



Haute école d'ingénierie et d'architecture Fribourg  
Hochschule für Technik und Architektur Freiburg

**Hes·so**

Applied research and development

# **Collaboration driving innovation**

## Cover

This cover is a unique piece of digital art. The image was generated by an algorithm based on aR&D statistics of the School of Engineering and Architecture of Fribourg (page 3), as well as on random parameters such as the time of the image's production.

The algorithm was developed in 2022 at the iCoSys institute, in collaboration with the Communication Service of the HEIA-FR.



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# TABLE OF CONTENTS

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<b>Research at the service of society</b>	<b>2</b>
.....	
<b>Why choose the HEIA-FR as a collaboration partner?</b>	<b>3</b>
.....	
<b>Ten applied research institutes</b>	<b>5</b>
ChemTech	6
ENERGY	7
HumanTech	8
iCoSys	9
iPrint	10
iRAP	11
iSIS	12
iTEC	13
SeSi	14
TRANSFORM	15
.....	
<b>Four centers of competence</b>	<b>17</b>
PICC	18
ROSAS	19
Smart Living Lab	20
BCC	21
.....	
<b>Research Services</b>	<b>22</b>
Collaboration models	23
.....	
<b>Continuing education</b>	<b>24</b>
.....	
<b>Location &amp; access plan</b>	<b>26</b>

# RESEARCH AT THE SERVICE OF SOCIETY

Located in the heart of Switzerland, the HEIA-FR is a bilingual School of Engineering and Architecture that collaborates closely with economic and industrial actors.

Every year, the School of Engineering and Architecture of Fribourg (HEIA-FR) trains around 1000 students in six different Bachelor's programs and four Master's programs. It also hosts a rich applied research and development (aR&D) network with close ties to the economy: ten institutes and four centers of competence address the technical and scientific challenges defined by their numerous regional and national partners. In the following pages, we invite you to learn more about the research activities of the HEIA-FR.



FOUNDED IN  
**1896**



**6** BACHELOR'S PROGRAMS

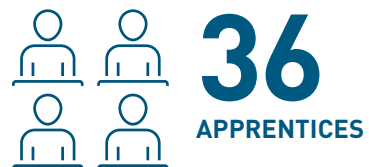
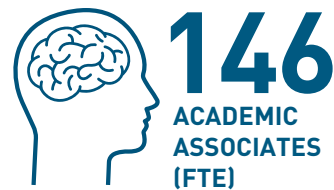
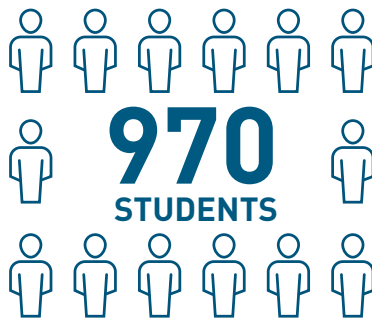


**4** HES-SO MASTER'S PROGRAMS

**Hes-so**

MEMBER OF THE UNIVERSITY  
OF APPLIED SCIENCES AND ARTS  
WESTERN SWITZERLAND

IN 2022

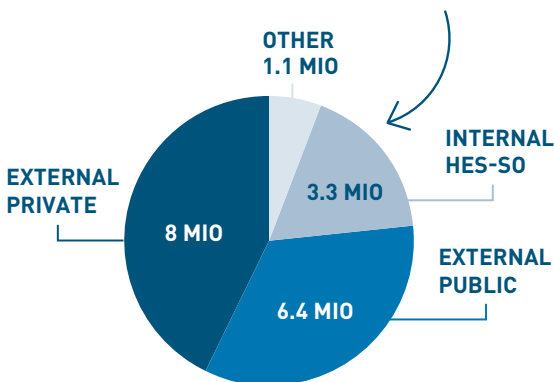
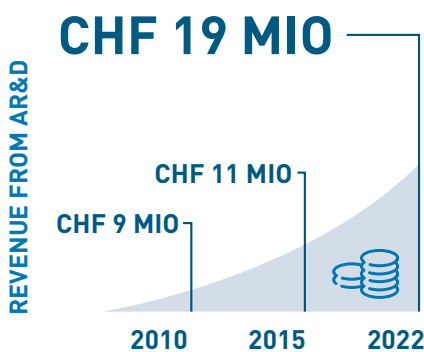


# WHY CHOOSE THE HEIA-FR AS A COLLABORATION PARTNER?

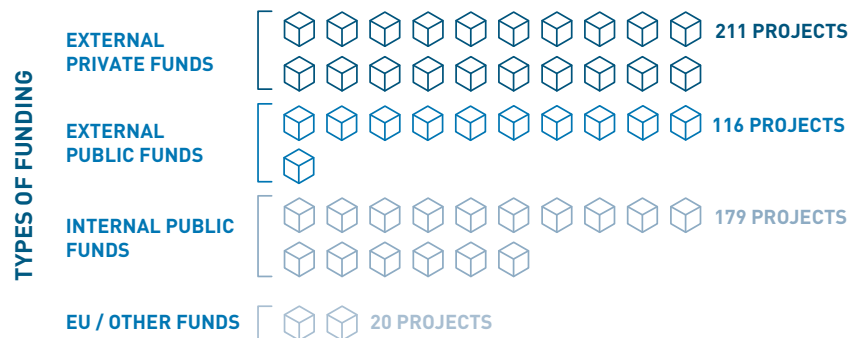
The HEIA-FR's applied research and development is open to economic partners of all sizes, from small local enterprises to public institutions and multinational companies.

The HEIA-FR is a research institution on a human scale. Our projects contribute to a more efficient, resilient and sustainable society by developing market-oriented products, services and technologies across a wide range of domains. These include industrial technologies, construction and the environment, and information and communication technologies. With highly-qualified staff and state-of-the-art facilities, our institutes and

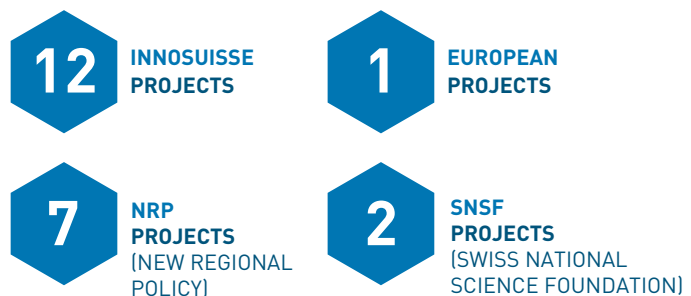
centers of competence are able to address the needs of the economy using an experimental yet practical approach. Furthermore, our collaborative projects can qualify for funding from Innosuisse, the Swiss Innovation Agency, or from the New Regional Policy of the Canton of Fribourg, among others.



