RÉGION
BOURGOGNE
FRANCHE
COMTÉ

Healthcare industries and technologies

Extended presentation

aer
regional economic
agency of
bourgogne-franche-comté

editorial

Marie-Guite Dufay

President of the Bourgogne-Franche-Comté Regional Council

Bourgogne-Franche-Comté, a “living laboratory of health innovation in France”

Bourgogne-Franche-Comté is in the lead when it comes to territories where “life is good” and where a certain understanding of well-being is sure to captivate you indefinitely. We care about this renowned quality of life – we nurture and cultivate it. In our territory with strong environmental and societal qualities, innovative industries have developed cutting-edge technologies and skills that are used daily for prevention, diagnosis and treatment.

These companies progress in a dynamic environment of research and innovation, conducive to their development. University research in the region has received the national I-Site (Initiatives for Science, Innovation, Territories and Economy) label of excellence in three distinct scientific areas, strongly connected to the expertise of the territory. These areas are related to the future of companies and populations: advanced materials and smart systems; environment, territories and food for a sustainable quality of life; and finally, health and integrated individualised care.

Our region, recognised in the field of medical devices and advanced therapies, is part of the French-Tech #Health Tech network, which initiates creative and constructive rivalry between innovative start-ups in cutting-edge medical fields and provides them with access to strong industrial clusters, unique and attractive training opportunities, and research teams that work closely on needs.

In order to support current skills’ needs and the requirements for trades of tomorrow, to promote innovation and to encourage the development of companies, the region appeals to the Regional Economic Agency and local partners to develop the most specific skills by working closely on the region's ambitions, whether they be for the benefit of companies or territorial needs.

To live in Bourgogne-Franche-Comté is to be part of an ecosystem of dynamic universities, innovative start-ups, exceptional know-how and cutting-edge industries. Above all, it also means considering health in its most immediate calling: to promote the physical, mental and social well-being of every resident.

Arnaud Marthey

President of the AER BFC

In an area covering 47,800 km², Bourgogne-Franche-Comté has developed superior industrial expertise. The region relies on a dense ecosystem of skills to respond to the health challenges of today and the future. Companies, start-ups, research laboratories and training establishments strengthen their collaborations through innovative projects that provide solutions in specialities such as medical devices, diagnostic equipment, biotechnology and biotherapy.

Bourgogne-Franche-Comté has numerous assets: a strategic location in Europe, a strong anchoring of health-related activities in the territories, a recognised scientific and university environment, research laboratories and talented researchers distinguished for their work. With the presence of the National French Blood Service, we can position ourselves to develop an industry of advanced therapy medicinal products - a field that holds real hope in the fight against cancer.

The Regional Economic Agency of Bourgogne-Franche-Comté is funded by the Region to work on any project that allows us to act as a living laboratory of health innovation in France. **Attracting new investors, supporting innovations, connecting economic stakeholders, developing promising industries and promoting our attractiveness are our essential missions. We are working on coordinating the ecosystem of innovative health industries and services with all current stakeholders to support the development of activities and employment.**

Our role is to contribute to creating the conditions and environment that are conducive to the anchoring of activities, to make Bourgogne-Franche-Comté a land of excellence that is able to respond to the health challenges of today and those of the future.

arnaud marthey

This publication was prepared with the involvement
of the stakeholders and partners of the industry,
whom we would like to thank for their valuable contribution.

