JOANNEUM RESEARCH

JOANNEUM RESEARCH

Forschungsgesellschaft mbH

SHAPING THE FUTURE, TOGETHER

JOANNEUM RESEARCH Forschungsgesellschaft mbH

JOANNEUM RESEARCH develops solutions and technologies for business, industry and public authorities over a wide range of sectors and conducts applied cutting-edge research on an international level.

The company makes a significant contribution towards safeguarding the economic success of the region and assumes a key role in the transfer of technology and expertise into the economy.

Owners

80,75 %
State of Styria

14,25 %
BABEG Carinthian Agency for Investment Promotion and Public Shareholding

5 %
Wirtschaftsagentur Burgenland GmbH

Certifications

ISO 9001
Requirements for quality management systems

ISO 14001
Environmental management systems

ISO 13485
Medical devices – Quality management systems – Requirements for regulatory purposes

ISO 14644
Cleanrooms and associated controlled environments

ISO 17025
Accredited test laboratory ROBOTICS Evaluation Lab

GLP
Good Laboratory Practice

Numbers – Data – Facts

around **500** employees (from over 25 nations)

7 research units

6 locations

around **50** million Euro of research services per year

Corporate Film

INNOVATION.
NETWORKING.
KNOWLEDGE TRANSFER.

»We work on solutions for the challenges of our time with technologies for tomorrow.«

Dr Heinz Mayer
Managing Director

Shaping the future, together!

As an internationally positioned research company, we stand for the highest scientific excellence of our employees that enables us to occupy a key position in the international transfer of technology and knowledge.

around 220 scientific lectures

around 60 scientific theses (Bachelor, Master, Dissertation)

around 200 publications in scientific journals

over 25 nationalities

around 15% international scientific staff

around 40% foreign share of revenues

around 800 R&D Prjoects

Annual figures

Experience shows that the consistent internationalisation of research activities is closely linked to quality, excellence and innovation. Success is demonstrated by the numerous national and international awards.

JOANNEUM RESEARCH is tightly embedded in the international and European research landscape. International partnerships and projects are not only a strategically competitive factor, but also a significant quality criteria.

International activities

Research Infrastructure

DIGITAL

Institute for Digital Technologies

- Laboratory for highly autonomous driving
- Image processing laboratory
- Acoustic laboratory
- Satellite ground station
- Space technology laboratory
- IoT innovation space
- CTTC – cyber test and training centre
- Human factors laboratory
- Social robot Pepper

MATERIALS

Institute for Sensors, Photonics and Manufacturing Technologies

- Class 6 clean room certified according to ISO 14644
- Roll-to-roll nanoimprint lithography and hot embossing
- Greyscale lithography and mastering
- Optical and multiphysics simulation
- Functional print
- Chemical and physical sensor technology
- Surface, film and material characterisation
- Vacuum and plasma deposition methods
- Industrial-grade laser systems and robot-controlled processing plant
- Light laboratory

ROBOTICS

Institut for Robotics and Flexible Production

- Hands-on area
- 5G playground
- Robotic systems from a range of OEMs
- Digital twins
- Innovative sensors and actuators
- Cutting-edge measurement and calibration systems
- Accredited test laboratory for force impact in human-robot collaboration

COREMED

Centre for Regenerative and Precision Medicine

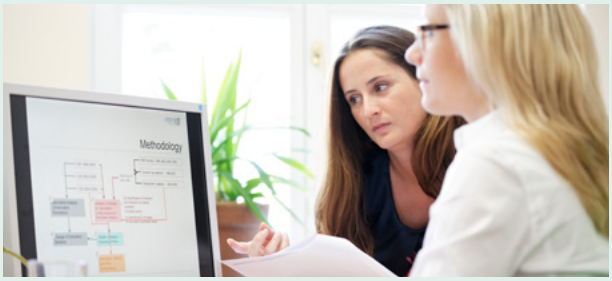
- New laboratory for wound documentation (3D photography incl. planimetry and volumetry),
- measurement of skin characteristics (Cutometer, Reviscometer, Tewameter) and
- characterisation of skin blood circulation (laser speckle contrast imaging, hyperspectral camera, thermal image camera)

