RESEARCH PROJECTS

ACHIEVE MORE
THROUGH RESEARCH & DEVELOPMENT

forschung.fh-ooe.at

fh OBERÖSTERREICH RESEARCH & DEVELOPMENT

SELECTED RESEARCH PROJECTS
AT THE UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA

Foreword

R&D at the University of Applied Sciences Austria

Main Areas of Research

ACHIEVE MORE
WITH AUSTRIA'S LEADING UNIVERSITY OF APPLIED SCIENCES IN R&D

Successful companies know from experience that every euro invested in research and development pays for itself many times over. Innovation is a decisive competitive advantage that strengthens businesses and secures jobs over the long term.

Upper Austria is in the fast lane as a centre of research, and the University of Applied Sciences Upper Austria has developed into a reliable partner and driver of innovation. Austria's leading university of applied sciences in research can offer innovative enterprises its four schools with around 500 professors and research associates.

Currently, more than 500 projects are being carried out at ten Centers of Excellence within their respective research focal areas. Research is geared towards practical applications and is carried out in fields ranging from IT (Hagenberg Campus), Medical Engineering and Applied Social Sciences (Linz Campus), Business and Management (Steyr Campus) to Engineering (Wels Campus).

The extensive networking of the University of Applied Science Upper Austria's schools makes it possible to achieve an optimum overall solution for every project.

The FH OÖ Forschungs & Entwicklungs GmbH is a strong and flexible partner that is ready to support businesses and institutions from industry and society so that they can take full advantage of the challenges of the future!

Mag. Thomas Stelzer, State Governor of Upper Austria

Markus Achleitner, Minister of Economy and Research of Upper Austria

ACHIEVE MORE COOPERATION MADE EASY

The University of Applied Sciences Upper Austria is the clear leader among Austria's universities of applied science and is also among the strongest in research and development in German-speaking countries. In 2021, more than 450 researchers generated €20.49 million in R&D turnover. In addition, thirteen members of the research staff completed their dissertations while one was awarded a habilitation degree.

The University of Applied Sciences Upper Austria's R&D portfolio is aimed at businesses and institutions from industry and society. On the one hand, this includes 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 support in specialist fields (e.g. in the form of specific equipment). For the University of Applied Science Upper Austria's collaboration partners, joint projects are first and foremost a financially straightforward and efficient undertaking. Geared towards the needs of the client, innovative solutions are developed and can be put directly into practice.

Drawing from and in coordination with the economic and research strategy #upperVISION2030, the University of Applied Sciences Upper Austria has implemented measures in order to make a substantial contribution to the realisation of the programme's objectives.

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.

This project brochure provides an overview of the research projects at the University of Applied Sciences Austria's four schools with the aim of encouraging new and interesting research collaborations.

The opportunities for cooperation are many:
» Applied R&D projects with collaboration partners
» Scientific research projects
» International R&D projects
» Symposia and workshops
» Students' bachelor's and master's theses

The project period may extend from a few months to five years.

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

Prok. Prof. Priv.Doz. Dipl.-Ing. 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.

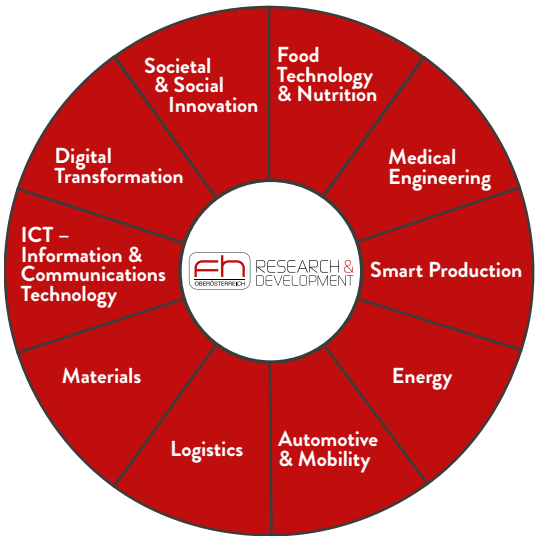
With **71 degree programmes** at the **four schools** in Hagenberg, Linz, Steyr and Wels, and over **5,800 students** enrolled in the academic year 2021/2022, the University of Applied Sciences Upper Austria has become a driving force in education and research in the State of Upper Austria.

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

64%
of all R&D projects of the University of Applied Sciences Upper Austria address environmental aspects and have Green Deal relevance.

Center 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. Fourteen research groups are working on innovative solutions for the digital future.

Your Points of Contact for Research & Development at the Hagenberg Campus

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Automotive & Mobility

AutoWSD

Complexity Analysis of Automotive Windshield Displays

In this project, algorithms are developed to evaluate the usability and user experience of applications for windshield displays, which are considered the big siblings of head-up displays.

» 1/2019 – 12/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. Mag. DI
Dr. Clemens Holzmann

Automotive HMI-Design

Design and development of an interactive human-machine interface for dynamic adjustment and visualization of vehicle parameters during test drives. The focus is on the intuitive recognition of the connection between technical parameters and driving behaviour.

» 10/2021 – 4/2022, < €100,000, Contract research

Project Manager:
Prof. DI
Dr. Gerald Ostermayer

AutoSimAR

Automotive Simulations of AR Applications for Increased Usability, Traffic Safety and Traffic Flow

Automatic determination of the usability of graphical user interfaces of head-up and windshield display applications in the automotive sector using metrics and their impact on road safety and traffic flow.

» 4/2021 – 3/2024, €100,000 – 500,000, FFG COIN

Project Manager:
Prof. DI
Dr. Gerald Ostermayer
https://nemo.fh-hagenberg.at

EBIM-ÖV

Low-emission commuting with intelligent micro public transport

Determination of the realistic savings potential of CO2 emissions through the design of an optimized and accepted micro public transport offer to commuters. The goal is an attractive solution to the first and last mile problem for commuters in rural areas.

» 1/2019 – 4/2021, €100,000 – 500,000, IWB EFRE 2020

Project Manager:
Prof. DI
Dr. Gerald Ostermayer
https://nemo.fh-hagenberg.at

InterGrid

Convergent Interoperability Stack for Smart Grid ICT Infrastructures

The project develops a smart grid meta-architecture, which allows for interoperability of several smart grid components on an end-to-end basis by provision of an appropriate protocol stack, thus avoiding central middleware frameworks.

» 10/2020 – 9/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI
Dr. Gerald Ostermayer

eMotion

With eMotion we design and implement a new e-scooter that has an innovative and user-oriented HMI together with a novel on-board information system.

» 3/2020 – 2/2024, > €500,000, FFG New Energies 2020

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

Energy

Big Power Data

Fast data analysis for the energy industry with ACID scaling

With Big Power Data HAKOM TSM continues a cloud-first strategy to meet new requirements in the energy field resulting from the challenges they face from the increasing share of green electricity in the European Power Grid. The main focus of the platform is on Time Series Data with scaling ACID.

» 10/2021 – 8/2023, €100,000 – 500,000, Climate and Energy Fund

Project Manager:
DI Martin Harrer

Urban Storage Cluster South Burgenland

In this project, algorithms are developed to evaluate the usability and user experience of applications for windshield displays, which are considered the big siblings of head-up displays.

» 9/2017 – 8/2021, €100,000 – 500,000, FFG Future City

Project Manager:
Prof. DI
Dr. Christoph Schaffer

Societal Transformation & Social Innovation

Career Advisory System

Within the project, the "Career Advisory System" will be developed by the PEEC research group to improve the existing recruiting system of karriere.at with concepts of Machine Learning as well as an ongoing analysis of user interactions.

» 5/2021 – 4/2022, < €100,000,
FFG General Programme

Project Manager:
Prof. DI (FH)
Dr. Johannes Schönböck

CATRINA

Courage Activation Research and Influencing Factors for Taking Action

CATRINA researches gender- and diversity-specific factors for moral courage. We developed three game concepts to promote moral courage in such situations in an individual and gender-sensitive way to strengthen the courage to act.

» 10/2019 – 5/2022, < €100,000,
Talente FEMtech

Project Manager:
Assistant Prof.
Wolfgang Hochleitner BSc MSc
https://catrina.at/

CIICPD

Critical Incidents for Intercultural Communication and Promoting Diversity

Industry 4.0 increases the need for new approaches to the training of future employees, the development of their key competences, such as critical thinking, the ability to adapt to different situations, mutual cooperation and intercultural communication skills, among others. The project focuses in particular on the method of critical incidents in a multicultural environment and aims to contribute to improving international co-operation and intercultural communication. The project purposes is to develop and test training materials for university teaching based on the research on critical incidents and to adapt them to the needs and requirements of the individual target groups (companies and educational institutions).

» 9/2020 – 8/2023, < €100,000,
EU Erasmus +

Project Manager:
Mag. Dr. Martina Gaisch
https://ciicpd-project.webnode.cz

INDUCE

Cyber Security Literacy And Dexterity through Cyber Exercises

The development of cyber-security skills is therefore a challenge for society as a whole, which can no longer be limited to a small group of experts. Even private individuals are not spared from cyber attacks and are increasingly confronted with IT security issues. The INDUCE project offers suitable answers to these challenges and has set itself the goal of imparting cyber security skills to a wider circle of people in order to contribute to the ability of diverse target groups to act in an increasingly networked and digital society.

» 4/2021 – 3/2024, €100,000 – 500,000,
Laura Bassi 4.0

Project Manager:
Mag. Dr. Martina Gaisch
https://www.fh-ooe.at/hochschulforschung-und-entwicklung/hochschulforschung-und-entwicklung/projekte/induce

iVolunteer

A Digital Ecosystem for Life-long Volunteering

The project supports life-long learning by applying the blockchain technology and recommender systems. Formal and informal competencies aquired during volunteering may be provided to third-parties. The blockchain may than be used by third parties to validate stated competencies of volunteers including their evolution.

» 1/2019 – 12/2021, €100,000 – 500,000,
FFG COIN Netzwerke

Project Manager:
Prof. DI (FH)
Dr. Johannes Schönböck

MINT your Future

The project aims to encourage young people, especially women, to pursue a career in STEM professions (science, technology, engineering, and mathematics). The project's portal “MINT your future” is designed to show schoolgirls that some young women from similar non-specialist school types have already succeeded in finding their way in a STEM career. With authentic reports and testimonials, threshold fears and insecurities are to be reduced and the desire and courage for computer science is to be awakened. The aim is to create a platform that meets the girls and young women where they are and provides them with the information they need in the respective phase of career choice.

» 10/2021 – 12/2022, €100,000 – 500,000, Funding Federal Chancellery

Project Manager:
Mag. Dr. Martina Gaisch
mintyourfuture.at

ICT – Information and Communications Technology

AI-assisted text analysis of accident descriptions

Automated analysis of accident reports using AI for the “Kuratorium für Verkehrssicherheit”. The aim is to quantify the potential of various prevention measures
in sport and leisure (incl. household).

» 1/2022 – 6/2022, < €100,000, Contract research

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

AI for Lead Generation

Development of an AI-based recommender system to support sales activities

Together with FunnelFox GmbH we develop a prototype for an AI-based sales lead generation software. Using a database of more than 20 mio. company profiles from all over the world the software finds those profiles that are most similar to existing customers.

» 2/2021 –1/2023, < €100,000, Contract research

Project Manager:
Prof. DI
Dr. Gabriel Kronberger

AKFA

Active Vehicle Fleet Operations Optimisation

In this project, topics like predictive maintenance and operational optimisation for vehicle fleets are developed. The traceability and explainability of the results of machine learning algorithms shall be ensured through the use of Explainable Artificial Intelligence (XAI) methods.

» 11/2019 – 10/2021, €100,000 – 500,000, FFG General Programme

Project Manager:
Assistant Prof. Dr.techn.
Emmanuel Helm MSc

AlpinIO

AI-based analysis of apline vegetation

The AlpinIO research project deals with sustainable and generic methods from the field of computer vision and AI for the supported preparation, processing and evaluation of alpine vegetation in times of climate change.

» 7/2021 – 2/2022, < €100,000, easy2research Upper Austria

Project Manager:
DI (FH)
Dr. Gerald Zwettler MSc
https://aist.fh-hagenberg.at

Amido

Automated Georeferencing of Aeral Images

The project cooperation with Amido is about the automated georeferencing of aerial photographs. This involves registering location images using various aircraft (helicopters, drones, etc.) with satellite images.

» 8/2021 – 2/2022, < €100,000, easy2research Upper Austria

Project Manager:
DI (FH)
Dr. Gerald Zwettler MSc
https://aist.fh-hagenberg.at

AMOR_RF

Affordable Macro-Modeling Platform of RF Systems and Devices

The project Amor aims on supporting start-ups and SME, which develop products with a radio frequency (wireless) transmission interface.

» 11/2019 – 10/2022, €100,000 – 500,000, Interreg Austria-Czech Republic

Project Manager:
Prof. Dr. Ing. habil.
Hans-Georg Brachtendorf

BAMBI

Biodiversity Airborne Monitoring Based on Intelligent UAV sampling

The project BAMBI uses camera drones and artificial intelligence to monitor animals in the wild. The project aims to analyze the long-term development of wildlife populations to identify impending ecological problems, such as biodiversity loss or overpopulation, on time.

» 4/2022 – 3/2025, €100,000 – 500,000, FFG AI FOR GREEN

Project Manager:
Dr. David Schedl BSc MSc

BF-ATGMiner

Automatic extraction of attributed grammars from software

In this project, a new method for specification extraction is developed that integrates grammar mining and symbolic execution. The extracted specifications are used for automatic program tests.

» 7/2021 – 6/2022, < €100,000, FH Upper Austria core funding

Project Manager:
DI (FH) Dr. Josef Pichler

BF-IVES

Interactive visualizations for recommender systems

The project investigates interactive visualizations for recommender systems that increase user trust and improve the user experience. The goal is the development of an interface construction kit and a design pattern collection for visual recommender systems.

» 9/2021 – 8/2022, < €100,000, FH Upper Austria core funding

Project Manager:
Dr.-Ing. Mandy Keck

Data cleansing for club data

Interface to the Verbandsplaner platform with automated data cleansing

For the extensive data transfer of associations, verbandsplaner.com and the School of Informatics, Communications and Media in Hagenberg developed a morphic highly automated data importer. For this purpose, AI models were used that enable the data importer to automatically process and cleanse new data.

» 12/2020 – 6/2022, < €100,000,
FFG General Programme

Project Manager:
DI Martin Harrer

Data&Security

Bootcamp Data Sciece & Security

In this continuing education seminar, highly motivated participants from companies are trained in methods and tools in the areas of data science and IT security and apply them to individual practical projects from their own companies.

» 11/2019 – 10/2021, €100,000 – 500,000,
Digital Pro Bootcamps

Project Manager:
Mag. Gabriele Traugott

DEPS Pilot

Pilotprojekt Dependable Production Systems

The DEPS Pilot project researches methods for the efficient and secure protection of software. The aim is to develop a process that reliably detects whether software is running on the right hardware.

