RANGE OF SERVICES

ACHIEVE MORE THROUGH RESEARCH & DEVELOPMENT

forschung.fh-ooe.at

FH OBERÖSTERREICH RESEARCH & DEVELOPMENT

RESEARCH & DEVELOPMENT
UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA

R&D at the University of Applied Sciences Upper Austria

Research Focus Areas

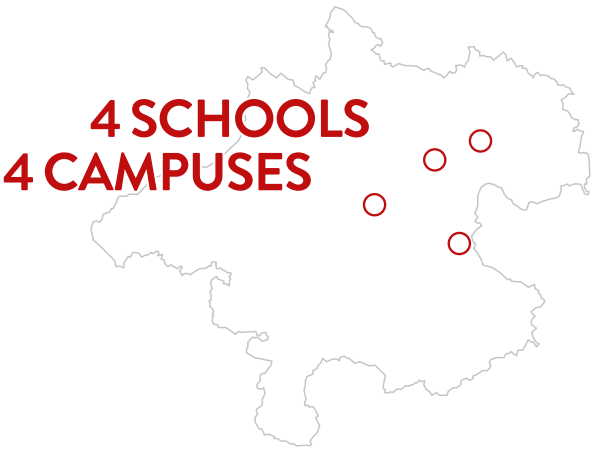
University of Applied Sciences Upper Austria in the Upper Austrian Research Landscape

Cooperation Made Easy

RESEARCH & DEVELOPMENT AT A GLANCE

Since 2003, the University of Applied Sciences Upper Austria has taken an innovative approach to applied research and development in ten Centers of Excellence and Focal Areas. Today, the University of Applied Sciences Upper Austria is in an outstanding position in the field of research and development. In 2022, around 241 professors and 247 full-time employees were responsible for €22 million in R&D turnover. In addition, eleven members of the research staff completed their dissertations and five were awarded a habilitation degree in 2022. This ensures that practical, high-level research and development with a clear orientation towards economic and social needs will continue. The University of Applied Sciences Upper Austria is not only the clear leader among Austria's universities of applied sciences but also one of the most research-intensive universities of applied sciences in the German-speaking world!

For all R&D-related news of the University of Applied Sciences Upper Austria please see our website at forschung.fh-ooe.at.



- School of Informatics, Communications and Media Hagenberg Campus
  - School of Medical Engineering and Applied Social Sciences Linz Campus
  - School of Business and Management Steyr Campus
- School of Engineering Wels Campus

€41.6 million
in research agreements

10 Centers of Excellence and Focal Areas

R&D turnover (in €m)
2003: 1.14
2010: 9.57
2019: 20.88
2020: 20.27
2021: 20.49
2022: 22.04

2022
523
scientific publications
11 dissertations | 5 habilitation

ON THE ROAD TO SUCCESS WITH R&D!

Research and development is particularly important for our economy and society. Businesses must innovate and be creative in order to remain competitive at an international level. Only innovative processes, products and services can secure existing jobs and create new ones. The University of Applied Sciences Upper Austria is a strong and flexible partner, ready to effectively master the challenges of the future.

Mag. Thomas Stelzer
State Governor of Upper Austria

With its strategic economic and research programme #upperVISION2030, the State of Upper Austria has adopted specific measures and priorities in order to continue Upper Austria's success as an industrial, export and technology region. In doing so, we deliberately rely on the proven innovative strength of the University of Applied Sciences Upper Austria and support its activities in research and development, which continue to provide Upper Austria with cutting-edge, innovative know-how.

KommR Markus Achleitner
Minister of Economy and Research of Upper Austria

Our researchers are dedicated to studying the latest and most important topics of the twenty-first century in future-oriented areas of research. The Centers of Excellence and research focal areas are aligned with the thematic areas of the strategic programme, which also paved the way for the implementation of these interdisciplinary Centers of Excellence. The University of Applied Sciences Upper Austria thereby makes a significant contribution to achieving Upper Austria's strategic objectives.

Dr. Gerald Reisinger
University President, University of Applied Sciences Upper Austria

With the European Green Deal, major changes are coming to the areas of mobility, energy, production, circular economy and food. These research areas have long been part of the DNA of the University of Applied Sciences Upper Austria. With the know-how of the researchers and their partners from industry, internationally recognised research successes have already been achieved. Now the Green Deal topics are becoming even more important at European and national level.

Prok. Prof. Priv.Doz. DI Dr. Johann Kastner
Executive Vice-President for Research and Development, University of Applied Sciences Upper Austria

PROGRESS THROUGH INNOVATION

Customised R&D Solutions

International recognition and a hands-on academic education are the factors that distinguish a university of applied sciences as an educational institution. Qualified graduates from a university of applied sciences strengthen business activities through their outstanding performance.

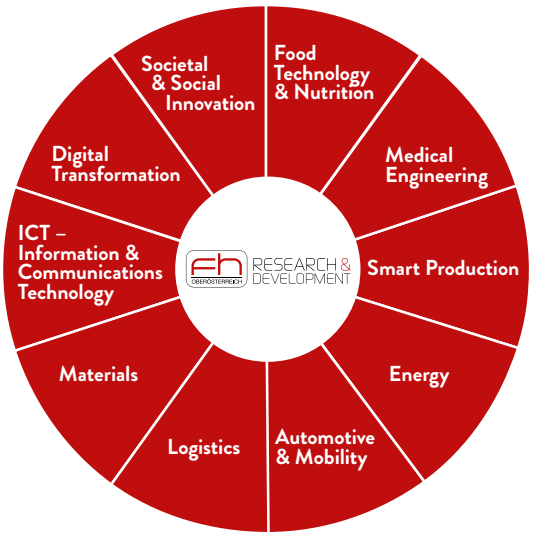
With **71 degree programmes** at the **four schools** in Hagenberg, Linz, Steyr and Wels, and about **5,800 students** enrolled in the academic year 2022/2023, the University of Applied Sciences Upper Austria has become a driving force in education and research in the State of Upper Austria.

Moreover, the University of Applied Sciences Upper Austria focuses its R&D activities on achieving innovative results that benefit industry and society. The University of Applied Sciences Upper Austria's research and development programmes converge in the FH OÖ Forschungs & Entwicklungs GmbH, which was specifically founded to coordinate research projects.

Innovative Solutions for Industry & Society

In close coordination with the areas of competence in teaching, a total of **ten Centers of Excellence and research Focal Areas** have been established within the framework of the degree programmes offered at the **four schools.**

Aspects of the European Green Deal and digitalization are addressed in a future-oriented manner in all 10 Centers of Excellence and Focal Areas.



We are particularly strong in these European Green Deal areas:

Energy
Clean, reliable and affordable Energy

Healthy Food
Farm to Fork: healthy and affordable food

Circular Economy
Mobilising industry for a clean and circular economy

Mobility
Accelerating the shift to sustainable and smart mobility

61%
of all R&D projects of the University of Applied Sciences Upper Austria address environmental aspects and have Green Deal relevance.

STRATEGIC RESEARCH PARTNERSHIPS

The University of Applied Sciences Upper Austria is a fixture of the Upper Austrian research landscape and cooperates closely with industry and academic institutions. In order to manage this collaboration strategically and efficiently, the University of Applied Sciences Upper Austria is a shareholder in the following initiatives:

» **Digitrans GmbH** – Test region Austria-North for automated driving with a focus on freight mobility and logistics
» **DIH Arbeitswelt GmbH** – Digital Innovation Hub ARBEITSWELT KMU (DIH.work)
» **FFoQSI GmbH** – K1-Austrian Competence Centre for Feed and Food Quality, Safety and Innovation
» **Logistikum Schweiz GmbH** – Logistik und Supply Chain Management
» **TCKT** – Transfercenter für Kunststofftechnik GmbH
» **tech2b** Inkubator GmbH

Digitrans GmbH
DigiTrans aims to develop a test region for automated and networked driving in north-central Austria, taking into account the requirements of industry and infrastructure managers and focusing on user- and impact-driven implementation within a sustainable operating model.

DIH Arbeitswelt GmbH
The aim of DIH.work is to collaborate with SMEs to create sustainable working environments in a digital society.

FFoQSI GmbH – K1 Competence Centre for Food Research
The Austrian Competence Centre for Feed and Food Quality, Safety and Innovation—FFoQSI for short—is the first COMET Competence Centre to safeguard feed and food production. Research is concentrated in areas 1 and 2 of the research programme on selected topics along the value chain of plant-based feed and food as well as foodstuffs of animal origin. Area 3 involves strategic research and is an innovation platform for technology development.