## 526 ACTIVE PROJECTS IN 2022

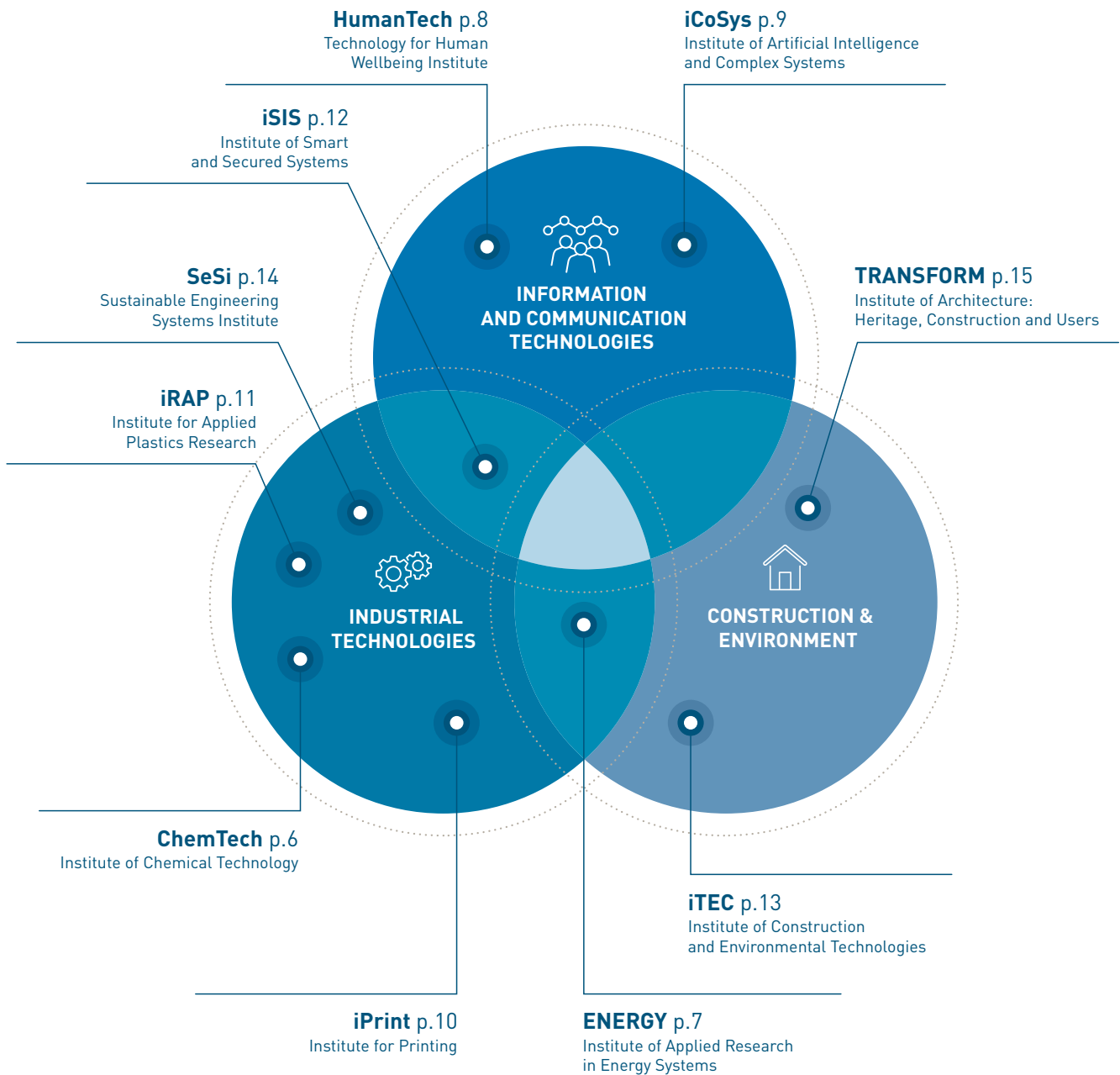


## 214 PROJECTS LAUNCHED IN 2022, INCLUDING:





# INNOVATION IN PROMISING RESEARCH AREAS



The work done in our different applied research institutes converges into three main clusters. This expertise enriches the content of our educational and training programs.





# ChemTech

## Institute of Chemical Technology

## Applied chemistry at the service of the industry

Benefiting from its expertise in synthesis, chemical engineering, analytics, characterization, process chemistry, scale-up and production, the ChemTech institute plays a key role in turning innovation at the molecular level into applications optimized for the chemical and pharmaceutical industries, as well as for other industries that use chemistry indirectly.

### Chemical process development

Synthesis and catalysis in the fields of fine chemicals and pharmaceuticals, development of safe and sustainable materials and processes, optimization, scale-up and production

### Characterization technology

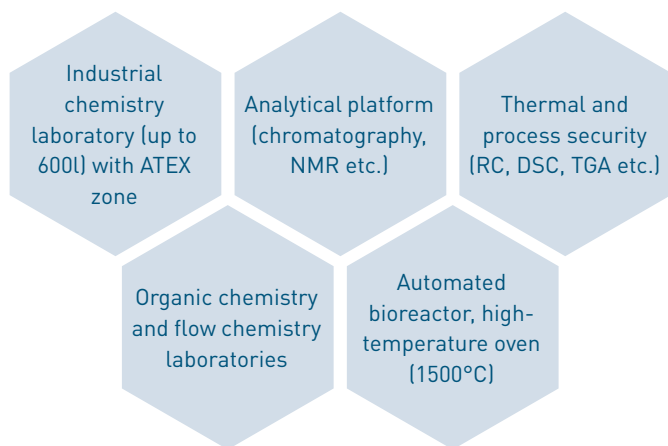
Property characterization of new materials and surfaces, development of online analytical and monitoring methods (PAT and bio-PAT)

### Flow chemistry

New synthesis and isolation technologies for flow systems, conversion of batch or fed-batch processes into continuous processes, use of micro- and mesoreactors



### FACILITIES



### HEAD OF THE INSTITUTE



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« Chemistry provides answers to some of the urgent sustainability questions of our time. »



### CASE STUDY



go.hefr.ch/chemtech-play

**Metalor**  
Creation of new catalysts



### PARTNERS (non-exhaustive list)

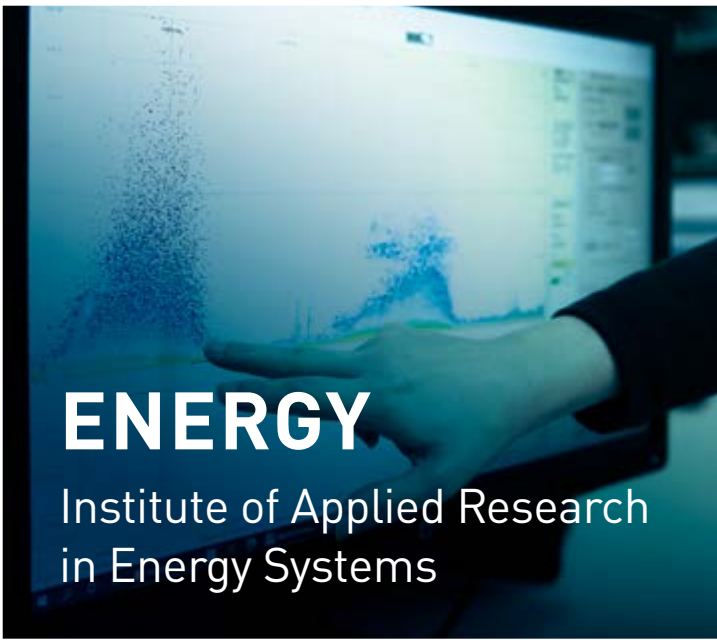
#### Scientific

- University of Fribourg
- School of Viticulture and Enology, Changins
- Swiss Federal Institutes of Technology (EPFL, ETHZ)

#### Industrial / Institutional

- AKTS
- Bloom Biorenewables
- Metalor
- Novartis
- Firmenich





# ENERGY

## Institute of Applied Research in Energy Systems

## Towards simpler and more efficient energy systems

The ENERGY institute supports and promotes the development of a sustainable society in terms of energy production and energy management. Our projects are set in a context of profound evolution fueled by climate change, the phasing-out of nuclear power, and the growth of the renewable energy sector.

### Electrical and thermal networks

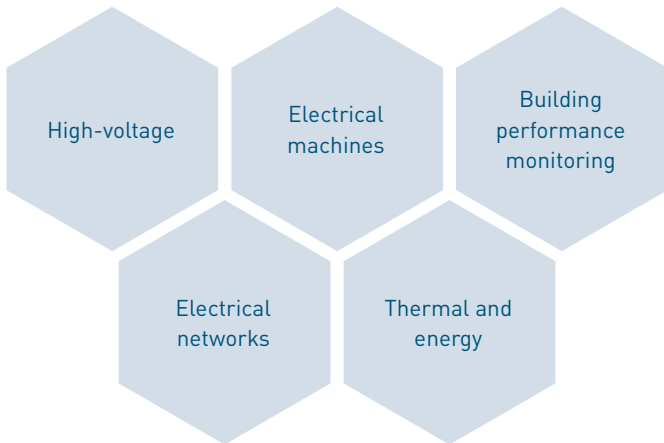
Design, modeling, simulation and testing of components and systems for networks; energy integration, management and optimization of networks

### Building and neighborhood performance and environmental impact

Urban heat islands, life cycle analysis in the built environment, the physics of buildings and technical installations



### LABORATORIES



### HEAD OF THE INSTITUTE ad interim



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*« The success of the energy transition lies in anticipating both needs and technologies. »*



### CASE STUDY



go.hefrch/energy-play

**Romande Energie SA**  
Fault location tool



### PARTNERS (non-exhaustive list)

#### Scientific

- Swiss Federal Institutes of Technology (EPFL, ETHZ)
- Swiss Federal Laboratories for Materials Science and Technology (Empa)
- Université Grenoble Alpes

#### Industrial / Institutional

- Groupe E
- Romande Energie
- Canton and City of Fribourg
- Swiss Federal Office of Energy (SFOE)



# HumanTech

## Technology for Human Wellbeing Institute

## Between humans and technology

At the intersection between the technological, economic and human sciences, the HumanTech institute works to improve life quality and human wellbeing through the ingenious application of new technology. Our objective is to facilitate the emergence of a “smart society” in which technology and society can co-evolve.