» 1/2020 – 12/2021, < €100,000,
State of Upper Austria

Project Manager:
DI (FH)
Dr. Florian Eibensteiner

DigitalWerk

DigitalWerk is a cooperation between the Kunstuniversität Linz, the JKU Linz and the University of Applied Sciences Upper Austria as well as numerous top-class partners with the aim of making digitisation tangible for the most diverse groups of actors.

» 1/2020 – 12/2024, < €100,000,
Austrian Federal Ministry of Education, Science and Research

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

FaQSN

Fast Quantum Simulation with Consideration of Hardware Noise

The aim of the dissertation project is to extend a classical simulation approach taking into account the 'hardware noise' in order to enable more realistic simulations.

» 10/2019 – 9/2022, €100,000 – 500,000,
FFG/Upper Austria Dissertation Funding
FH Upper Austria

Project Manager:
Prof. DI
Dr. Jürgen Fuß

HCAI

Human-Centered Artificial Intelligence

This doctoral program is run jointly with JKU and aims to develop methods to make AI more understandable, transparent and fair for humans on the one hand and to support the interaction between humans and AI systems on the other hand.

» 1/2022 – 12/2025, > €500,000,
FWF – doc.funds.connect

Project Manager:
Prof. Univ.-Doz. DI
Dr. Ulrich Bodenhofer

IndividualAI4All

Individual AI Solutions for All

The aim of this project is to develop basic concepts and methods to accelerate the development of individual AI solutions. The main approach is to develop reference models for representative AI use cases.

» 1/2022 – 12.2022, < €100,000,
FH Upper Austria core funding

Project Manager:
Prof. Univ.-Doz. DI
Dr. Ulrich Bodenhofer

Linguist

Translation Quality Analysis

This project aims to develop a machine learning system that evaluates the quality of translations using context information and user feedback from translators. Linguist is a cooperation between the University of Applied Sciences Upper Austria and the software localization provider LingoHub GmbH, Linz.

» 1/2020 – 6/2022, < €100,000,
Contract research

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

MAGNA.ML

Parameter optimizaion of dynamic models

In this research project, an evolutionary algorithm for optimizing parameters of dynamic models based on measured data was developed.

» 5/2020 – 2/2021, < €100,000,
Contract research

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

ML Methods for Identifying Features of Global Optimization Problems

Most optimization and machine learning tasks are modeled in a stationary fashion. This means that the optimization or modeling objective does not change during an algorithm run. This international FWF project is concerned with advancing into the non-stationary domain using various methodological approaches.

» 10/2021 – 9/2024, €100,000 – 500,000,
FWF - Joint Projects

Project Manager:
Prof. PD DI
Dr. Michael Affenzeller

mmWave Radar OTA Test

The main goal of the Project is to develop a mmWave OTA measurement setup that allows to test the radiation and receive capabilities of a mmWave transceiver DUT with a focus on regression testing and beamforming/beamsteering.

» 4/2020 – 3/2023, €100,000 – 500,000,
Silicon Austria Labs Forschungskooperative

Project Manager:
Prof. DI
Dr. Markus Pfaff

Predictive Innovation

Methods for detecting “hot topics” in news, publications, and patents are being developed. Interactive visualizations are developed for these “topics”, which support companies in the idea generation process.

» 11/2020 – 4/2022, < €100,000,
FFG General Programme

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

HeuristicLab Hive 4.0

Distributed Computing System for HeuristicLab

HeuristicLab Hive enables parallel and distributed computing in HeuristicLab. With HeuristicLab Hive, HeuristicLab algorithms can be distributed on the HPC clusters and lab PCs at the Hagenberg Campus, in order to utilise more than 1,000 computer cores for solving optimisation and data analysis problems.

» 10/2019 – 12/2024, €100,000 – 500,000,
FFG COMET K2 Centres

Project Manager:
Prof. DI
Dr. Stefan Wagner
https://dev.heuristiclab.com

hokify

Digital Job-Platform with AI-based Employer Analysis

The project cooperation with hokify GmbH is about the creation of a Global Employer Knowledge Graph. In the process, various heterogeneous data sources on employers are connected by means of web crawlers and validated by means of data mining and AI.

» 8/2021 – 4/2022, < €100,000,
FFG General Programme

Project Manager:
DI (FH)
Dr. Gerald Zwettler MSc
https://aist.fh-hagenberg.at

HYCOS

Hybrid Collaboration Spaces

HYCOS deals with environments for hybrid collaboration which recently gained a lot of importance due to the pandemic. A prototypical hybrid collaboration space and generalizable design and implementation guidelines are developed.

» 4/2022 – 03/2026, €100,000 – 500,000,
FWF Stand-Alone Projects

Project Manager:
Prof. DI (FH)
Dr. Mirjam Augstein

RiskAI

Methods are developed to identify business risks from online news, social media posts and company data. The risks are classified and presented in an interactive dashboard.

» 8/2020 – 1/2022, €100,000 – 500,000,
FFG General Programme

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

SATURN

AI-supported SaaS solution for the improvement of marketing, sales and service processes

The goal of the project "AI-supported SaaS solution for the improvement of marketing, sales and service processes (SATURN)" is the data processing for online marketing, taking into account the new requirements arising from the General Data Protection Regulation (GDPR). In particular, the research fields of Data Science and Recommendation Systems will be addressed. This includes the preprocessing and preparation of anonymized behavioral data, and the creation of classifier and recommender algorithms to enable an accurate prediction of relevant products.

» 4/2021 – 6/2021, < €100,000,
FFG General Programme

Project Manager:
Assistant Prof.
Oliver Krauss BSc MSc

SHCTT

Supporting Hybrid Collaboration for the Teams of Tomorrow

The SHCTT project deals with the fine-grained analysis of hybrid collaboration processes. This involves the further development of a conceptual analysis framework as well as the (partial) automation of the previously time-consuming analysis process.

» 3/2020 – 2/2022, €100,000 – 500,000,
Microsoft Productivity Research Grant

Project Manager:
Prof. DI (FH)
Dr. Mirjam Augstein

SMART-TEX AGING

Methods for Compensation of Aging Effects in Smart Textiles

The SMART-TEX AGING project explores the causes and impacts of aging in smart textiles and develops methods to compensate for these effects. Although the influence of wearing and washing conditions modify the measured sensor values, intelligent algorithms can be used to restore the product's original performance.

» 7/2019 – 3/2022, €100,000 – 500,000,
FFG Bridge 1

Project Manager:
Prof. DI Mag.
Dr. Josef Langer

Smart Analytics

Sensor network for maintenance of petrol stations

In the Smart Analytics project, a flexible sensor network is being developed to continuously collect data from buildings, systems and devices and thereby optimize their maintenance and repair processes.

» 6/2019 – 8/2021, < €100,000,
FFG Basisprogramm

Project Manager:
Prof. DI Mag.
Dr. Josef Langer

SOC - Toolkit

SOC Toolkit

The goal of the SOC-Toolkit project is to significantly reduce the response times to security incidents and to provide security analysts with a holistic view of security incidents by automatically enriching and linking existing data from different security solutions. The faster containment of incidents minimizes the extent of potential damages, and the extensive automation of previously manual activities frees valuable employee resources for other purposes.

» 10/2020– 6/2021, < €100,000,
AWS

Project Manager:
Assistant Prof.
Oliver Krauss BSc MSc

SPA

Secure Prescriptive Analytics

In the FTI project Secure Prescriptive Analytics (SPA) we are researching together with the partners Risc SW and SCCH on the development and combination of data-based as well as simulation-based modeling for the creation of optimized proposals for action. As a result, a generically applicable SPA framework is to be developed.

» 1/2022 – 12/2025, > €500,000,
RTI structural funding Upper Austria

Project Manager:
Prof. PD DI
Dr. Michael Affenzeller

StraSE
Strategic Software Engineering

In this project, we develop methods for the symbolic execution of program and test code. The developed methods are used to detect programming errors and for automatic program repair.
» 1/2020 – 12/2022, < €100,000, FFG COMET K1 Centre

Project Manager:
DI (FH) Dr. Josef Pichler

Sweat-Tex
Smart Textiles for Sweat Analysis

The SWEAT-TEX project aims to develop a textile sweat sensor that is washable and suitable for everyday use. Research is also conducted into which vital parameters can be derived from perspiration and which are relevant from a sports science or nursing point of view.
» 9/2019 – 6/2022, €100,000 – 500,000, FFG COIN Netzwerke

Project Manager:
DI (FH)
Dr. Florian Eibensteiner

SymRegZeit
Vector-based Genetic Programming for Symbolic Regression and Classification with Time Series

The goal of this dissertation project is to explore new methods for using time series directly for symbolic regression and classification. This allows time series data such as sensor values to be used directly for prediction and to analyze the relationships between time series and their underlying dynamic processes.
» 11/2019 – 9/2022, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

TextileUX

TextileUX proposes the creation of a pressure-sensitive textile-based sensing platform to enable computational environments to be embedded seamlessly into our lives. It aims to broaden the knowledge base at the intersection of materials, textiles and computer science.
» 10/2018 – 9/2022, > €500,000, FFG COMET K projects

Project Manager:
Prof. Mag. DI
Dr. Andreas Stöckl

Woodmaster+
Mobile App for Classification and Measurement of Wood Logs

The Woodmaster Plus research project applies computer vision for automated, image-based analysis of wood piles on mobile devices. The main focus is on accurate segmentation and quality determination of the wood cross-sections.
» 11/2020 – 4/2021, < €100,000, easy2research Upper Austria

Project Manager:
DI (FH)
Dr. Gerald Zwettler MSc
https://aist.fh-hagenberg.at

Medical Engineering

AML-SBG
The NLRP3/EIF2 axis in AML

Acute myeloid leukemia (AML) is a highly heterogeneous and aggressive type of blood cancer and the leading cause of leukemia-related mortality. In this project the analysis of inflammatory pathways and the identification of mechanisms which lead to increased/decreased cytokine or inflammasome expressions is of high interest. A framework providing algorithms including datasets from publicly available databases is implemented to support these analyses.
» 7/2021 – 12/2024, < €100,000, FWF Stand-Alone Projects

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

b-tastic
Automated detection and analysis of movement in sports

This project aims to develop software and hardware components for automated movement detection in sports. In addition to a prototypical design of the hardware, it is necessary to automatically develop algorithms to detect relevant movements from 3D video recordings. Here, machine learning methods are needed to learn models based on annotated data to recognize motion sequences.
» 8/2020 – 7/2022, €100,000 – 500,000, FFG General Programme

Project Manager:
Assistant Prof. DI (FH)
Dr.techn. Viktoria Dorfer MSc
https://www.b-tastic.com

Cellector
Framework for the automated analysis of microscopy images using evolutionary algorithms and machine learning

The accurate and automated analysis of microscopy images of cells is of highest importance in numerous biomedical research endeavors. The goal of this project is the development of “explainable” artificial intelligence (“explainable AI”) methods for image analysis.
» 10/2020 – 9/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

LeukImmun
Identification of Crucial Factors for the Development and Therapy of Leukemia Based on Immunological Data

Leukemia is a malignant disease of the hematopoietic system. Within the LeukImmun project algorithms are developed and researched that analyse immunological data and provide results for better understanding of the different types of leukemia and leading to new innovative therapies.
» 10/2019 – 10/2022, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

M.O.V.E.

Modeling Orthosses for Vitality Enhancement

In the M.O.V.E. project, orthopedics will be digitized by creating a self-learning AI-based suggestion system that will lead to significant process automation with automated patient-specific orthotic designs.

» 7/2021 – 6/2022, €100,000 – 500,000, FFG General Programme

Project Manager:
DI (FH)
Dr. Gerald Zwettler MSc
https://aist.fh-hagenberg.at

TC-Cooperative PhD Hagenberg

Funding of PhD Research in Bioinformatics

This collaborative PhD project supports the research of bioinformatics PhD students, especially in the areas computational proteomics and immunology.

» 10/2018 – 12/2020, €100,000 – 500,000, RTI structural funding Upper Austria

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

TIMed 2022++

Technological Innovation in Medicine 2022++

Research fields: (1) Data Science and Systems Engineering, (2) Biomedical Sensor Technology, (3) Biomimetics and Material Development, (4) High-Resolution Imaging, (5) Medical Simulators and (6) Drug Characterisation.

» 1/2022 – 12/2025, > €500,000, RTI structural funding Upper Austria

Project Manager:
DI (FH) Thomas Kern
www.timed-center.at

PROTrEIN

Training of computational proteomics researchers

PROTrEIN is a European Innovative Training Network that consists of 11 beneficiaries and 8 partner organizations. The mission of this network is to train the next generation of researchers in the field of computational proteomics by providing them with a set of interdisciplinary and intersectional skills.

» 1/2021 – 12/2024, €100,000 – 500,000, EU MSCA - Marie Curie Actions

Project Manager:
Assistant Prof. DI (FH)
Dr.techn. Viktoria Dorfer MSc
http://protrein.eu

XL-MS

Identification of crosslinked proteins using mass spectrometry

In this cooperation with the Research Institute of Molecular Pathology and the University of Vienna we aim to improve and introduce new algorithms to MS Annika, a tool that uses mass spectrometry data to detect crosslinks which can be used to create protein-protein interaction networks or to obtain native protein structures.

» 10/2021 – 9/2024, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
Assistant Prof. DI (FH)
Dr.techn. Viktoria Dorfer MSc

Smart Production

ALeS

The aim of this bootcamp project is to train experts for workplace-integrated, digital transfer of knowledge and skills in the production context (smart factory).

» 4/2021 – 3/2022, < €100,000, Digital Pro Bootcamps

Project Manager:
Prof. Mag.
Dr. Tanja Jadin

backaldrin.SCCH

Data analytics in the development of bakery products

In cooperation with backaldrin and the Software Competence Center Hagenberg (SCCH), we research and develop methods for the comprehensive analysis of data from the development of bakery goods. We use artificial intelligence to gain new insights and to optimize parameters in production – and thus implement prescriptive analytics in food development.

» 7/2021 – 12/2022, €100,000 – 500,000, FFG COMET K1 Centre

Project Manager:
Prof. PD DI
Dr. Stephan Winkler

DIH.work

Digital Innovation Hub WORKING WORLD SME

The Digital Innovation Hub WORKING WORLDS SME measurably promotes the creation of future-oriented, sustainable working environments in Austrian SMEs in a digital society. The collaboration of research, administration, stakeholders and innovators allow the understanding of needs of SMEs as well as the effective implementation of digital innovations in and with Austrian SMEs.