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BOURGOGNE-FRANCHE-COMTÉ

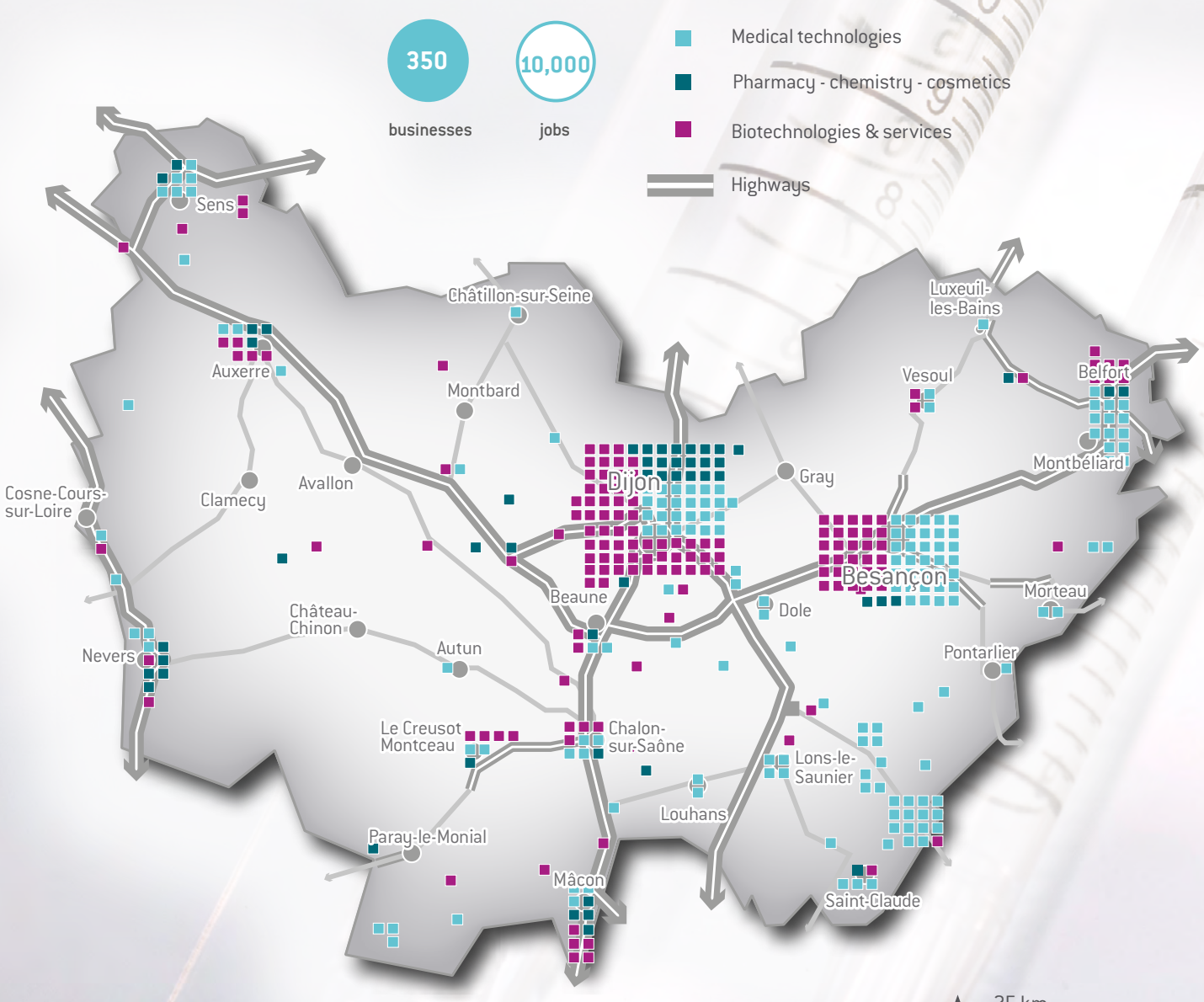
BOURGOGNE-FRANCHE-COMTÉ
an efficient ecosystem
for supporting the evolution of health industries and technologies

Bourgogne-Franche-Comté excels in providing concrete answers to current challenges such as population ageing, development of chronic illnesses, individualised healthcare needs, prevention, etc.

With the presence of **major pharmaceutical figures** (Groupe Urgo, Vétoquinol, etc.) in the region for more than a century and a fabric of SMEs **from the microtechnology sector**, who are **experts in the design of medical devices and subassemblies** (Micro-Méga, Proteor, Statice, etc.), Bourgogne-Franche-Comté is historically anchored in the healthcare sector.

These companies are part of a complete ecosystem that includes **Dijon University Hospital and Besançon University Hospital**, the **Georges-François Leclerc Cancer Centre (CGFL)**, the **National French Blood Service (EFS)**, the regional pharmaco-imaging cluster **Pharm'Image**, numerous **research centres and laboratories**, the **3 competitiveness clusters** involved in healthcare (PMT, Vitagora and Plastipolis), and **universities and engineering schools**.

A forward-looking ecosystem that contributes to Bourgogne-Franche-Comté, a **region firmly invested in the medicine of the future.**



Sources : Kompass
Mapping : AER Bourgogne-Franche-Comté
March 2018

3 AREAS OF EXPERTISE

In Bourgogne-Franche-Comté, Healthcare manufacturers are divided into 3 areas of expertise:

MEDICAL TECHNOLOGIES

Medical devices, diagnostic and medical biology equipment, telemedicine software, etc.

PHARMACY - CHEMISTRY - COSMETICS

Medicinal products, hygiene and cosmetic products, veterinary medicinal products, dietary supplements, etc.

BIOTECHNOLOGIES & SERVICES

Biotechnology, clinical research, tests, analyses, quality control, cleaning, sterilisation, etc.

RESEARCH

Georges-François Leclerc Centre
Besançon University Hospital
Dijon Bourgogne University Hospital
CRCs of the University Hospitals
National French Blood Service
IBCT
ICMUB
INSERM
FEMTO-ST Institute
ICB Laboratory
Laboratory of integrative neurosciences
Laboratory for Research on Learning and Development

PARTNERS

Microtechnology Competitiveness Cluster
Vitagora Competitiveness Cluster
Regional Economic Agency
BFCare
TIS Cluster
Innov'Health
Gerontology and Innovation Cluster

TRAINING

ISIFC (biomedical engineering school)

COMPANIES with recognised expertise

With over 350 companies representing nearly 10,000 employees, Bourgogne-Franche-Comté has an expertise in healthcare industries and technologies that enables the region to position itself as a territory of expertise in the medicine of tomorrow.

MEDICAL TECHNOLOGIES

Equipment for dentistry, surgery, therapy, ultrasound imaging, special glasses, bone or dental prostheses, neurological valves, etc. Often stemming from the microtechnology industry, regional companies design and manufacture parts for the major contractors within the sector and also finished products.
Electronics, micro-mechanics, micro-robotics, information technology, plastic processing, surface treatments, optics – these skills and many others are mastered for the development of innovative instruments to analyse, diagnose or treat. Many companies have taken a very early interest in **additive manufacturing**, a revolutionary process for the medicine of tomorrow.