HEALTH

Institute for Biomedical Research and Technologies

- Bioanalytics and Metabolomics
  - HPLC-MS (high resolution mass spectrometer)
  - HPLC-MS/MS (triple-quadrupole mass spectrometer)
  - GC-MS (triple-quadrupole mass spectrometer)
  - HPLC-UV
  - Robotic liquid handling workstation
  - Reader
  - Multiplexing immunoassay
  - IVRT testing
- Medical Sensors
  - Sensor manufacture
  - Biosensor characterisation / analysis

Thematic Areas at JOANNEUM RESEARCH



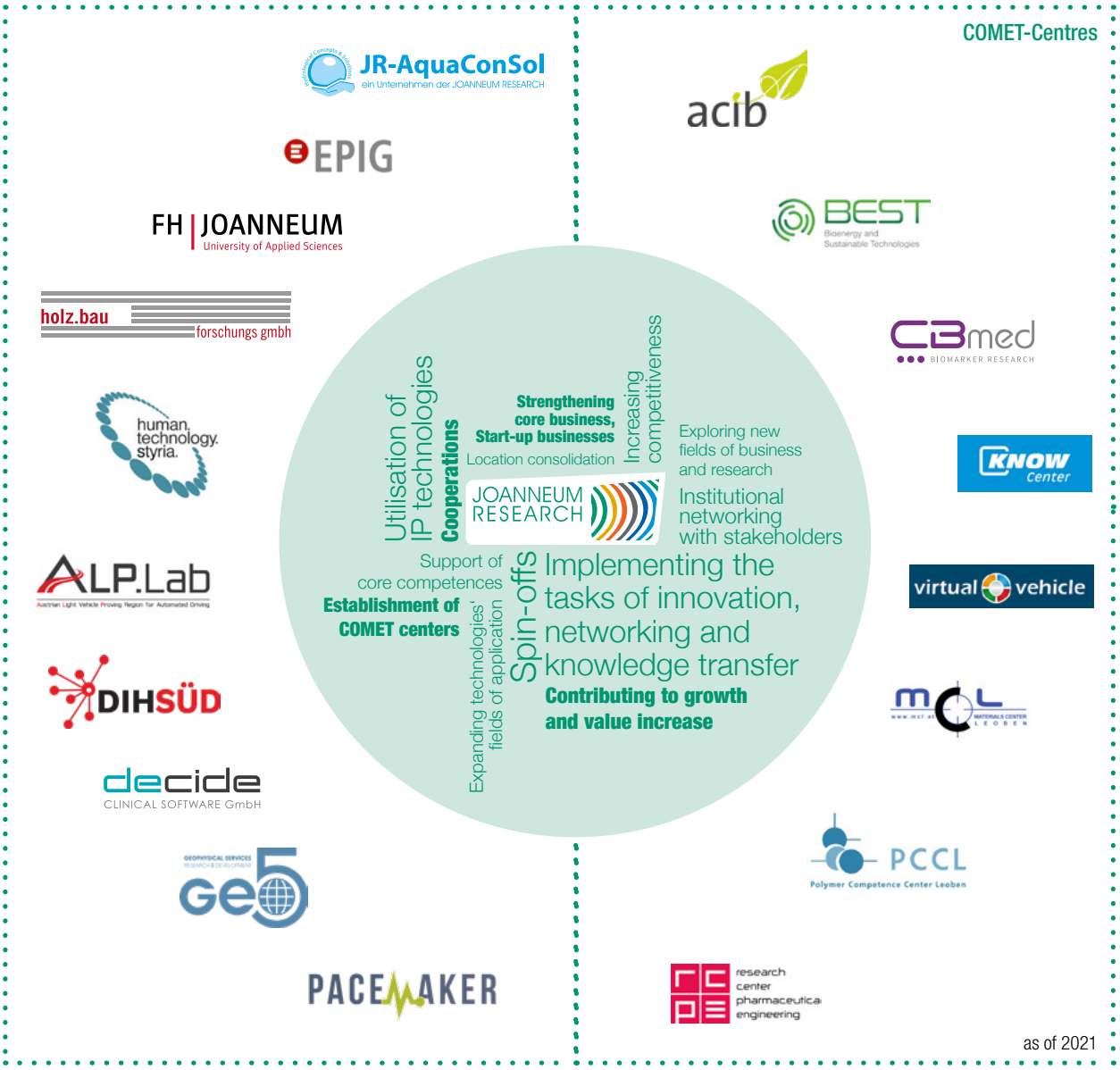
- **Digitalisation in Manufacturing:** Industrial sensors and instrumentation, acoustic, real-time, industrial Internet-of-Things (IIOT), robotics, data analysis
- **Optimisation of Manufacturing Technologies and Processes:** Generative manufacturing (laser production technology, 3D printing, plasma technologies), light and optical technologies
- **Robotics:** Robot system technologies, accredited test laboratory, ROBOTICS evaluation laboratory, training centre
- **Cyber Security and Cyber Defence:** Industry, e-commerce and critical infrastructure, cyber-attacks, military decision support systems
- **Printed Electronics**
- **Satellite Navigation and Communication technologies:** Navigation systems (Galileo, GPS, Glonass), satellite communication, wave propagation
- **Remote Sensing and Geoinformation:** Data from UAVs, aeroplanes, satellites
- **Roll-to-Roll Nanoimprint Lithography**
- **Traffic Telematics:** Highly autonomous driving, high-resolution maps, acoustic tunnel safety
- **Digitalisation in the Fields of Culture, Media and Agriculture:** Documentation, cataloguing, archiving