### Advanced interfaces and intelligent spaces

Improvement of life quality and human wellbeing through the use of new technology

### Data science and human analytics

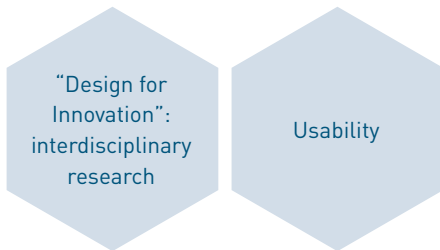
Implementation of a concept for a Smart Society

### Human-centered innovation

Design and development of systems capable of addressing social challenges such as population aging and the preservation of natural resources



### LABORATORIES



### HEAD OF THE INSTITUTE



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« We are driven by the need to understand how technology can be of real service to humankind. »



### CASE STUDY



go.hefr.ch/humantech-play

**Intermobility**  
Fleet management tool for a free-floating bicycle-sharing project



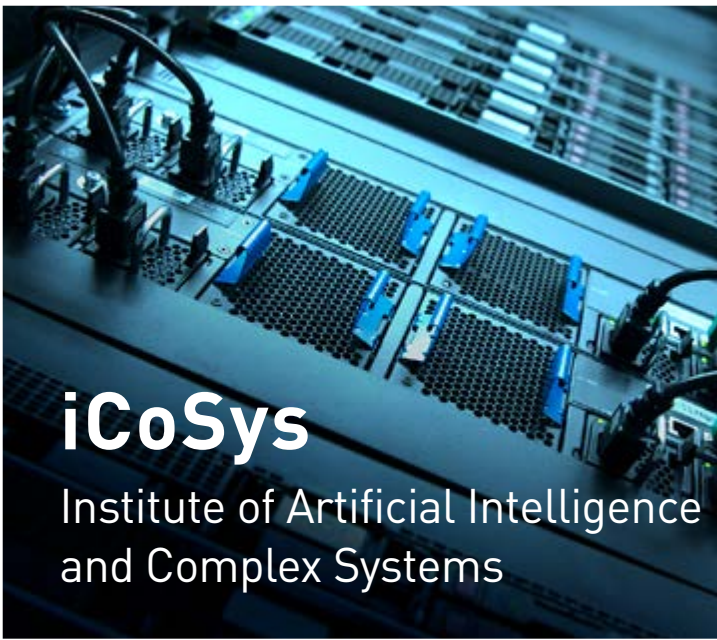
### PARTNERS (non-exhaustive list)

#### Scientific

- The Polytechnic University of Milan, Italy
- Escola Superior de Enfermagem de Lisboa, Portugal
- Faculdade de Ciências da Universidade de Lisboa, Portugal
- Ecole supérieure des technologies industrielles avancées, Biarritz, France

#### Industrial / Institutional

- Federal Food Safety and Veterinary Office (FSVO)
- Federal Office of Public Health (FOPH)
- PMF-System
- Lausanne University Hospital (CHUV)
- Renault



# iCoSys

## Institute of Artificial Intelligence and Complex Systems

## The partner of choice for industrial digitalization

iCoSys leads and supports innovation based on artificial intelligence and complex systems. Our projects draw on the latest developments in informatics, data science, distributed computing, software engineering and mathematical modeling.

### Applied AI and machine learning

End-to-end support for companies that use artificial intelligence (AI) technology, from data evaluation and model training to deployment

### Distributed computing

Mastery of the latest technology in high-performance distributed computing, optimization of AI applications, big data and simulations

### Sustainable ICT for Smart Living projects

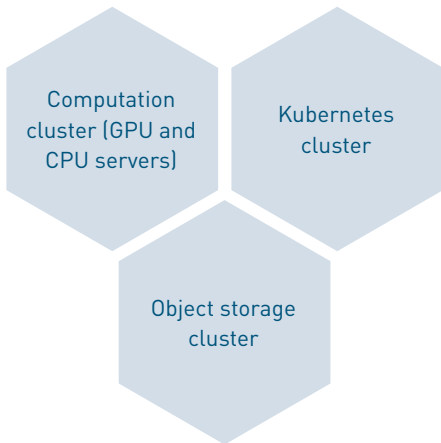
Creation of a more sustainable environment thanks to ICT solutions for smart cities, smart buildings and smart living

### ICT for industry 4.0

Enabling efficiency gains for industry through the use of data and advanced algorithms, including the use of artificial intelligence for anomaly detection, predictive maintenance and quality control



### FACILITIES



### HEAD OF THE INSTITUTE



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« We assist companies with their digital transition and process optimizations using advanced IT technologies such as artificial intelligence and distributed computing. »



### CASE STUDY



go.hefr.ch/icosys-play

**Hieronymus**  
Specialized translation engine using neural networks



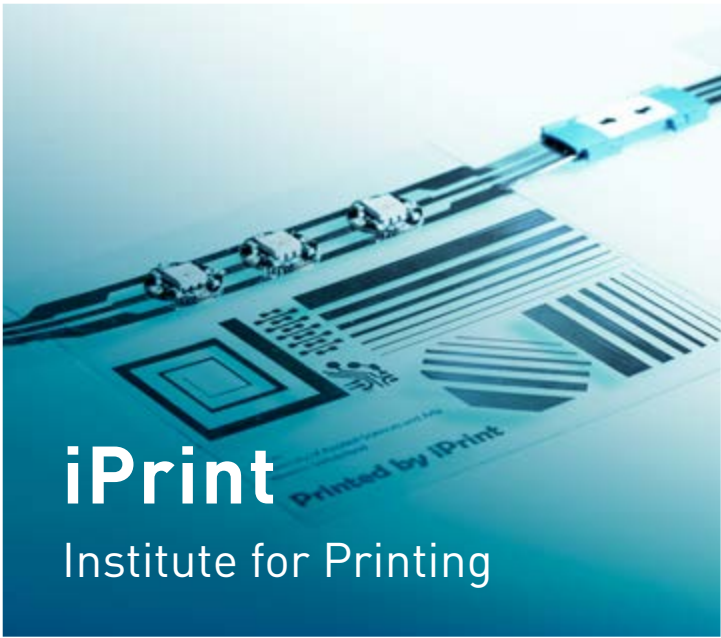
### PARTNERS (non-exhaustive list)

#### Scientific

- University of Fribourg
- Idiap Research Institute
- Edge Hill University
- Lawrence Berkeley National Laboratory

#### Industrial / Institutional

- Swiss National Library (BNS)
- Google Zürich
- Hieronymus
- Neur.on
- Morphean
- Infoteam
- Immomig



## Digital manufacturing by inkjet printing

The iPrint institute is specialized in inkjet technology and digital printing. Our multidisciplinary applied research develops these technologies and widens their field of application by creating new processes. iPrint also proposes hands-on training courses on inkjet technology.

### Innovative technologies for digital printing

Development of new technologies enabling the emergence of the digital production of tomorrow

### Digital printing process developments

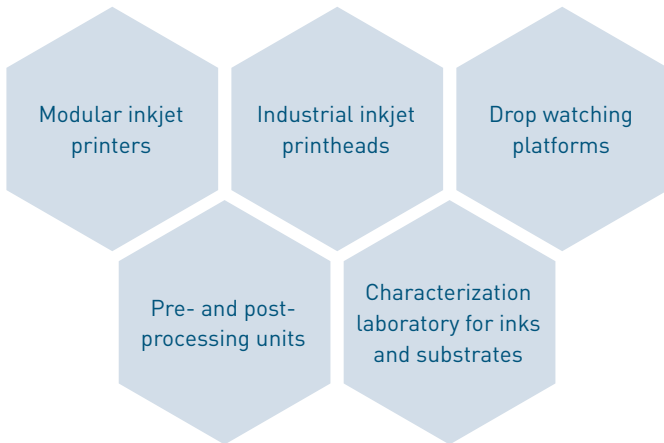
Development and optimization of inkjet-based digital printing processes in a variety of areas (including graphical printing, printing for electronics, biomedical printing and advanced manufacturing)

### Technology transfer and education

Promotion of technology transfer for digital printing processes, education of specialists in inkjet related core competencies with a highly interdisciplinary understanding



### FACILITIES



### HEADS OF THE INSTITUTE

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*« As soon as an inkjet-compatible ink can be formulated, there is no limit to the inkjet-based applications that can be developed. »*

*Gioele Balestra*



### CASE STUDY



go.hefr.ch/iprint-play

**Markem-Imaje**  
Coding and marking techniques



### PARTNERS (non-exhaustive list)

#### Scientific

- Swiss Federal Institute of Technology Lausanne (EPFL)
- Adolphe Merkle Institute
- University of Cambridge
- Université Grenoble Alpes
- Swiss Federal Laboratories for Materials Science and Technology (Empa)

#### Industrial / Institutional

- Polytype
- Epson
- Markem-Imaje
- Mabi Robotic
- Ursula Wirz Foundation





# iRAP

## Institute for Applied Plastics Research

## From materials to polymer applications

The iRAP institute addresses scientific and technical challenges in the field of plastics processing. It offers concrete and efficient solutions to the specific demands of the industrial sector. The competences offered by iRAP range from the material to its application while taking into account the product life cycle.