TCKT – Transfercenter für Kunststofftechnik GmbH
TCKT stands for application-oriented research and development in all areas of plastics engineering. TCKT develops solutions to diverse challenges within the scope of research projects. However, its range of services is also available on a contract basis, whether for individual material tests or longer-term studies. Since May 2022 the University of Applied Sciences Upper Austria owns 100% of the shares.

tech2b Inkubator GmbH
tech2b supports, guides and accelerates the development of innovative technology-oriented, knowledge-intensive and design-oriented start-ups. Admission to the tech2b support programme (AplusB) opens the way to developing business ideas in a structured and targeted manner and implementing them in the marketplace.

Logistikum Schweiz GmbH
Logistikum Schweiz develops optimal and sustainable logistics solutions for the future. It promotes the ability to innovate in the area of purchasing, logistics and supply chain management and thus contributes to the design of competitive, regional and international logistics and value creation networks.

Center of Excellence for Smart Production

As products, machines and processes can be 'intelligently' connected through the Internet, things and services have the ability to communicate with each other. Therefore, the primary goal of the Center of Excellence for Smart Production is to research on different models to make optimal use of distributed intelligence. In addition, the development of innovative data analysis, modeling, simulation, and optimization approaches is important to enable holistic improvements. New application areas for 3D printing/rapid prototyping, especially based on metal components, are being explored, as well as data-driven business models.

Contact: Manuel Brunner BSc MSc,
+43 5 0804 33293, manuel.brunner@fh-steyr.at

Center of Excellence Energy

Research is focused on industrial production processes and systems engineering as well as management, simulation and optimisation of (renewable) energy technologies. Work is being done on topics such as decentralised energy systems, resilient energy grids, load management and integration of thermal and electrical energy storage. In the bioenergy sector, researchers are addressing the development of production processes of advanced biofuels (bioethanol from straw) and the optimisation of biogas processes.

Contact: DI Dr. techn. Gerald Steinmaurer,
+43 5 0804 46910, gerald.steinmaurer@fh-wels.at

Center of Excellence Automotive | Mobility

The University of Applied Sciences Upper Austria is pursuing an interdisciplinary and holistic approach in the automotive and mobility sector that aims to achieve more efficient, safer and user-friendlier as well as more socially and environmentally compatible transport of people and goods. Topics such as automotive engineering, new drive and vehicle technologies, vehicle communication, lightweight design and new composite materials are being explored intensively.

Contact: Prof. DI Dr. Roland Markus Hinterhölzl,
+43 5 0804 44550, roland.hinterhoelzl@fh-wels.at

Center of Excellence Medical Engineering/TIMed CENTER

Researchers at the TIMed Center focus their scientific work on biomedical data analysis, biomimetics and materials development, biomedical sensors, high-resolution imaging, medical simulators and drug characterisation. In order to develop interdisciplinary, technical solutions for problems in the field of medicine with its cooperation partners, the TIMed Center combines the strengths of the four University of Applied Sciences Upper Austria campuses in Hagenberg, Linz, Steyr and Wels at the interface between technology and medicine. The Center's Core Facilities make shared resources available in order to facilitate collaboration.

Contact: DI (FH) Thomas Kern,
+43 5 0804 27110, thomas.kern@fh-hagenberg.at

Center of Excellence Food Technology | Nutrition

The Center of Excellence Food Technology and Nutrition focuses on bioactive compounds and the formulation of functional food and feed products. Therefore, various in vitro and in vivo test systems are implemented to unravel the mode of action of the compounds on a molecular and cellular level. Another topic is food quality control through various measuring procedures.

Contact: Prof. Priv.-Doz. Dr. Julian Weghuber,
+43 5 0804 44403, julian.weghuber@fh-wels.at

Center of Excellence Logistics

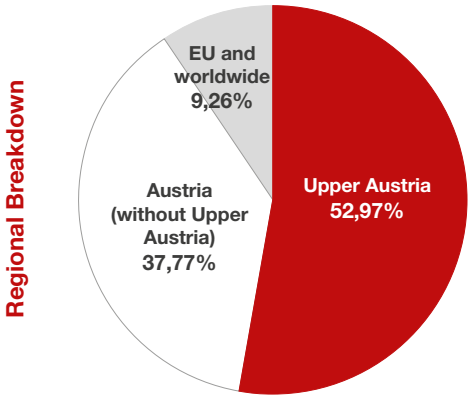
LOGISTICS = FUTURE SECURITY. Dealing with future issues and identifying current trends by means of logistics expertise and technology creates security.
Methods for pattern recognition in value networks, systemic risk assessment in real time, emission calculations and circular economy through the digital transformation of trade in the 21st century are an excerpt from the portfolio of the CoE Logistics. One thing is certain = CoE Logistics creates future security.

Contact: Prof. DI Franz Staberhofer,
+43 5 0804 33210, franz.staberhofer@fh-steyr.at

FACTS & FIGURES 2022

Key Financial Figures 2022

The FH OÖ Forschungs & Entwicklungs GmbH is not just active on a national level but also ‘exports’ its research know-how worldwide:



In 2022, the State of Upper Austria supported the University of Applied Sciences Upper Austria’s R&D activities with €1.74 million, providing the basis for applied and practical research and development. Numerous other projects were realised with the State of Upper Austria’s support as well.

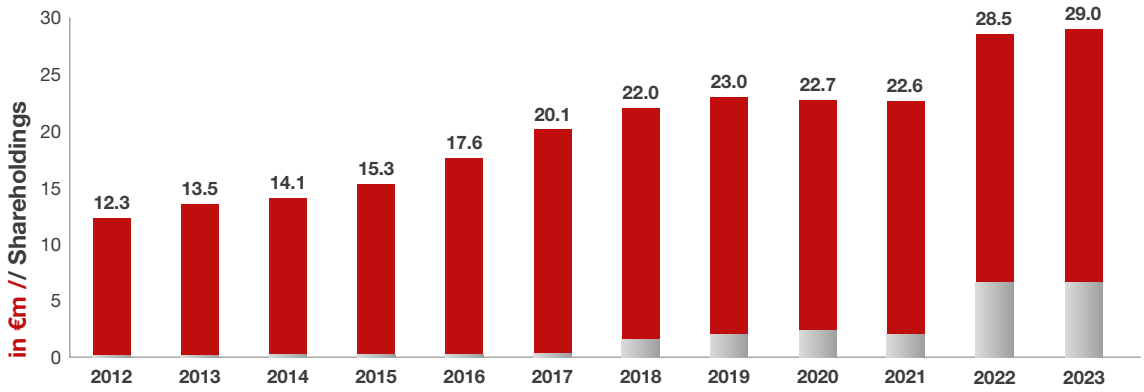
A total of 546 projects were concluded in 2022. Moreover, 95 new, mostly multi-year projects with a total volume of €26.21 million were acquired. More than 600 partners from industry and society cooperated with the University of Applied Sciences Upper Austria in research and development. Approximately 60% of all business partners are small and medium-sized enterprises.

Scientific Output

- Publications in 2022: **523**
- Conference presentations and scientific publications: **234**
- Books: **66**
- Articles in scientific journals: **204**
- Other publications: **14**
- Patents: **5**
- Dissertations: **11**
- Habilitations: **5**

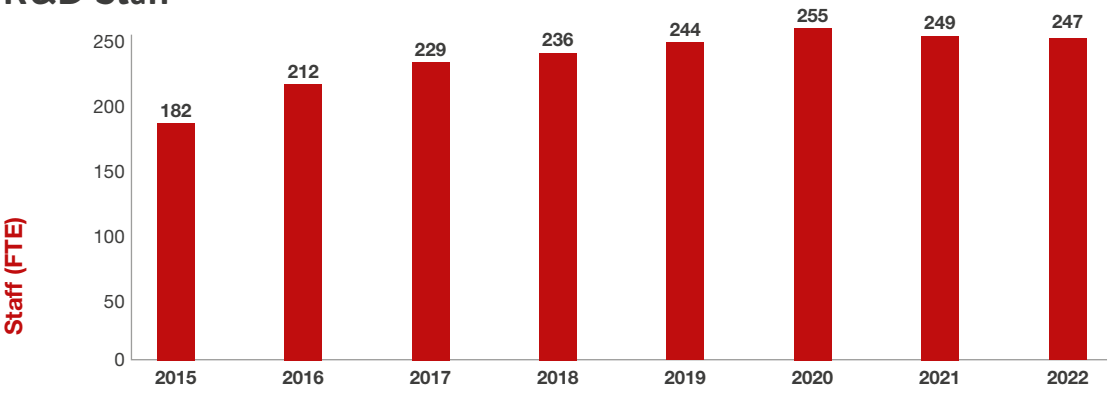
The publication of research results is of great importance for the further development of R&D at the University of Applied Sciences Upper Austria. Unless subject to non-disclosure agreements, research results are presented at national and international conferences as well as in relevant journals. In 2022, a total number of 523 publications appeared in international journals or were presented at scientific conferences, including conference papers, books and journal articles. The support of dissertations and habilitation degrees (a postdoctoral qualification) in cooperation with university partners, such as the Johannes Kepler University Linz or the TU Wien, is a primary aim of the University of Applied Sciences Upper Austria. In 2022, eleven employees completed their dissertations and five received a habilitation degree.