- **Pharmacokinetics, Pharmacodynamics, Bioequivalence**
- **Bio- and pharmaceutical Analyses**
- **Metabolomics**
- **Medical Sensors**
- **Clinical Decision Support**
- **Skin Ageing and Anti-ageing**
- **Wound Healing, Scar Formation and Tissue Regeneration**
- **Active and Assisted Living (AAL), and Digital Care**
- **Coating of Medical Implants and Surgical Instruments**
- **Metallic 3D Print for Implants**

- **Climate-Neutral Manufacturing and Life-Cycle Analyses**
- **Environment Monitoring, Consequences of Climate Change and Land Use**
- **Risk Assessment of Changes in Weather and Climate, Disaster Control**
- **Future-proof Energy Systems and Lifestyles**
- **International Climate Policies and Economics**
- **Regional Economic Analyses, Site Research, Structure and Regional Policies**
- **Design and Evaluation of National and International Funding Programmes and Institutions**
- **Data Analysis and Statistical Modelling**

Corporate Shareholdings

As an active network node within the national and international research and innovation system, JOANNEUM RESEARCH works closely with and for partners from the economy, science and research as well as the public sector. JOANNEUM RESEARCH makes a significant contribution towards sustainable and innovative solutions in projects with partners from a wide range of sectors and fields of activity with its slogan as the »INNOVATION COMPANY« and also lives the spirit of collaboration via its corporate shareholdings in companies. These include spin-offs to market technologies and numerous companies within the scope of the competence centre programme COMET (Competence Centres for Excellent Technologies).



as of 2021

DIGITAL

Institute for Digital Technologies

DIGITAL

The DIGITAL institute is a reliable partner in the area of digital innovation and transformation and develops practicable high-tech solutions for the mobility, space, industry, security & defence, energy & environment, AAL & digital care, and culture & creative industry sectors. Information and communication technologies are the drivers and mainspring of economic and social development of our society. The technological basis for research work, such as in the areas Industry 4.0, highly autonomous driving and networked systems, is formed from:

- Sensor technology and signal processing for images, video, acoustics, wearables and remote sensing
- Communication and navigation technologies,
- Web, internet and modern information management technologies.

Our competent research groups deliver practical high-tech solutions for the private and public sectors utilizing the following technological competences:

- **Remote Sensing and Geoinformation**
- **Intelligent Vision Applications**
- **Intelligent Acoustic Solutions**
- **Telecommunication, Navigation and Signal Processing**
- **Connected Computing**
- **Cyber Security and Defence**
- **Digital Twin Lab**

CONTACT:

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MATERIALS

Institute for Sensors, Photonics and Manufacturing Technologies

MATERIALS

MATERIALS delivers interdisciplinary solutions for the entire value chain, from the initial idea up to prototypes, by using cutting-edge technologies and processes based on miniaturisation, integration and material optimisation.
Combined with a high-end infrastructure, we offer trendsetting solutions and services that are aligned with business-related and industrial requirements. Our core topics include large scale micro and nano structures, biological and chemical sensors, light technologies, functionalised surfaces and laser processes. The institute uses its high level of scientific competence to provide its customers with access to the latest technologies for implementation into innovative products and services. It is the primary contact for the development of technology and processes for:

Hybrid Electronics and Patterning

- R2R printing and mastering
- PyzoFlex®
- Organic electronics

Light and Optical Technologies

- Optics: design and manufacture
- Laser, micro and nano processing
- Photovoltaic and optoelectronics