» 5/2021 – 4/2024, € 100,000 – 500,000, FFG Digital Innovation Hubs

Project Manager:
Prof. DI
Dr. Werner Kurschl
https://dih.work/

DisMoSim

Distributed Modelling and Simulation of Cyberphysical Systems

In the DISMOSIM project, the HIVE group is responsible for the user-centered design, prototyping, and evaluation of novel remote collaboration tools. For example, we will use large high-resolution touch screens with pen input to enable engineers to collaboratively manipulate 3d engineering models of vehicles and to run mechanical simulations and visualize their results.

» 9/2018 – 8/2021, €100,000 – 500,000, FFG COIN

Project Manager:
Prof. DI (FH)
Dr. Johannes Schönböck

FELICE

Flexible Assembly Manufacturing with Human-Robot Collaboration and Digital Twin Models

FELICE aims to deliver a modular platform which integrates a mobile collaborative robot, an adaptive workstation and an intelligent planning and control system. The objective is to increase productivity, ensure the safety and improve the well-being of factory workers.

» 1/2021 – 6/2024, €100,000 – 500,000, EU HORIZON 2020

Project Manager:
Assistant Prof. DI Dr. techn. Andreas Beham
https://www.felice-project.eu

IOODSP

Incremental Online Optimisation of Dynamic Stacking Problems

IOODSP is researching optimisers for solving hard stacking problems in dynamic environments. They incrementally adapt as the situation changes, thereby increasing reactivity without compromising performance.

» 10/2019 – 3/2022, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI Dr. Stefan Wagner

JRC adaptOp

Josef Ressel Center for Adaptive Optimisation in Dynamic Environments

Within the Josef Ressel Center adaptOp, adaptive optimisation algorithms are developed, which can foresee dynamic changes in production processes by machine learning and are able to adjust proactively. These new optimisation methods are evaluated and applied in the areas production planning, storage and transport.

» 10/2019 – 9/2024, > €500,000, CDG Josef Ressel Center

Project Manager:
Prof. DI Dr. Stefan Wagner
https://www.adaptop.at

JRC SymReg

Josef Ressel Center for Symbolic Regression

Within the Josef Ressel Centre for Symbolic Regression we plan to develop new symbolic regression algorithms as well as a methodological and technical framework for incremental model adaptation for handling concept drift. We will apply the newly developed algorithms and frameworks for modelling powertrains and friction systems.

» 1/2018 – 12/2022, > €500,000, CDG Josef Ressel Center

Project Manager:
Prof. DI Dr. Gabriel Kronberger

LIPOL

Learning in-the-loop control for smart processes in the food industry

Together with the company partner GAMED GmbH and customers from the food industry we develop software tools using AI methods for monitoring and controlling product quality in industrial food production processes.

» 5/2021 – 5/2023, < €100,000, Contract research

Project Manager:
Prof. DI Dr. Gabriel Kronberger

Optimal Workforce

Digital Methods for Improved Qualification Strategies

In this project new methods were developed that were able to show the relationship between employee flexibility through cross-training and key performance indicators such as service level. In the integration of simulation, optimization, and data analysis the interdependencies among the total number of qualifications and the service levels could be shown and interpreted.

» 11/2017 – 5/2021, €100,000 – 500,000, Funding for digitization in Upper Austria

Project Manager:
Assistant Prof. DI Dr. techn. Andreas Beham

Recycling4Future

Automatic and optimal control of plastics recycling plants.

Together with EREMA Engineering Recycling Maschinen und Anlagen GmbH we develop customized machine learning algorithms that can be used for automatic and stable control of plastics recycling plants.

» 1/2021 – 12/2022, < €100,000, Contract research

Project Manager:
Prof. DI Dr. Gabriel Kronberger

SimGenOpt2

Integrated Methods for Robust Production Planning and Control

In this project methods were developed for the optimization of production systems. With a simulation-based optimization approach improved planning parameters were identified, while in a mathematical programming approach a variety of production scenarios were generated. As an integrated system this enables cost-efficient and robust planning.

» 3/2017 – 3/2021, €100,000 – 500,000, FFG Production of the future

Project Manager:
Assistant Prof. DI Dr. techn. Andreas Beham

TransMet 1

Transformation in metallurgy to recycled steel

In this project which is part of the COMET Center MCL (Material Center Leoben) we work on algorithms for the adaptation of material models. Focus of our activities are the combination of physics-based models with purely data-driven models.

» 4/2021 – 3/2024, < €100,000, FFG COMET K2 Centre

Project Manager:
Prof. DI Dr. Gabriel Kronberger

X-PRO

Research and Development of User-centred Methods for Cross-Virtuality Analytics of Production Data

The aim of the basic research project X-PRO is the development of fundamental new methods in the field of Informatics and Data Analytics to handle the upcoming challenges of rapidly rising amounts of data in the production environment. Further development of existing methods of visual and immersive analytics will lead to all new interactive and visual analytic tools which will be called ‘Cross-Virtuality Analytics’. These tools should ensure an optimised Human-Computer-Interaction.

» 2/2020 – 1/2025, > €500,000, RTI structural funding Upper Austria

Project Manager:
Prof. Dr. Christoph Anthes, MSc
https://x-pro.fh-ooe.at/

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 University of Applied Sciences Upper Austria Linz Campus puts people at the centre of its research and development work. The research projects focus on new developments in medical technology on the one hand and engage with issues of societal transformation on the other.

Your Points of Contact for Research & Development at the Linz Campus

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eva.rechberger@fh-linz.at

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

Societal & Social Innovation

ASPIRE

In Education, Employment or Training?! A Longitudinal Study on Immigrant Youths' Success Factors

The main goal of the project is to gain a better understanding about conditions, processes and results of immigrant youths' positive development. A longitudinal study will be conducted in which adolescents, parents and teachers will participate.

» 3/2022 – 2/2026, €100,000 – 500,000, OeNB Jubiläumsfonds

Project Manager:
Prof. PD Mag.
Dr. Dagmar Strohmeier

Gekop

Against the background that vaccinations are one of the most important and effective measures in medicine, the study analyzes to what extent word-of-mouth influences the decision of Austrian parents to vaccinate their children. The study focuses on those vaccinations recommended by the Austrian Federal Ministry for Social Affairs, Health, Care and Consumer Protection for children in the first two years of life.

» 5/2021 – 12/2022, < €100,000, FH Upper Austria core funding

Project Manager:
Prof. PD
Dr. Sebastian Martin

Industrial brownfields in Upper Austria

A panel survey

Three years after the first survey of industrial and commercial wastelands in Upper Austria, the survey in 2021 was conducted with an extended search profile that integrated also vacancies in town centres. The data is used to prioritize (economic) further development.

» 3/2021 – 9/2021, < €100,000, Contract research

Project Manager:
Prof. MMag.
Dr. Franziska Cecon

DiGreen

Digital government for green municipalities and cities

DiGreen provides – based on best-practice experiences – manuals and guidelines how sustainable and digital solutions can be implemented in municipalities and cities. Furthermore, a multidimensional curriculum will be developed for students as well as public servants to support the knowledge transfer.

» 11/2021 – 11/2024, €100,000 – 500,000, EU Erasmus+

Project Manager:
Prof. MMag.
Dr. Franziska Cecon
https://www.upjs.sk/en/faculty-of-public-administration/DiGreen

Evaluation of the project "Mental Health First Aid"

External evaluation of the project "Mental Health First Aid: An Austrian prevention program of pro mente Austria"

This study focuses on evaluating the project "Mental Health First Aid". The project aims to train both professionals in social and health sector and interested laypersons in the form of seminars to deal better with psychological crises in their environment.

» 9/2020 – 10/2022, < €100,000, Contract research

Project Manager:
Prof. PD Mag.
Dr. Petra Wagner

GARP-Video

Real Relief for Caregivers through Social Assistive Robots

Digitization and Social Care Robots – there seems to be "much ado about nothing", as there is no evidence about wide use of new technology in caregiving. This video looks for solution approaches that lead to real relieving digital assistance for caregivers. Living Labs are part of the solution.

» 2/2019 – 12/2021, < €100,000, NAWA - Polish National Agency For Academic Exchange

Project Manager:
Prof. Mag.
Dr. Irmtraud Ehrenmüller
http://garp.upjp2.edu.pl/en/information-about-the-project/

IPSI+

Initiating projects of social innovation

Sustainable social innovations contribute greatly to tackling societal challenges. Therefore, the goal of this project is to support research activities of the two departments Healthcare-, Social- & Public Management and Social Work.

» 5/2020 – 12/2021, < €100,000,
FH Upper Austria core funding

Project Manager:
Prof. Mag.
Dr. Renate Kränzl-Nagl
https://pure.fh-ooe.at/en/projects/

Living Care Lab

Step 1: Business Planning Living Care Lab

To adapt digital devices and social assistive robots for the real, effective use in caregiving environments, it needs innovative research institutions. A “Living Care Lab” represents a methodology that enabels the evaluation of innovative technology. This project supports the establishment of a Living Care Lab at the University of Applied Sciences in Linz.

» 2/2022 – 11/2022, < €100,000,
Project Funding Upper Austria

Project Manager:
Prof. Mag.
Dr. Irmtraud Ehrenmüller

Impact measurement for istOÖ

The project aims at creating an impact-oriented steering model for the Department of Integration, Upper Austria (Integrationsstelle des Landes OÖ, ist OÖ) and at developing a tool for measuring the social impact of counselling services, provided by the association migare, Centre for migrants Upper Austria (Verein migrare, Zentrum für MigrantInnen OÖ.).

» 9/2021 – 12/2022, < €100,000,
Contract research

Project Manager:
Prof. Mag.
Dr. Renate Kränzl-Nagl
https://pure.fh-ooe.at/en/projects/

Medical Engineering

Bioceta

Biophysical Characterisation of Extra-cellular Bio Particles for Therapeutical Application

In the course of this project, it is planned to establish a new focus at the University of Applied Sciences Upper Austria that deals with the multi-modal biophysical analysis of smallest biological particles (e.g. extracellular vesicles).

» 7/2018 – 6/2023, > €500,000,
FFG COIN Aufbau

Project Manager:
Prof. DI
Dr. Jaroslaw Jacak
www.timed-center.at

Bio-Ink SMCS

Versatile Bio-Ink for Selective Molceule Binding and Cell Stimulation

The perception of the interaction of molecules in living cells is important to understand the systems that control cell function and metabolism. The synthesis of a biocompatible base for protein and cellular interactions represents importance in biotechnology, 3D tissue engineering and regenerative medicine and other fields. Here, we plan to establish a route for synthesis of protein based all-bio photoresist resin for fabrication of intrinsic bio structures using simple photolithography setup.

» 5/2021 – 11/2021, < €100,000,
FH Upper Austria core funding

Project Manager:
DI Fabian Hauser BSc

CoRoNA

Capturing of Recognition Patterns of Nanoscopic Anchors of Virus-like Particles (CoRoNA)

Advances in vaccine and antiviral drug development are the result of fundamental studies on viral replication, transmission and pathogenesis. Our aim is to reveal a detailed structural mechanism of how nCOV-2019 recognises contacts with selected antibodies and can consequently be produced. These studies represent an acute diagnostic and subsequently also therapeutic option for controlling the current pandemic and the future resurgence of the virus.

» 3/2021 – 12/2021, < €100,000,
FH Upper Austria core funding

Project Manager:
Prof. DI
Dr. Birgit Plochberger
www.timed-center.at

NOZ

Native supported cell membranes

Methods will be developed to extract native cell membranes from living cells and mount them on substrates suitable for atomic force microscopy or quartz crystal microbalance, which should enable to study molecular processes occuring on these membranes using these biophysical techniques.

» 9/2021 – 8/2022, < €100,000,
FH Upper Austria core funding

Project Manager:
DI Dr. Johannes Preiner
https://pure.fh-ooe.at/en/projects

Fast3DCast

Rapid production of plastic support bandages using continuous stereolithography

The aim of Fast3DCast is to research methods and materials for the efficient production of support bandages as a replacement for plaster bandages and hard bandages made of synthetic material by continuous stereolithography.

» 3/2022 – 2/2024, €100,000 – 500,000,
FFG Bridge 1

Project Manager:
Prof. DI
Dr. Jaroslaw Jacak

FcRClu

Elucidation of IgG oligomer mediated Fc receptor clustering

Within the project we will structurally and dynamically investigate the mechanism of Fc-receptor clustering and resulting immune cell activation, as induced by antibody hexamers formed on target cells.

» 11/2020 – 10/2024, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
DI Dr. Johannes Preiner
https://pure.fh-ooe.at/en/projects/

HS-AFM to study Fc:Fc interaction

Biophysical Characterisation of Therapeutic Antibodies

Monoclonal antibodies are increasingly used in the treatment of various cancers. In this project the mode of action of these novel therapeutics is investigated at the molecular level in cooperation with an internationally leading pharmaceutical company.

» 9/2017 – 12/2022, > €500,000, Contract research

Project Manager:
DI Dr. Johannes Preiner
https://pure.fh-ooe.at/en/projects

IgGMedCompAct

Determinants of IgG-mediated complement activation

The project seeks answers to such important questions as: How do the different IgG antibody subclasses (IgG1-IgG4) initiate the clearance of a target cell? What is the influence of antibody glycosylation, binding strength to the antigen, or antigen abundance on the target cell?

» 1/2021 – 12/2024, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
DI Dr. Johannes Preiner
https://pure.fh-ooe.at/en/projects

ImageHeadstart

Breakthrough computer vision applications in the micro world: Industry Research Consortium 4.0

The aim of the project is to create a consortium from which the region's companies can draw on the knowledge of regional research organisations and thus achieve competitiveness so that they can also lead in global competition in certain areas.

» 1/2020 – 12/2022, €100,000 – 500,000, Interreg - Austria-Czech Republic

Project Manager:
Assistant Prof. Dipl.-Biol.
Sascha Senck PhD

Lipoprotein particle interaction with biomembranes

Lipoprotein particle interaction with biomembranes

The exchange of lipids between lipoproteins itself and to cells is a key process for maintaining cellular cholesterol homeostasis. Imbalance of systemic cholesterol uptake and export leads to atherosclerosis, diabetes and cancer. We implemented a combined Atomic-Force and Single-Molecule-Fluorescence-Microscope, Fluorescence-Cross-Correlation-Spectroscopy and C-Laurdan polarization measurements to confirm cargo release to various membrane environments. High-Speed Atomic Force Microscopy will facilitate observation of particle interaction and/or diffusion in real time will show for the first time unprecedented details of the particle interaction - even fusion - with distinct membranes at various stages.

» 8/2020 – 7/2024, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
Prof. DI
Dr. Birgit Plochberger
www.timed-center.at

LiSSCeD

3D Lithographical Scaffolds for Stem Cell Differentiation

The scientific focus of this proposed project will be the development of 3D cell scaffolds, which are mimicking the ECM. The complex, MPL/STED-lithography written scaffolds (feature sizes ranging from micro- down to nanometers) will be co-cultured with two different cells allowing for the first time the study of cell-cell as well as cell-scaffold interactions in-vitro at the nanoscopical level.

