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OTHER



GÜSSING ENERGY TECHNOLOGIES - GET

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THEMATIC RESEARCH FOCUS

RESEARCH AREA

Güssing Energy Technologies is a research institute, which participates in practical, basic and application research. Therefore Güssing Energy Technologies is an intermediary between science and economy.

EXCELLENCE

- Combined Heat and Power plants with a focus on biomass: (Organic) Rankine Cycle, thermal and biological gasification
- District heating systems
- Architectural engineering (active houses, historical buildings)
- Smart grids powered by various Renewable Energy Sources
- Thermal cooling: Adsorption and absorption cooling devices

MISSION

The mission of the private non-profit research institute Güssing Energy Technologies is to transfer know-how gathered from fundamental and applied research into usable products.

Therefore long-term experience in designing novel technologies and developing them into reliable facilities is available.

DEVELOPED TECHNOLOGIES

CONTENT OF RESEARCH

- Biogas upgrading, decentralised gas & biogas grids, mobile biogas
- Smart district heating networks
- Sunsorber (small scale thermal driven cooling device)
- Algae production and utilization
- Transfer of the Güssing model
- Development of an adsorption cooling device

MAIN CAPABILITIES

The laboratory of the Güssing Energy Technologies is fully equipped with devices to monitor and

operate thermal driven cooling devices and similar facilities. For other purposes there is the opportunity to utilize the laboratory of the bioenergy2020+ in Güssing for specific projects. A prototype of the Sunsorber is currently being produced in order to start mass production in 2013. This small-scale cooling device incorporates nine years of continuous development with a total budget of 1.7 million EURO.

At the end of 2011 another product, which has been optimized by Güssing Energy Technologies, will be ready for mass production, the Contain Dry System. This drying system is much more economical and ecological due to its energy savings than conventional drying systems.

Another strength of Güssing Energy Technologies is the experience in biomass-based combined heat and power plants. Due to the monitoring of the Güssing power plants and others, as well as steady R&D, Güssing Energy Technologies is now providing its expertise to develop projects with various heat consumers and producers. The know-how also builds a stable basis for the preparation of energy concepts for municipalities and industry. Due to the integration in the Güssing cluster, a deeply ingrained network has been established over the last decade in order to introduce any expertise in the targeted projects.

NUMBER OF RESEARCH POSITIONS

SENIOR RESEARCH STAFF

4

JUNIOR RESEARCH POSITIONS (INCL. PH.D. STUDENTS)

2

KEY RESEARCH EQUIPMENT

LIST OF DEVICES

- Ultrasonic volume and heat flow meter
- NI Field point metering and control units
- District heating leakage detection system

THIS SME INNOVATION GUIDE HAS BEEN DEVELOPED WITHIN THE CENTROPE TT PROJECT AND WAS FUNDED BY THE CENTRAL EUROPE PROGRAMME (EUROPEAN REGIONAL DEVELOPMENT FUND).

BUDGET

TOTAL: 0.5 mil. EU

PART OF THE TOTAL BUDGET COMING FROM PRIVATE RESOURCES (%): 95 %

PART OF THE TOTAL BUDGET COMING FROM FOREIGN RESOURCES (%): 5 %

MAIN PROJECTS

- Opt. CHP systems: survey of existing biomass CHP systems based on Rankine cycles and design of an optimized facility
- Sunsorber: development of a thermal driven cooling device
- OPT-Polygrid: development of an overall control tool for a multigrid system with various producers and consumers, like biological and thermal gasification systems, CHPs and various consumers

ACHIEVEMENTS

- Austrian state award for tourism: The concept for the supply from Renewable Energy Sources for the VILA VITA was awarded in 2009.
- Various Final reports: OPT-KWK Systeme, Mobile Biogas, OPT.Polygrid,...