Laser and Plasma Processing

- Laser material processing
- Plasma surface technologies
- Generative manufacturing (metal 3D printing)

Sensors and Functional Printing

- Functional print
- Chemical and biological sensors
- Microfluidic lab-on-a-foil systems

Smart Connected Lighting

- Intelligent electronic systems
- System of systems

Connectivity and Communication

- Integrative lighting

CONTACT:

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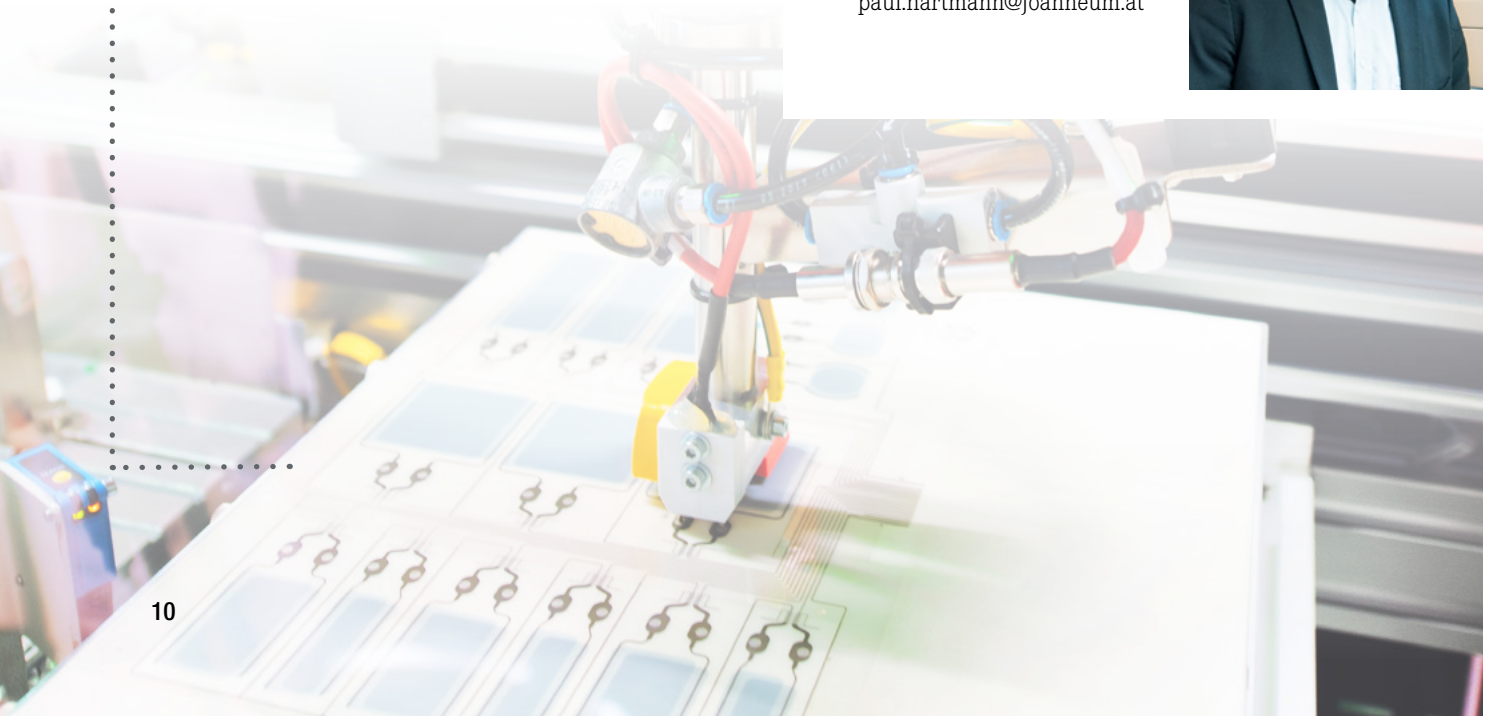

ROBOTICS

Institut for Robotics and Flexible Production

ROBOTICS

In the short and medium term, robotics, in all its diverse and interdisciplinary forms, will not only influence classic industrial manufacturing but also significant areas of our working and everyday lives. ROBOTICS addresses current business needs for application-oriented research for these technologies at the interface between the digital and real worlds. With their interdisciplinary and mechatronic structure, the disciplines of mechatronics and robotics in general, and research into the field of human-robot cooperation in particular, represent a promising supplement to the research portfolio of JOANNEUM RESEARCH.