» 12/2018 – 11/2022, €100,000 – 500,000, FWF – Stand-Alone Project

Project Manager:
Prof. DI
Dr. Jaroslaw Jacak
www.timed-center.at

MEDUSA

Medical EDUcation in Surgical Aneurysm clipping (MEDUSA)

The brain is the most sophisticated organ of our body and defines the human nature beyond personality and perception. Consequently, pathological damages of the brain's vulnerable structures have serious consequences for patients. For this reason, the surgical treatment of neurological disorders, such as aneurysms, have a high clinical relevance. Reaching the responsible target areas of the brain, however, is highly complex. Treatment only gets possible due to the integration of advanced technology and exceptional cognitive and fine-motoric skills of neurosurgeons. MEDUSA aims to build a revolutionary training and planning platform for neurosurgeons that is designed to set new standards in clinical simulation for reaching the ultimate goal of saving lives.

» 6/2019 – 5/2023, €100,000 – 500,000, Upper Austria Innovatives OÖ2020

Project Manager:
Prof. DI
Dr. Andreas Schrempf
www.timed-center.at

SPUSI

Smart Phantom for Optimisation and Education of Ultrasound Imaging Diagnosis and Guided Interventions

The main objective of the proposal SPUSI is focused on the development of novel, realistic phantoms for the development, optimization and training of ultrasound imaging diagnosis and guided interventions. Phantoms, able to mimic real human tissue with respect to acoustic and haptic properties, should help to improve image quality and to reduce development time of ultrasound imaging systems. Additionally the developed phantoms should build a profound basis for the development of training systems for several clinical applications. The systematic use of realistic ultrasound phantoms within the development process of ultrasound imaging systems should lead to an improved diagnosis quality.

» 10/2018 – 12/2021, €100,000 – 500,000, FFG Bridge

Project Manager:
Prof. DI
Dr. Andreas Schrempf
www.timed-center.at

Vascular MicroLab

Characterisation of Thrombocyte Aggregation under Flow Conditions

The aim of this proposed project is to study the influence of blood vessel wall integrity on thrombus formation: Therefore, we plan to develop a simple microfluidics device with a cell monolayer, mimicking the endothelial blood vessel wall.

» 11/2018 – 11/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI
Dr. Jaroslaw Jacak
www.timed-center.at

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

Research and development at the Steyr Campus is centred on management and digitalisation. Researchers examine in particular diverse aspects of digitalisation from a management and business perspective in order to support practical decision-making and operational processes.

Your Points of Contact for Research & Development at the Steyr Campus

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Vice-Dean for R&D
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4400 Steyr
Phone: +43 5 0804 33297
wolfgang.schildorfer@fh-steyr.at

Digital Transformation

AI SDT-LAB

AI Social Design Thinking Lab

The aim of this project is to create a cross-border network of cooperating units in order to (1) identify possibilities for the practical use of AI, (2) find a suitable and effective application of this technology to optimize organizational processes and (3) find ways to overcome existing barriers that make it difficult to put AI into practice.

» 9/2021 – 12/2022, €100,000 – 500,000, Interreg - Austria-Czech Republic

Project Manager:
Prof. DI
Dr. Margarethe Überwimmer
https://www.global-business.at/en/projects/AI_SDT

Interreg Boost4BSO

Boosting CE Business Support Organizations (BSOs) capacities for I4.0 Scale Up Support

SMEs in particular face major challenges when they want to digitalise their production, for example. There is often a lack of expertise on how the transformation from traditional production to Industry 4.0 and advanced manufacturing can work. The task of our research group is, among other things, to develop a new type of "snowball mechanism" so that toolboxes for building up competences can be standardised, distributed quickly - like snowballs - and multiplied among business support organisations (BSOs). As a result of the project, BSOs should be better able to support SMEs in building transformation competences quickly and sustainably in order to identify their potential and develop new business strategies.

» 4/2020 –3/2022, €100,000 – 500,000, Interreg Central Europe

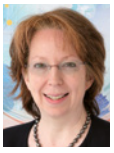
Project Manager:
Prof. DI
Dr. Margarethe Überwimmer
Boost4BSO - Interreg (interreg-central.eu)

Interreg CCCN

Cross - cultural communication network

The aim of this project is the development of a long-term cross-border cooperation between two Universities, one in Vysocina and one in Upper Austria. Consequential a systematic and long-term cooperation between institutions in the AT-CZ border regions should be created. Within this newly established network of both Universities, intercultural trainings will be developed together. This concepts will be tailored towards four different target groups, which are Universities, High-Schools, vocational schools and Companies.

» 10/2021 – 12/2022, < €100,000, Interreg - Austria-Czech Republic



Project Manager:
Prof. DI
Dr. Margarethe Überwimmer
https://www.global-business.at/en/projects

Irrational online behaviour

This research aims at generating new insights concerning the online behaviour of dissatisfied customers. More specifically, it investigates (a) the (psychological) triggers of online complaints, (b) complaint channel choice, (c) consumers' expectations concerning complaint outcomes, (d) reactions of online complainants and bystanders to online complaint handling.

» 5/2021 – 9/2022, < €100,000, FH Upper Austria core funding

Project Manager:
PD Mag. Wolfgang Weitzl PhD
https://digital-business.at/forschen/forschungsprojekte/complaining-4-0

KITKA - Artificial Intelligence

Transparency through a catalogue-based platform for Austria

AI systems have great potential for Austrian companies. However, many companies are not yet making maximum use thereof. A lack of trust and knowledge of these systems represent essential barriers to their adequate use. The overall aim of the project is to counteract these challenges by providing comprehensive information that has been validated by experts from different disciplines. For this purpose, an interdisciplinary project team is designing an open-access platform, which has the purpose of presenting use cases of AI in a holistic form and evaluating them according to a catalog of criteria that has been developed.

» 3/2020 – 2/2021, < €100,000, FFG IDEEN LAB 4.0

Project Manager:
Prof. DI
Dr. Margarethe Überwimmer
https://projekte.ffg.at/projekt/3763333

PERFORM

Pioneering the Digital Future for Omnichannel Retail Managers

The goal of PERFORM is to establish a European Training Network to prepare the next generation of Digital Retail Managers via training and research in the field Business Models, UX, Technologies, Operations and Analytics.

» 1/2018 – 12/2021, > €500,000, EU MSCA - Marie Curie Actions

Project Manager: Prof. PD Mag. Dr. Andreas Auinger
http://www.perform-network.eu

ProsperAMnet

Progressing Service Performance and Export Results of Advanced Manufacturers Networks

The main goal of ProsperAMnet is to develop and provide two innovative online-tools – the so-called Service Performance Monitor and the Service Export Radar - for advanced manufacturers in order to support them in their service management and export activities.

» 4/2019 – 3/2022, > €500,000, Interreg Central Europe

Project Manager: Prof. DI Dr. Margarethe Überwimmer
www.interreg-central.eu/prosperamnet

QSemIDM

Qualification seminar "Industrial Data Manager"

Decision-makers and generalists receive an overview of methods and techniques for data analysis and visualization. They will be sensitized to the use of available data for the transformation of existing business models into innovative ones in the sense of data-driven business.

» 12/2020 – 11/2021, < €100,000, FFG Research Competence for Economy

Project Manager: Assistant Prof. Mark Stieninger, BA MSc

Technostress in Organizations

Technostress is a form of stress caused by the use and ubiquity of digital technologies. This project investigates how and why technostress arises in the organizational environment and how employees deal with it.

» 1/2019 – 6/2022, €100,000 – 500,000, FWF – Stand-Alone Project

Project Manager: a.Univ.Prof. Prof. Mag. Dr. René Riedl
https://pf.fwf.ac.at/de/wissenschaft-konkret/project-finder/42546

Logistics

AMS Study

A Study about the Competences of Qualified Logistics Personnel

The aim of this study commissioned by the AMS Upper Austria is to investigate which competencies qualified logistics personnel will need by the year 2030. The goal is to derive from this analysis which qualification measures, training and further education will be required to develop those competencies. A clear focus is on the changes caused by the advancing digitalization and automation.

» 8/2021 – 12/2021, < €100,000, Contract research

Project Manager: Prof. Dr. Lisa-Maria Putz-Egger BSc MA
www.logistikum.at

AWARD

All Weather Autonomous Real logistics operations and Demonstrations

The EU-funded AWARD project will develop and deploy a safe autonomous transportation system applicable to a wide range of real-life occurrences and scenarios. Specifically, the project will provide an autonomous driving system capable of confronting adverse environmental conditions such as fog, heavy snow and rain.

» 12/2020 – 1/2023, €100,000 - 500,000, EU HORIZON 2020

Project Manager: Prof. Mag. Dr. Matthias Neubauer
https://award-h2020.eu/

LoKoS

Logistics collaboration and standardisation

In order to show how efficiency can be increased in logistics networks by using data, the project "LoKoS" focuses on network potentials through a logistics data model based on a real example in vehicle distribution logistics. As outlined in the project proposal, a procedure regarding a standardized data model is to be demonstrated in order to be able to realize data-based (logistics) decisions for real companies and to favor collaboration.

» 7/2021 – 6/2022, < €100,000, FH Upper Austria core funding

Project Manager: Dr.rer.soc.oec. Michael Plasch BA MA

COMPETING

Recognition of professional recognition in inland navigation

COMPETING will develop curricula and lesson materials, as well as a Quality Assurance and Quality Control (QA/QC) system, to ensure the highest level of quality concerning the implementation of future proof IWT (Inland Waterway Transport) education and training throughout the EU. There are fifteen partners participating in this project.

» 1/2019 – 3/2022, €100,000 – 500,000, EU ERASMUS+

Project Manager: Prof. Dr. Lisa-Maria Putz-Egger, BSc MA
https://www.iwt-competencies.eu

Connecting Austria

Connection of Efficient and Automated Freight Traffic from Motorway to City

Connecting Austria investigates four specific use cases for semi-automated and energy-efficient truck platoons. The unique contribution is its specific focus on infrastructure issues and on parameterized traffic perspectives when evaluating energy-efficient and semi-autonomous truck platoons.

» 1/2018 – 12/2021, €100,000 – 500,000, FFG Mobility of the future

Project Manager: Prof. Mag. Dr. Matthias Neubauer
https://www.connecting-austria.at

Cope

Collective Perception

Logistikum at University of Applied Sciences Steyr is coordinating an important next step for automated and cross-linked driving in urban environment. The project team focuses on the following overarching research question: How can safety in intersection situations be increased for all road users through cooperation and communication (C-ITS)?

» 9/2020 – 8/2022, €100,000 – 500,000, FFG Mobility of the Future

Project Manager: Prof. Mag. Dr. Wolfgang Schildorfer
https://www.project-cope.eu

DeNaLog

Digitalization & eCommerce in the domain of Sustainable Freight Logistics

DeNaLog is a qualification network focusing on e-commerce, cyber security and smart factory. Within the four days basic modules and the nine two-day in-depth modules, logistics service providers' employees have the opportunity to take a closer look at different topics such as information and communication technologies, powertrain technologies or vehicle systems.

» 4/2021 – 3/2023, < €100,000, FFG Research Competence for Economy

Project Manager: Prof. Mag. Dr. Wolfgang Schildorfer
https://projekte.ffg.at/projekt/4109014

DIGEST

German acronym for "Digitaler Zwilling des Verkehrssystem Straße"

DIGEST develops concepts and specifications of a digital twin of roads for a European implementation that is framed and specified within a prototypic implementation in the Austrian, German and Swiss region.

» 10/2020 – 9/2022, €100,000 – 500,000, FFG Mobility of the Future

Project Manager: Prof. Mag. Dr. Wolfgang Schildorfer
https://projekte.ffg.at/projekt/3894859

DigiTrans – Innovation Lab

Test region Austria-North for automated driving with a focus on freight mobility and logistics aspects

Digitrans provides know-how and test infrastructure and accompanies the testing, validation, research and implementation of autonomous commercial vehicles and their various applications. We are helping to shape the future of autonomous transport sustainably.

» 3/2018 – 2/2024, €100,000 – 500,000, FFG Mobility of the future

Project Manager: Prof. Mag. Dr. Matthias Neubauer
https://.digitrans.expert

DOMINO

Hub for Intermodal Mobility Services & Technologies

Providing mobility for all users in a simple, convenient and networked manner - that is the vision we are working on at DOMINO, the "hub for intermodal mobility services and technologies". The main objective of the DOMINO research project is to develop an integrated, publicly accessible mobility offer.

» 9/2019 – 8/2022, €100,000 – 500,000, FFG Mobility of the future

Project Manager: Prof. Mag. Dr. Wolfgang Schildorfer
https://www.domino-maas.at; https://www.domino-ooe.at

ESRIUM

Egnss-enabled Smart Road Infrastructure Usage and Maintenance for increased energy efficiency and safety on European road networks

The European project "ESRIUM" to use and maintain EGNSS-enabled smart road infrastructure launched remotely. The consortium that makes up the "EGNSS-enabled Smart Road Infrastructure Usage and Maintenance for increased energy efficiency and safety on European road networks" (ESRIUM) project came together online to kick-start the project on 12th December 2020. ESRIUM is found under the programme Horizon 2020 to foster greener and smarter road usage, road maintenance, and increase road safety.

» 12/2020 – 11/2023, €100,000 – 500,000, EU HORIZON 2020

Project Manager: Prof. Mag. Dr. Wolfgang Schildorfer
https://esrium.eu

EVIS-AT

Real-time Road Traffic Information – Austria

The project EVIS.AT has the goal to provide level of service, travel times and event messages in an unified and high quality way for the Austrian main road network.

» 6/2014 – 6/2026, > €500,000, Climate and Energy Fund

Project Manager: Prof. Mag. Dr. Matthias Neubauer
http://www.evis.gv.at

IW-NET

Innovation driven Collaborative European Inland Waterways Transport Network

IW-NET will facilitate industry-wide collaboration for a unified Inland Waterway Area integrated in the TEN-T and European Transport System. The project's solutions comprise of highly configurable simulation models to support authorities and business stakeholders to evaluate and manage their strategies, and to optimize their tactical and operational planning capabilities. Furthermore, the project will cover state-of-the-art infrastructure and vessel technologies that support the streamlining and improvement of operational processes in inland waterway transport.

» 5/2020 – 4/2023, €100,000 – 500,000, EU HORIZON 2020

Project Manager: Prof. Dr. Lisa-Maria Putz-Egger BSc MA
https://www.iw-net.eu

JRC LIVE

Josef Ressel Center for Real-time Value Network Visibility

The goal of the project is to develop a supply chain control tower solution that allows to consolidate, analyze and visualize the most important data in an information cockpit to enable companies in their daily operations to gain control over their value network.

