

TUHH AREA OF EXPERTISE: GREEN TECHNOLOGIES

Sustainable, environmentally friendly, innovative



SUSTAINABLE, ENVIRONMENTALLY FRIENDLY, INNOVATIVE

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. “Green technologies” highlights the strengths of the TUHH in the fields of renewable energies, water and environmental technologies as well as systems, storage and networks.

The energy transition and dwindling resources are posing great challenges for research and science. The “green technologies” area of expertise at the TUHH brings together engineering expertise regarding issues related to sustainability and environmental responsibility.

The research area of **renewable energies** deals with the topic of energy production, both onshore and offshore. The construction, operation and safety of offshore wind turbines, as well as the use of wave and tidal stream energy, are very important aspects of this research. Other important research areas include geothermal energy as well as the utilisation of biomass and resources from the waste and waste water sectors, in terms of both their materials and energy.

How can fluctuating renewable energies be stored and then made available to the end user? TUHH scientists from the interdisciplinary research area of **Systems – Storage – Networks** are addressing this question. Dynamic modelling of the system as a whole, for example, makes it possible to identify ways of balancing out fluctuations in demand at different times through the targeted use of storage technologies.

In the field of **water and environmental technologies**, TUHH experts focus on the topics of safe water supply, water and soil protection as well as research into sustainable and climate-friendly technologies. Alongside adaptation strategies aimed at coastal and floodwater protection as well as the development of methods aimed at enabling water to be reused, the recovery of valuable substances from waste is also of vital importance.

” *The issue of securing the efficient supply of energy and materials in a manner that is environmentally sustainable and conserves resources is the most important technical and sociopolitical challenge of this day and age – a challenge that is being tackled by scientists from various disciplines.*



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