This enables us to provide industrial partners with important assistance and comprehensive support for the development of innovative production processes and simultaneously increase the readiness for an entry into new, trend-setting and research-intensive areas of technology.

ROBOTICS offers:

- **Industry-Robotsystems and Technologies**
- **Competence Group ROBOTICS Evaluation Lab**
- **ROBOTICS Evaluation Lab**

CONTACT:

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COREMED

Centre for Regenerative and Precision Medicine

COREMED

COREMED is a joint initiative between JOANNEUM RESEARCH and the Medical University of Graz established to drive research and development in the domain of regenerative medicine forwards, in particular in the fields of cut and wound healing, scarring and skin ageing.

COREMED offers interdisciplinary, complete solutions in R&D services for the pharmaceutical and medical-technical industry.

Within the domain of regenerative medicine, the focus of COREMED's research is currently on the organ skin and its processes of regeneration and repair – healing instead of just repairing.

This includes:

- Physiological Processes of Wound Healing in Acute Wounds (e.g. Burn Injuries)
- Pathological Mechanisms that Form the Basis for the Emergence of Chronic Wounds or Hypertrophic Scars
- Process of Skin Ageing and the Associated Changes

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HEALTH

Institute for Biomedical Research and Technologies

HEALTH

HEALTH sees itself as the link between fundamental medical research and industrial application and offers interdisciplinary complete solutions as R&D services for the pharmaceutical industry and MedTech sector.

In a close alliance with the Medical University of Graz, around 60 technical and scientific experts convert ideas and technologies from the fields of medicine, pharmaceutical science and healthcare into marketable products and services.

Our scientific expertise in the fields of medicine, pharmaceutical science and biotechnology is organised in the following areas:

- **Pharmacological Research in the Skin**
  We are investigating pharmacological principles of the skin to enable the development of effective and affordable therapies with minimal side effects for people with skin diseases.
- **Pharmacological Research in the Brain**
  We are doing pharmacological research in the healthy and the diseased brain to enable the development of effective therapies that can be tailored to each individual patient with a neurological disease.
- **Metabolic Research**
  We are applying our technologies to investigate the basic principles of metabolism and thus enable new treatments of widespread metabolic diseases such as diabetes and obesity, as well as an improvement in general aging processes.
- **Digital Healthcare**
  We contribute to a meaningful digitization of processes and decisions in healthcare to improve the quality of treatment while giving staff more time to work with people.

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LIFE

Institute for Climate, Energy Systems and Society

LIFE

LIFE is an internationally renowned research partner and contact for matters regarding the complex interactions between climate, energy and society and offers an excellent total system understanding from economic, ecological, technological and social perspectives.

Based on the wide spectrum of methodological competence and expertise in the thematic areas of LIFE, the experts can offer clients a diverse portfolio of services in the form of:

- Studies, analyses, reports,
- Surveys, evaluations,
- Economic analyses,
- Lifecyle analyses (LCA),
- (Eco) Balances,
- Management, cooperation and execution of national and international research projects,
- Consulting and accompanying research.

Our focus is on:

- **Weather and Climate Risk Management**
- **Climate-Neutral Energy Systems and Lifestyles**
- **International Climate Policy and Economics**
- **Competence Group Urban Living Lab**

CONTACT:

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POLICIES

Institute for Economic, Social and Innovation Research

POLICIES

POLICIES stands for successful and evidence-based decisions in politics and business.
We apply our empirical and methodological competence to projects in which we provide scientific, social scientific and statistical support for the development of innovation strategies and policies, as well as concrete technologies and products. In this way, we can investigate a company's behaviour regarding innovation or the effect of policy measures, or evaluate a region's development potential, or investigate the gender-specific access and impact of scientific and technological developments.

POLICIES assists clients from the public and private sectors by providing consulting, planning and evaluation services for:

- Technology and Innovation Strategies,
- Policy-making and Funding Programmes,
- Regional Location Evaluation and Site Development,
- Data-supported Innovation Projects in Companies.