### Plastic and ceramic injection molding (CIM)

Material selection, design and development of injected plastic and ceramic products and their molds, rheological and mechanical simulations, prototyping and injection process monitoring

### Compounding and extrusion processes, material characterization

Development of high-value compounds, piloting and scaling up of extrusion and compounding processes, characterization and testing of materials

### Surface technologies and nanotechnologies

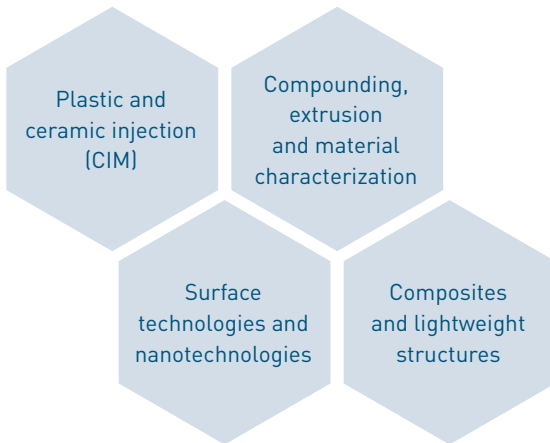
Surface functionalization with atmospheric plasma, nanomechanical and surface analysis, tribology and application of coatings and surface texturing

### Composites and lightweight structure design

Design and development of lightweight structures, industrialization and recycling of continuous fiber composites, digital simulation, prototyping



## LABORATORIES



## HEAD OF THE INSTITUTE



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« *The responsible and sustainable use of plastics is our mission.* »



## CASE STUDY



go.hefr.ch/irap-play

**Johnson Electric**  
Design of magnetized rotors



## PARTNERS (non-exhaustive list)

### Scientific

- University of Fribourg
- University of Applied Sciences of Eastern Switzerland (OST)
- Plastics Training and Technology Center Aarau (KATZ)
- University of Applied Sciences and Arts of Northwestern Switzerland (FHNW)
- Swiss Federal Laboratories for Materials Science and Technology (Empa)

### Industrial / Institutional

- Johnson Electric
- Dentsply Sirona
- Bcomp
- DuPont de Nemours
- SIKA
- Colorplastic



# isis

## Institute of Smart and Secured Systems

## Security and reliability at the service of society

With proven experience in the reliability of intelligent systems, the iSIS institute offers unique services in functional safety and certification of complex systems for the automotive, aviation, railway and power generation industries.

### Automated mobility

Innovative and ergonomic interdisciplinary solutions for automated transport and mobility in collaboration with SwissMoves

### Security and reliability of systems

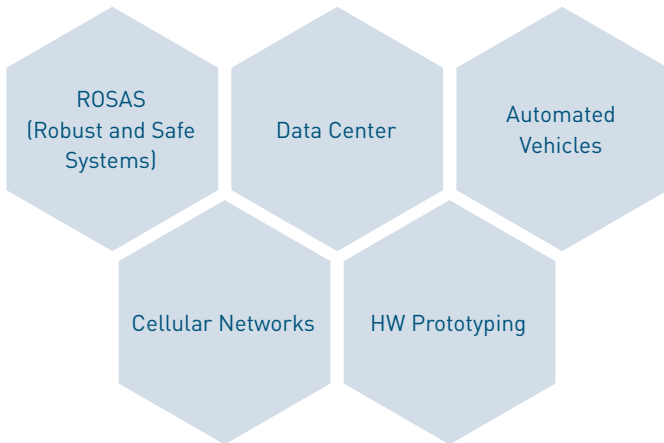
Efficient protection of critical infrastructure, OT and IT cybersecurity, and in-the-loop design with Model Based Engineering (MBE)

### Embedded and interactive systems

Development of hardware and software for embedded, distributed and low-power systems; development of interactive systems for automated mobility, e-learning and e-commerce



### LABORATORIES



### HEAD OF THE INSTITUTE



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« With SwissMoves we are working on different themes whose common goal is to make mobility safer, more sustainable and more efficient. »



### CASE STUDY



go.hefr.ch/isis-play

**Parker Meggitt**  
Model Based Engineering



### PARTNERS (non-exhaustive list)

#### Scientific

- DEFCON Switzerland
- Institute for Security and Open Methodologies (ISECOM)
- SwissMoves
- SWITCH Security Workgroup

#### Industrial / Institutional

- Swisscom
- ABB/Hitachi
- Parker Meggitt
- Johnson Electric
- Swissdotnet



# ITEC

## Institute of Construction and Environmental Technologies

### Laying the foundations for the construction of tomorrow

ITEC focuses on the present and future of the built environment at all levels: construction materials, structural elements, complete structures and entire infrastructures. Its research targets the development of methods, technological processes and products in the field of civil and environmental engineering.

#### Structures

Conceptual design and development, characterization and evaluation, modeling and testing of materials, new and existing construction elements and structures

#### Geotechnics

Conceptual design, modeling and testing of materials, construction works and geotechnical hazards

#### Soil and water

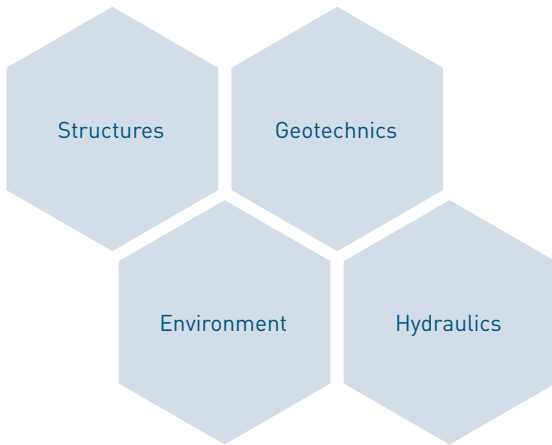
Characterization, management and protection of soils in urban settings and on construction sites, water courses, fresh and waste waters, green infrastructure

#### Transport and mobility

Automated vehicles, digital twins, new and existing networks, mobility and safety



#### LABORATORIES



#### HEAD OF THE INSTITUTE



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« Many concrete solutions can be found locally, particularly with respect to resource conservation. »



#### CASE STUDY



go.hefr.ch/itec-play

**Charpentes Vial SA**  
Timber-concrete composite floor system for buildings



#### PARTNERS (non-exhaustive list)

##### Scientific

- Universities of Fribourg, Lausanne, and Neuchâtel
- Swiss Federal Institutes of Technology (EPFL, ETHZ)
- National Institute of Applied Sciences, Lyon (INSA)
- Polytechnic University of Milan
- Cracow University of Technology

##### Industrial / Institutional

- Swiss Federal Offices (FOEN, FEDRO, SFOE)
- Municipal and city services (for example: Fribourg, Vaud)
- Swiss Federal Railways (CFF)
- Groupe E
- Building Insurance Agency of the Canton of Fribourg (ECAB)





# SeSi

## Sustainable Engineering Systems Institute

## From ideas to industry

The SeSi institute specializes in high added value mechanical components, as well as in mechanical systems developed using digital tools and designed to be smart and durable.

### Systems

Development of design and fabrication processes for products and systems fitting the circular economy

### Sustainability

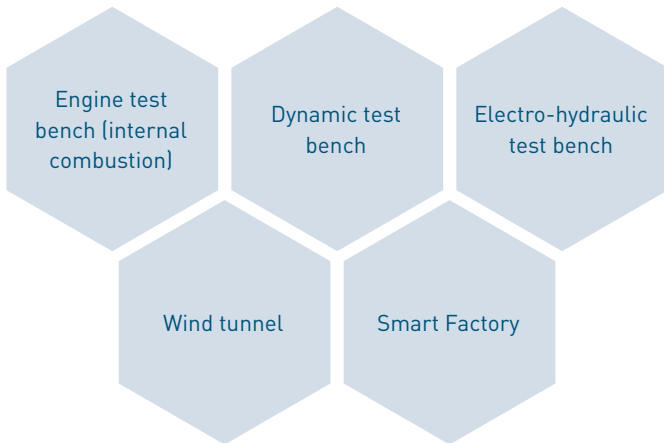
Minimizing energy and resource consumption in production and during product lifetime

### Digitalization

Improving development time and reducing production costs through digital modeling (simulation, prototyping)



### FACILITIES



### HEADS OF THE INSTITUTE

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*« Sustainable and innovative engineering is at the heart of our research projects. »*

*Vincent Bourquin*



### CASE STUDY



go.hefr.ch/sei-play

**Swibrace**  
Development of adaptive orthopedic braces



### PARTNERS (non-exhaustive list)

#### Scientific

- Swiss Federal Institute of Technology Lausanne (EPFL)

#### Industrial / Institutional

- Johnson Electric
- Liebherr Machines Bulle
- Fiat Powertrain Technologies
- Transports publics fribourgeois (TPF)



# TRANSFORM

## Institute of Architecture: Heritage, Construction and Users

## Transformation: a synonym for innovation

TRANSFORM is the only research institute in Switzerland focusing on urban and architectural transformation as an area of innovation. Its interdisciplinary approach contributes to creating a sustainable built and natural environment. TRANSFORM works towards the judicious integration of innovative technologies and processes into the renovation, restoration, redevelopment, requalification or reuse of buildings, neighborhoods and cities.