R&D Turnover of the University of Applied Sciences Upper Austria



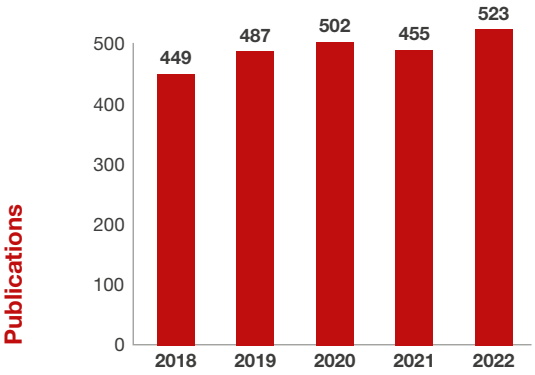
Success is also reflected in R&D turnover growth, which is expected to reach €29 million in 2023. The grey bars represent the consolidated turnover of the University of Applied Sciences Upper Austria’s shareholdings.

R&D Staff

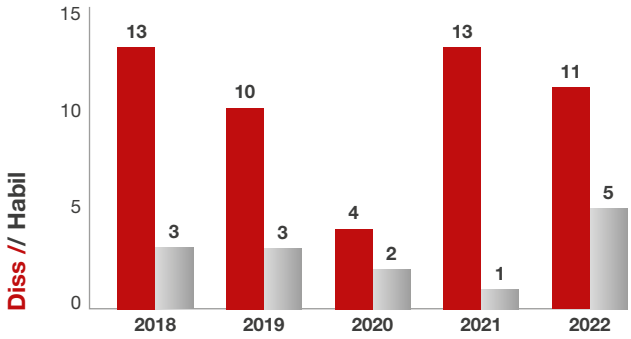


R&D staff members carry out research and development projects together with the University of Applied Sciences Upper Austria's approximately 241 professors. The University of Applied Sciences Upper Austria has seen a steady increase in research staff with the number of full-time equivalents (annual average) rising from 182 in 2015 to 247 in 2022.

Number of Scientific Publications

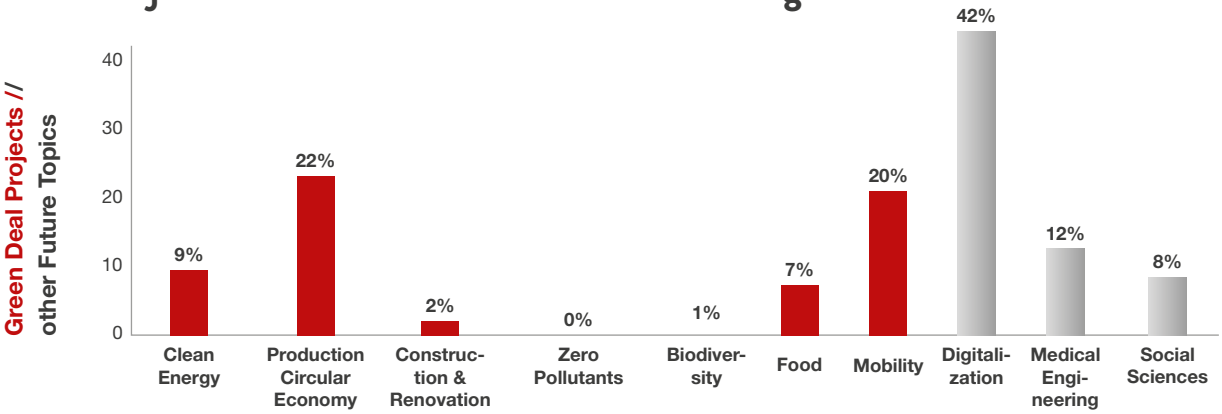


Completed Dissertations/ Habilitation



In 2013 researchers published 403 articles in journals, conference proceedings, books and reports. By 2022 this figure had increased to 523. In 2018 the State of Upper Austria and the Austrian Research Promotion Agency jointly launched the University of Applied Sciences Upper Austria's dissertation programme to support excellent junior researchers in the implementation of their dissertation projects.

R&D Projects 2022: 61% Green Deal and 42% Digitalization



The graph shows the amount of current research projects on future topics and with Green Deal relevance at the University of Applied Sciences Upper Austria in 2022. In addition to the primary topic of a research project, aspects of digitalization are often addressed and advanced in parallel. This means that digitalization is evaluated in multiple ways.

Centers of Excellence & Focal Areas:

- ICT - Information and Communications Technology
- Smart Production
- Medical Engineering/TIMed CENTER
- Automotive & Mobility
- Energy
- Logistics
- Digital Transformation
- Societal Transformation & Social Innovation
- Food Technology & Nutrition

HAGENBERG CAMPUS

School of Informatics, Communications and Media

Research and development at the University of Applied Sciences Upper Austria Hagenberg Campus is centred on computer science, communications and media. Fifteen research groups and two Josef Ressel Centres are working on innovative solutions for the digital future.

ICT – Information and Communications Technology

Advanced Information Systems and Technology
The AIST research group focuses on the improvement and automation of IT-assisted systems through the application of machine learning and data science algorithms and paradigms. The research spectrum covers standard-driven process mining in medical IT, the improvement of software systems through Artificial Intelligence and Machine Vision, as well as Digital Transformation for business processes of SMEs.

Embedded Systems
The ‘Wearable’ team works on networked embedded systems that are attached to the body during use - these smart textiles are integrated into clothing, recognize movement patterns and measure temperatures, humidity and other biometric data. The ‘AI for Resource Limited Devices’ team deals with artificial intelligence on limited embedded systems and implements efficient AI algorithms that work without a server and network connection. The ‘Signal Processing’ team deals with CAD of electronic circuits and devices with emphasis on radio frequency technology up to the THz range and digital signal processing for next generation mobile phones as well as artificial intelligence employing novel methods based on differential equations.

Web Intelligence and Innovation Laboratory
The research group focuses on multimedia web applications and the analysis and presentation of media data and realises application-oriented

research projects from the fields of artificial intelligence and information systems and technology. The research focuses on multimedia applications on the web, data visualisation of media data, data analysis and machine learning as well as semantic text analysis.

Prescriptive Analytics

Heuristic Methods and Evolutionary Algorithms
This research group models and optimises tasks, especially in the areas of production and logistics. Simulation-based approaches are used in combination with heuristic optimisation methods and various data mining approaches. A special research focus in the field of intelligent data analysis is on explainable data analysis (white-box data mining).

Human Computer Interaction

Media Interaction Lab
The Media Interaction Lab (MIL) is one of the leading Austrian research laboratories in the area of human-computer interaction. The lab is part of the Department of Digital Media and combines technical know-how with creative expertise and a fundamental understanding of users and their needs. Focal points are the research and development of tomorrow's computer interfaces. The COMET project 'TextileUX' is currently working together with the Johannes Kepler University Linz on smart pressure-sensitive textiles (fabrics, knits, etc.), which are currently used primarily in the automotive industry. The Beyond Europe project 'Innovation Playground' develops innovative workspaces that support in-house innovation processes by combining flexible room concepts, smart furniture and digital tools.

Playful Interactive Environments
The Playful Interactive Environments (PIE) research group examines the interface between computer games and animation with a special focus on new forms of natural and playful interaction. In doing so, approaches using eye tracking, group-driven games, audio-reactive interaction as well as augmented and virtual reality are being developed and evaluated for possible industrial, social, health and artistic applications.

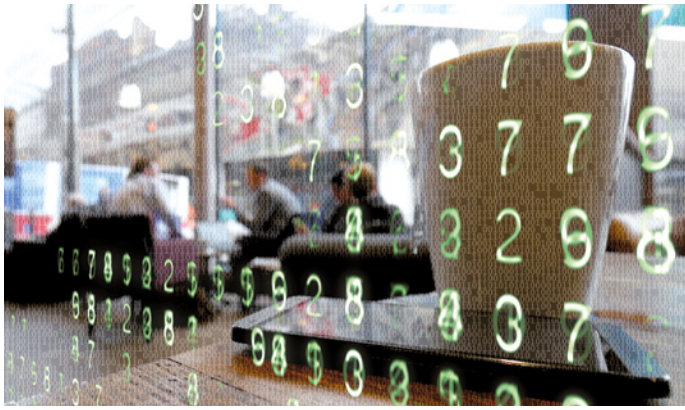
Human Interfaces & Virtual Environments
The Human Interfaces & Virtual Environments (HIVE) group has extensive and long-standing expertise in research and development in the field of human-computer interaction, data visualisation and virtual and augmented reality. The research group deals with the design and technical implementation of novel digital tools for the visualisation, exploration or manipulation of data and processes. For this purpose, natural interaction techniques and intuitive presentation methods for a wide variety of applications are developed and evaluated - e.g. production data visualisation on interactive walls, visualisation of biological or logistic networks in virtual reality or new media for digital teamwork. Another focus is the exploration of transitions along the mixed reality continuum.