» 1/2019 – 12/2023, > €500,000,
CDG Josef Ressel Center

Project Manager:
Prof. DI (FH)
Dr. Markus Gerschberger
www.govisible.at

LOG-ReaGtSion

Resilience needs assessment of goods and services of key Austrian industries

Early detection of supply disruptions and bottlenecks is essential for designing resilient economic supply networks. Covid-19 has shown that in addition to the critical infrastructure, other companies are important to maintain the supply of the population. The aim of this project is to identify these key companies and their products and supply chains and to derive recommendations for action to ensure resilience in future crises.

» 9/2021 – 2/2023, < €100,000,
FFG KIRAS

Project Manager:
Mag. Michael
Herburger BA MA
https://www.kiras.at/en/financed-proposals/detail/reagtsion

LOGIN

Logistics Technologist

LOGIN – The project LOGIN aims to introduce new EQF 4 level qualification dedicated to the Operators who develop logistics related to manufacturing (Logistics Technologist - LOT) and the related training and examination systems.

» 10/2018 – 3/2021, < €100,000,
EU ERASMUS+

Project Manager:
Prof. Dr. Lisa-Maria
Putz-Egger, BSc MA
https://www.logistikum.at/uploads/images/PDF/ProjectInfo_LOGIN.pdf

Logistikum.RETAIL

The research project “logistikum.RETAIL” pursues the vision of establishing a leading international innovation and competence center for innovation in retailing and thus for the sustainable creation of cooperative competitive advantages and thereby strengthening the Upper Austrian business location and its players along the innovation chain to contribute from education, business and research.

» 12/2017 – 12/2022, > €500,000,
FTI Struktur Land OÖ

Project Manager:
Prof. Mag.
Dr. Oliver Schauer, MBA
www.logistikum-retail.at

LogNetz

Building a competence network for the analysis and visualization of logistic value networks

Logistics value networks are complex structures consisting of independent corporate partners, the relationships between them and a large number of stakeholders. In order to be able to overview or optimize these networks in the context of global competition, it is necessary to obtain network data and to systematically evaluate and interpret it.

» 7/2020 – 6/2022, €100,000 – 500,000,
Interreg - Austria-Bavaria

Project Manager:
Mag.rer.nat.
Winter Matthias
www.lognetz.eu

LogResDat

Data Circles in Logistics and Resilience

Closely coordinated and optimised processes make the transport and logistics sector highly susceptible to disruptions of any kind, whether short-term or long-term. In this context, data in particular can support companies in reacting optimally, i.e. resiliently, to these disruptions. In the project, numerous use case ideas are generated and finally 2 use cases on “Logistics and Resilience Data Circles” are developed for a cross-company data exchange.

» 7/2021 – 3/2022, < €100,000,
FFG ICT of the Future

Project Manager:
Mag. Michael
Herburger BA MA
https://projekte.ffg.at/projekt/4138803

MobiLab OÖ

Mobility Laboratory Upper Austria

MobiLab Upper Austria is one of a total of six funded mobility laboratories in Austria whose goal is to address central mobility topics and local or regional challenges. Through its function as a hot spot for future-relevant MobiLab supports cities, municipalities, regions as well as companies and start-ups in the development, testing and implementation of new mobility solutions.

» 3/2017 – 3/2021, > €500,000,
FFG Mobility of the future

Project Manager:
Prof. Mag.
Dr. Wolfgang Schildorfer
http://www.mobilab-ooe.at

MobiLab 2.0

Mobiltiy Lab Upper Austria

The follow-up project MobiLab 2.0 puts its focus on mobility subjects which are constantly up to date and supports local governments, companies or Start-Ups with its expertise, trying to find solutions regarding to different mobility questions. Embedded within the University of Applied Sciences Upper Austria, CoE logistics, MobiLab 2.0 also provides research and development in the scope of mobility, traffic and transport logistics.

» 10/2021 – 9/2026, > €500,000,
FFG Mobility of the Future

Project Manager:
Prof. Mag.
Dr. Wolfgang Schildorfer
http://www.mobilab-ooe.at

MultiRELOAD

MultiRELOAD: Port solutions for efficient, effective and sustainable multimodality

Together with 22 European partner organizations MultiRELOAD focusses on the specific role and challenges of inland ports & hubs as multimodal freight nodes in contributing to reaching Europe's greenhouse gas (GHG) reduction target of at least 55% by 2030.

» 9/2022 – 8/2025, > €500,000, Horizon Europe

Project Manager:
FH-Prof. Dr. Lisa-Maria Putz-Egger BSc MA

REWWay

Research & Education in Inland Waterway Logistics

REWWay is the result of a cooperation between Logistikum Steyr and viadonau (The company viadonau is responsible for the Austrian Part of the Danube). The aim of the project is to promote the topic of inland waterway logistics in national and international research and educational facilities. In fact, the focus is to train logisticians with knowledge on eco-friendly inland navigation and its connection to other modes of transport.

» 7/2012 – 12/2023, > €500,000, Contract research

Project Manager:
Prof. Dr. Lisa-Maria Putz-Egger, BSc MA
www.rewway.at

SSCCS

Secure Supply Chains for Critical Systems

The aim of the SSCCS project is to ensure the resilience and security of supply chains against cyber attacks. This is done in a structured, interdisciplinary approach based on real use cases and takes into account both highly integrated SCs and those with a low organisational level.

» 7/2021 – 6/2025, €100,000 – 500,000, FFG COIN

Project Manager:
Mag. Michael Herburger BA MA
https://projekte.ffg.at/projekt/3984614

Sucredi

Supply Chain Resilience – Coping with Digital Risks

New technologies and trends of digitalisation bring new digital and cyber risks to all companies and their supply chains. The goal of this project is to show how supply chains can become more resilient to digital and cyber risks.

» 10/2019 – 6/2022, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI (FH) Dr. Markus Gerschberger
https://pure.fh-ooe.at/de/projects/

Smart Production

Hybrid Algorithms for Redesigning MRP

The aim is to develop efficient modeling and solution approaches to overcome all known drawbacks of Material Requirements Planning (MRP) and provide (close to) optimal mid-term production plans. Our specific focus is the rolling horizon planning aspect in combination with stochastic demand and capacitated production system behavior. Several approaches have already been developed, but usually only one or at most two of the drawbacks are tackled simultaneously. The final output is a hybrid solution approach to combine algorithmic and optimization approaches to tack MRP drawbacks.

» 10/2020 – 9/2023, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
Prof. PD DI (FH) Klaus Altendorfer PhD
https://pf.fwf.ac.at/en/research-in-practice/project-finder/48194

InnoFIT

Innovative Forecast and Demand Adjustment through the Use of Sales Data from New Information Technologies

The aim of the project InnoFIT is to develop methods for analysing and correcting demand forecast data for improving the performance of medium and long term production planning. For this purpose, the improvement potential of new information technologies applied in supplier portals between supplier and customer within the hierarchical production planning process is exploited.

» 6/2018 – 2/2022, €100,000 – 500,000, FFG Production of the future

Project Manager:
Prof. PD DI (FH) Klaus Altendorfer PhD
https://projekte.ffg.at/projekt/3042801

Smart Factory Lab

Laboratory for Smart Production throughout the product's life cycle

The project Smart Factory Lab aims at building a laboratory across locations for development and testing of innovative technologies, methods and concepts for intelligent production throughout the product's life cycle. At the Center of Excellence for Smart Production, we focus on the research topics Preemptive Maintenance including the integration of mixed reality technologies within the servicing process and additive manufacturing by powder jet method and new business models.

» 1/2016 – 12/2022, > €500,000, IWB EFRE 2020

Project Manager:
Prof. DI Dr. Herbert Jodlbauer
https://x-pro.fh-ooe.at

X-PRO

Research and Development of User-Centered Methods for Cross-Virtuality Analytics of Production Data

The research project "Research and development of user-centered methods for cross-virtuality analytics of production data", in short X-PRO, aims to achieve a completely new quality of human-computer interaction in the interactive visual analysis of large amounts of data from the production environment.

» 2/2020 – 1/2025, > €500,000, RTI structural funding Upper Austria

Project Manager:
Prof. DI Dr. Herbert Jodlbauer
https://x-pro.fh-ooe.at

Center 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.

Your Points of Contact for Research & Development at the Wels Campus

Head of Research Center, Wels Campus
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4600 Wels
Phone: +43 5 0804 44406
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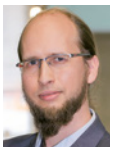
Automotive & Mobility

BeyondInspection

Digitalization platform for the predictive evaluation of aerospace components using multimodal multiscalar inspection



BeyondInspection develops a digitalization platform for predictive evaluation of aerospace components based on multimodal, multiscalar inspection as well as new data analysis and visualization methods for primary and secondary test data.

» 12/2019 – 11/2022, > €500,000,
FFG TAKE OFF

Project Manager:
DI (FH) Bernhard Plank MSc
http://www.3dct.at/beyondinspection

ConSSens

Connected and Smart Sensing for autonomous Mobility

This project deals with connected systems and the resulting distributed control tasks with common goals. A typical use case is vehicle platooning: A leading car is followed by all other vehicles with defined distance and speed.

» 5/2021 – 10/2022, < €100,000,
FH Upper Austria core funding

Project Manager:
Alexander Winkler BSc MSc

SUCCESS

Selective use of carbon composites in efficient structures

Investigation of the co-extrusion of thermoplastic filaments using fused filament fabrication (FFF) with simultaneous selective, local embedding of continuous fiber rovings with regard to data interfaces, material and process quality.

» 3/2021 – 8/2022, < €100,000,
FH Upper Austria core funding

Project Manager:
DI (FH) Manuel Frank MSc

JARVIS4Pre

Virtual learning and artificially intelligent developed work instructions for preform manufacturing in aeronautics

Development of a virtual learning environment with the aid of FE-based draping simulation, in which the “experience” of humans - with regard to manual and (partially) automated preform production - is artificially relearned. This step away from classical optimization towards artificially intelligent algorithms increases efficiency and also contributes to a sustainable and resource-saving aviation industry.

» 9/2021 – 2/2024, €100,000 – 500,000,
FFG TAKE OFF

Project Manager:
Prof. DI Dr. techn. Roland Hinterhölzl

MMZ

The investigation of methods for the mobility of the future

Analytical, numerical and experimental predictions of residual stresses which are generated during the manufacturing process of CFK (thermoplast) - metal hybrid designs.

» 1/2019 – 12/2023, > €500,000,
RTI structural funding Upper Austria

Project Manager:
Prof. DI Dr. techn. Roland Hinterhölzl

Phad-CT

Quantitative phase and dark-field contrast computed tomography for industrial applications in lightweight materials

The main goal of PhaD-CT is the development of optimization and standardization guidelines for Talbot-Lau grating interferometer CT and tensor tomography in the investigation of polymer matrix composites.

» 12/2019 – 11/2022, €100,000 – 500,000,
FFG/Upper Austria Dissertation Funding
FH Upper Austria

Project Manager:
Assistant Prof. Dipl.-Biol. Sascha Senck PhD

ProSim

Process simulation for the automation of composite manufacturing

Setup of the draping and consolidation simulation as well as the experimental material characterization and validation of the simulation for impregnated UD semi-finished products with subsequent linking of the simulations and integration into the structure simulation.

» 11/2018 – 10/2022, > €500,000,
FFG COIN

Project Manager:
Prof. DI Dr. techn. Roland Hinterhölzl

PSSP

Photonic sensing for smarter processes

The aim of the K-PSSP project is to generate process knowledge with photonic methods (CT, thermography, laser ultrasound, ...) that previously did not exist in this way. This is to achieve significant improvements in production processes in terms of efficiency.

» 9/2018 – 8/2022, > €500,000,
FFG COMET K Projects

Project Manager:
Prof. PD DI Dr. Johann Kastner
http://www.3dct.at

RC-LowCAP

Research Centre for Low Carbon Special Powertrain

The goal is the decarbonization of small powertrains for tools & utility and personal mobility vehicles. This is achieved by research on the topics CO2-neutral fuels in novel combustion engine concepts and electrified and hybridized powertrain concepts.

» 12/2018 – 11/2022, > €500,000,
FFG COMET K Projects

Project Manager:
Prof. DI Dr.
Gernot Grabmair
https://www.rc-lowcap.at

RCLowCAP - XLCA

CO2 Life Cycle Analysis in early stage design phase

Within the framework of RC-LowCAP - Research Centre for Low CO2 Special Powertrain, methods and tools are being researched in this subproject with 8 company partners, which support developers in evaluating the CO2-footprint of design concepts.

» 12/2018 – 5/2023, €100,000 – 500,000,
FFG COMET K Projects

Project Manager:
Prof. PD DI Dr.
Peter Hehenberger

StructureWave

Effects of Defects: Effect of Fiber Waviness on Structural Composite Parts

There are two significant challenges for an assessment of the effect of fiber waviness on the global behavior on part level that are also the main goals and innovation of this project: on the one hand the numerical analysis using the finiteelement method (FEM) or analytical approaches, both validated by experimental tests andon the other hand the detection of these manufacturing effects.The challenge is to bridge the gap of the scales from alocal assessment on coupon level (mm) to a global assessment on part level (cm or m). FE-based multiscale approaches are used and the simulations are validated with experimental tests on part level.

» 5/2019 – 4/2021, < €100,000,
FFG/Upper Austria Dissertation Funding
FH Upper Austria

Project Manager:
Prof. DI Dr. techn.
Roland Hinterhölzl

TOMUS

Time optimal control of complex multibody systems

The thesis aims to develop a new numerical method for computing time optimal controls for complex multibody systems like cars or robots.

» 11/2019 – 4/2022, < €100,000,
FFG/Upper Austria Dissertation Funding
FH Upper Austria

Project Manager:
Prof. PD DI Dr.
Wolfgang Steiner

ZDM

Zero Defect Manufacturing for Thermo-dynamical Processes

The main objective is to develop a zero-defect manufacturing method for thermo-dynamical processes in three different industrial fields. Sensors and data-driven models are developed, which allow an improved process control and reducing scrap parts.

» 5./2021 – 4/2024, €100,000 – 500,000,
FFG Production of the Future

Project Manager:
DI Gernot Mayr BSc
https://thermo-ndt.at/category/projects/

Digital Transformation

Agile business model development

Conceptualization and validation of an approach for agile business model development

The aim of the project is the conceptualization and validation of a novel approach to develop innovative business models based on agile principles and methods against the background of the digital transformation.

» 3/2021 – 9/2022, < €100,000,
FH Upper Austria core funding

Project Manager:
Prof. Mag. Dr. Alexander
Brendel-Schauberger

Effects of DT

This dissertation empirically examines the effects design thinking creates, specifically focusing on its effectiveness in education, innovation projects and individual skill development.