Some iconic companies:
DIXI MEDICAL, FCI, FILAB, GROUPE URGO, ILSA, IMASONIC, IMMUNODIAGNOSTIC SYSTEMS, MAIN CARE IDO-IN, MEDICOAT, MICRO-MEGA, ONEFIT MEDICAL, PROTEOR, PROTHEOS, PURELAB PLASTICS, SOPHYSA, STATICE, STEMCIS, ZIMMER BIOMET, ETC.

PHARMACY - CHEMISTRY - COSMETICS

The pharmaceutical and chemical industries bring together **research, manufacturing and pharmaceutical marketing activities** for human or veterinary medicine. Bourgogne-Franche-Comté has a strong territorial anchoring in the manufacture of medicinal products, thanks to the presence of major pharmaceutical groups. Whether it be nutraceuticals, functional foods or dietary supplements, nutrition is, for some companies in the industry and thanks to the expertise of the VITAGORA competitiveness cluster, a major area of innovation.

Some iconic companies:
ADHEXPHARMA, CENTRE PHARMA, CORDEN PHARMA, CROSSJECT, DELPHARM, GALIEN PHARMHOLDING, GROUPE URGO, MERCK, RECIPHARM, VÉTOQUINOL, ETC.

BIOTECHNOLOGIES & SERVICES

Today, **biotechnology**, which started with the discovery of DNA, is considered the medical technology field of the future. In the healthcare field, it is involved in the **understanding of life for diagnosis, vaccines, in vitro fertilisation, genetic engineering or advanced therapy medicinal products.**

Some iconic companies:
GROUPE CEN, INVENTIVA, ICTA, ONCODESIGN BIOTECHNOLOGY, RD BIOTECH, ETC.

INNOVATIVE PROJECTS

MAILPAN®
THE DEFYMED BIOARTIFICIAL PANCREAS

The European Centre for the Study of Diabetes (CeeD) and its Strasbourg spin-off DEFYMED, in partnership with **STATICE in Besançon** and the Mans Centre for Technology Transfer (CTTM), have enabled the development of a prototype for a bioartificial pancreas for insulin-dependent diabetics. It involves designing an **implantable device for macro-encapsulation of insulin-secreting cells.**

A reference for the design, development and production of implants, instruments and laboratory equipment, STATICE stands out in particular for its **mastery of biomaterials, such as silicone, which are compatible with the human body**. Mailpan is a representative example of the skills of regional companies.

www.statice.com
www.defymed.com

ZENEO®
A PATENTED NEEDLE-FREE AUTO-INJECTION SYSTEM

Developed by the **Dijon pharmaceutical company CROSSJECT**, ZENEO® is a **needle-free injection device unmatched elsewhere in the world**. Prefilled and single use, ZENEO® propels the medicine through the skin in less than a tenth of a second. It is the only auto-injector that allows for fast and easy use in emergency situations.

Today, the company's profile includes eight medicines in advanced stages of development, seven of which are for emergency situations: epilepsy, severe migraine, allergic shock, overdose… Its ambition is to become the **world leader in emergency auto-injectables**. In Bourgogne-Franche-Comté, CROSSJECT is a pharmaceutical company with worldwide potential and technologically speaking is indisputably ahead of the game.

www.crossject.com

RESEARCH and INNOVATION, a trailblazing spirit

Bourgogne-Franche-Comté has 23 university research units and nearly 20,000 studies in life sciences and applied technologies.

The medical research conducted at the various public and private research organisations (university hospitals, National French Blood Service, Dijon Cancer Centre) make the territory visible in certain medical specialities, such as new cell and tissue biotherapies, oncology, cardiovascular pathologies, proteomics, instrumentation and medical imaging, etc.

MAIN ORGANISATIONS

CAPS INSERM
Cognition, Action and Sensorimotor Plasticity

BESANÇON UNIVERSITY HOSPITAL *(see page 11)*

DIJON BOURGOGNE UNIVERSITY HOSPITAL *(see page 11)*

GF LECLERC CENTRE (CGFL)
Cancer Centre *(see page 16)*

CENBIOTECH
MD, dietary supplements, cosmetics *(see page 11)*

CRC OF BESANÇON UNIVERSITY HOSPITAL
Biotherapies and technological innovations *(see page 11)*

CRC OF DIJON BOURGOGNE UNIVERSITY HOSPITAL
Epidemiology and Multidisciplinary *(see page 11)*

NATIONAL FRENCH BLOOD SERVICE *(see page 11)*

IBCT
Immunomodulation, cell and allogeneic immunotherapy, regenerative medicine and signalling, and cell and tissue regulation

ICMUB
Molecular chemistry, medical imaging *(see page 15)*

INSERM BESANÇON
Graft-versus-host and graft-versus-tumour interactions and cell and tissue engineering

INSERM DIJON
Lipids, nutrition, cancer

FEMTO-ST INSTITUTE
Micro- and nano-technologies, robotics, information technology, automation, optics, biomechanics, proteomics and e-health *(see page 12)*

ICB LABORATORY
Materials including nanoparticles, reactivity, nanosciences, optics, biomedical applications *(see page 12)*

LABORATORY FOR RESEARCH ON LEARNING AND DEVELOPMENT (LEAD)
Cognitive psychology

INTEGRATIVE AND CLINIC NEUROSCIENCE LABORATORY OF BESANÇON
Process of regulation and dysregulation of emotions and mood

