

TUHH AREA OF EXPERTISE: LIFE SCIENCE TECHNOLOGIES

From gene to technology centre



FROM GENE TO TECHNOLOGY CENTRE

Put together to be interdisciplinary, developed in a focused manner: the three fields of “aviation and maritime systems”, “green technologies” and “life science technologies” comprise the research expertise of the TUHH. “Life science technologies” highlights the strengths of the TUHH in the fields of medical technology, biomaterials and bio and chemical process technology.

In the area of expertise of “life science technologies”, the TUHH is dedicated in equal measure to discovering efficient and resource-conserving production processes and tackling the challenges for modern medical products associated with increasing life expectancy:

For example, the research area of **bio and chemical process technology** explores questions related to industrial or “white” biotechnology, the biological systems necessary for the sustainable production of chemicals as well as energy sources provided by renewable raw materials. In addition to new approaches to process development and integration, basic research is being carried out which encompasses the field of molecular modelling.

One of the tasks of **medical engineers** is to develop methods to ensure the reliability of medical assistance systems. For example, they are researching how 24-hour patient monitoring can be guaranteed to enable patients to recover at home. Other areas of research include imaging techniques and the development of sensor systems based on microsystem technology and nanoelectronics that are capable of transmitting medical data.

Areas of research in the field of **biomaterials** range from developing new implants and material systems through to laser structuring, regenerative medicine and tissue engineering. Research is being carried out to discover how artificial tissue implants can be grown in a bioreactor. In addition to technical material properties, the focus is on biocompatibility and biostability.

” *The TUHH is taking on social challenges when it comes to the area of expertise of life science technologies, and is searching for effective solutions, for example in cooperation with prestigious partners from the field of healthcare.*

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