» 2/2019 – 1/2022, €100,000 – 500,000,
FFG/Upper Austria Dissertation Funding
FH Upper Austria

Project Manager:
Prof. Dipl.-Wirtsch.-Ing. Dr.
Christiane Rau

EnerMan

ENERgy-efficient manufacturing system MANagement

The aim of the project is for factories of the future to rethink their approach to energy use and move from a pure energy optimisation model to a sustainability model that takes a holistic view of energy consumption.

» 1/2021 – 12/2023, €100,000 – 500,000,
EU HORIZON 2020

Project Manager:
Prof. PD DI Dr.
Peter Hehenberger

Forest-based health tourism

Establishment of a cooperation network to develop sustainable business models for the health tourism use of forests

Forests become an increasingly important commodity for human health related activities, both physically and mentally. Our project analyses how the forest-health relationship can be deployed by forest owners to develop new marketing models for the targeted and guided use of forests by the general public. The project consortium approached these aspects in an interdisciplinary manner and in accordance with the respective core competencies of the project partners on a scientific, tourist, medical and forestry level.

» 1/2020 – 6/2022, €100,000 – 500,000, Interreg - Austria-Bavaria

Project Manager:
Prof. Dipl.oec.troph Claudia Probst PhD.

ViMa@SEMA

Virtual Machine and Digital Twin

The aim of the project is to establish models and processes for the virtual commissioning of machine tools.

» 4/2018 – 12/2021, < €100,000, Contract research

Project Manager:
Prof. PD DI Dr. Peter Hehenberger

Energy

Monitoring research on large-scale solar plants

Advice to funding applicants for large-scale solar thermal plants Monitoring and knowledge building: support in the detailed planning and implementation phase; definition and implementation of the monitoring concept; measurement data analysis, optimisation, interpretation and feedback as well as documentation; plant evaluation and comparisons, building up knowledge base and transfer of results 4. plant evaluation and comparison, development of knowledge base and transfer of results

» 11/2021 – 5/2031, €100,000 – 500,000, Climate and Energy Fund

Project Manager:
DI Dr. techn. Gerald Steinmaurer
https://solare-grossanlagen.at/begleitforschung/

CasGris

Center for Applied Smart Grid Systems

The aims of this project are the creation of a high resolution simulation environment as well as a comparison-platform for energy related system, in which also the properties and effects of electrical communication interfaces will be taken into account.

» 1/2017 – 12/2020, > €500,000, FFG COIN

Project Manager:
DI Dr. techn. Gerald Steinmaurer
https://forschung.fh-ooe.at/center-of-excellence-energie/

DC Surface BreakDown

Surface break down of polluted Medium Voltage DC insulators in Air

The aim of this dissertation is to develop the necessary know-how for a future (reliable) electrical DC power supply. The aim of this dissertation is to characterize DC insulators and materials and to generate suitable testing possibilities.

» 10/2020 – 9/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI Dr. Peter Zeller

ENTHYRE

Development of a hybrid receiver for a Fresnel collector by implementing Spectral Splitting

The aim of this research project is the development of a hybrid receiver for a concentrating solar collector. This solar system will be capable of providing renewable heat with temperatures up to 200°C and renewable electricity simultaneously and with maximized efficiency.

» 10/2018 – 9/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI Dr. Robert Höller

Flotation

Optimization Dissolved Air Flotation

Scientific support for the prototypical development of a flotation process (DAF) without backflushing device for waste water treatment
» 2/2020 – 5/2021, < €100,000,
Contract research

Project Manager:
Prof. PD DI DDr.
Christof Lanzerstorfer

Heat Highway

Interregional heat transmission networks to enable industrial waste heat usage and fossil-free industry

Heat Highway investigates supra-regional heat transmission networks (HTN), focusing on the use of multiple waste heat sources. Heat Highway will go far beyond the state of the art in terms of number of actors involved, interregionality and interaction.
» 3/2021 – 2/2024, < €100,000,
Climate and Energy Fund COOPERATIVE R&D PROJECT

Project Manager:
DI Dr. techn. Gerald Steinmaurer
https://projekte.ffg.at/projekt/3851881

InduGrid

Industrial Microgrids

In this project, technical, economic and legal framework conditions will be depicted in an energy exchange platform, which will be implemented and validated in 3 test sites with different focus areas. It will enable the assessment of new energy communities.
» 9/2018 – 8/2022, €100,000 – 500,000,
Climate and Energy Fund

Project Manager:
DI Dr. techn.
Gerald Steinmaurer
https://forschung.fh-ooe.at/center-of-excellence-energie/

K1-MET

Competence Center for Excellent Technologies in Advanced Metallurgical and Environmental Process Development

Participation in K1-MET will be used to further develop environmental technologies for the metallurgical industry, particularly in the fields of waste gas purification and recycling.
» 7/2015 – 6/2023, €100,000 – 500,000,
FFG COMET K1 Centres

Project Manager:
Prof. PD DI DDr.
Christof Lanzerstorfer

klimaaktiv 2019+

New buildings and renovations

The programme klimaaktiv Building and Renovating is a key element in the Federal Government´s climate and energy strategy #mission2030 in connexion with energy-efficient new starts and high-quality renovation in Austria.
» 2/2019 – 12/2022, < €100,000,
Climate and Energy Fund

Project Manager:
Prof. Arch. DI Dr.
Herbert Leindecker
https://www.klimaaktiv.at

Cooperation GASOKOL 2021

Yield optimisation TOOL for thermal collectors

Development of an innovative, practical design TOOL for predictive yield optimisation of thermal collectors in the product planning or optimisation phase.
» 2/2021 – 12/2022, < €100,000,
easy2research Upper Austria

Project Manager:
DI Dr. techn.
Gerald Steinmaurer

Methods for Energy Flow Optimization

The main objective of the project is the development of novel tools (mathematical algorithms) in order to coordinate the operation of future interconnected energy networks in an optimal manner. An interconnection of power grid and thermal grids will be considered. A special focus lies on renewable energy sources, innovative storage systems as well as on the application in industry and domestic homes.
» 1/2018 – 12/2022, > €500,000,
RTI structural funding Upper Austria

Project Manager:
DI Dr.techn.
Harald Kirchsteiger
https://forschung.fh-ooe.at/center-of-excellence-energie/

New-TCM

Development of innovative thermochemical storage materials with high energy density

Salt-containing thermochemical storage materials are promising candidates for efficient low-temperature energy storage applications of the future. Aim of the project is to improve the low stability and difficult handling characteristic of the salt-composites.
» 1/2019 – 12/2020, €100,000 – 500,000,
IWB EFRE 2020

Project Manager:
DI Dr. nat. tech.
Bernhard Zettl
https://pure.fh-ooe.at/en/projects/

Power Disconnectors for E-Car Battery Short Circuit Protection

High performance Arc Chute technologies

Short circuits in E-cars must be interrupted in a save and efficient manner. Weight and volume restrictions for protective devices require developing new arc chute technologies. Basic electric arc physics investigations are performed in the high current test site.
» 9/2020 – 8/2023, €100,000 – 500,000,
FFG Mobility of the Future

Project Manager:
Prof. DI Dr. Peter Zeller

RESINET

The RESINET project addresses the main topic of the resilience of energy networks, taking into account the change in the framework conditions from central, unidirectional systems to networks with a significantly higher proportion of renewable, fluctuating energy suppliers ("prosumers"), increasing storage capacities in the network and controllable loads.
» 1/2021 – 6/2022, > €500,000, IWB EFRE 2020

Project Manager:
DI Dr.techn. Harald Kirchsteiger
https://forschung.fh-ooe.at/center-of-excellence-energie/

SENDER

Sustainable consumer engagement and demand response

The project answers the topic 'Consumer engagement and demand response'. SENDER will develop the next generation of energy service applications for demand-response, home-automation, -convenience and -security. It puts consumers at the heart of the energy market by engaging them in a co-creation process with other actors from the energy domain. The idea behind the project is related to the context of continuously increasing, highly distributed renewable generation. Grid operators require more flexibility from the grid, to balance the increase of uncontrollable Renewable Energy Source production.
» 10/2020 – 9/2024, €100,000 – 500,000, EU HORIZON 2020

Project Manager:
Prof. DI Dr. Wilhelm Süßenbacher
https://www.sender-h2020.eu

Serve-U

Community-based Smart Energy Service through flexible Optimization Models and fully automated Data Exchange

The research project Serve-U involves the development of a user-centric energy service platform that enables energy communities to automatically access highly accurate forecast data for load and generation patterns, as well as the identification of optimized energy utilization options with highest economic benefits and lowest environmental impact.
» 4/2021 – 9/2023, €100,000 – 500,000, Climate and Energy Fund

Project Manager:
Prof. MMag. Dr. Michael Schmidthaler
serve-u.at

SorSens

Application of physical and numerical methods for state of charge determination of sorption materials

The aim of the project is the development of a vitual sensor for easy and reliable state-of-charge measurement of thermochemical energy storage materials
» 7/2021 – 6/2022, €100,000 – 500,000, Climate and Energy Fund

Project Manager:
DI Dr.nat.tech. Bernhard Zettl
https://pure.fh-ooe.at/en/projects/

TCMix

Investigation of salz-mixtures for thermo-chemical energy storage

The aim of the project is the development stable salt mixtures for use as active component in TCS-materials
» 3/2021 – 2/2024, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
DI Dr.nat.tech. Bernhard Zettl
https://pure.fh-ooe.at/en/projects/

SPC SuedBgld

Urban Storage Cluster Suedburgenland

Development and realization of a Living Lab test environment of a cross-building, cross-user, cross-quarter storage and cross-charging station energy management system in combination with innovative tariff models.
» 9/2017 – 3/2022, €100,000 – 500,000, FFG Future City

Project Manager:
DI Dr. techn. Gerald Steinmaurer
https://forschung.fh-ooe.at/center-of-excellence-energie/

Food Technology & Nutrition

AeroAir Mibi

Microbial evaluation of the effectiveness of desinfection devices

Assessment of the microbial decontamination effectiveness of desinfection devices for events, airports and airplanes
» 6/2021 – 12/2021, < €100,000, Contract research

Project Manager:
Mag. Alexander Zwirzitz PhD

Ecology of microalgae on tropic glaciers and in slushy snow

Physiology and analytics of microalgae which live in melting snow and ice.
» 2/2021 – 7/2024, €100,000 – 500,000, FWF - Stand-Alone Projects

Project Manager:
Dr.rer.nat. Daniel Remias

FFoQSI

FFoQSI – Austrian competence center for feed and food quality, safety and innovation

The main focus of the research is the program that has been developed by players of science and economy. Here we investigate critical issues along the value chains of plant derived feed and food (green value chain) and animal derived food (red value chain).
» 1/2017 – 12/2024, > €500,000, FFG COMET K1 Centre

Project Manager:
Prof. PD Dr.
Julian Weghuber
www.ffoqsi.at

FODMAPs

Analytical methods for detection of FODMAPs and microorganisms involved

Objectives are the analysis of the chemical structure of FODMAPs (fermentable oligo-, di- and monosaccharides as well as polyols) and the development of fermentation methods for their reduction or degradation in wheat and wheat products.
» 10/2018 – 9/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD Dr.
Julian Weghuber
https://forschung.fh-ooe.at/coe-lte/

JRC - PDR

Josef Ressel Centre for Phytogenic Drug Research

The JR Centre investigates plant-derived bioactive substances for the prevention and therapeutic support of human diseases and for the improvement of animal health and performance.
» 1/2019 – 12/2023, > €500,000, CDG Josef Ressel Centre

Project Manager:
Prof. PD Dr.
Julian Weghuber
https://forschung.fh-ooe.at/coe-lte/

PhytoFERM

Fermentation of plant substances to increase their biological effectiveness

To increase the bioavailability and bioactivity of selected plant active ingredients (phytogenics) to improve animal health through fermentation and evaluate their efficiency.
» 1/2021 – 12/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD Dr.
Julian Weghuber
https://forschung.fh-ooe.at/coe-lte/

Phytogenics

Molecular biological characterization of protective mechanisms of selected phytogenic substances

Establishment of different in-vitro test systems (e.g. C. elegans) and characterization of the selected phytogenic substances with respect to their protective effects on animal health.
» 1/2019 – 12/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD Dr.
Julian Weghuber
https://forschung.fh-ooe.at/coe-lte/

PlastoCyan

Production of polyhydroxybutyric acid from dairy waste waters by cyanobacteria

Genetiv optimisation of cyanobacteria for increased production of the biodgradable plastic PHB.
» 6/2021 – 12/2022, €100,000 – 500,000, Interreg - Austria-Czech Republic

Project Manager:
Mag. Alexander Zwirzitz PhD

REACT

Enabling Technologies for Zero Defect Manufacturing

Development of various methods in the environment of “Zero Defect Manufacturing” (ZDM). ZDM aims to avoid rejects in general or at least to reduce them significantly. This is particularly important in connection with the entire value chain of food and feed.
» 1/2021 – 9/2022, > €500,000, IWB EFRE 2020

Project Manager:
Prof. PD Dr.
Julian Weghuber
https://forschung.fh-ooe.at/coe-lte/

Traditional Meat Processing

Traditional meat processing methodologies are further improved to gain more natural meat products without the excessive need for artificial additives.
» 5/2021 – 2/2023, < €100,000, Contract research

Project Manager:
DI Dr. Herbert Wiesinger-Mayr

Logistics

autoSHUNTING

Experimental development for highly automated shunting operations within the railway freight traffic

The project autoSHUNTING has the following goals: (1) Definition of processes for highly automated shunting operations within the shunting yard and during last mile operation and(2) developing of a technical demonstrator for automated shunting of freight wagons.
» 4/2019 – 3/2022, €100,000 – 500,000, FFG Mobility of the Future

Project Manager:
Prof. DI Dr. Burkhard Stadlmann
https://forschung.fh-ooe.at/bahnautomatisierung-und-verkehrstelematik-1/

DACIO

Digital Automated Coupling in Infrastructure Operations

Activites within DACIO will develop additional automated solutions for the planned introduction and use of the new digital automatic coupling of wagons used for rail freight services. One focus will be the development of an infrastructure based uncoupling unit for marshalling yards.
» 9/2021 – 8/2024, > €500,000, FFG Mobility of the Future

Project Manager:
Prof. DI Dr. Burkhard Stadlmann

RoboClub

This is not a classical research project, but an educational project for students with research questions of mobile, autonomous robotics (mapping, navigation, image processing,...) for the advanced students in the higher semesters. The project is financially supported by the company TGW.
» 10/2018 – 9/2023, €100,000– 500,000, Contract research

Project Manager:
Ing. Michael Zauner BSc MSc

self_DEBASE

Based on an analysis of the classic brake shoe, principles for opening a brake shoe that has been forgotten on the track are developed.
» 9/2019 – 8/2021, < €100,000, FFG Mobility of the Future

Project Manager:
Prof. PD DI Dr. Martin Egger

TARO

Towards Automatic Railway Operation

The research of TARO will contribute to the future of automated train operations. The main activities of the University of Applied Sciences Upper Austria are focusing on modern cost effficient solutions for signalling on future regional lines.
» 6/2020 – 6/2023, €100,000 – 500,000, FFG Mobility of the Future

Project Manager:
Prof. DI Dr. Burkhard Stadlmann

ULTIMOB

Ultimative Integrated Solutions for Mobility

ULTIMOB will demonstrate integrated solutions for mobility of persons. The activites of the University of Applied Sciences Upper Austria concentrate on touristic mobility in Tyrol with a smart mobility center in the valley Ötztal.
» 9/2019 – 8/2023, < €100,000, FFG Mobility of the Future

Project Manager:
Prof. DI Dr. Burkhard Stadlmann
www.ultimob.at

Medical Engineering

ImplaNDT-Sim

Personalized cranial implants and simulator for large-area defects

The “ImplaNDT-Sim” project combines 3D-printed patient-specific implants made of PEEK with a skull made of synthetic bone material with realistic mechanical properties and artificial soft tissues to build a modular simulator for biomechanical evaluation and medical training.