BESANÇON UNIVERSITY HOSPITAL

- Technological innovations
- Biotherapies: immunotherapy for cancer, transplantation and grafts, cell & genetic therapy
- INCREASE university-hospital federation on inflammatory diseases
- Risks and vulnerability: infectious, neuro-cardiovascular, ethics/medical progress and vulnerable populations, quality of life

CLINICAL RESEARCH CENTRE OF BESANÇON

BIOTHERAPIES AND TECHNOLOGICAL INNOVATIONS

- **Biotherapies:** development and evaluation of biotherapies in oncology and haematology, transplantation, tissue and organ grafts, biotherapy of inflammatory diseases, medically assisted reproduction, human papillomaviruses
- **Technological innovations:** microsystems and biological qualifications, health technology for neuropsychiatry, ethics and medical progress, emergence in technological innovations for health

The CRC of Besançon has an ISO-certified platform for assessment of medical devices (DINAMIC) that belongs to the National Network of Centres for Clinical Research Centres-Technological Innovations and Tech4Health.

- Medical progress and societal evolution (PROMES)
- Risks & vulnerability
- Health Technology Assessment (HTA) Platform for therapeutic evolutions
- Patient quality of life platform

DIJON BOURGOGNE UNIVERSITY HOSPITAL

- Lipid metabolism, inflammation, diabetes and vascular risk
- Preventive and therapeutic approaches in cancer
- Functional and molecular imaging
- Genomics of developmental anomalies
- Cognitive, motor and sensory disabilities: diseases, ageing
- Patients, Health, Society and Territories

CLINICAL RESEARCH CENTRE OF DIJON BOURGOGNE

EPIDEMIOLOGY AND MULTIDISCIPLINARY

The Clinical Research Centre of DIJON has inpatient beds at the University Hospital and at the CGFL, as well as research sites: **epidemiological, medico-economic or clinical studies (phases I à IV) and assessment of medical devices**.

CENBIOTECH/CEN NUTRIMENT DIJON

CLINICAL RESEARCH AND OBSERVATIONAL STUDIES

The only private CRC in Dijon to have the scientific approval from the Regional Health Agency (ARS) for:

- Medical devices
- Dietary supplements
- Cosmetic products

NATIONAL FRENCH BLOOD SERVICE

Cell and tissue engineering, medical biology, transfusion medicine, fundamental and applied research, R&D in advanced therapy, production of advanced therapy medicinal products.

- **A pharmaceutical platform for development of advanced therapy medicinal products (ATMP)** (in partnership with the CRC of Besançon)
- **A tissue bank**
- **Grand Est Cord Blood Bank**
- **Grand Est Transfusion Biobank**

www.efs.sante.fr

BIO-INNOVATION,

A TECHNOLOGICAL PLATFORM DEDICATED TO HEALTH PRODUCTS

BIO-INNOVATION, centre for development of new medical devices and biotherapy: translational research, pre-industrialisation, project engineering, etc.

www.temis.org

Microtechnology and materials

Bourgogne-Franche-Comté brings together advanced skills in micro- and nanotechnologies as well as in materials, in addition to essential assets for inventing and miniaturising increasingly efficient medical technologies.

FEMTO-ST INSTITUTE

MICRO- AND NANO-TECHNOLOGIES

With a workforce of 750, FEMTO-ST is a European-scale research laboratory specialising in micro- and nano-technologies, time-frequency, energy, applied mechanics, robotics, information technology, automation, optics, biomechanics, proteomics and e-health.

FEMTO-ST is developing numerous projects for health, based on engineering skills and in close connection with the University Hospitals and CRCs.

MIMENTO PLATFORM
- Micro- and nano-technologies
- Manufacturing of microsystems, specialising in Lithium niobate, silicon, glass

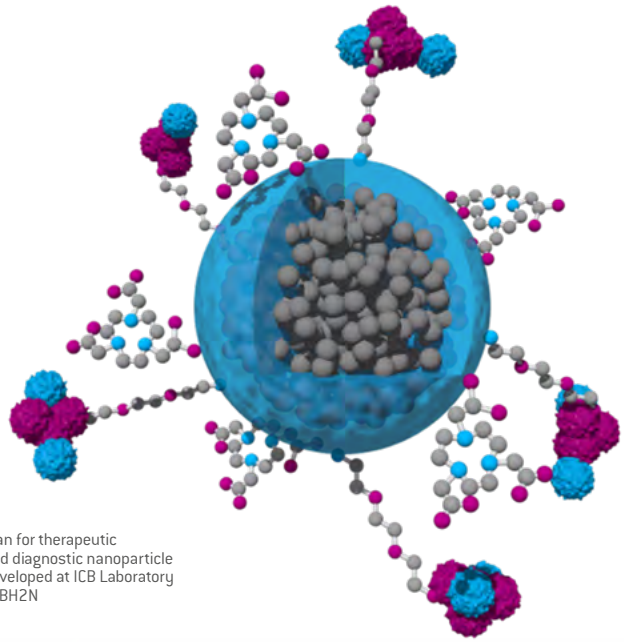
FEMTO ENGINEERING
Activities in all FEMTO-ST areas of expertise (fuel cell, stirling engines, femtosecond laser machining, biochips, microsystems, ultra-stable radio frequency oscillators)