### Built and territorial heritage

Heritage-conserving adaptations, planning the transformation of urban and rural territory while respecting its identity

### Architecture and energy

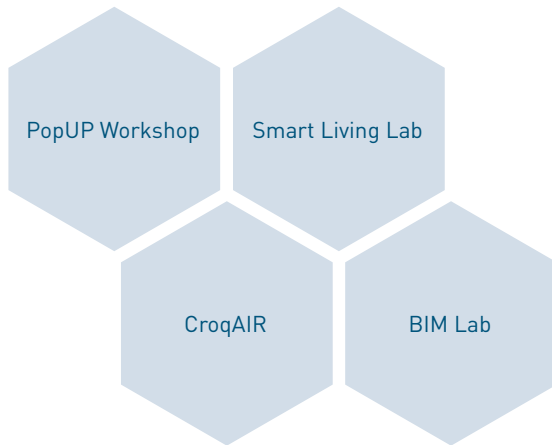
Integration of technology into construction, focus on construction processes, design of methods that minimize damage from construction

### Interactions between users and places

Adaptation of architectural typologies to fit user profiles, design of spaces that respond to health-related needs and problems, monitoring new materials



### FACILITIES



### HEAD OF THE INSTITUTE



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« The city of the future is already here. The challenge is to transform it and to adapt the existing building stock so we can maintain a quality of life while protecting natural resources. »



### CASE STUDY



go.hefr.ch/transform-play

**Energy renovation**  
Holistic approach to the building envelope



### PARTNERS

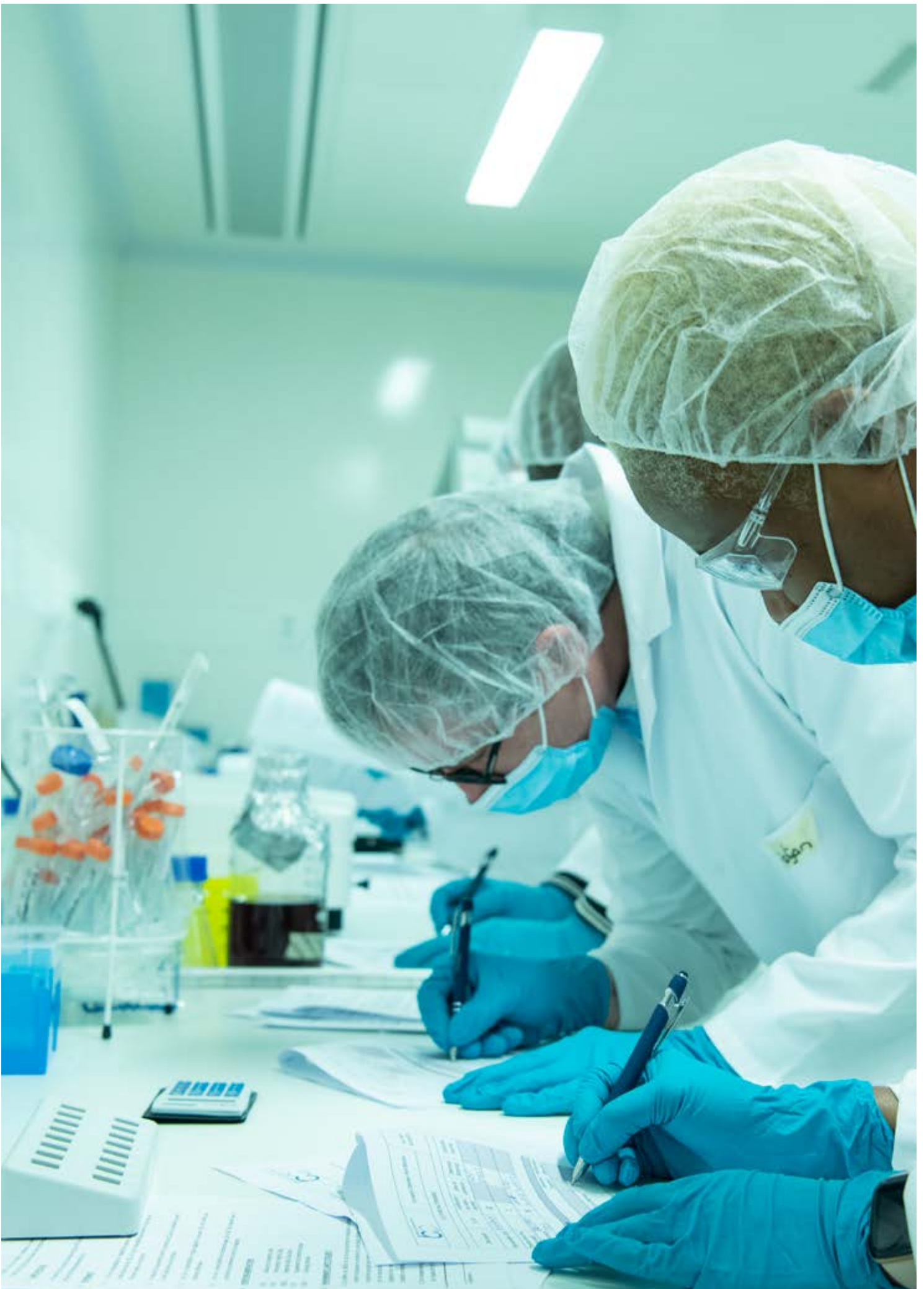
(non-exhaustive list)

#### Scientific

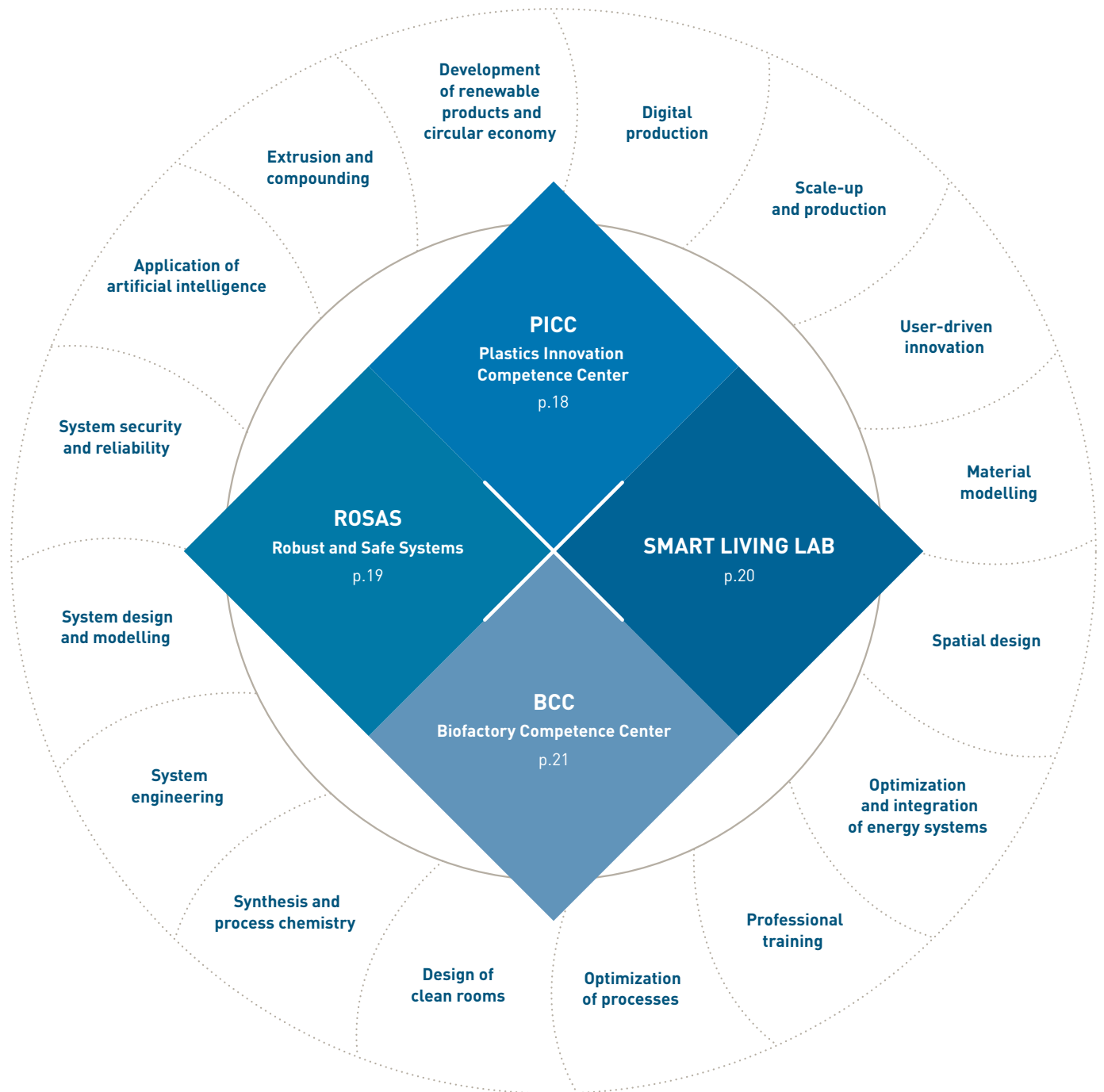
- Swiss Federal Institutes of Technology (EPFL, ETHZ)
- University of Fribourg
- University of Geneva
- Lucerne University of Applied Sciences and Arts
- University of Burgundy Franche-Comté