MAIN COLLABORATING PARTNERS

COLLABORATIONS WITH ACADEMIC PARTNERS

- ACR – Austrian Cooperative Research, Vienna; Austria
- IFA Tulln – University of Agriculture, Tulln, Austria
- VUT – Vienna University of Technology, Vienna, Austria
- bioenergy2020+, Graz, Wieselburg, Güssing, Austria
- AIT – Austrian Institute of Technology, Vienna, Austria

COLLABORATIONS WITH COMPANIES

- ContainDry AG, Vienna, Austria
- Pomurske Elektrarne, Ljutomer, Slovenia
- skupina Fabrika, Ljutomer, Slovenia
- Saubermacher, Graz, Austria
- MARS Masterfood, Breitenbrunn, Austria
- Güssing Renewable Energy, Güssing, Austria

EXPECTATIONS

REQUIREMENTS

International and/or European partners to further enhance the R&D, resp. to apply for common EU-projects.

Distribution partners for:

- Sunsorber: small scale adsorption cooling device
- ContainDry: 40 ft Container Drying unit for wooden boards

OFFERS

Partners who are preparing projects where the expertise of Güssing Energy Technologies could be introduced are also welcome:

- Installation of district heating networks and power plants
- Biogas plants, upgrading, mobile distribution, resp. grid injection and decentralised grids
- Energy concepts for municipality and industry



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Fachhochschulstudiengänge



Burgenland

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RESEARCH FOCUS

RESEARCH AREAS AND STUDY PROGRAMMES

- Business Studies (focusing on Central and Eastern Europe)
- Information Technology and Information Management
- Energy and Environmental Management
- Health

EXCELLENCE

For 17 years the University of Applied Sciences Burgenland has been offering practically- oriented study courses in two modern study and research centres in Eisenstadt and Pinkafeld.

The secret of our success is a practical study course, renowned lecturers, well-located and modern study centres and research laboratories as well as an efficient structure of the study courses. Within the 4 core competences - Business Studies (focusing on Central and Eastern Europe), Information Technology and Information Management, Energy and Environmental Management and Health – applied research and development is integrated with education.

MISSION

The combination of education with a focus on Central and Eastern Europe and applied research & development, on the one hand, guarantees up-to-date education contents and, on the other hand, contributes to knowledge transfer in the region. Together with business partners, top-class research and development plans are realised in different projects.

MAIN CAPABILITIES

FIELDS OF RESEARCH

- Consumer and market research
- Wine (Sensor technology)
- Cardiovascular health
- In-plant health promotion
- Knowledge management
- eCommunication & eCollaboration

- eLearning
- Media
- Building technology and management
- Energy and environmental technology, process technology
- Waste and resource management
- Sustainable energy systems

ALUMNI PROFILE

Students can choose between 15 bachelor's and master's degree programmes in four core competences:

Business Studies (focusing on Central and Eastern Europe):

Bachelor's Degree Programme:

- International Business Relations

Master's Degree Programmes:

- International Business Relations
- European Studies – Management of EU Projects
- Human Resource Management and CEE Industrial Law
- International Wine Marketing

Information Technology and Information Management

Bachelor's Degree Programmes:

- Information, Media and Communication
- IT Infrastructure Management

Master's Degree Programmes:

- Applied Knowledge Management
- Business Process Engineering & Management

Energy and Environmental Management

Bachelor's Degree Programme:

- Energy and Environmental Management

Master's Degree Programmes:

- Energy and Environmental Management
- Building Technology and Management
- Sustainable Energy Systems

Health

Bachelor's Degree Programme:

- Health Management and Promotion

Master's Degree Programme:

- Health Sector Management

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NUMBER OF RESEARCH POSITIONS

SENIOR RESEARCH STAFF

42

JUNIOR RESEARCH POSITIONS (INCL. PH.D. STUDENTS)

24

KEY RESEARCH EQUIPMENT

LIST OF DEVICES

- In Eisenstadt: laboratory for market research, mediaLab, scientific library
- In Pinkafeld: laboratory, Josef-Ressel-Centre

MAIN PROJECTS

Selected R&D projects are:

- Josef-Ressel-Centre – CFD (Computational Fluid Dynamics) Centre Austria
- K1 Excellence Centre Bioenergy 2020+
- LQG – life cycle oriented quality optimisation of buildings
- Build2Zero – integrated concepts for the realisation of zero-emission-buildings