www.femto-st.fr

ICB LABORATORY

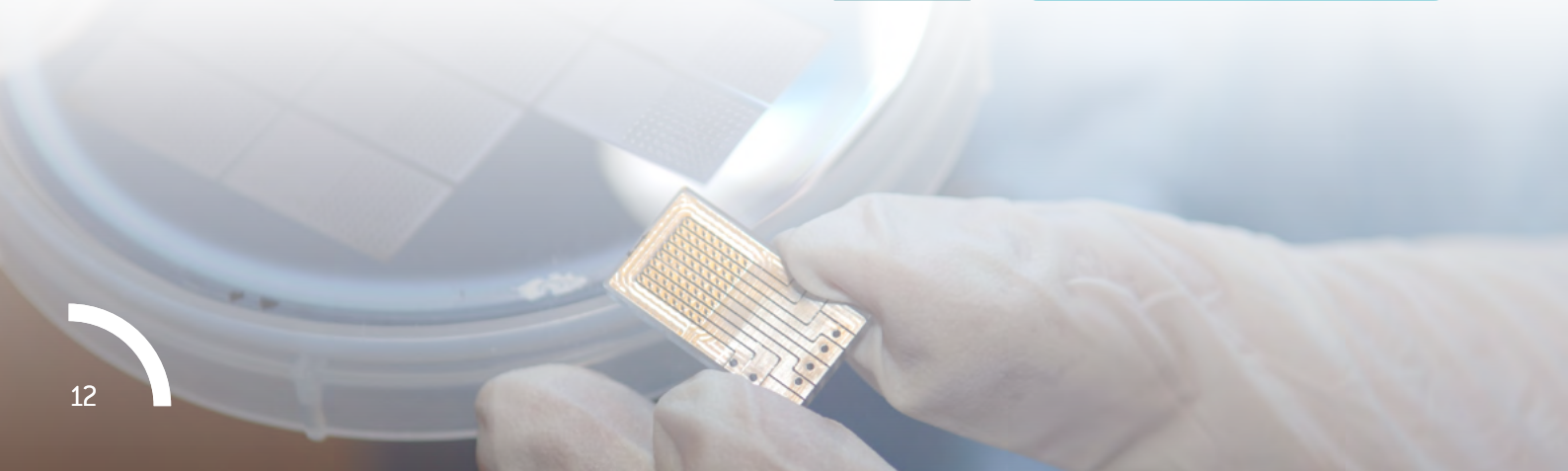
MATERIALS INCLUDING NANOPARTICLES, REACTIVITY, NANOSCIENCES, OPTICS, BIOMEDICAL APPLICATIONS

Research topics:
- Synthesis and characterisation of hybrid nanoparticles for medical applications: contrast agents in medical imaging and therapeutic agents
- Development of multi-frequency and atomic force microscopy spectroscopic methods of analysis
- Plasmonics and optics for biosensors
- Digital simulations of proteins and nanostructures



Plan for therapeutic and diagnostic nanoparticle developed at ICB Laboratory
© BH2N

icb.u-bourgogne.fr



INNOVATIVE PROJECT

MIMEDI

A BIOREACTOR FOR THE MANUFACTURE OF DRUG-CELLS

PROJECT CERTIFIED Microtechnology Cluster

Combining skills in microtechnology (Mi) with those for the production of advanced medicinal products (Médi), MiMédi is a project set up to develop a bioreactor for controlled large-scale production of Médi. This bioreactor aims to **"miniaturise" and automate the entire manufacturing process**: from multiplication, selection and modification of cells (such as blood cells) collected from a patient, to the packaging and then release of the Médi administered to the same patient.

PROJECT PARTNERS

- ILSA
- SMALTIS
- AUREA Technology
- DIACLONE
- BioExigence
- MED'INN Pharma
- University of Franche-Comté via FEMTO-ST
- AER Bourgogne-Franche-Comté
- UMR 1098 "Graft-versus-host and graft-versus-tumour interactions & cell and tissue engineering"
- Besançon University Hospital via CRC Inserm 1431
- Femto Engineering

UNION EUROPEENNE
RÉGION BOURGOGNE FRANCHE COMTÉ
avec le Fonds européen de développement régional (FEDER)

projects.femto.fr/mimedi

E-health and imaging

TELEHEALTH, A MAJOR ADVANTAGE...

Since 2007 with its **1st integrated telemedicine platform**, Bourgogne-Franche-Comté has been at the forefront of telehealth. Today, nearly **250 telemedicine sites**, covering a vast number of diseases (stroke, neurology, radiology, anatomic pathology, dermatology, cardiology, geriatrics, diabetology, psychiatry) connect the entire regional territory.

INNOVATIVE PROJECTS

E-TICSS PROGRAM

DIGITAL SERVICES
FOR HEALTHCARE PROFESSIONALS

The eTICSS (Innovative Social Care Coordination Territory) program, conducted by the BFC Regional Health Agency, was selected as part of the national Digital Healthcare Regions program. Implemented throughout the region, it involves providing professionals from the health, medico-social and social sectors with digital services that allow them to better coordinate their actions, so that everyone can receive the right care, from the right professionals, in the right organisations, at the right rime. All at the best price.

www.projet-eticss.fr

i-DIABÈTE® APP

AN EXPERIMENT AT THE REGIONAL LEVEL

With the iDiabète® smartphone app developed by CEN CONNECT, diabetic patients allow doctors to access information about their diabetes and treatment, especially in an emergency situation. Just scanning the QR Code on their diabetic card offers the necessary guarantees of safety and reliability.

www.cenconnect.com

EVENT

OCS - CONNECTED HEALTH OBJECTS

This annual meeting reviews the subject at hand, as well as the latest legal, regulatory and technical advances.