Mobile Interactive Systems
The focus of this group is on the interaction between mobile devices and the surrounding infrastructure (e.g. displays, embedded systems, interactive tables). In addition to developing novel interaction techniques, applications and services, evaluating their usability is a research priority.

Personalized Environments and Collaborative Systems
The research group PEEC deals intensively with topics related to Human-Computer Interaction, primarily Computer-Supported Cooperative Work (CSCW) and personalization on the web and beyond.
The focus around CSCW includes comprehensive qualitative and quantitative analysis and computer-based support of different cooperation and collaboration settings

TECHNICAL INFRASTRUCTURE:

Outstanding research in the field of information technology requires the use of state-of-the-art infrastructure. The latest hardware and modern software tools are available for use in our research projects to enable cutting-edge research.



(remote, hybrid or co-located),as well as conception and prototypical implementation of collaborative environments. The focus on personalisation includes the conception, prototypical implementation and evaluation of adaptive systems (primarily on the web) that take into account the individual requirements of users. The PEEC group works intensively with methods related to Human-Centered Design (e.g., Contextual Design, prototyping, user studies) and comprehensive analytical frameworks for the elicitation of requirements and the conception and evaluation of solutions on the one hand, and with latest web technologies for implementation on the other.

Assistive Technology Lab
New interactive concepts and technologies facilitate the development and utilisation of natural user interfaces for workstations as well as for people with physical or mental disabilities. For these areas of application, assistive systems and aids are developed by the research group using design thinking and interaction design methods in order to make work processes and daily activities easier.

Knowledge Media & Engineering
The main areas of research encompass the conceptualisation of learning and working environments for cooperative knowledge generation and communication as well as their implementation in the field of organisational learning, taking into account flexible working models. Additional research activities are concerned with the development of collaborative and adaptive systems, the interaction between humans and machines and the creation of knowledge banks as well as the targeted application of semantic technologies for the networking, processing and extraction of knowledge. The research activities can be summed up under three areas of focus: Web-based Media and Online Communication, Learning and Working in the Digital Age, and Personalised Human-Computer Interaction.

WEL-Digital: Research Group for Work, Education and Life in a Digital World
As an interdisciplinary social science team, we deal with the importance of digital media and technologies for work, education and life in a digital world. In the WORK context, we address the question of how digital transformation can take place in organizations, taking into account changed work requirements and individual needs. In the EDUCATION context, questions about media didactic design, the learning experience and self-directed learning in hybrid learning arrangements are in the foreground. In the LIFE context, questions arise about the daily use of digital media and the ability to act in an increasingly mediatized world. Our projects range from basic research to social science-based applications.

IT-Security

Secure Information Systems
The protection of know-how and resources plays an ever-increasing role in our interconnected society. The University of Applied Sciences Upper Austria conducts research in the following areas: critical infrastructure, computer forensics, improvement of cryptographic methods, early recognition of malicious software and threats from the Internet as well as risk management and the establishment of a secure corporate organisation.

Medical Engineering/TIMed CENTER

Bioinformatics
The bioinformatics research group at the University of Applied Sciences Upper Austria explores and develops algorithms for the analysis of molecular biological data, such as mass spectrometry data, microscopy images of cells and DNA sequences.
The programs developed on this basis are then used to explore the causes of illnesses as well as to develop appropriate treatments and simulate biological processes.

YOUR POINTS OF CONTACT FOR RESEARCH & DEVELOPMENT

Vice-Dean for R&D
Prof. DI Dr. Stefan Wagner
Softwarepark 11
4232 Hagenberg
Phone: +43 5 0804 22030
stefan.wagner@fh-ooe.at

Head of Research Center
Mag. Gabriele Traugott
Softwarepark 11
4232 Hagenberg
Phone: +43 5 0804 27140
gabriele.traugott@fh-hagenberg.at

DIGITAL FUTURE

Digitise the world with a degree in IT or media studies from Hagenberg!

The University of Applied Sciences Upper Austria Hagenberg Campus offers ten bachelor's and twelve master's degree programmes to choose from. About 290 professors and lecturers impart practical knowledge to currently 1,545 students. 7,661 graduates have already laid the foundation for their careers here.

Smart Production

Symbolic Regression
At the Josef Ressel Centre for Symbolic Regression, methods and algorithms for data-based, semi-physical modelling are researched and developed. The newly developed methods are used to improve the modelling, design and control of powertrains and friction systems.

Adaptive Optimisation
The Josef Ressel Centre for Adaptive Optimisation in Dynamic Environments (adaptOp) researches and develops predictive and adaptive optimisation algorithms that can anticipate changes in dynamic production processes and enable proactive responses. These new processes are used in operational process control in the manufacture of steel and flat glass in order to improve the efficiency of production, storage and in-house transport.

Automotive & Mobility

Networks and Mobility
The research group NEMO is primarily concerned with research into mobile and wireless radio systems and the analysis of how methods for influencing private transport affect the use of resources. Communication amongst vehicles and between vehicles and road infrastructure makes new approaches in the management of private transport possible.

PARTNERS

We have successfully completed and are actively conducting research projects for and with a wide variety of companies, institutions and scientific cooperation partners.

» AVL List
» Banner
» BMW
» Education Group
» Erema
» Fronius
» Infineon
» Johannes Kepler University Linz
» Kepler University Hospital
» LCM
» LIFEtool
» LiSEC
» Medical University of Vienna
» Miba
» Microsoft Research
» OÖ Energiesparverband
» Primetals
» RISC Software
» SCCH
» Silicon Austria Labs
» TGW
» University of Art & Design Linz
» University of Vienna
» Voestalpine

Centers of Excellence & Focal Areas:

» Medical Engineering/TIMed CENTER
» Societal Transformation & Social Innovation
» Food Technology & Nutrition

LINZ CAMPUS

School of Medical Engineering and Applied Social Sciences

The School of Medical Engineering and Applied Social Sciences puts people at the centre of its work. Research projects focus on new medical technology developments on the one hand and address issues of societal transformation on the other.

Medical Engineering/TIMed CENTER

'Systems & Technologies for Humans' is one of the three priority areas for action in the new Upper Austrian research, technology and innovation strategy '#Upper Vision 2030'. Together with the Johannes Kepler University Linz, the University of Applied Sciences for Health Professions Upper Austria, non-university research institutions and Upper Austrian health care institutions—such as the Kepler University Hospital, hospitals operated by religious orders and Upper Austria's health care holding company OÖG—the TIMed CENTER makes a significant contribution to excellence in medical (technology) research in Upper Austria. At its Core Facilities, opened in 2018, the TIMed CENTER offers access to shared high-end instruments, cutting-edge technologies, state-of-the-art methods, experts and services to tackle complex issues in the fields of research, development and innovation. To this end, the researchers in Linz draw first and foremost from their expertise in the areas of high-resolution imaging, nanolithography, motion measurement, biomechanics, electronics, materials and software engineering. This makes it possible to continuously expand and upgrade the medical engineering infrastructure at the Linz Campus in order to facilitate applied research and development in the manufacture of medical devices and in vitro diagnostics and to support our partners in the development of their medical devices in compliance with applicable standards.

High-Resolution Imaging for Molecular Diagnostics
Complementing conventional imaging methods, new microscopy environments are being developed to solve molecular biological problems. They include highly sensitive detection techniques and methods for diagnostics, nanoscopic characterisation of biomedical samples with real-time analyses, and surface analysis and manipulation in the µm and nm range.