- ENEREED – Sustainable Energy Conversion from Reed
- IDES-EDU - Master and Post Graduate education and training in multi-disciplinary teams implementing EPBD and beyond
- Pilot studies on wine: label & bottle caps
- Model project on cardiovascular health in the district Oberwart
- My heart and me - Sparkling Science
- eCollaboration 2.0: Collaboration Tools and Social Media for Teamwork

REQUIREMENTS

Research within the 4 core competences:

- Business Studies (focusing on Central and Eastern Europe)
- Information Technology and Information Management
- Energy and Environmental Management
- Health

OFFERS TO THE INDUSTRY

- Applied research projects at an academic level
- Competent contact persons who give support for establishing project proposals and acquiring subsidies



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JOSEF-RESSEL CENTRE: CFD - CENTRE AUSTRIA

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THEMATIC RESEARCH FOCUS

RESEARCH AREA

**Applied research in the area of application of
Computational Fluid Dynamics in**

Building Technology

for example

- Room airflows
- Hygrothermal transports in building materials

Energy Process Engineering

for example

- Wind forecast / Boundary Layer Flows / Building Aerodynamics
- Biomass combustion

Environmental Process Engineering

for example

- Gas cleaning

EXCELLENCE

Prediction of isothermal and non-isothermal room airflows and convective heat transfer problems (free, forced and mixed convection) for incompressible flows.

MISSION

Developing of CFD models to improve energy, environmental and building technology processes.

DEVELOPED TECHNOLOGIES

CONTENT OF RESEARCH

- The RANS (Reynolds Averaged Navier-Stokes) based turbulence models are not able to predict free and mixed convection heat transfer and the transitional flow behaviour of free jets (especially the entrainment variation). Within the project a calibration procedure was developed which clearly improves the results of computational simulations.
- A CFD model for prediction of the hygrothermal transports in building materials was developed and validated. With this model the three-dimensional and unsteady sorptive moisture transport in building materials can be determined.

- The unsteady flow behaviour in the shade of buildings was investigated with own wind tunnel experiments. Based on the experimental findings a multi scale turbulence model that improves the precision was developed.
- For multiphase flows a closure model was implemented in a commercial CFD-code to consider the momentum exchange between a liquid and gaseous phase. With this closure model it is possible to develop and optimize flue gas cleaning technologies.

MAIN CAPABILITIES

Within the project CFD models were developed to predict heat and mass transport processes. Based on this models optimization studies such as

- optimization of ventilation systems (office and living space)
- development of surface heating and cooling systems
- development of biomass combustion chambers and the heat transfer modules
- wind power forecast and optimization of the installation position of wind power systems
- optimization of specific gas cleaning systems
- optimization of building construction details to avoid moisture damage can be performed.

The results could already be used in numerous R&D projects. The application potential for the CFD models developed is continuously enlarged in various applied research projects.

FIELDS OF RESEARCH RESULTS APPLICATION

See above mentioned applications

ALUMNI PROFILE

At the University of Applied Sciences – Fachhochschulstudiengänge Burgenland Gesellschaft m.b.H., students can choose between 15 Bachelor's and Master's degree programmes in four core competences:

- Business Studies (focusing on Central and Eastern Europe);
- Information Technology and Information Management
- Energy and Environmental Management
- Health

NUMBER OF RESEARCH POSITIONS

RESEARCH STAFF

5

KEY RESEARCH EQUIPMENT

LIST OF DEVICES

- Particle Image Velocimetry (PIV) and chamber for laser measurements
- Climate chamber
- Hot wire anemometer
- Mass air flow test bench
- Biomass combustion test bench
- Gas chromatography and dust emission Measurement system
- Sorption isotherm measurement system
- CFD cluster (about 250 cores)
- CFD code Fluent®
- CFD code OpenFoam®