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JOANNEUM RESEARCH

JOANNEUM RESEARCH Forschungsgesellschaft mbH

Executive Board and Corporate Staff

Research Units

DIGITAL
Institute for Digital Technologies

- Remote Sensing and Geoinformation 01 05
- Intelligent Vision Applications 01 05
- Intelligent Acoustic Solutions 01
- Telecommunications, Navigation and Signal Processing 01 05
- Connected Computing 01
- Cyber Security and Defence 01
- Digital Twin Lab 05

MATERIALS
Institute for Sensors, Photonics and Manufacturing Technologies

- Hybrid Electronics and Patterning 02
- Light and Optical Technologies 02
- Laser and Plasma Processing 03
- Sensors and Functional Printing 02
- Smart Connected Lighting 06

ROBOTICS
Institute for Robotics and Flexible Production

- Industrial-Robotsystem-Technologies 05
- ROBOTICS Evaluation Lab 05
- ROBOTICS Training Center 05

COREMED
Centre for Regenerative and Precision Medicine

- Tissue Regeneration and Wound Healing 01

HEALTH
Institute for Biomedical Research and Technologies

- Biomedical Tissue Monitoring 01
- Bioanalysis and Metabolomics 01
- Data Management and Biostatistics 01
- Digital Healthcare Solutions 01

LIFE
Institute for Climate, Energy Systems and Society

- Weather and Climate Risk Management 01
- Climate-Neutral Energy Systems and Lifestyles 01 05
- International Climate Policy and Economics 01
- Urban Living Lab 01 05

POLICIES
Institute for Economic, Social and Innovation Research

- Technology, Innovation and Policy Consulting 01 04
- Data Analytics and Statistical Modelling 01 05
- Regional Economics and Structural Policy 01 05

Locations: 01 Graz 02 Weiz 03 Niklasdorf 04 Vienna 05 Klagenfurt 06 Pinkafeld

Equity Holdings

Affiliated Company
- JR-AquaConSol GmbH

Shareholdings
- DIH SÜD GmbH
- EPIG GmbH
- FH JOANNEUM Gesellschaft mbH
- Holz.Bau Forschungs GmbH
- Human.technology Styria GmbH

Commercial utilization/Spin-offs
- ALP.Lab GmbH
- decide Clinical Software GmbH
- Geo5 GmbH
- Pacemaker Technologies GmbH

Shareholdings COMET-Centres
- ACIB GmbH
- BEST – Bioenergy and Sustainable Technologies GmbH
- CBmed GmbH
- Know-Center GmbH
- Virtual Vehicle Research GmbH
- Materials Center Leoben Forschung GmbH
- Polymer Competence Center Leoben GmbH
- Research Center Pharmaceutical Engineering GmbH

Stand 5/2023

Company Locations

as of 2023

01 GRAZ

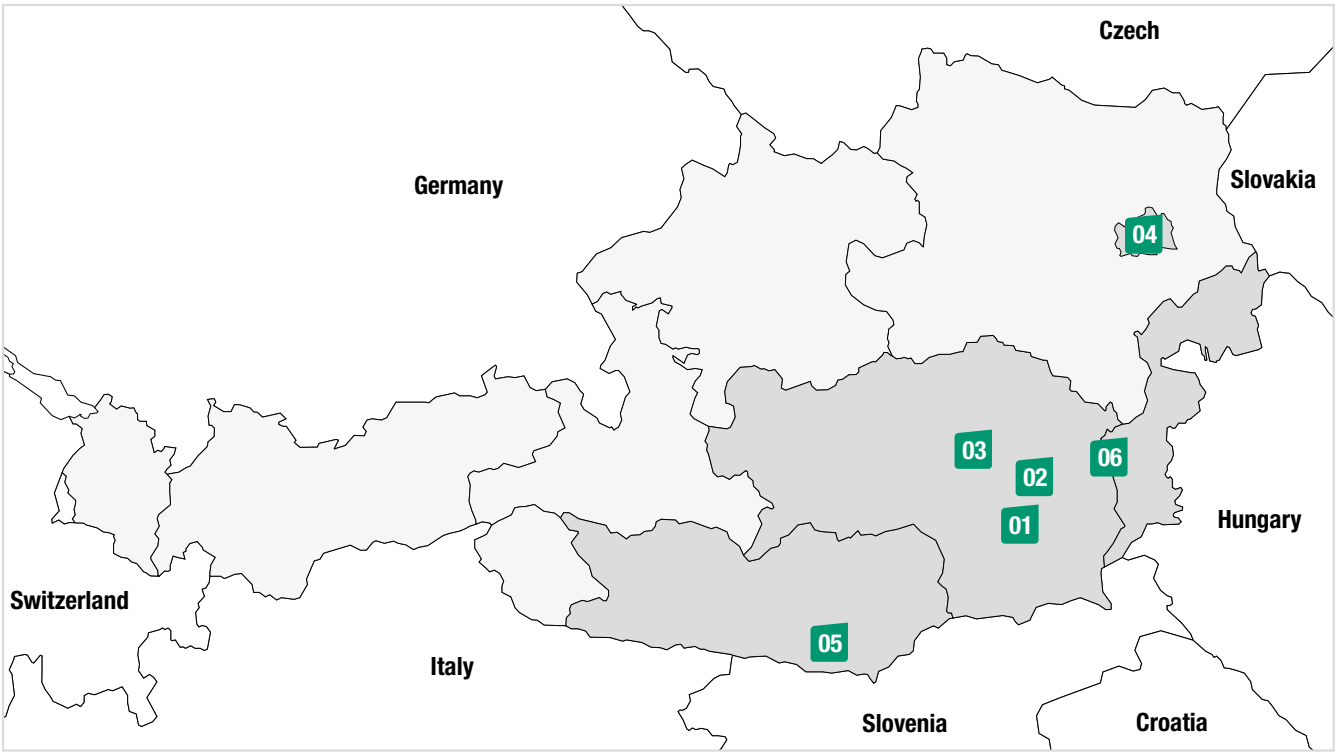
Leonhardstraße 59
A-8010 Graz
- Management
- POLICIES
- Corporate Departments