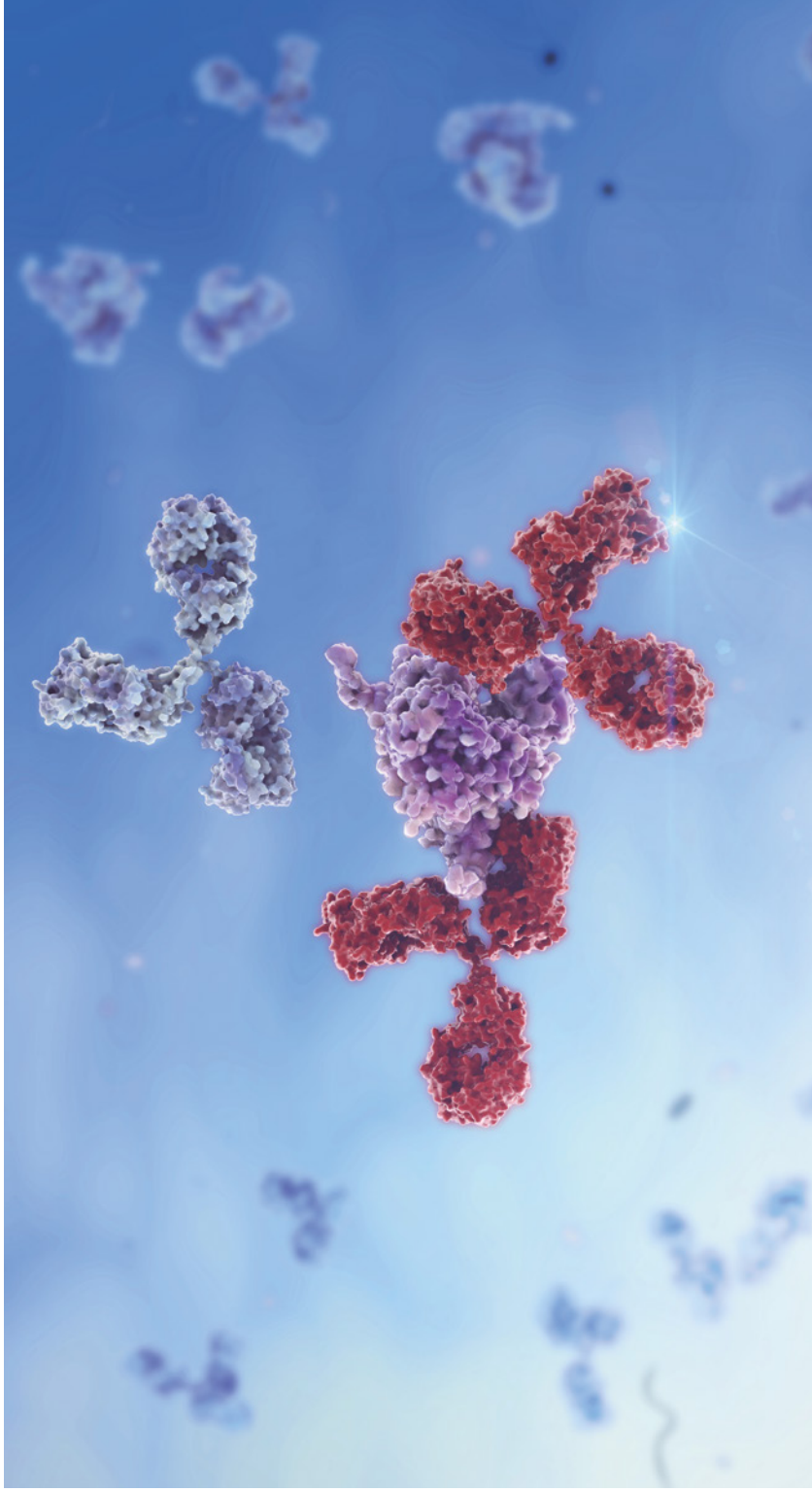
Biomimetics & Materials Development
New 3D printing technologies enable lithographic structuring and biomolecular analysis on a nanometre scale, the production of organ-like support structures for medical research and the imitation of mechanical and chemical properties of biological systems.

Hybrid Surgical Simulators/ Model Building and Simulation
Development and validation of hybrid surgical simulators for medical education and training, product development and approval as well as preoperative planning.

Motion Analysis/Biomechanics
Research is focused on 3D motion measurement of the musculoskeletal system, analysis of muscle strength, use of accelerometry to classify physical activities and posturographic methods for analysing the balance system.

Prosthetics/Sensors
The use of intelligent sensors improves the interface between devices and people in the fields of rehabilitation technology and prosthetics.

Medical Device Software
The increasing digitalisation of the medical field requires secure software, especially for software medical devices and embedded software components. Participation in relevant standardisation bodies will make a contribution in this regard.



OUR LABS ARE FULLY EQUIPPED WITH STATE-OF-THE-ART EQUIPMENT AND SOFTWARE TOOLS:

- High resolution imaging: super-resolution, 3D-localisation, high-speed atomic force, confocal and single-molecule fluorescence microscopy, spectroscopy
- 3D nanolithography for biomimetics and materials development
- Hybrid surgical simulators consisting of artificial anatomical structures, computer models and virtual reality
- Biomedical sensors for motion analysis and activity measurements

Societal Transformation and Social Innovation

Researchers at the Linz Campus are concerned with phenomena such as demographic change, migration, changes in health care and social services, social aspects of digitalisation and social innovations. With their expertise, they contribute to innovative concepts in the social and health care sectors as well as in public management. Research projects in the field of social work critically reflect on social problem areas and evaluate the work of social service providers. This forms the basis for further practice-oriented development of concepts and methods of social work.

Diversity
The growing proportion of older people in the population poses new challenges to health care and social systems. The research projects at the Linz Campus aim to develop new concepts for outpatient, semi-inpatient and inpatient services. They focus among other things on the following questions: How can new technologies be integrated into the care and support of older people for the benefit of older people and carers alike? To what extent do different care concepts and institution-specific conditions influence the perceived workload of carers? How can the social planning of cities be adapted to demographic changes and the increasing heterogeneity of the population? Social diversity is also at the centre of research projects that examine how different groups are disadvantaged in digital media, at school, on the job market or in public spaces.

Digisocialisation – Transformations in a digi-social world
This research cluster addresses communication and participation in digital space. The expansion and simultaneous limitation of encounter and communication in digital spaces requires further development of social support and its underlying attitudes based on findings from research in the field of counseling, coaching, and therapy.

Social Innovation
Which social innovations are needed to solve the societal challenges of tomorrow? Researchers at the University of Applied Sciences Upper Austria are examining this question at the interface of social issues, business and technology. The innovation potential of established providers as well as new ‘social businesses’ is analysed. A central issue is how to recognise social innovation and measure its impact.

Higher Education Research and Development
The Department of Higher Education Research and Development supports the university management and staff of the University of Applied Sciences Upper Austria in identifying and professionally managing potential needs for change. Current societal trends, recent developments and future prospects in higher education are analyzed, assessed and anticipated based on research findings applicable to all faculties.

HEAD Wheel (Higher Education Awareness for Diversity)
The HEAD wheel provides a comprehensive overview of five diversity aspects (demographic, cognitive, disciplinary, functional and institutional diversity) that play an integral role at the tertiary level. The University of Applied Sciences Upper Austria aims at providing a holistic as well as pragmatic instrument for the organization and encouragement of a culture of diversity.

Due to the intersectional nature of the wheel, different agents can enter diversity-related issues through one of the five HEAD Wheel segments and therefore approach them through different doors, with differing rationales and various purposes. Because of this, it is up to each Higher Education Institution to choose its own key aspects which usually reflect the strategy, the development plan, the charter and the relevant diversity policy. A closer look at the wheel reveals a second ring, which depicts specific challenges and opportunities that HEIs are confronted

YOUR POINTS OF CONTACT FOR RESEARCH & DEVELOPMENT

Vice-Dean for R&D
Prof. MMag. Dr. Johanna Anzengruber
Garnisonstrasse 21
4020 Linz
Phone: +43 5 0804 52450
johanna.anzengruber@fh-linz.at

Head of Research Center
Mag. Eva Maria Rechberger
Garnisonstrasse 21
4020 Linz
Phone: +43 5 0804 55000
eva.rechberger@fh-linz.at

A HUMAN FOCUS

Make the world a better place with a degree in medical engineering and applied social sciences from Linz!

The University of Applied Sciences Upper Austria Linz Campus offers three bachelor's and four master's degree programmes to choose from. About 230 professors and lecturers impart practical knowledge to currently 690 students. 3,394 graduates have already laid the foundation for their careers here.

within this kaleidoscope of diversity. The responsible part of the Higher Education Management actively authorizes and initializes concrete projects and procedures in order to establish a profound diversity management.

HEAD CD Frame (Higer Education Awareness for Diversity Curriculum Design)
Increasing diversity and strengthening of equality legislation have a deep impact on teaching and learning. To empower all students in ways that they can ultimately fulfill their academic potential calls for re-examination of the management, design and delivery of learning, teaching and assessment - meaning, it requires more inclusive curricula. The HEAD CD Frame can support Higher Education Institutions in this process by offering a framework that describes the entire student lifecycle from access to final student success. The key areas the HEAD CD Frame focusses at are (fair and inclusive) access and integrative student engagement along the different diversity characteristics (see HEAD Wheel) that will lead to student success. The student lifecycle can be positively influenced by a diversity sensitive institutional management and curriculum design, inclusive teaching and learning, excellent academic assessment and feedback, accessible and supportive learning environments as well as positive staff engagement.

Making curricula more inclusive is a holistic process and the framework may qualify as a helpful frame of reference. It has the potential to act as a gate opener in curriculum design and delivery. As such, it offers many starting points for teaching staff, managers or program leaders to pave the way for successful academic development of all students.

PARTNERS

We have successfully completed and are actively conducting research projects for and with a wide variety of companies, institutions and scientific cooperation partners.