» 10/2021 – 3/2023, < €100,000, FH Upper Austria core funding

Project Manager:
Assistant Prof. Dipl.-Biol. Sascha Senck PhD

ImageHeadstart

Ground-breaking computer-vision-applications in the micro-world - consortium of research organisations for industry 4.0

The ImageHeadstart project, in a consortium led by the University of South Bohemia, addresses the challenges of digital image processing in the fields of microscopy and tomography, using machine learning and artificial intelligence.

» 1/2020 – 12/2022, €100,000 – 500,000, Interreg - Austria-Czech Republic

Project Manager:
Assistant Prof. Dipl.-Biol. Sascha Senck PhD
https://www.imageheadstart.eu

TC - BIOsens

The main goal of the TC activity BIOsens is to further expand the competence and scientific visibility of the University of Applied Sciences Upper Austria in the field of biofunctional surfaces as sensory interfaces for cellular analyses.

» 1/2021 – 12/2025, > €500,000, RTI structural funding Upper Austria

Project Manager:
Dr. techn. Peter Lanzerstorfer BSc MSc

TC - BIOsens-beta

Basic research for applied biomedical sensors (e.g. functional polymers for 2D/3D nanostructuring, cell biochips for drug screening, electro-mechano chips, etc.)

» 1/2021 – 12/2021, €100,000 – 500,000, RTI structural funding Upper Austria

Project Manager:
Dr. techn. Peter Lanzerstorfer BSc MSc

ZellCHIP

Cell biochips as basis for the investigation of MHC class I molecule clusters

Biosensors are widely used in basic research as well as in applied diagnostics. Especially in the biomedical field there is an increased demand for new concepts. In the ZELLchip project, an innovative and modular cell biochip platform based on microstructured COP (cyclo-olefin polymer) films is being developed, which will be used to analyze the functional basis of selected MHC (Major Histocompatibility Complex) proteins.

» 10/2020 – 3/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Dr. techn. Peter Lanzerstorfer BSc MSc

Cell surface clusters of MHC class I molecules

The two-hybrid antibody micropattern technique, which distinguishes the conformational forms of class I MHC, is used to study the formation of these clusters, their structure, and their physiological role. This work is complemented by single molecule microscopy, biochemistry and in silico studies.

» 1/2021 – 12/2023, €100,000 – 500,000, FWF - Joint Projects

Project Manager:
Dr. techn. Peter Lanzerstorfer BSc MSc

Smart Production

3TANIUM

Evaluation of NDT Techniques for Assessment of Critical Process and Manufacturing Related Flaws and Defects for a Ti-alloy

The main objective of 3TANIUM is the establishment of NDT methods that are capable to provide the secure detection of process related critical flaws and defects and to understand their effects on material and mechanical properties in additively manufactured Ti6Al4V parts.
» 1/2021 – 12/2022, €100,000 – 500,000, EU HORIZON 2020

Project Manager:
Assistant Prof. Dipl.-Biol. Sascha Senck PhD
https://3tanium.eu/

AM4Tools

Determination of process parameters for the processing of high speed steel and hot work tool steel using SLM and LMD

In this project, the processability of a high-speed steel and a hot-work steel is investigated using selective laser melting and laser metal deposition.
» 1/2020 – 12/2024, > €500,000, Contract research

Project Manager:
Prof. Dr.-Ing. Aziz Huskic

AMGesenk

Use of additive manufactured forging dies with internal cooling

The overall objective of the research project is to achieve a reduction in tool wear through contour-matched internal cooling channels. These are produced by means of selective laser melting.
» 7/2020 – 6/2022, < €100,000, Stiftung Stahlanwendungsforschung

Project Manager:
Prof. Dr.-Ing. Aziz Huskic

AugmeNDT

Immersive analysis of complex composites on-site and remotely using augmented reality techniques

The goal of AugmeNDT is to explore new immersive visualization and interaction techniques for effective analysis of a wide variety of 2D, 3D, and 4D primary and derived secondary data from nondestructive testing.
» 12/2020 – 11/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Assistant Prof. DI (FH) Dr. Christoph Heinzl
https://pure.fh-ooe.at/en/projects/

Autility

Automated utility vehicle for transportation and work processes

Automated transport and work operations e.g. on factory premises, airports or for service tasks have the potential to greatly enhance efficiency. During the project an automated utility platform for proof of concept will be implemented and demonstrated at the airport Linz and via a municipal work task using the project partner's research platform.
» 10/2018 – 9/2021, €100,000 – 500,000, FFG ICT of the Future

Project Manager:
Prof. DI (FH) Dr.techn. Roman Froschauer
https://sar.fh-ooe.at

AdditiveAI

Using Machine Learning for the Optimization of Additive Manufacturing Techniques

One of the major challenges in laser powder metal deposition processes is the process-related non-uniform material deposition. With the help of machine learning algorithms, the basis is to be created for adapting the process control and thus optimizing the processing result.
» 3/2021 – 3/2022, < €100,000, FH Upper Austria core funding

Project Manager:
Dr.-Ing. Holger Gröning

COMPARE

Comparative analysis of temporal trends of multidimensional data ensembles from materials testing.

The goal of the PhD project COMPARE is to develop comparative visualization techniques for ensemble data sets over time or for ongoing NDT processes in insitu tests (e.g., with respect to tension, compression, thermal loading, or similar) for complex material systems.
» 12/2020 – 11/2023, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Assistant Prof. DI (FH) Dr. Christoph Heinzl
https://pure.fh-ooe.at/en/projects/

DisMoSim - Wels

Distributed and internet-based modelling, control and simulation of cyberphysical systems

The DisMoSim project addresses the decentralized reality of today's development processes from modelling and simulation to the optimization and verification of cyberphysical systems. For this purpose, digital tools are provided to support distributed and collaborative development at different locations. On the one hand a more efficient collaboration between different teams and locations is made possible and on the other hand the know-how protection is ensured when model and data are exchanged between OEM and supplier.
» 9/2018 – 8/2021, > €500,000, FFG COIN

Project Manager:
Prof. DI Dr. Wolfgang Witteveen

FatAM

Fatigue properties in additively manufactured metals and composites

The main goal of FatAM is to formulate guidelines for optimizing AM production parameters for companies that additively manufacture metal or composite components.
» 1/2021 – 12/2024, €100,000 – 500,000, FFG COIN

Project Manager:
Assistant Prof. Dipl.-Biol. Sascha Senck PhD

FELICE

Flexible Assembly Manufacturing with Human-Robot Collaboration and Digital Twin Models

FELICE unites multidisciplinary research in collaborative robotics, AI, computer vision, IoT, machine learning, data analytics, cyber-physical systems, process optimization and ergonomics to deliver a modular platform that integrates and harmonizes an array of autonomous and cognitive technologies in order to increase the agility and productivity of a manual assembly production system, ensure the safety and improve the physical and mental well-being of factory workers.
» 1/2021 – 6/2024, €100,000 – 500,000, EU HORIZON 2020

Project Manager:
Prof. DI (FH) Dr.techn. Roman Froschauer
https://www.felice-project.eu

HOPPER

Handling of man-made Objects using automated Positioning, Planning and Enhanced Reasoning methods

The automated transport and handling of goods allows for a substantial increase in efficiency and flexibility. The goal of this project is to develop, integrate and demonstrate key technology components enabling automated object handling for multiple loading and manipulation processes within the logistics and municipal service domain using automated platforms like forklifts and cranes.
» 10/2019 – 9/2022, €100,000 – 500,000, FFG ICT of the Future

Project Manager:
Prof. DI (FH) Dr.techn. Roman Froschauer
https://sar.fh-ooe.at

PlugBot

Plug and Produce Robotic Building Blocks

The main goal of this project is the implementation of a modular robot system, which will be used by experts during programming and by untrained personnel to implement and operate heterogeneous robot systems. In order to demonstrate the universal applicability, the project results will be demonstrated in several very different application-oriented scenarios.
» 4/2019 – 12/2021, €100,000 – 500,000, FFG Production of the Future

Project Manager:
Prof. DI (FH) Dr.techn. Roman Froschauer
https://www.profactor.at/forschung/industrielle-assistenzsysteme/robotische-assistenz/projekte/plugbot

ReMaP

Research on magnesium alloys for additive manufacturing of structural and biodegradable components

In the ReMaP project, novel magnesium alloys are being developed for additive manufacturing. The components produced by means of additive manufacturing technologies are examined by means of micro-computed tomography.
» 1/2020 – 12/2022, €100,000 – 500,000, Interreg - Austria-Czech Republic

Project Manager:
FH-Assistenzprof. Dipl.-Biol. Sascha Senck PhD
https://www.ait.ac.at/en/research-topics/alloy-development/projects/remap

Smart Factory Lab

Laboratory for Smart Production throughout the product's life cycle

The project Smart Factory Lab aims at building a laboratory across locations for development and testing of innovative technologies, methods and concepts for intelligent production throughout the product's life cycle. At the Center of Excellence for Smart Production, we focus on the research topics Preemptive Maintenance including the integration of mixed reality technologies within the servicing process and additive manufacturing by powder jet method and new business models.
» 1/2016 – 12/2022, > €500,000, IWB EFRE 2020

Project Manager:
Prof. DI Dr. Herbert Jodlbauer
https://smartfactorylab.at

Smart Panel Bender

Development of new model-based virtual prototypes for automatic production of sheet metal components with lot size 1, integration into the digital factory, new strategies for adaptive production and processing of new materials.
» 7/2018 – 12/2022, > €500,000, FFG COMET K2 Centre

Project Manager:
Prof. DI Dr. techn. Christian Zehetner

SMARTER

Slope Maintenance Automation using Real-Time Telecommunication and advanced Environment Recognition

The project SMARTER addresses complex problems arising from the use of automated commercial vehicles and machines in public spaces away from the road.Basic regulations and requirements in connection with mowing on slopes along roads are to be identified for the development of suitable safety and operating concepts. Safety-compliant components will also be evaluated, selected and used as part of an integrated safety concept.
» 1/2021 – 12/2022, €100,000 – 500,000, FFG Mobility of the Future

Project Manager:
DI (FH) Raimund Edlinger MSc
https://sar.fh-ooe.at

SpaceNDT

Advanced Non-Destructive Testing Techniques for Damage Characterization of Space Materials and Components

The ultimate goal of this project is the establishment of NDT protocols for the verification of damage tolerance in fracture-critical components in order to develop “Best Practise Analysis Guidelines” for additively manufactured and composite parts
» 7/2018 – 9/2021, €100,000 – 500,000,
FFG Infrastructure Fundings

Project Manager:
Assistant Prof. Dipl.-Biol.
Sascha Senck PhD

TS-GEOTEX0US

Deepdrawing and punching tool development with a geometry-optimized, textured surface and ultrasound support

The overall objective of this project is to develop deep-drawing and stamping dies with geometry-optimized, textured surfaces and ultrasonic support, taking into account the sustainability aspect with regard to lubricant reduction.
» 7/2021 – 6/2024, > €500,000,
FFG

Project Manager:
Prof. Dr.-Ing.
Aziz Huskic

X-PRO

Research and development of user-centric methods for cross-virtuality analytics of production data

The research project “Research and development of user-centered methods for cross-virtuality analytics of production data”, in short X-PRO, aims to achieve a completely new quality of human-computer interaction in the interactive visual analysis of large amounts of data from the production environment.
» 1/2020 – 12/2024, > €500,000,
RTI structural funding Upper Austria

Project Manager:
Assistant Prof. DI (FH) Dr.
Christoph Heinzl
https://x-pro.fh-ooe.at/

xCTing

Enabling X-ray CT based Industry 4.0 process chains by training Next Generation research experts

The overall aim of the xCTing project is to train 15 young and promising researchers (ESRs) that will take the lead in conceiving the next generation of European Industry 4.0-ready CT technology.
» 3/2021 – 2/2025, > €500,000,
EU MSCA - Marie Curie Actions

Project Manager:
Assistant Prof. DI (FH) Dr.
Christoph Heinzl
https://xcting-itn.eu/

Materials

Optimization of Lightweight Wood Concrete

Wood residues and sawdust are recycled and used as aggregate in concrete in so-called wood lightweight concretes. Considering CO2 sequestration within the wood content, such materials could help to improve the CO2 balance of building components.
» 3/2021 – 9/2021, < €100,000,
FH Upper Austria core funding

Project Manager:
Prof. DI Dr. techn.
Stefan Jaksch

Biocidal PVD serial coating

Development of an anti-microbial PVD series coating for infection prevention on polymer & steel.

