

The Institute for Bioprocessing and Analytical Measurement Techniques (iba) is a non-university research institute of the Free State of Thuringia and an affiliated institute of the TU Ilmenau. As part of the research profile "Biotechniques at Interfaces", topics of application-oriented research for the development of technical systems for the life sciences are dealt with. The central research focus is on the engineering of molecular and cellular processes for disease modeling and therapeutic approaches for patient-specific medicine. The investigation, modification and application of interfaces and interface effects aims at the optimization of high-throughput methods as well as other processes, systems and products for medicine, biotechnology and related areas.

The AMT at the Institute for Bioprocessing and Analytical Measurement Techniques (iba) is looking for a Master student.

Master Student / Internship – Hydrogels Coated Blood Bags

Chiffre number: 2026-02_M-THN-H

on the topic:

Immobilization of Multifunctional Hydrogels on Blood Storage Bag Substrates

We are seeking a motivated Master's student to develop stable, multifunctional hydrogel coatings on commercially available blood bag substrates for platelet storage applications. The project focuses on enhancing hydrogel adhesion using surface modification strategies such as plasma treatment and covalent crosslinking while controlling gel thickness, uniformity, and mechanical stability. You will characterize hydrogel-substrate adhesion and durability using SEM, CLSM, AFM, nanoindentation, and contact angle measurements, and evaluate platelet interactions to ensure biocompatibility. Work packages include (1) hydrogel immobilization on bags, (2) long-term stability testing under realistic storage conditions, and (3) assessment of platelet responses. This project offers hands-on experience in biomaterials engineering, surface chemistry, microscopy, and biophysical analysis, contributing to innovative blood-contacting technologies.

Your tasks

- Literature Review
- Immobilization of Agarose Hydrogel Composites
- Surface and Mechanical Characterization
- Stability and Durability Testing
- Platelet Interaction Studies
- Data Analysis and Reporting

We expect:

- Students with a background in chemistry, molecular biology, biophysical chemistry, or biotechnology
- Knowledge of protein and cell analysis
- Reliable, careful, and responsible personality
- Experienced handling of MS Office applications (Excel, PowerPoint, Word)
- Good communication skills in English

We offer a varied, promising and self-responsible field of activity in an interdisciplinary and internationally networked research institute. You will find an open and collegial research

landscape with a wide range of professional and personal development opportunities. You can rely on a highly motivated team of scientists from various disciplines.

The iba guarantees professional equality and supports the compatibility of family and career, including with flexible working hours within the scope of official possibilities.

The position will start from **01.03.2026**. Please send your detailed application with the usual documents (cover letter, CV, evidence, certificates) in one PDF document with the reference number provided to following e-mail address until **15.02.2026**:

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