PHARM'IMAGE

REGIONAL EXPERTISE CLUSTER
IN PHARMACO-IMAGING

Unique in France, it brings together local stakeholders, companies and hospitals, in an Economic Interest Group (EIG).

Its objective is to **evaluate biomarkers for monitoring the effectiveness of treatments and selection of the most active molecules using medical imaging technology**. The EIG has recently been equipped with a **cyclotron, based at the CGFL.**

New therapies focus on **precision medicine**, in which pharmaco-imaging fulfils the global needs of all stakeholders in the chain of the medicinal product, from the pharmaceutical industry to the clinicians, to ensure **compatibility between the treatments chosen and the patients' condition**.

www.pharmimage.fr

ICMUB

INSTITUTE OF MOLECULAR BIOLOGY
OF THE UNIVERSITY OF BURGUNDY

Mixed research unit with a staff of 130, academic partner of the PHARM'IMAGE EIG.

2 areas of research including **Health, Medical Imaging and Therapy**:

- Development of theranostic and molecular imaging agents
  - Development of imaging probes
  - Bioconjugation techniques for imaging probes on various biological vectors
  - Radiochemistry, radiomarking by radio-isotopes for PET or SPECT imaging and for therapy
  - Organometallic theranostic agents
  - Imaging and theranostic nanoparticles, nano-objects for drug delivery
- Study of unusual DNA structures
- Development of electrochemical biosensors

www.icmub.fr

INNOVATIVE PROJECT

IMAPPI

AN IMAGING SYSTEM COMBINING MRI AND TOMOGRAPHY

Development of an emerging technology that brings together MRI and positron emission tomography (PET) techniques in the same imaging system. It represents a major technological challenge, since equipment like this is currently available as a prototype at only a few sites worldwide, none of which are available in France.

A trailblazing region in oncology

Oncology in Bourgogne-Franche-Comté is considered "exemplary and unique in France" by the French Medical Board. Its shared organisation ensures the same treatment for all patients, regardless of their location within the territory.

COMMITTED ORGANISATIONS

GEORGES-FRANÇOIS LECLERC CENTRE
EXPERT AND REFERRAL CENTRE IN ONCOLOGY

With a three-fold mission of care, the CGFL is **France's third-highest establishment** for the number of patients enrolled in a biomedical study. More than 1 in 5 patients have early access to the latest medicines and advanced therapies.

- Early phase research unit
- 2 high-level translational research platforms: oncological biology and preclinical imaging
- 1st digital PET scanner installed in France
- One of 3 French sites equipped with an MRI-guided radiotherapy accelerator

www.cgfl.fr

GIMI INSTITUTE
GENOMICS AND IMMUNOTHERAPY

The GIMI (Genomic and Immunotherapy Medical Institute) Institute was created in 2016 by Dijon University Hospital and Besançon University Hospital, the CGFL and the National French Blood Service. It aims to make **genomic medicine** a clinical reality for patients with cancer, rare diseases and common diseases.

www.gimi-institute.org

CANCÉROPÔLE EST

Cancéropôle Est gathers together all of the stakeholders in cancer research in France's North-eastern sector, with the objective of **structuring, coordinating and strengthening research** in cooperation with institutions for fundamental, clinical and applied research, by bringing together researchers (epidemiologists, biologists, physicists, chemists, IT specialists, mathematicians, robotics specialists, etc.), healthcare professionals, manufacturers and patients.

www.canceropole-est.org

IRFC
FEDERAL REGIONAL CANCER INSTITUTE OF FRANCHE-COMTÉ

Unique in France, the IRFC is a Health Cooperation Group comprised of public and private healthcare establishments operating in **Medical and Radiotherapy Oncology in Franche-Comté**. This organisational innovation is based in particular on a dedicated territorial Information System, in place since 2006, and combining various innovations in e-health (reference engines, assessment of therapeutic innovations, phasing out of the city-hospital connection, quality control) in a current cohort of more than 40,000 patients.

www.irfc.fr

INFRASTRUCTURE

PC BIO (ONCOLOGY AND BIOLOGY)

The PC Bio is a front-line facility located on a single site of 19,000m². Along with the IRFC headquarters and the users' associations, it houses the oncology services, including the pharmaceutics department, the Tumour Bank and cutting-edge technology in brachytherapy and radiotherapy. The building is certified by the Haute Qualité Environnementale (High Quality Environmental) standard as a "green building", thus ensuring optimal comfort for patients.