BUDGET

TOTAL: 0.5 mill. EUR/yr

PART OF THE TOTAL BUDGET COMING FROM PRIVATE RESOURCES (%): 50 %

PART OF THE TOTAL BUDGET COMING FROM FOREIGN RESOURCES (%): 40 %



MAIN PROJECTS

- Optimization of Biomass Combustion Systems (Herz Energietechnik, Austria)
- Optimization of Gas Cleaning Systems (Austrian Energy and Environment, Austria)
- Development of a Wind Power Forecast Model (Austrian Wind Power, Austria)
- Development of Heating and Cooling Systems for Office Rooms (STRABAG, Austria)
- Thermal Comfort Investigations of Low-energy Houses (Woschitz Engineering, Austria)
- Investigations of the Hygrothermal Transport in Floors (Jilg, Austria)
- Investigations regarding the performance of surface heating and cooling systems (Ke Kelit, Austria)

ACHIEVEMENTS

List of the most important publications:

- Heschl Ch., Sanz W., Lindmeier I. (2009). Demands on turbulence modelling for ventilated room airflows. Seventh International Conference on CFD in the Minerals and Process Industries CSIRO, Melbourne, Australia 9-11 December 2009
- Heschl Ch., Sanz W., Lindmeier I., Clauss G. (2010). Validation of scale-adaptive and elliptic relaxation turbulence models applied to flow around buildings. Fifth International Symposium on Computational Wind Engineering. Chapel Hill USA
- Heschl Ch., Sanz W., Müller D., Klanatsky P. (2010). Implementierung von v2f-Turbulenmodellen in einem CFD Code. 4. Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.
- Heschl Ch., Sanz W., Müller D., Lindmeier I. (2010). Ein Beitrag zur numerischen Berechnung von Raumlufströmungen. 4.

Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.

- Heschl Ch. (2010). Ein Beitrag zur numerischen Berechnung turbulenter Raumlufströmungen. Dissertation Technical University of Graz, Austria, Faculty of Mechanical Engineering
- Inthavong K., Tu J., Heschl Ch. (2010). Micron Particle Deposition in the Nasal Cavity Using the v2-f Model. The Sixth International Conference on Computational Fluid Dynamics. July 12-16, St. Petersburg
- Inthavong K., Heschl Ch., Tu J.Y. (2011). Evaluation of RANS and LES turbulence models for indoor airflows. Ventilation: Types, Standards and Problems. Nova Science Publishers
- Klanatsky P., Gronald G., Weiß C., Heschl Ch. (2010). Numerische Strömungssimulation der Mehrphasenströmung auf Kolonnenböden 4. Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.
- Klanatsky P., Gronald G., Weiß C., Heschl Ch. (2010). CFD-Simulation der Mehrphasenströmung auf Kolonnenböden. ANSYS Conference & 28. CADFEM Users' Meeting, Aachen
- Klanatsky P., Gronald G., Weiß C., Heschl Ch. (2010). CFD-Simulation für thermische Trennverfahren, Beschreibung der Hydrodynamik auf Kolonnenböden. CITplus Issue 12/2010
- Klanatsky P., Lindmeier I., Heschl Ch., Heck U. (2011). Implementierung und Validierung eines modifizierten v2f-Turbulenmodells in OpenFOAM. 5. Forschungsforum der österreichischen Fachhochschulen. Vienna
- Lindmeier I., Heschl Ch., Clauss G., Heck U. (2010). Prediction of the flow around 3D obstacles using open source CFD-Software. Fifth International Symposium on Computational Wind Engineering. Chapel Hill USA

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- Lindmeier I., Heschl Ch., Clauss G., Heck U., Klanatsky P. (2010). Untersuchung der Umströmung von drei-dimensionalen Hindernissen mittels Open Source CFD-Code. 4. Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.
- Lindmeier I., Heschl Ch., Lukas J., Woschitz R. (2010). Beurteilung unterschiedlicher Klimatisierungskonzepte im Bezug auf thermische Behaglichkeit im Wohnbau mittels CFD. 4. Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.
- Lindmeier I., Heschl Ch., Jilg H. (2011). Messtechnische Erfassung des hygrothermischen Verhaltens unterschiedlicher Estrichmischungen bei definierten Randbedingungen. 5. Forschungsforum der österreichischen Fachhochschulen. Vienna
- Schnitzer J., Heschl Ch., Lindmeier I. (2010). Experimentelle Untersuchungen zur Charakterisierung der turbulenten Strömungsstrukturen in belüfteten Wohnräumen. 4. Forschungsforum der österreichischen Fachhochschulen. Pinkafeld Austria.