The aim of this project is to develop a series-manufacturable, long-term stable, anti-microbial PVD coating to prevent smear infections on plastic and stainless steel surfaces.
» 9/2021 – 8/2022, < €100,000,
FFG General Programme

Project Manager:
Prof. DI Dr. Daniel Heim

ESU-S-Mod

Developement of a slag for sufide modigfication during ESR

Based on a modification of the slag composition and in cooperation with the industrial partner voestalpine Stahl Donawitz the type of sulfides after remelting shall be altered to improve machinability of the steel. Furthermore a high degree of cleanliness regarding oxides shall be achieved.
» 12/2019 – 10/2022, €100,000 – 500,000,
Contract research

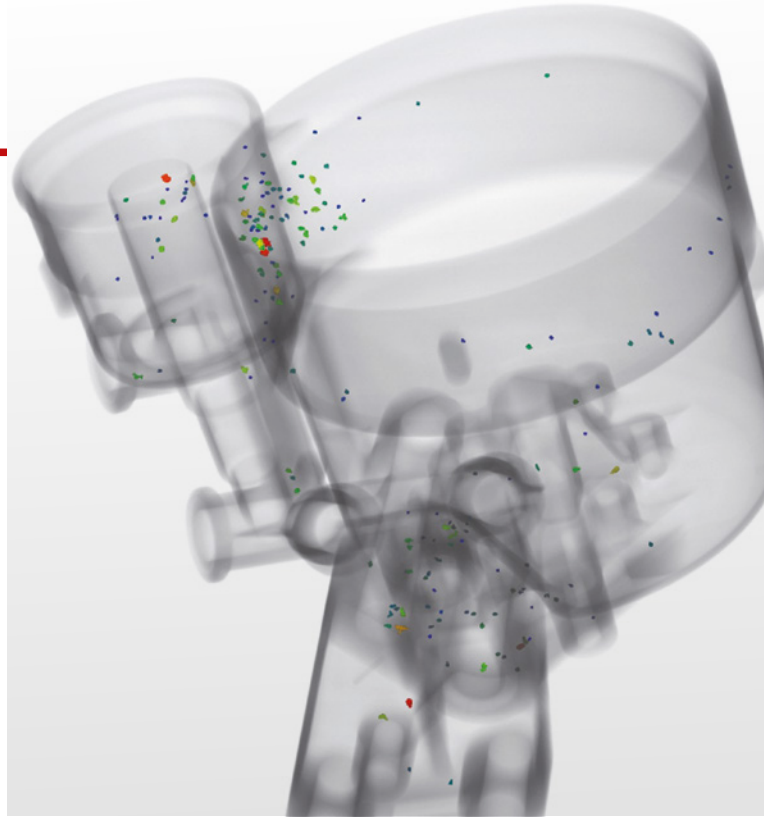
Project Manager:
Prof. DI Dr.
Reinhold Schneider

ESW-HSS-2

Development of a new HSS steel for rolls

To comply the ever increasing demands on rolls, a new HSS-type steels shall be developed together with ESW, R&E Weinberger AG. The aim of this cooperation project is a steel with the potential for higher surface quality.
» 10/2020 – 9/2022, €100,000 – 500,000,
Contract research

Project Manager:
Prof. DI Dr.
Reinhold Schneider



GPOIL

Circular Economy - refuse-derived fuels pyrolysis

The aim of this project is to identify process engineering patterns and develop process engineering action instructions for the chemical recycling of low-grade but high-calorific refuse-derived fuels and, subsequently, their conversion into high-quality polyolefin materials for engineering plastics and food packaging.

» 8/2021 – 7/2023, €100,000 – 500,000, FFG Circular economy 2020

Project Manager:
Prof. DI Dr.
Wilfried Preitschopf

TGC

Timber-glass composite: calculation and sizing concepts for glued bracing floor and roof elements

The research project deals with the use of timber-glass composite elements as shear-resistant ceiling and roof structures. Connections are developed, components tested, calculation and sizing concepts derived.

» 12/2019 – 11/2022, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. DI Dr.
Werner Hochhauser

JRC for TNDE of Composites

JR-Centre for Thermal Non-destructive Evaluation of Composites

The Josef Ressel Centre focuses on the development of reconstruction methods for active thermography. The methods can be used in the aerospace (FACC) and automotive industry (ENGEL and OTTRONIC).

» 1/2018 – 12/2022, > €500,000, CDG Josef Ressel Centre

Project Manager:
DI (FH) Dr. techn.
Günther Mayr
www.thermo-ndt.at

K1Met-3

Influence of slag properties on energy consumption

New ESR-slags for the energy reduced production of super clean steels for mechanical components as well as high performance tools and dies are developed in the laboratory special steel plant at the University of Applied Sciences Wels together with voestalpine Stahl Donawitz and Böhler Edelstahl within the frame of the Metallurgical Competence Center K1MET.

» 7/2019 – 6/2023, €100,000 – 500,000, FFG COMET K1 Centre

Project Manager:
Prof. DI Dr.
Reinhold Schneider

CombiPhoton

Combination of photonic methods for quality assurance of high-integrity lightweight components made of CFRP

The aim of this research project is to explore a fast and inline capable non-destructive testing system. The combined system, consisting of active thermography and laser ultrasound, is intended to enable 100% testing of high integrity, complex-shaped lightweight

» 5/2021 – 4/2024, €100,000 – 500,000, FFG Production of the Future

Project Manager:
DI (FH) Dr. techn.
Günther Mayr
www.thermo-ndt.at

LCP-Plast

Extrusion process for manufacturing self-reinforced liquid crystal polymer films

The focus of research in this project is the extrusion of high performance films and the rheology of liquid crystal polymers.

» 1/2019 – 12/2022, €100,000 – 500,000, FFG Bridge 1

Project Manager:
Prof. PD DI Dr.mont.
Gernot Zitzenbacher

MiCi

Methods for multimodal and in-situ characterization of inhomogeneous materials

Multimodal non-destructive testing methods (NDT) such as In-situ X-ray computed tomography is essential to characterize materials during a machining process, for example, during or after a thermomechanical treatment.

» 1/2016 – 12/2021, > €500,000, IWB EFRE 2020

Project Manager:
Prof. PD DI Dr.
Johann Kastner

N-Martensite

Optimization of N-alloyed martensitic Cr-Steels

This project cooperation with voestalpine Böhler Edelstahl and TU Graz focuses on the alloy and heat treatment optimization of martensitic Cr-Steels for better mechanical and corrosion properties.

» 10/2019 – 9/2023, €100,000 – 500,000, Contract research

Project Manager:
Prof. DI Dr.
Reinhold Schneider

NaKuRe

Sustainable use of polymers by improved recycling methods and recycling-friendly design

The focus of this project is on modeling extrusion-based processes for recycling mixed plastics, the holistic LCA-based analysis of plastic cycles, and coating-based barrier solutions.

» 1/2022 – 12/2025, > €500,000, RTI structural funding Upper Austria

Project Manager:
Prof. PD DI Dr.mont.
Gernot Zitzenbacher

NextMould

Development of hybrid energy-efficient aluminum injection molds using arc welding

The production of injection moulds from aluminium alloys by additive manufacturing (arc welding) and possible surface treatments and coatings of such moulds shall be investigated.

» 7/2019 – 12/2021, €100,000 – 500,000, CORNET Project

Project Manager:
Prof. DI Dr. Daniel Heim

Pore3D

Systematic analysis of three-dimensional pore structures in fiber-reinforced polymers using 3D X-ray methods.

The main objective is to quantitatively evaluate the three - dimensional pore structure in a variety of fiber - reinforced plastics using X - ray CT techniques and to determine the porosity as precisely as possible in order to ensure the required properties for modern lightweight construction.

» 11/2018 – 10/2021, €100,000 – 500,000, FFG/Upper Austria Dissertation Funding FH Upper Austria

Project Manager:
Prof. PD DI Dr.
Johann Kastner

Q&P Med-Mn

Quenching & Partitioning of Medium-Mn-Steels

The effect of quenching & partitioning process parameters on the kinetic of microstructural changes in different variations of Medium-Mn-Steels and their correlation with fundamental material properties are in the focus of this joint project together with voestalpine and TU-Graz.

» 10/2017 – 9/2022, €100,000 – 500,000, Contract research

Project Manager:
Prof. DI Dr.
Reinhold Schneider

safeTOUCH

Development of abrasion resistant anti-viral & -bacterial coatings for aircraft interior components

Surface in aircraft interior are coated by atmospheric pressure plasma to get them biocid. In addition to optimizing the deposition process, the biocidal effect and durability of the coatings is investigated and further developed.

» 9/2020 – 8/2022, €100,000 – 500,000, FFG TAKE OFF

Project Manager:
Prof. DI Dr. Daniel Heim

Film deposition and thermo-chemical plasma treatment at moderate temperatures

Using glow discharge plasmas, novel processes are being developed to harden steel surfaces on the one hand and to produce coatings on the other, so that their surfaces exhibit very high or very low surface energies.

» 1/2019 – 1/2022, €100,000 – 500,000, FFG project

Project Manager:
Prof. DI Dr. Daniel Heim

Schrott-DP

Effect of impurities from scrap on DP-steels

The effect of typical impurities from scrap on the phase transformation behaviour and subsequently on the mechanical properties of Dual-Phase-(DP)-steels is in the focus of this project which is conducted in cooperation with voestalpine in Linz.

» 12/2020 – 8/2023, €100,000 – 500,000, Contract research

Project Manager:
Prof. DI Dr.
Reinhold Schneider

Study on recycling of building materials

The objectives of this study are the origin of material flows, the waste hierarchy, recycling possibilities under the premise of increasing the recycling paths in the construction industry and the identification of sensibly achievable recycle shares in the construction industry.

» 8/2021 – 12/2021, < €100,000,
Contract research

Project Manager:
Prof. Ing. Dr.
Khaled Saleh Pascha

NaKuRe - HoKu

Holistic LCA-based Consideration of Lifecycle of Plastics

As part of the FTI-initiative NaKuR, methods and tools for life cycle assessment of plastic products as well as systematic approaches for recycling/resource-efficient design in the context of the circular economy are being researched.

» 1/2022 – 12/2025, > €500,000,
RTI structural funding Upper Austria

Project Manager:
Prof. PD DI Dr.
Peter Hehenberger

VN-Q&P-MedMn

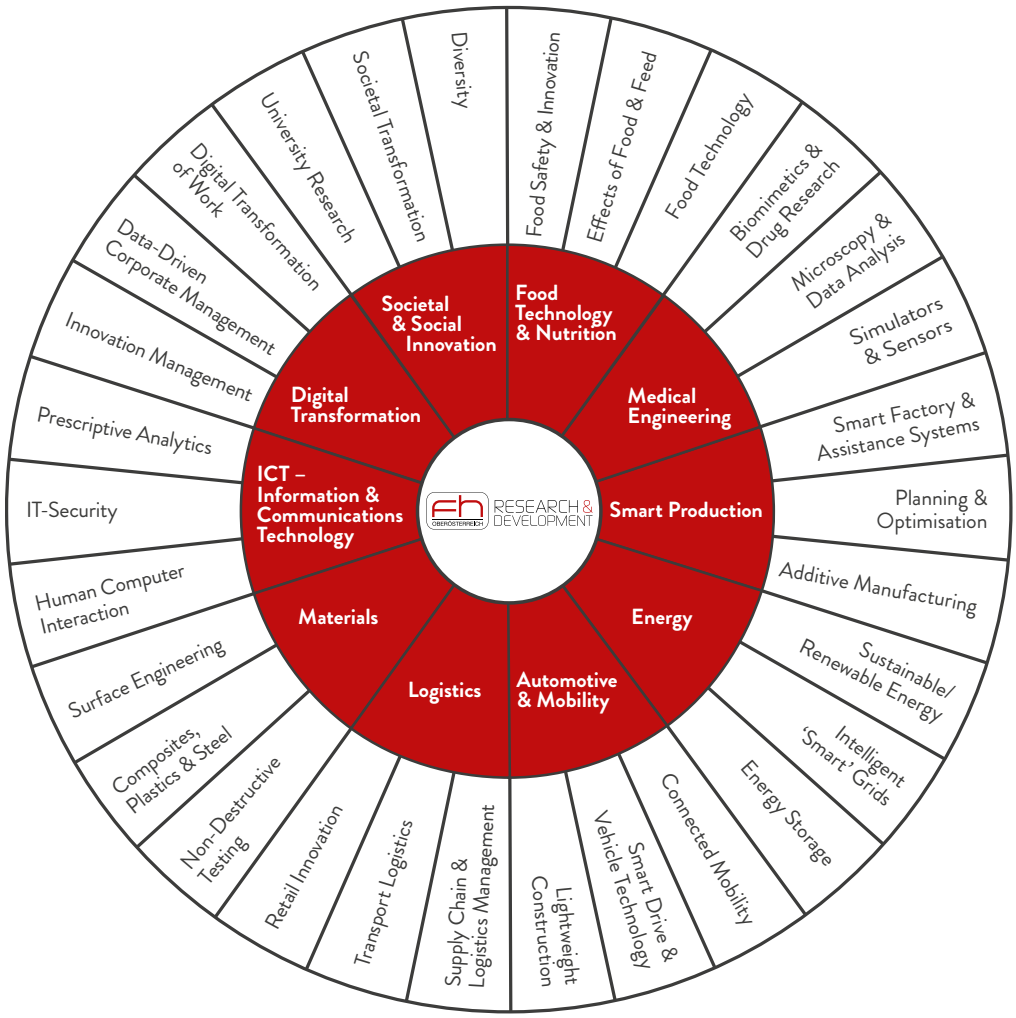
Pre- and Post heat treatment for Quenching & Partitioning of Medium-Mn-Steels

Within the frame of this project the effect of selected heat treatment parameters on the microstructure and mechanical properties of Q&P-treated Medium-Mn-Steels shall be investigated together with voestalpine and TU-Graz.

» 9/2019 – 8/2024, €100,000 – 500,000,
Contract research

Project Manager:
Prof. DI Dr.
Reinhold Schneider

OUR RESEARCH FOCAL AREAS AND EXPERTISE



The University's Centers of Excellence and Focal Areas

Research Topics

Multidisciplinary teams work on and research all topics.

UNIVERSITY RESEARCH AND DEVELOPMENT

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Digital Learning
Educational Technology

EDUDIG – Educators' digital competencies

EDUDIG – Enhancing the development of educators' digital competencies

The Erasmus+ project will create training opportunities for lecturers in higher education to develop their digital (technical and pedagogic) skills and competences. The project outcomes are a collection of content (curricular plan), the development of a guided online course and an e-teaching manual for self-directed learning.

» 6/2021 – 5/2023, < €100,000, EU Erasmus+

Project Manager:
Adrijana Krebs MA
https://edudig.eu

Student Participation
Student Engagement

STUPS

Student Participation without Borders

The project aims to increase and improve knowledge about student participation processes within higher education institutions. In addition, innovative measures will be generated to further encourage student engagement, especially of students from underrepresented and disadvantaged backgrounds.

» 10/2019 – 5/2022, < €100,000, Erasmus+/ KA2

Project Manager:
Mag. Dr. Silke Preymann
www.stupsproject.eu

WE SINCERELY THANK OUR FUNDING AGENCIES FOR THEIR SUPPORT.

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Strategic Economic & Research Programme for Upper Austria

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EFRE
Europäische Union Investitionen in Wachstum & Beschäftigung. Österreich.

FWF
Der Wissenschaftsfonds.

Christian Doppler Forschungsgesellschaft

ÖNB

FFG
Österreichische Forschungsförderungsgesellschaft

We are also very grateful for our more than 600 corporate and scientific partners!

RESEARCH & DEVELOPMENT AT OUR 4 SCHOOLS

INFORMATICS, COMMUNICATIONS AND MEDIA
HAGENBERG CAMPUS

MEDICAL TECHNOLOGY AND APPLIED SOCIAL SCIENCES
LINZ CAMPUS

BUSINESS AND MANAGEMENT
STEYR CAMPUS

ENGINEERING
WELS CAMPUS

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