INNOVATIVE PROJECTS

UCP VAX
CANCER TREATMENT VACCINES

It contains an antigen (telomerase) intended to **activate the immune cells**. The idea is for the telomerase vaccine to act on a particular category of T-cells that will **coordinate and target the immune defence against the tumour.** UCPVax has been tested in a first-in-human trial since 2016, in patients with lung cancer. The first results are encouraging and have allowed the trial to continue in phase II, in a larger number of patients and in other cancers.

www.chu-besancon.fr

ONCOSNIPE®
DETECTING TREATMENT-RESISTANT PATIENTS WITH ARTIFICIAL INTELLIGENCE

OncoSNIPE is based on the implementation of **bioinformatic approaches, artificial intelligence, statistical learning and semantic enrichment**. It is designed to identify and characterise patients resistant to cancer treatments. Its purpose is to guide the healthcare professional in the treatment of a patient, or the pharmaceutical company in its development of new drugs, and ultimately to reduce rates of treatment failure.

www.oncodesign.com

IMAKINIB
KINASE INHIBITOR PET RADIOTRACER

Anticipated developments here include the marketing of at least 2 new radiotracers for clinical use in the therapeutic monitoring of cancer patients. The skills involved in this project are all present within the Pharm'Image cluster and have been acquired gradually thanks to a collaboration between the members of the EIG and the available technical systems (cyclotron, radiochemistry laboratory, preclinical and clinical PET imaging).

www.pharmimage.fr

LIPSTIC
LIPOPROTEINS AS TREATMENT

The LipSTIC labex (laboratory of excellence) is a unique multidisciplinary research program in France. It focuses on **lipoproteins to prevent, diagnose or treat cancer and inflammatory diseases**. Lipoproteins may also allow for **transport of insoluble bioactive molecules in water to the diseased organ**.

www.labex-lipstic.fr

Targeted TRAININGS to prepare for the future

ISIFC - FRANCHE-COMTÉ HIGHER INSTITUTE FOR ENGINEERING

The ISIFC, a school within the University of Franche-Comté, has been CTI certified to provide graduate training since 2001, in addition to post-graduate training and to approve accreditation for prior learning. The school educates nearly 50 engineers each year for research and care centres and the industry as a whole, providing each graduate with a rare three-fold culture: technical, regulatory and medical.

The training is comprised of 4 skills clusters:
- **Engineering sciences**
- **Life and health sciences**
- **General and corporate culture**: focus is on entrepreneurship (Biotika), quality, and regulatory and clinical affairs
- **Professional experience:** 40-week internships based in hospital departments, research laboratories and companies, 260 project hours within the school, and a possible final year sandwich course

isifc.univ-fcomte.fr

BIOTIKA®

A real springboard to professional life for students, Biotika® is the academic enterprise of the ISIFC. Its activities are non-profit and eligible for the Research Tax Credit.

2 OBJECTIVES
- Detect and train industry leaders
- Promote industrial and hospital collaboration

SERVICES FOR COMPANIES
- Technical dossier for CE marking
- Quality management system
- R&D solutions, until the demonstrator
- Premarketing studies
- Clinical affairs

EVENT
"RENTRÉE DU DM"

A renowned annual meeting, the "Rentrée du DM" (Return of the MD) is a professional training for medical device specialists.

Bringing together the ANSM and several notified bodies for 2 days, developments in the regulatory context are at the heart of discussions.

UNIVERSITY OF BURGUNDY

The Health Sciences Training and Research Department (UFR) offers training in **medicine, pharmacy, midwifery, advanced therapies, public health and the environment, healthcare product quality and international harmonisation, graft-host relationship.**

www.u-bourgogne.fr

ESIREM DIJON

HIGHER SCHOOL OF ENGINEERING FOR RESEARCH IN MATERIALS AND INFORMATION TECHNOLOGY/ELECTRONICS

- Training of **Materials engineers**: ceramics, plastics, hydraulic binders, glass and semiconductors
- Training of **engineers in Information Technology/ Electronics:** Embedded Systems, Network Security and Quality,
- Software and Knowledge Engineering, Imaging,
- Cloud Computing, Big Data

esirem.u-bourgogne.fr

ART ET MÉTIERS, CLUNY CAMPUS

- Training of general engineers in **mechanical, industrial and energy engineering**
- Master's in research
- Doctoral school

artsetmetiers.fr

AGROSUP DIJON

NATIONAL HIGHER INSTITUTE FOR AGRONOMIC SCIENCES, FOOD AND THE ENVIRONMENT

- Master's degree in **Health Nutrition**, Focus in Nutrition and Food Sciences
- **Agriculture and food** engineer, speciality in Nutrition, Sensoriality, Food, Health, Safety

www.agrosupdijon.fr

UNIVERSITY OF FRANCHE-COMTÉ

The Health UFR offers complete courses in **medicine and pharmacy**, and contributes to the training of **nurses, physiotherapists, midwives, speech therapists and dentists.**

- 2 bachelor's degree courses: **pharmaceutical, cosmetology and health industries,** and **professional optics**
- Master's degrees: **lipoproteins and advanced therapies, neurosciences, graft-host relations, management of infectious and health risks, palliative care medicine**.

The Sciences and Technologies (ST) UFR offers a bachelor's degree in **bio-industries and biotechnologies**.

www.univ-fcomte.fr

ENSMM BESANÇON

NATIONAL HIGHER SCHOOL FOR MECHANICS AND MICROTECHNOLOGY

- 3 engineer training options
- 3 master's degrees in research
- 1 pathway in **Microsystems and Health**
- 1 specialisation in **Bio-microsystems for health**

www.ens2m.fr

UTBM OF BELFORT-MONTBÉLIARD

UNIVERSITY OF TECHNOLOGY OF BELFORT-MONTBÉLIARD

- 5 **engineer** apprentice and student training programs: Mechanical engineering, Mechanical and ergonomics, Information technology, Industrial systems, Energy
- 5 focuses for **Master's degrees**: Management, Energy, Mechanical Engineering, Information Technology
- 2 co-accredited **doctoral schools**: Sciences for engineering and Microtechnology, Language - Space - Weather - Societies

www.utbm.fr

ESTA BELFORT

HIGHER SCHOOL OF TECHNOLOGIES AND BUSINESS

The ESTA trains **Business engineers specialising in Chemistry-Biotech**. Objective: to deepen knowledge in chem-biotech and supplement it with business and managerial skills.

www.esta-groupe.fr

DO YOU HAVE A PROJECT? Bourgogne-Franche-Comté wants you!