A Selection of Our Partners:
» Linz General Hospital
» Federal Association of Austrian Nursing and Foster Homes
» Caritas Upper Austria
» g.tec
» GE Healthcare
» gespag OÖ
» Hospice Austria
» John Hopkins University
» State of Upper Austria
» Med-EL
» Otto Bock
» Paracelsus Medical University Salzburg
» City of Wels
» University of Wisconsin, Milwaukee
» University of Michigan
» Volkshilfe Upper Austria
» x-tention Informationstechnologie GmbH
» Yerevan State University

Centers of Excellence & Focal Areas:

- Digital Transformation
- Logistics
- Smart Production
- Medical Engineering/TIMed CENTER
- ICT - Information and Communications Technology

STEYR CAMPUS

School of Business and Management

At the Steyr Campus, research and development focuses on management and digitalization. In particular, researchers investigate various aspects of digitalization from a management and business perspective to support decision-making and action processes in practice.

Logistics

The Logistikum, as the largest national research and educational unit in the discipline of logistics, has the lead over the Center of Excellence and currently forms the Center of Excellence Network together with its (inter)national partners and research groups of the University of Applied Sciences Upper Austria, the Association Network Logistics and the Logistikum Switzerland. The Center of Excellence Logistics is a leading international research center for the logistics of the future and interface for cooperation in research for both regional and (inter) national companies, partners and institutions. Strategically relevant future topics are worked on across faculties and multidisciplinary.

Resilience needs assessment of goods and services of Austrian key industries (ReaGtSion)
The goal of the project is to analyze supply chains and to ensure the security of supply of selected critical products for Austrian industry. Natural gas was already taken into focus as an essential product in the middle of 2021, due to a multitude of uncertainties and the non-transparent dependency of the Austrian industry. In the form of an industry-related analysis, the needs, possible vulnerabilities, cascade effects and risks in the present natural gas supply chain are identified. Based on this, central options for action at the economic and security policy level will be worked out with the stakeholders in order to make system-relevant organizations more resilient to future threats.

Logistikum.RETAIL 2.0
In the area of retail, we accompany and shape the (digital) transformation of retail in the 21st century in close dialog with key leading companies and stakeholders of the ‘retail’ discipline. The main challenges for this area are hybrid sales channels, new supply structures due to geopolitical and ecological changes, the circular economy and new distribution structures.

Systemic Risk Management and Resilience Planning for Austrian Food Supply Security (SYRI).
The goal is the systemic risk assessment in real time for the population of supply-critical food value networks. These networks consist of thousands of actors and are digitally mapped from food sources to the processors, to the logistics, to the end consumers in retail or the catering and hotel industry and are assessed in real time for systemic supply risks.

Josef Ressel Center for Predictive Value Network Intelligence (PREVAIL)
PREVAIL aims to help companies implement predictive analytics in the value network and SCM enabling the transition from purely human-driven to data-driven decision making. JRZ PREVAIL is changing classic SCM - from reactive measures to proactive, predictive decisions.

GreenPack - Green packaging
The GreenPack project aims to introduce reusable packaging in online retailing. Together with Austrian Post and the five retail companies dm, INTERSPAR weinwelt, INTERSPORT, Tchibo and Thalia, various reusable packages are being tested in practice, customer acceptance is determined, and the ecological footprint is calculated.

Sustainable Transport - IW-NET & REWWay
The CoE Logistics aims to raise awareness about the sustainability performance of different transport flows to make emission calculations applicable for companies. Data on emission provide the basis for informed decisions on the environmentally friendly choice of a mode of transport or vehicle. Many companies recognize that trucks, as the most widely used mode of transport, are among the biggest emitters of CO2. Together with e.g., the Smart Freight Center, research is being conducted into improving the data basis for emission assessment standards, the GLEC Framework, with a focus on inland shipping.

Smart Production

Intelligent production processes lead to intelligent products. These products are the guarantor, but also the prerequisite for companies to survive future competition. As an innovative partner of industry, the Center of Excellence has specialized in research and transfer on the topic of smart production. By coordinating and networking all relevant departments, a lively exchange of information between the faculties (Hagenberg, Steyr and Wels) is enabled both in R&D and in diploma and master‘s theses. For example, pilot or demonstration projects on the topic of ‘Innovative applications for the digitalization of production’ are carried out jointly with Upper Austrian companies. Within the Center of Excellence, the Steyr Campus is the center of production and organization competence. The researchers at the site are active in many areas, with the main focus on the following areas:

Operations Management
The field of operations management deals with the entirety of production processes and their interactions. Activities range from the optimization of product planning and control, through capacity planning and production controlling, to the integration of new technologies in the areas of the Industrial Internet of Things, cyber physical production systems and mixed reality. The linking of these processes with the possibilities arising from digitalization offer new opportunities for the modernization of production.

Business Analytics
Knowing the past, understanding the present and shaping the future. This is how the field of business and prescriptive analytics can be described. In intelligent production, where machines are networked with software systems, data is generated. Making the raw data usable and putting it into the right structure is the first step. The next step is to interpret and evaluate the

data. As soon as the basic understanding of the origin of the data is available, it can be optimized. This results in predictions, decision support and recommendations for action.

Josef Ressel Center for Data-Driven Business Model Innovation (DDBMI)
The changes brought about by smart production also enable a transformation of word creation. New revenue models, such as usage-based payment or additional services (predictive maintenance), are made possible by digitalization. At the Josef Ressel Center for DDBMI, data-driven approaches (in particular concepts, process models, methods and tools) for business model innovation are developed and made available to partner companies. Key topics will be the recognition of the need for business model innovation for established production companies, ensuring a sustainability orientation and the targeted and efficient use of data for the design of business models and for ensuring the innovation process. The newly developed approaches will be applied and implemented by the partner companies in pilot projects.

Digital Transformation

Hardly any other phenomenon has aroused as much interest and brought about as many changes in business, science, politics and society in recent years as digitization. Many new concepts such as Industry 4.0, Big Data, Cloud Computing, Internet of Things or Artificial Intelligence have been discussed. However, the actual implementation of digitization projects is progressing much more slowly in the business world, especially because there is a lack of knowledge about the benefits and the concrete possibilities for implementation. Research projects in the Focal Area 'Digital Transformation' examine a wide variety of aspects of digitization from a management and business perspective and investigate them in order to support decision-making and action processes in practice. The Digital Business Institute (DBx), with its focus on Digital Strategy & Innovation, Digital Marketing & Commerce and Digital Work & Life, supports companies in tapping the potential of digitization and thus securing their competitiveness for the future.

Digital Strategy & Innovation
The strategic (re)orientation of companies in the sense of digital leadership requires sustainable anchoring of the concepts of business model innovation and digital entrepreneurship in the DNA of the companies.

Digital Marketing & Commerce
Digital technologies are seen as having enormous business potential, such as revolutionizing the way companies interact with their stakeholders. Our research supports companies in successfully using digital technologies to create positive customer experiences, to reduce unfavorable consequences of problematic experiences for companies (e.g. negative word of mouth) and customers and to sustainably increase the effectiveness and efficiency of companies. We support the creation of a market-oriented, data-supported and knowledge-based marketing management in digitalized companies using modern technologies (mobile, web, virtual reality, AI, data analytics, etc.).

Digital Work & Life
The digital transformation encompasses all areas of work and life. The level of digitization in companies is increasing, and also more and more people are using digital media in their private lives. The effects of the use of digital technologies in business and society are a significant field of research. Insights gained on topics such as social media use, dependencies on digital devices and software, home office, technostress,

YOUR POINTS OF CONTACT FOR RESEARCH & DEVELOPMENT

Vice-Dean for R&D
Prof. Mag. Dr. Wolfgang Schildorfer
Wehrgrabengasse 1-3
4400 Steyr
Phone: +43 5 0804 33297
wolfgang.schildorfer@fh-steyr.at

Head of Research Center
Assistant Prof. Mark Stieninger BA MSc
Wehrgrabengasse 1-3
4400 Steyr
Phone: +43 5 0804 33412
mark.stieninger@fh-steyr.at

information overload, IT-based interruptions, are the basis for an effective and economical design of working and living environments in which people benefit from the use of digital technologies and do not fall victim to them.

AI Social Design Thinking Lab (AI SDT-LAB)
The AI SDT-LAB, an INTERREG AT-CZ project with IHS Vienna and two Czech partners, identifies barriers, needs, competences and problem scenarios in the implementation of Artificial Intelligence (AI) in Austria and in South Bohemia. This resulted in a lab at the Steyr campus and one in South Bohemia, where cutting-edge AI applications with a focus on marketing and sales are presented. Companies can acquire knowledge and reflect on the applications from the perspective of technology - value for branding and sales - and ethics in social design thinking workshops. The accompanying scientific studies of the research focus Global Business Management show that the expansion of AI applications for sales and marketing in Austria starts with the awareness of companies regarding data management and data protection, training, AI knowledge and expertise. The essential AI strategy and change management can be developed in AI Social Design Labs.