ZWT
Neue Stiftingtalstraße 2
A-8010 Graz
- COREMED
- HEALTH

Steyrergasse 17
A-8010 Graz
- DIGITAL
- Corporate Departments

Hilmwarte
Roseggerweg 31
A-8010 Graz
- DIGITAL

Science Tower
Waagner-Biro-Straße 100
A-8020 Graz
- LIFE



02 WEIZ

Franz-Pichler-Straße 30
A-8160 Weiz
- MATERIALS

03 NIKLASDORF

Leobner Straße 94a
A-8712 Niklasdorf
- MATERIALS

04 VIENNA

Haus der Forschung
Sensengasse 1
A-1090 Vienna
- POLICIES

05 KLAGENFURT

Lakeside B13b
A-9020 Klagenfurt am Wörthersee
- DIGITAL
- LIFE
- POLICIES
- ROBOTICS

06 PINKAFELD

Technologiezentrum Pinkafeld
Industriestraße 6
A-7423 Pinkafeld
- MATERIALS

JOANNEUM RESEARCH

WOULD YOU LIKE TO LEARN MORE?

www.joanneum.at

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#joanneumresearch

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Subscribe to our newsletter!

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DIGITAL

Institute for Digital Technologies

- Remote Sensing and Geoinformation
- Intelligent Vision Applications
- Intelligent Acoustic Solutions
- Telecommunications, Navigation and Signal Processing
- Connected Computing
- Cyber Security and Defence
- Digital Twin Lab

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ROBOTICS

Institut for Robotics and Flexible Production

- Industrial-Robotsvstem-Technologies
- Competence Group ROBOTICS Evaluation Lab
- ROBOTICS Training Center

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MATERIALS

Institute for Sensors, Photonics and Manufacturing Technologies

- Hybrid Electronics and Patterning
- Light and Optical Technologies
- Laser and Plasma Processing
- Sensors and Functional Printing
- Smart Connected Lighting

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COREMED

Centre for Regenerative and Precision Medicine

- Tissue Regeneration and Wound Healing

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coremed@joanneum.at

HEALTH

Institute for Biomedical Research and Technologies

- Biomedical Tissue Monitoring
- Bioanalysis and Metabolomics
- Competence Group Data Management and Biostatistics
- Digital Healthcare Solutions

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Phone +43 316 876-4000
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LIFE

Institute for Climate, Energy Systems and Society

- Weather and Climate Risk Management
- Climate-Neutral Energy Systems and Lifestyles
- International Climate Policy and Economics
- Competence Group Urban Living Lab

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POLICIES

Institute for Economic, Social and Innovation Research

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- Data Analytics and Statistical Modelling
- Regional Economics and Structural Policy

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prmpbf22 213 I June 2023

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