#### Industrial / Institutional

- Federal Office of Public Health (FOPH)
- Losinger Marazzi SA
- City of Fribourg
- Canton of Vaud
- Suisse Energie
- Patrimoine Suisse
- La Ressourcerie



# AT THE INTERSECTION OF SPECIALIZED KNOWLEDGE FIELDS



The centers of competence of the HEIA-FR are characterized by their interdisciplinarity and their understanding of market needs.





# PICC

## Plastics Innovation Competence Center

## Innovative materials for a more sustainable society

Plastic packaging is the epitome of the throwaway economy. Today it is more urgent than ever to incorporate the principles of circular economy to the plastics industry as part of a wider effort to create a more sustainable society. This is precisely the goal of the PICC, which focuses in particular on recycling processes, eco-design, and plastics derived from biomass materials.

### Ecobility check

Multidimensional product evaluation methodology involving analysis of obtained results, an ecological footprint report, and recommendations on product improvement

### Problem solving

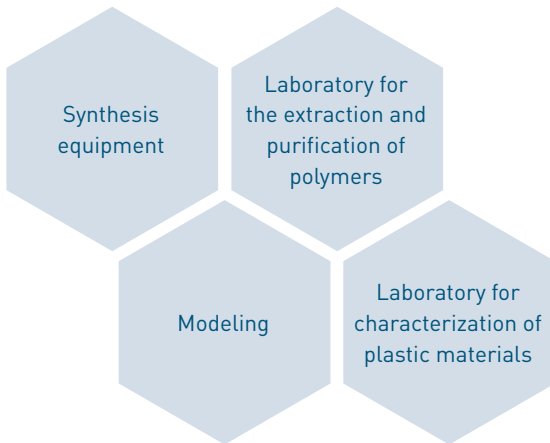
Analysis of conception or design flaws, proposals for alternative solutions, product improvement recommendations including social impact and an alternative business model

### Materials

Selection of materials, testing, prototyping, product development, qualitative analysis of product life cycles, development of product value chains



### FACILITIES



### DIRECTOR

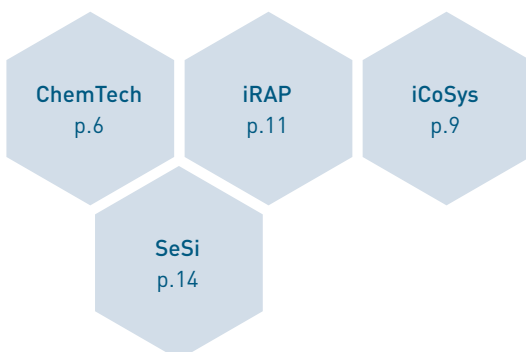


**Rudolf Koopmans**  
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*« Collaboration has to be learned, practiced, and taught. Our objective is to serve as a springboard for people willing to change their daily routine, to project themselves into the future, and to innovate for the sake of a better society. »*



### PARTICIPATING INSTITUTES



### PARTNERS (non-exhaustive list)

#### Scientific

- Swiss Federal Institutes of Technology (EPFL, ETHZ)
- University of Fribourg
- Adolphe Merkle Institute
- Plastics Training and Technology Center, Aarau (KATZ)
- Institute for Material Technology and Plastics Processing (IWK)

#### Industrial / Institutional

- MPG
- Fraunhofer-Gesellschaft
- BIOMARINE



# Engineering at the service of safety and security

The ROSAS Competence Center is specialized in safe, secure and robust technical systems. Our engineers ensure the safe and reliable interaction of mechanical components, electronic hardware and software in industrial systems. Such systems are integrated in domains such as aviation, automotive and machine industry.

### Cybersecurity

Penetration tests, communication protocols, risk and threat analysis, certification processes, support for the implementation of cybersecurity management processes

### Safety and reliability

Definition of requirements, analysis of existing processes and optimization opportunities, expert advice, implementation, support for CE marking, device calibration and testing

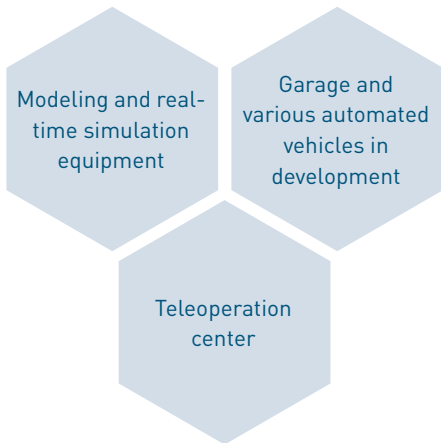
### Systems engineering

Simulation, verification and validation, industrialization, life cycle engineering, optimization, modeling, digital twins

### Intelligent systems

Vehicle/machine automation, infrastructure and communication, teleoperation, simulation, certification support, social acceptance, supervision, and predictive maintenance

### FACILITIES



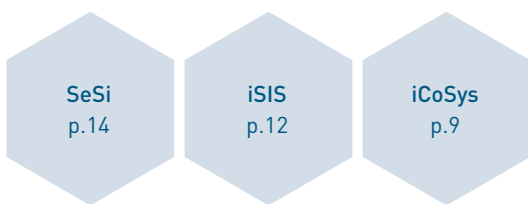
### DIRECTOR



**Wolfgang Berns**  
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« Our mission is to identify any potential malfunctions in our clients' products, after which we determine what can be done to prevent them and set up a warning system in case they should ever occur. »

### PARTICIPATING INSTITUTES



### PARTNERS (non-exhaustive list)

- |  |                                   |
|--|-----------------------------------|
| <b>Scientific</b>                      | <b>Industrial / Institutional</b> |
| - University of Fribourg               | - CertX                           |
| - Technical University of Munich (TUM) | - Liebherr Machines Bulle         |
| - Shanghai University                  | - Parker Meggitt                  |
| - University of Calgary                | - Mercury Mission Systems         |
|  | - Johnson Electric                |



## A research and development center focused on the future of the built environment

Smart Living Lab is a place where researchers and companies come together to implement interdisciplinary research projects using experimentation under real conditions. These projects focus on user wellbeing, energy efficiency and the digital transformation. The Smart Living Lab combines the expertise of the Swiss Federal Institute of Technology Lausanne (EPFL), the HEIA-FR and the University of Fribourg (UNIFR).