MAIN COLLABORATING PARTNERS

COLLABORATIONS WITH ACADEMIC PARTNERS

- Technical University of Graz, Graz, Austria
- University of Leoben, Leoben, Austria

COLLABORATIONS WITH COMPANIES

- Austrian Wind Power (Eisenstadt, Austria)
- Jilg (Außermanzing, Austria)
- Woschitz Engineering (Eisenstadt, Austria)
- STRABAG (Wien, Austria)
- Herz Energietechnik GmbH (Pinkafeld, Austria)
- Austrian Energy and Environment (Graz, Austria)

- KE KELIT Kunststoffwerk Gesellschaft m.b.H. (Linz, Austria)

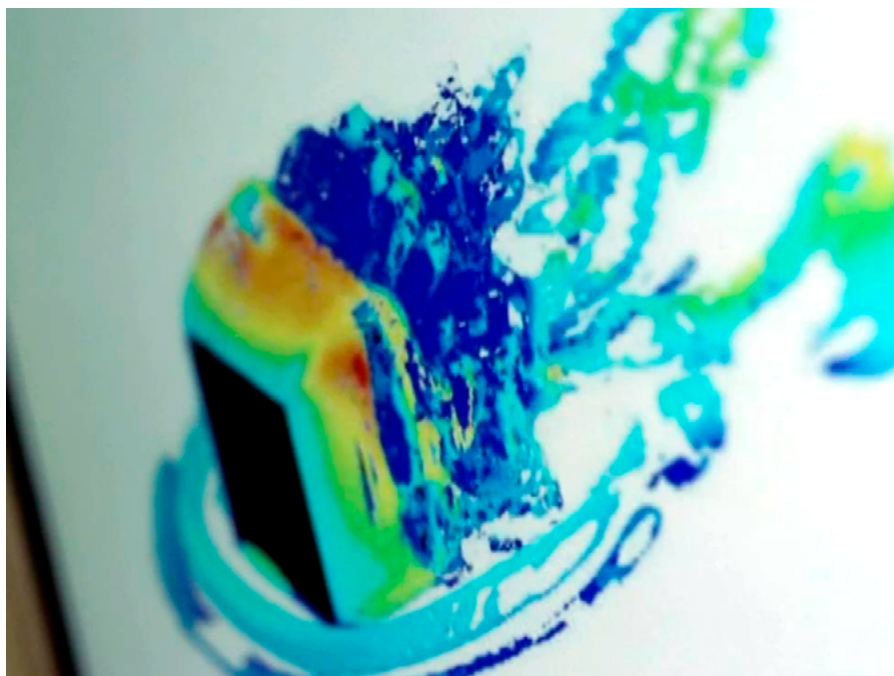
EXPECTATIONS

OFFERS

Expert know-how in Computational Fluid Dynamics especially for

- optimization of ventilation systems and concepts (office and living space)
- development of surface heating and cooling systems

- development of biomass combustion chambers and the heat transfer modules
- wind power forecast and optimization of the installation position of wind power systems
- optimization of specific gas cleaning systems
- optimization of building construction details to avoid moisture damages
- empirical and numerical investigations with regard to the performance of surface heating and cooling systems and the effects on the thermal comfort



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THEMATIC RESEARCH FOCUS

RESEARCH AREA

- Minerals in caves, hydrothermal cave formation
- Karren, modelling of covered karstification
- Dissolution of carbonates
- Karst biology: CO₂ production
- Water exchange in plants living in karst environments
- Karst climatology
- Pseudokarst and volcano speleology
- Karst and cave habitats
- Fluvial morphology on karst surface