Medical Engineering/ TIMed CENTER

The TIMed CENTER supports preparatory and goal-oriented basic research at the interface of technology and medicine, thus enabling the acquisition of additional third-party funds from research funding at national and EU level as well as through contract research.

Benchmarking Programme for Hospitals: PERFORMANCE COMPARISON (LeiVMed)
Hospital costs are constantly rising, so further efforts to control costs seem inevitable. At the same time, there is a growing need for even better medical quality in the treatment of patients. The main task of medical controlling is to ensure that medical services are provided effectively and efficiently. LeiVMed is a web-based benchmarking system that enables participating hospitals to compare their core clinical processes. Research activities focus on the risk-adjusted comparison (benchmarking) of clinical outcome, processes, and costs.

WE ARE DIGITAL

FH OÖ DigiSpace

The **DigiSpace** with its **infrastructure** supports both **teaching** and **research and development** at the Steyr Campus. In addition, the DigiSpace is a contact point for companies in all matters relating to digitization.

The content addresses the following innovative topics:
» data-supported control of companies
» digital process design in companies
» digital products and services
» digital business models
» digital value networks
» people in the digital world of work

The DigiSpace provides:
» Business Lounge & Performance Show
» Digital Boardroom: 220“ LED Wall and 5 Working Bunks
» Behavioral Analysis Labs
» Mixed Reality Area
» Innovation Space
» Additive Manufacturing & Industrial Assembly Area
» Vertical Farming

Centers of Excellence & Focal Areas:

- Smart Production
- Automotive & Mobility
- Energy
- Food Technology & Nutrition
- Materials
- Digital Transformation
- Medical Engineering/TIMed CENTER
- Logistics
- ICT- Information and Communications Technology
- Societal Transformation and Social Innovation

WELS CAMPUS

School of Engineering

Research and development work at the University of Applied Sciences Upper Austria Wels Campus revolves around engineering and applied science. Six Centers of Excellence and Focal Areas provide the foundation for its research work and make the school one of the most research-intensive and best-equipped in Europe.

Smart Production

Intelligent production processes result in intelligent products. Such products are not only the guarantors but also the prerequisites for the competitiveness of companies in the future. The main focus of Wels Campus within the CoE for Smart Production lies on advanced manufacturing and additive manufacturing: The increasing shortage of resources, shortening of product life cycles and individualisation of products means shorter development cycles and increasing competition for raw materials. An increasing number of component variants with smaller quantities and shortened innovation cycles have made additive manufacturing processes (3D printing, additive manufacturing) key technologies. Another important pillar in this area is the integration of additive manufacturing in automated and intelligent processes as well as products and tools.

At the heart of the Center of Excellence for Smart Production is our industry-oriented teaching and research laboratory for smart manufacturing, the Center for Smart Manufacturing, which features a flexible manufacturing and assembly system (FMAS). Five stations are connected by a transfer system with integrated RFID for workpiece carrier tracking. Complex products are manufactured fully automatically at the processing stations using seven robots (four of which are collaborative), image processing systems, automatic screwing units, CNC processing centres and other components. The

system's configuration allows for the production of items from a lot size of one. A SCADA system is used to operate and monitor the FMAS. Research projects include the full digitalisation of the system for simulation and virtual commissioning (virtual planning and optimisation – real production) purposes.

Automotive & Mobility

The CoE Automotive and Mobility primarily focuses on lightweight construction and lightweight materials as well as smart drive and vehicle technologies. Research in the field of lightweight construction and lightweight materials is primarily concentrated on plastics, composites (especially carbon composites) and metals as well as hybrid materials and structures for the automotive and aerospace industries. Giving due consideration to the processing of these materials and materials testing is also crucial. Our activities therefore focus on plastic, composite and metal processing processes, surface technology for lightweight construction, connection technology and recycling of plastics, composites and metals on the one hand, and on materials testing and characterisation, including the non-destructive testing methods of X-ray computer tomography and active thermography, on the other.

In the field of smart drive and vehicle technologies, the CoE addresses current topics ranging from powertrains, power generation, energy sources, energy storage, energy management, power and control electronics, control units, model-based algorithms and simulation to sensors. Thus work can be carried out on a wide range of complex topics—such as the design, simulation and optimisation of (hybrid) powertrains from power generation to the road or model development and optimisation of, for example, hydrogen-based drive concepts or the development of functions for control unit software in the vehicle, HIL (hardware in the loop) simulation development, including real-time models and testing.

Energy

Current research at the CoE Energy focuses primarily on renewable energy technologies (especially solar technology and wind), heating technology, energy storage and energy management issues. Other projects deal with life cycle considerations of energy-optimised buildings, quality assurance in building technology and heating and combustion technology as well as methods, processes and products for increasing energy efficiency in production facilities.

The focus in the field of electric energy technology is on smart grids, the development of components for electric energy technologies, protective technology for electrical storage and DC systems, powertrains for electric mobility, test generators for cost-effective simulation of DC power supplies and the integration of large electrical storage systems in the grid. Work is also done on energy-related issues, legal and regulatory aspects of energy grids and electricity market design.

A large area of research is concerned with the development of algorithms and the implementation of optimal controls of energy flows in building and industrial applications, taking into account load and weather forecasts, as well as the development of (renewable) energy communities.

The biosciences research area deals with the development of production processes of, inter alia, advanced biofuels, such as bioethanol from modified cyanobacteria, the development of integrated biorefinery concepts and the production of active substances and valuable products from microalgae.

In the field of environmental technology, the focus is on the (further) development and optimisation of processes and systems for exhaust gas cleaning, dust measurement, development/optimisation of exhaust air filters and

TECHNICAL INFRASTRUCTURE:

The facilities that we have available for research and development are as multifaceted as our research topics and make it possible to conduct internationally recognised, cutting-edge research in the fields of engineering and applied natural sciences. Our laboratories are fully equipped with state-of-the-art hardware and software tools, which ensures that all research incorporates the latest available technological advances.

scrubbers, optimisation of composting processes and biofilter materials, recycling of residual materials and environmental analysis.

Food Technology and Nutrition

An extensive portfolio of substances and herbal ingredients can be found in nature. Relevant natural extracts and plant substances with a measurable biological effect are increasingly being used in modern medicine and nutrition for the prevention or treatment of diseases and may in future represent a potential alternative to conventional active substances. For targeted use, it is important to know and be able to describe the basic molecular mechanisms of action. Our work therefore focuses on the identification and characterisation of phytochemicals and research into their biological effects in suitable in vitro, in vivo, in ovo and in silico test systems.
In addition to basic research, we work together with innovative partners from industry for the development of functional foods, phytogenic feed additives and highly effective natural pharmaceuticals and nutraceuticals.

Moreover, research is conducted into a wide variety of materials in the food sector, such as functional ‘smart packaging’, bioplastics, self-composting ‘green packaging’, condition indicators (warehouse indicators), etc. Other topics include food quality assurance (food inspection) using various measuring methods, such as imaging and sensors, and new production technologies. More than 40 staff members work in ten fully equipped cell and molecular biology as well as chemical analysis laboratories. A key issue is the detection of bioactive substances in plant raw materials and toxic or undesirable by-products that occur in food production. Austria’s only experimental and teaching brewery complements the research opportunities of this focal area.

Materials

The optimised, materials-specific processing and testing of polymers, composites and metals takes centre stage in this focal area. Research in this focal area is devoted to the following areas: polymer processing and polymer cycle, forming technology, heat treatment technology, surface technology, metallurgy and alloy development, additive manufacturing. The field of polymer technology is focused on extrusion technology, thermoforming and the polymer cycle, with a special focus on the tribological and rheological interactions in in polymer processing machines, moulds and dies. In the field of metallurgy, the focus is on the improvement of properties of tool steels and modern steels for lightweight design. A working group is addressing the production of surface coatings for metallic components as well as plastics, glass and textiles. State-of-the-art equipment is available to carry out research, including systems for additive manufacturing—selective laser melting (SLM), fused deposition modelling (FDM), stereolithography—scanning electron microscopes, quenching and forming dilatometers, high-pressure capillary rheometers, film extrusion systems, compounders, thermoforming systems, thermal analysis methods (DSC, DMA), etc.