### Wellbeing and behavior

Improve human health and comfort by optimizing indoor environmental quality and influencing behaviors in a positive way

### Construction technologies

Monitor resource efficiency and accelerate processes of change in construction

### Interactions and design processes

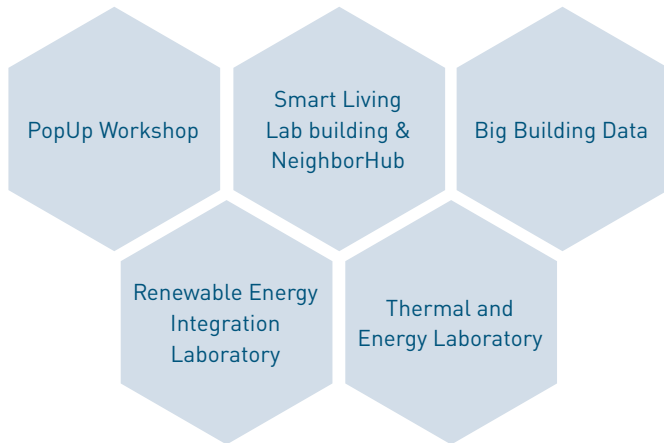
Understand and structure dialogue between stakeholders in the building lifecycle to develop the tools to design, model and operate buildings

### Energy systems

Develop smart energy-efficient systems and technologies, improve their management, and anticipate legal and economic impacts



### FACILITIES



### HEIA-FR MANAGER



**Jean-Philippe Bacher**  
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+41 26 429 67 55

« *The Smart Living Lab has two key dimensions: smart living, which implies an evolution towards a more sustainable way of life, and living lab, which refers to the importance of providing a dynamic and living setting for innovative experimentation.* »



### PARTICIPATING INSTITUTES



### PARTNERS (non-exhaustive list)

#### Scientific

- Swiss Federal Institutes of Technology (EPFL, ETHZ)
- Université Savoie Mont Blanc
- Université Grenoble Alpes

#### Industrial / Institutional

- CSD Ingénieurs
- Groupe E
- JPF
- City and Canton of Fribourg
- Swiss Federal Offices (FOPH, SFOE)





www.bcc.ch



# BCC

## Biofactory Competence Center

## Training the (bio)pharmaceutical industry's personnel

The BCC is a research and training facility at the service of the (bio)pharmaceutical industries. It offers training courses for professionals in industry-standard clean rooms and under real operating conditions. These courses are a response to the global shortage of highly-qualified personnel in the (bio)pharmaceutical sector. The BCC also provides support to companies carrying out applied industrial research.

### Professional education and training

On-boarding and continuing education programs for the (bio)pharmaceutical industries from basic to advanced; online courses; training programs for the unemployed

### Industrial research

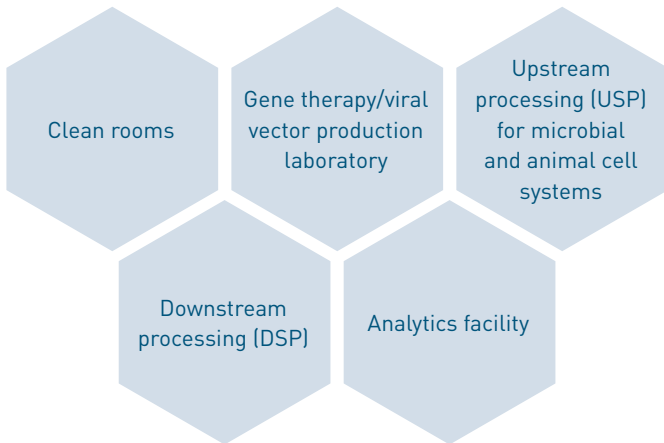
Design of bioprocesses; development and optimization of bioprocesses; technical problem-solving; consulting; Beta testing of equipment

### Design of modular systems

Design of modular facilities for (bio)pharmaceutical companies



### FACILITIES



### DIRECTOR



**Ian Marison**  
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*« We have successfully set up online courses on gene therapy and viral vector production. These technologies enable the fabrication of Covid-19 vaccines, cancer therapies and therapies for a number of hereditary genetic illnesses. »*



### PARTICIPATING INSTITUTES



### PARTNERS

(non-exhaustive list)

#### Scientific

- Regenosca SA
- Planetary Group SA

#### Industrial / Institutional

- Pall International
- UCB
- CordenPharma
- Lonza
- Merck



# Research Services

to support your projects

The HEIA-FR's Research Services aim to assist researchers with every stage of their project, including initial contacts with potential partners, managing contracts and intellectual property, and knowledge transfer.

Our expert team has the right combination of administrative, managerial, legal, communication and project management know-how to help researchers with the procedures involved in bringing a project to fruition.

## A key advantage: platforms and networks

As a member of the University of Applied Sciences and Arts Western Switzerland (**HES-SO**), the HEIA-FR regularly participates in joint projects with other schools of higher education.

We are also operating **INNOSQUARE**, which provides services to promote collaboration between companies and universities. INNOSQUARE supports project management for research and innovation.

Finally, our in-house Research Services are a founding member of **TechTransfer Fribourg**, an association that brings together the HEIA-FR, the University of Fribourg, the Fribourg School of Management and the Adolphe Merkle Institute.



## INNOSQUARE

Design and management of research and innovation projects

[www.innosquare.com](http://www.innosquare.com)



Do you have an idea or a project to develop?

[recherche-heia@hefr.ch](mailto:recherche-heia@hefr.ch)  
+41 26 429 68 37

## A collaboration model for every need



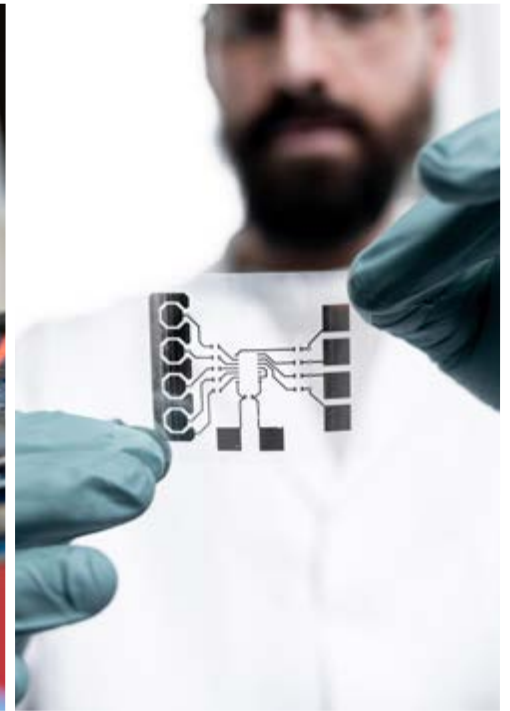
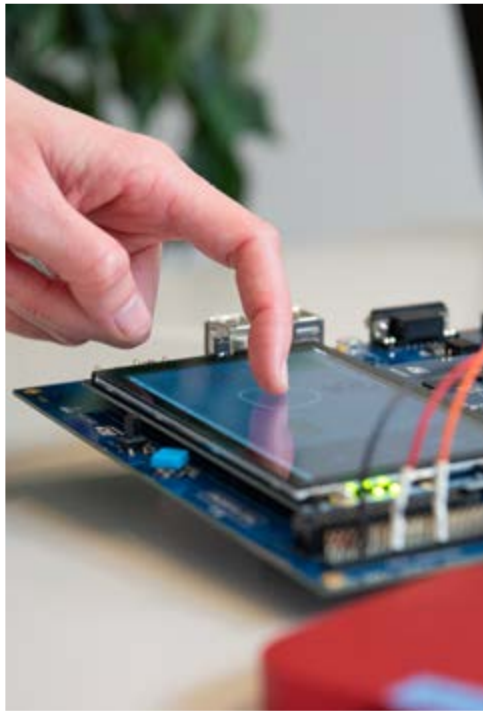
« Our ambition is to be as efficient as possible in transforming research results into practical applications. »

Patrick Favre-Perrod  
Deputy Director, aR&D Director

Research collaborations can take on various forms depending on the objectives of our economic or institutional partners. Both the duration of the project and the partner's expected commitments will vary according to the chosen type of collaboration.

In addition to these partnerships, a range of services, training courses and certification courses offered by the HEIA-FR are open to all economic and public actors (presentation on pages 24-25).