EXCELLENCE

- Karren, modelling of covered karstification
- Pseudokarst and volcano speleology
- Fluvial morphology on karst surface

MISSION

Karst research, including karren morphology, speleology and analysis of pseudokarst areas has been the research focus of our department for the past 30 years. In the last decade several young researchers joined our group, greatly expanding the research horizon of our team, which now includes karst biology, karst mineralogy, karst climatology and karst hydrogeology. In addition to supporting individual research, the principal goal of our group is to encourage cooperation to build collaboration because we believe that in the beginning of the 21st century only cooperation can result in fundamental, new scientific findings. From a scientific point of view, the principal areas of interest of the research group are still karst surface processes. The main questions we are investigating: what the geological processes are which preformed karstic areas, how does karren form and what kind of connections we can observe between climate, biogenic activity and the development of karstified rocks? Since surface and subsurface karstic processes (cave formation) are inseparable, our group is also involved in cave mineralogy and karst hydrogeology research. Our main goal is to synthesize all our results in a complex model that extensively explains the process of karstification and the formation of

karst forms. By using this model we will be able to pinpoint locations for potential environmental hazards and give advices to handle them.

DEVELOPED TECHNOLOGIES

CONTENT OF RESEARCH

The karren research group is investigating the factors influencing karstification of high mountain karren and covered karsts. One of the most important findings of the group is the elevated CO₂ content of snow, which is possibly due to the dissimilation of the *Pinus mugo*. The high CO₂ concentration in surface waters results in a more intense dissolution on slopes covered with vegetation than on bare slopes. The difference can be confirmed by the analysis of sizes and forms of the karren on the two slope types. The most characteristic karren form in high mountain regions is the rinnenkarren, formed under rivulets. According to new observations, they can form as a result of percolating waters.

Karst-climate analysis is the essential background of high-mountain karren research. Amount, intensity and distribution of precipitation, exposure to wind are all effects that primarily influence the vegetation on covered and uncovered slopes. Aim of the research is to investigate the direct and indirect effects of the climatic parameters on the formation of karren.

Photosynthesis measurement of plants (e.g. *Pinus mugo*) and CO₂ concentration analysis of the soil and snow, in cooperation with biologists, is an important additional research area to understand karren formation and karren forms on different slopes covered with different flora.

There are several research areas which are loosely attached to karst and karren formation. Particularly, biologists are interested in the ecology of karst areas. Various karst formations (karren and caves) are specific habitats offering living space for several rare symbiosis. The specific flora and fauna do not simply benefit from the specific conditions of the karstic

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depressions, but it is in a close interaction with the abiogenic environment.

Complex investigation (trophyty, chemistry, palaeontology) of the sediments of lakes formed on karst areas yields new information about paleokarst evolution. We also learn how climate changed while karst and karr forms formed, about sedimentation processes and about the anthropogenic impact.

Geological investigations focus on the following research areas: analysis of hydrothermal formations and cave minerals (structural geology, mineralogy, geochemistry, isotopic studies) this in turn helps us to understand the geological background of the formation of caves. In addition to the climatic biogenic and geomorphological factors influencing selective dissolution of carbonates, the geologic properties of the carbonates also determine the evolution of the form features. Petrology of carbonates therefore may also help us to understand the formation of various karrformen.

The different factors are compared and summarised in a complex mathematical model. This model is useful for the reconstruction of karst reliefs, denudation processes and for examination of future karr formation processes. Through detailed analysis of karr forms, dissolution processes and climatic factors, the mathematical and computer models can be improved and refined.

MAIN CAPABILITIES

Our research group established two periodicals and organizing an annual conference, The Karst Development Conference which is held in May in Szombathely. This is an absolutely unique international conference welcoming

geographers, geologists, biologists, climatologists, speleologists. It is the only thematic conference in Central Europe hosting karst-specialists.

One of our periodicals is called Karsztfejlődés which is mainly in Hungarian, but we also have our own international journal called Karst development, which is distributed to several research centres, universities and libraries in Europe. By publishing only high-quality papers, we hope to get an IF in the near future.