In addition to the materials themselves, materials testing is an important research area that focuses on the non-destructive testing of materials and components. Here,

YOUR POINTS OF CONTACT FOR RESEARCH & DEVELOPMENT

Vice-Dean for R&D
Prof. PD DI Dr. Gernot Zitzenbacher
Stelzhamerstrasse 23
4600 Wels
Phone: +43 5 0804 44520
gernot.zitzenbacher@fh-wels.at

Head of Research Center
Priv.-Doz. Mag. Clemens Röhrl, PhD
Stelzhamerstrasse 23
4600 Wels
Phone: +43 5 0804 44180
clemens.roehrl@fh-wels.at

3D X-ray computed tomography (CT) and active thermography play a central role. CT inspection captures the interior of 3D structures (metals, plastics, etc.) non-destructively and characterises materials three-dimensionally with a resolution of up to 250 nm. Active thermal measuring processes are fast imaging methods using infrared cameras for examining heat flow in previously stimulated test specimens. They provide information about defects in the interior of the object or material properties. In addition, projects are carried out using optical measurement technology, sound and vibration technology and industrial image processing, and our own test setups and test beds are being developed.

Digital Transformation

Innovation and technology management is at the forefront of digital transformation at the Wels Campus. This interdisciplinary field is focused on the further development and application of methods and tools for increasing the performance of early innovation phases. A current research project is devoted to design thinking in organisations with the aim of increasing employee creativity as well as increasing the level of collaboration and motivation of those involved, thereby achieving better and more radical innovations.

The activities at the so-called front end of innovation have a profound effect on the success of an innovation project. For this reason the sprint> (Systematic Product Innovation Transfer Center) research and transfer centre has been established at the Wels Campus, which covers the areas of expertise along the entire front end process— from value assessments of product concepts using multivariate statistical methods, the conception and implementation of acceptance tests for product ideas and concepts and trend monitoring to strategy and idea workshops as well as design, rapid and virtual prototyping and the design of commercialisation processes.

SMART

Simplify the world with a degree in engineering and environmental studies from Wels!

The University of Applied Sciences Upper Austria Wels Campus offers fifteen bachelor's and fifteen master's degree programmes to choose from. Over 300 professors and lecturers impart practical knowledge to currently 2,016 students. 7,514 graduates have already laid the foundation for their careers here.

PARTNERS

We have successfully completed and are actively conducting research projects for and with a wide variety of companies, institutions and scientific cooperation partners. Here is a selection:

» Agromed Austria GmbH
» ARC Leichtmetallkompetenzzentrum Ranshofen GmbH
» Airbus Helicopters
» Austrian Bioenergy Centre GmbH
» BOKU
» Borealis Polyolefine GmbH
» Energiesparverband OÖ
» Engel Austria GmbH
» FACC AG
» Festo GmbH
» Fischer Brot GmbH
» Fronius International GmbH
» Georg Fischer Fittings GmbH
» Johannes Kepler University
» KTM
» LCM - Linz Center of Mechatronics GmbH
» LITE GmbH
» LKR Leichtmetallkompetenzzentrum Ranshofen GmbH
» Montanuniversität Leoben
» Next Generation Analytics GmbH
» Next Generation Recycling GmbH
» Neuburger Fleischlos GmbH
» PM International AG
» PROFACTOR Produktionsforschungs GmbH
» RHI Veitsch Radex AG
» Rübig GmbH & Co KG
» Schiebel Elektronische Geräte GmbH
» STARLIM Spritzguß GmbH
» Stern & Hafferl Verkehrs GmbH
» TU Wien
» Graz University of Technology
» UAR – Upper Austrian Research GmbH
» VetMed
» voestalpine Stahl GmbH
» voestalpine BÖHLER Edelstahl GmbH & Co KG

A FIXTURE OF UPPER AUSTRIA'S RESEARCH LANDSCAPE

R&D Advisory Board

The R&D Advisory Board ensures the optimal strategic alignment of all R&D activities of the University of Applied Sciences Upper Austria in coordination with other R&D institutions. It is currently composed of the following members:

» **DI Dr. Wilfried Enzenhofer, MBA,** CEO, Upper Austrian Research GmbH
» **Ing. Franz Hammelmüller,** Managing Director, SKF Österreich AG, Steyr
» **Ing. Rudolf Mark,** CEO, MARK Metallwarenfabrik GmbH, Chairman of the R&D-Advisory Board
» **DI Harald Plöckinger,** CEO, RÜBIG Gruppe
» **Mag. Sok-Kheng Taing,** Managing Director, Blue Value GmbH
» **Univ.-Prof. Prim. Dr. Josef Thaler,** Department Head, Department of Internal Medicine IV, Klinikum Wels-Grieskirchen
» **o.Univ.-Prof. Dipl.-Ing. Dr.techn. A Min Tjoa,** TU Wien

University of Applied Sciences Upper Austria Research Award

To honour the outstanding work of its research staff, the University of Applied Sciences Upper Austria's most successful researchers were once again distinguished in 2022.

The recipients of the University of Applied Sciences Upper Austria Research Award for 2022 are:

» **Prof. PD DI Dr. Michael Affenzeller**
School of Informatics, Communications and Media, Hagenberg
» **Prof. Dr. Patrick Brandtner BA MA**
School of Business and Management, Steyr

The Young Researcher Awards were awarded to:

» **Assistant Prof. Dr.techn. Emmanuel Helm MSc**
School of Informatics, Communications and Media, Hagenberg
» **Assistant Prof. Dr. Oliver Krauss BSc MS**
School of Informatics, Communications and Media, Hagenberg
» **Dr. Lisa Perkhofer BA MA**
School of Business and Management, Steyr
» **DI (FH) Bernhard Plank MSc**
School of Engineering, Wels
» **Assistant Prof. Dipl.-Biol. PhD Sascha Senck**
School of Engineering, Wels

In just over a year, the seven recipients published a total of 105 articles at academic conferences or in international journals and acquired more than €6.3 million in R&D project funds.

COOPERATION MADE EASY

The University of Applied Sciences Upper Austria as a Partner in R&D

The University of Applied Sciences Upper Austria is a flexible and reliable partner for businesses and institutions from industry and society that stands ready to assist them with research and development.

Target Audience
The University of Applied Sciences Upper Austria's R&D portfolio is aimed at businesses and institutions from industry and society. This includes on the one hand businesses that lack personnel resources or have limited financial resources for their own research and development activities (e.g. small and medium-sized enterprises). On the other hand, solutions are also developed for companies that need specialised support (e.g. in the form of special equipment). The University of Applied Sciences Upper Austria's services are relevant not only to traditional businesses but also associations and institutions, especially in the social sector.

Know-How
The University of Applied Sciences Upper Austria offers up-to-date know-how in ten Centers of Excellence and focal areas, making available the expertise and many years of (inter)national experience of more than 500 professors and academic staff. Project leaders are well versed in the methods of project management. If necessary, and depending on the requirements, students and interns may be involved as well. Moreover, modern equipment and well-equipped laboratories provide the basis for innovative R&D solutions.

Financing
In addition to complete financing provided by clients, support is available through numerous state, federal and EU funding programmes, some of which are linked to specific thematic areas. Projects that receive money from research funding programmes must be in line with the respective programmatic objectives and meet all criteria. The University of Applied Sciences Upper Austria's internal R&D controlling unit ensures that the projects stay on budget. Partners contribute personnel and/or financial resources as well.

Advantages for the University of Applied Sciences Upper Austria's Partners
Joint projects are first and foremost a financially straightforward and efficient undertaking for the University of Applied Sciences Upper Austria's partners. Innovative solutions are tailored to the needs of the client and can be put directly into practice.

The First Steps towards Cooperation
Interested parties should contact the head of the respective Research Center or University of Applied Sciences Upper Austria professors working in fields relevant to the client. The specific needs and goals of the client as well as the parameters of the potential collaboration are clarified in preliminary discussions.

Opportunities for Cooperation:

» Applied R&D projects with business partners
» Academic research projects
» International R&D projects
» Symposia and workshops
» Bachelor's and master's theses

Your first points of contact are the Heads of Research Center at our four Schools.

RESEARCH & DEVELOPMENT AT OUR 4 SCHOOLS

INFORMATICS, COMMUNICATIONS AND MEDIA
HAGENBERG CAMPUS

MEDICAL ENGINEERING AND APPLIED SOCIAL SCIENCES
LINZ CAMPUS

BUSINESS AND MANAGEMENT
STEYR CAMPUS

ENGINEERING
WELS CAMPUS

University of Applied Sciences Upper Austria
Research & Development

FH OÖ Forschungs & Entwicklungs GmbH
Roseggerstrasse 15
4600 Wels | Austria
Phone: +43 5 0804 14123
research@fh-ooe.at
forschung.fh-ooe.at

Imprint: Responsible for the content: University of Applied Sciences Upper Austria President Dr. Gerald Reisinger, Prok. Prof. Priv.Doz. Dipl.-Ing. Dr. Johann Kastner | Text: Christina Musalek, MSc; Heads of Research Centers
Photos: University of Applied Sciences Upper Austria, Peter Baier, WK-Fotografie GmbH/Wimmer, State of Upper Austria, Adobe Stock, iStock, Fotolia, Thinkstock, Christoph Einfalt – www.shortl.at, B. Plank – imBILDE.at, Werner Harrer, Andreas Atzlinger | Last updated: April 2023