Objective	HEIA-FR's aR&D offer	Commitment of the partner	Indicative duration
Solve a simple technical problem, test an idea	<b>A student project</b> Semester project, Bachelor's or Master's thesis project	<ul style="list-style-type: none"> <li>✓ Accompanying the student</li> <li>✓ Covering the cost incurred by HEIA-FR researchers (if any)</li> </ul>	3-5 months depending on the type of project (semester, Bachelor or Master)
Solve a complex technical problem, perform an assessment or analysis	<b>A research mandate</b> Tailored to your needs	<ul style="list-style-type: none"> <li>✓ Covering the cost incurred by HEIA-FR researchers</li> </ul>	Variable according to need
Carry out a feasibility study for an innovative idea	<b>A project funded by an Innosuisse innovation cheque</b> (CHF 15'000.- maximum)	<ul style="list-style-type: none"> <li>✓ Ensure follow up to the study</li> </ul>	2-4 months
Develop innovative products, services or processes	<b>A project funded by Innosuisse</b>	<ul style="list-style-type: none"> <li>✓ Covering 40-60% of project costs, including 10% in cash and the rest as services</li> </ul>	From a few months to 2-3 years
Take up a technological challenge or create a new value chain in collaboration with several companies	<b>A NRP project</b> supported by the New Regional Policy (NRP) of the Canton of Fribourg	<ul style="list-style-type: none"> <li>✓ Covering 35 to 50% of project costs, with 20 to 25% provided in cash and the rest as services – to be shared between the partners</li> </ul>	From a few months to 2 years
Conduct a project at an international scale	<b>An international project</b> Horizon 2020, Interreg or Eurostars	<ul style="list-style-type: none"> <li>✓ Actively participating in the project</li> <li>✓ Covering a part of the costs or services</li> <li>✓ Collaborating with the partners</li> </ul>	One or several years



# Continuing Education

Continuing education as a way of life

Whether for professional development or as a form of personal enrichment, continuing education is integral to leading an active life. The HEIA-FR, its institutes and centers of competence offer a rich selection of continuing education courses.



## Certification courses

Discover the  
CAS, DAS & MAS:

[go.heia-fr.ch/en/ce](http://go.heia-fr.ch/en/ce)

Buildings  
DATA SCIENCE  
Organization Inkjet  
BIM Planning  
Railway Engineering ENERGY  
CONSTRUCTION  
Environment Expertise  
Earthquake Engineering



Would you like to learn more?

[formation.continue-heia@hefr.ch](mailto:formation.continue-heia@hefr.ch)  
+41 26 429 66 06 / +41 26 429 65 98



# Programs offered by the aR&D (non-exhaustive list)

The teams of several institutes and centers of competence are involved in training courses for professionals. They can also create custom-designed programs on specific subjects, at the request of companies.

Existing courses  
Custom-designed courses  
Language

## Information and Communication Technologies (ICT)

Digital Society & Health; Interaction Science and Technology		•	E / F / I	HumanTech
Data Science; Machine Learning; Software Engineering; Agile Team Structures		•	F / D / E	iCoSys
EBAS : E-Banking – but Secure! (in collaboration with the Hochschule Luzern)	•		F / D	iSIS
Fribourg Linux Seminar	•		F / D / E	iSIS
Fribourg Cybersecurity Seminar	•		F / D / E	iSIS
Google Developer Group Fribourg (practical workshops)	•		F / D / E	iSIS
Cybersecurity Course for Municipalities and SMEs		•	F / D / E	iSIS
ROSAS Weekly Seminars		•	E	ROSAS

## Industrial Technologies

Security and Ecology; Storage and Transport of Hazardous Materials; Measurement Techniques; Stereochemistry; Reaction Mechanisms; Pipes and Metal Frameworks; Practical Training for Operators		•	F / E	ChemTech
Foundation Course: the Inkjet Training	•		E	iPrint
Masterclass on Waveform Development	•		E	iPrint
Masterclass on Inkjet Rheology	•		E	iPrint
Plastic Injection Molding Defects (FSRM course)	•		F	iRAP
The Basics of Plastic Injection Molding (FSRM course)	•		F	iRAP
Design and Dimensioning of Plastic Pieces (FSRM course)	•		F	iRAP
Basic to Advanced Upstream Processing	•		E	BCC
Basic to Advanced Downstream Processing	•		E	BCC
Analytics Courses	•		E	BCC
Gene Therapy	•		E	BCC
Collaboration with P-M-S	•		E	BCC
Custom-designed courses for the (bio)pharmaceutical industry		•	F / D / E	BCC
Materials@Work (in collaboration with ETHZ)	•		E / D	PICC
Plastics Processing; Rheology; Eco-Design; Ecobility		•	E / D	PICC

## Construction and the environment

Short course: Uncertainty Quantification, Reliability and Sensitivity Analyses applied to Geotechnics and Structures	•		E	iTEC
Symposium: Numerics in Geotechnics and Structures	•		E	iTEC
Pipeline Hydraulics	•		F / D	iTEC
BFUP – High Performance Fiber Reinforced Concrete – Study Day	•		F / D	iTEC

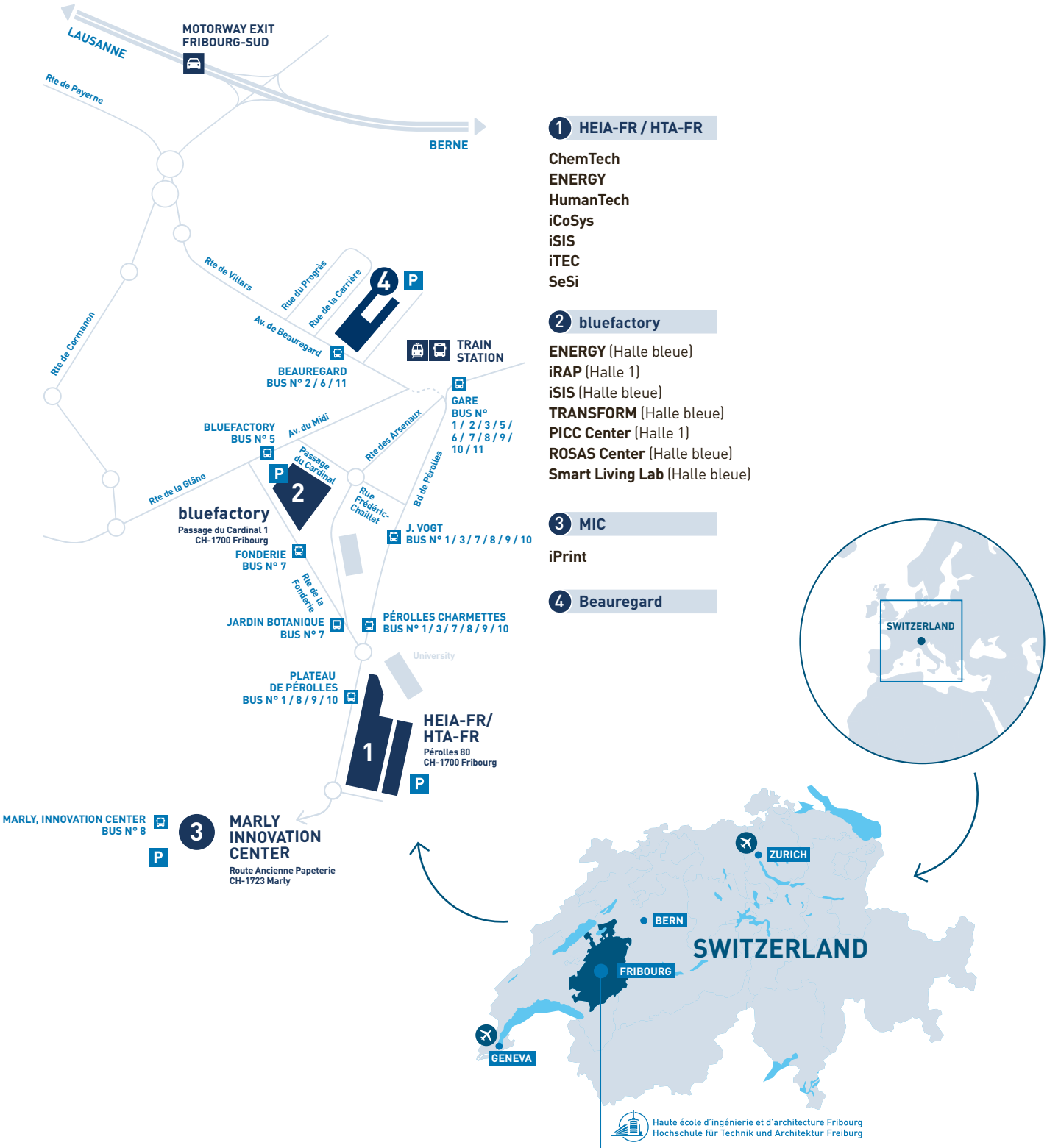


### Do you need tailor-made training?

The institutes and centers of competence are at your disposal to organize a training course on request. Please contact the one that covers your area of expertise.

# LOCATION AND ACCESS

The HEIA-FR is located on the Plateau de Pérolles campus in the city of Fribourg. Our aR&D activities also take place in the bluefactory innovation district and at the Marly Innovation Center (MIC).





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## **Impressum**

### **PHOTOGRAPHS**

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