The research group published several text books about high-mountain karst forms and generated the first karst map of the Totes Gebirge (Eastern Alps).

Since the members of the research group are also teaching at our university, the new results are immediately built into the curriculum. Students participate every year in a field trip to a high-mountain karst region and carry out the mapping of the karst features as well as execute specific measurements on karren. Some of our distinguished alumni are currently full members in our team, and we have many new students who are also involved in our research, working on pseudokarsts and karsts of specific regions (e.g. island in Croatia).

FIELDS OF RESEARCH RESULTS APPLICATION

The analysis of karst forms and covered karsts, which can be used in evaluating environmental hazards. Investigation of karren biotopes, floras and faunas, which helps us to evaluate the impact of human activity on the biotic and abiotic environment. Analysis of the karst forms of covered karst areas, which is important for engineering geologists.

Analysis of the dissolution processes of carbonates (limestone) induced by atmospheric carbon-dioxide, which could be interesting for architects and engineers since limestone is a common decorating material on old as well as new buildings, which is exposed to environmental pollution (e.g. acid rains).

Karstified limestone is a principal host of subsurface water. In karst areas this water appears in wells and springs supplying the communal water network. Therefore the understanding of karr formation and the evolution of the porosity and permeability of karstic rocks is a key element in the field of water protection.

NUMBER OF RESEARCH POSITIONS

SENIOR RESEARCH STAFF

9

JUNIOR RESEARCH POSITIONS (INCL. PH.D. STUDENTS)

5

KEY RESEARCH EQUIPMENT

LIST OF DEVICES

- Linkam THMS 600 heating-freezing stage for microthermometric studies
- petrological lab equipped by BX-51 microscope and thin section preparation tools
- Schleiber-type calcimeter
- caving equipment's
- soil thermometer
- Li-6400 XT Portable Photosynthesis System 29
- CO₂ injector system
- soil CO₂ efflux chamber
- laser diffraction Master Seizer 2000

MAIN PROJECTS

Erdő- és Mezőgazdálkodás, additional renewable energy technologies and climate change

MType: TÁMOP 4.2.2-08/1-2008-0020

Duration: 01.09.2009 – 31.08.2011

Intellectual, organizational and R&D infrastructural development at University of West Hungary

Type: TÁMOP 4.2.1.B-09/1/KONV-2010-0006

Duration: 01.05.2010 – 30.04.2012

ACHIEVEMENTS

- Karst-geomorphological map of the Totes Gebirge (Alps)

PUBLICATIONS:

- Veress M.: Karst Environments – Karren Formation in High Mountains – Springer Dordrecht Heidelberg London New York, 2010. 230 p.
- Veress M: Meanderkarren - In: A. Ginés, M. Knez, T. Slabe, W. Dreybrodt (eds): Karst rock features – Karren sculpturing Postojna-Ljubljana 2009 p. 223-235.
- Veress M: Rinnenkarren - In: A. Ginés, M. Knez, T. Slabe, W. Dreybrodt (eds): Karst rock features – Karren sculpturing Postojna-Ljubljana 2009 p. 211-222
- Veress M: Trittkarren - In: A. Ginés, M. Knez, T. Slabe, W. Dreybrodt (eds): Karst rock features – Karren sculpturing Postojna-Ljubljana 2009 p. 151-159.
- Veress M: Wandkarren - In: A. Ginés, M. Knez, T. Slabe, W. Dreybrodt (eds): Karst rock features – Karren sculpturing Postojna-Ljubljana 2009 p. 237-248.

MAIN COLLABORATING PARTNERS

COLLABORATION WITH ACADEMIC PARTNERS

- University of Debrecen (Debrecen, HU)
- Eötvös Loránd University (Budapest, HU)

- Geochemical Research Institute (Budapest, HU)
- Max Planck Institute (Leipzig, DE)

EXPECTATIONS

REQUIREMENTS

We require technical support to continue and to improve the quality of our measurements.

OFFERS

We offer for our partners our scientific experience and cooperation in any field of our research.



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