. We are looking for a candidate with high self-motivation, the ability to work and acquire new skills independently, as well as outstanding organizational and team skills. The candidate must be willing to travel nationally and internationally for training.

Work environment:

Together with internationally recognized experts, you conduct research aimed at improving foodstuffs and promoting healthy human nutrition.

In addition to a varied workplace where your performance counts, we offer

- a performance-related salary in accordance with TV-L, in-line with your personal qualifications and the personal prerequisites
- an interesting and stimulating research atmosphere for university research
- a motivated team that is looking forward to welcoming you
- flexible working times enabling, a good compatibility of work and family

- company pension scheme

In the case of essentially reciprocal suitability, severely-disabled applicants as defined SGB IX will be preferred.

Please address any questions to Dr. Mark Somoza (m.somoza.leibniz-lsb@tum.de) and send your application containing your comprehensive cv and transcripts as well as names of three potential references electronically to the following address, citing the

reference number **2023-13-S1-MS**:

Katharina Ranner (Human Resources Department) recruiting.leibniz-lsb@tum.de.

Take advantage of this opportunity and contact us!