DEDICATED BUSINESS PARKS

TEMIS SANTÉ

Located in **Besançon**, TEMIS SANTÉ is a technology park designed for companies and laboratories in the healthcare, biomedical, biotechnology, medical and surgical equipment, and e-health industries.

MAZEN-SULLY

Located in **Dijon**, MAZEN-SULLY technology centre is dedicated to entrepreneurial innovation and technology transfer.

No.1

region for **microtechnology** with 12,000 employees

No. 3

region for **share of industrial added value**

9

highways forming a strategic intersection in the heart of Europe

451

km of HSR lines
14 TGV stations

4

nearby international airports

A NETWORK OF PARTNERS in the service of companies

THE REGIONAL ECONOMIC AGENCY OF BOURGOGNE-FRANCHE-COMTÉ

ASSIST
the maintenance and development of economic activity and employment in the territory

SUPPORT AND DEVELOP
innovation and eco-innovation

BACK
economic development strategies of the territory

PROMOTE
the economic appeal of the territory

At each stage in a company's development: a single representative in the team provides confidential professional assistance and customised follow-ups.

BUSINESS PROJECT ENGINEERING

- Diagnosis of company needs
- Technical, Financial, Legal and HR Engineering
- Search for real estate and real estate companies
- Search for partners
- Association with the public and private ecosystem of economic development and innovation

PROMOTION AND COMMUNICATION

- Promotion of sector groups and initiatives implemented by companies that benefited from our assistance, know-how and regional resources
- Participation at local, national and international shows

INNOVATIVE PROJECT ENGINEERING

- Éco-innovation (carried out in partnership with ADEME Bourgogne-Franche-Comté
- Intellectual property and collective technological and sector surveillance (carried out in partnership with CCI Bourgogne Franche-Comté)
- Presta'INNO funded by Bpifrance and the Bourgogne-Franche-Comté Region

ECONOMIC CHANGES

- In partnership with the State services

A NETWORK OF PARTNERS in the service of companies

COMPETITIVENESS CLUSTERS

MICROTECHNOLOGY CLUSTER

A member of the Microtechnics Alliance, the Microtechnology cluster promotes the development of projects at the intersection of microtechnology, materials and pharmaceuticals. **Over 30% of projects** certified by the cluster are related to the medical field. The health committee of the cluster brings together companies, scientists, researchers and practitioners to develop research and innovation efforts.

166 members — 117 businesses

INNOV'HEALTH

Representing the healthcare industry in Bourgogne-Franche-Comté in the Microtechnology Cluster, Innov'Health leads the entire community, comprised of companies, research laboratories and higher education schools in the field, through a regional action plan. Innov'Health has already certified **105 health projects**.

www.polemicrotechniques.fr

SAYENS
ACCELERATION OF TECHNOLOGY TRANSFER

Its mission is to promote academic research (6500 researchers from 140 public research laboratories), through:

- **management of Intellectual Property portfolios** and **investment in technology maturation** with view to transfer to companies, start-up, etc.
- **creation** and **management of research contracts** (provision of services and access to experts, know-how from research laboratories and technical facilities of universities), etc.

sayens.fr

VITAGORA FOOD AND AGRICULTURE CLUSTER
TASTE - HEALTH - ENVIRONMENT

The strategy of Vitagora is the development of a food supply that is tasty, healthy, a source of well-being and sustainable. Numerous innovative projects focusing on "health nutrition" have been created and certified by the cluster: effect of **food behaviours** on health, development of **functional foods** or **dietary supplements**, optimisation of **nutritional profiles**, etc. Since 2015, Vitagora has held the **Gold Label of excellence** granted by the ESCA.

370 members — 250 businesses

www.vitagora.com

PLASTIPOLIS
BIOCOMPATIBLE PLASTICS AND POLYMERS

Plastipolis, whose primary areas of focus include the medical field, develops collaborative projects related to additive manufacturing and smart plastics. Plastipolis explores the medical applications of microsystems and nanotechnologies derived from plastics, as well as the use of biocompatible nano-polymers or polymers. The projects focus on creating smart diagnostic products, bioresorbable implants, antimicrobial coatings, drug delivery packaging, etc.

350 members — 250 businesses

www.plastipolis.fr

AND CLUSTERS

EVENT
HACKING HEALTH

Engineers, developers, legal experts, designers, marketing specialists, etc. Hacking Health is open to everyone who wants to contribute to **imagining solutions for the health of tomorrow.**

An annual event, lasting 48 hours, that brings together skilled experts and puts them to task to **design solutions to challenges posed by the session leaders**.

hacking-health.org

TIS CLUSTER

The North Franche-Comté Cluster for Advanced Technologies in Health highlights the expertise of its members, especially in the fields of orthopaedics and additive manufacturing.

100
members

adnfc.fr/page/espace_economique/filiere-medicale

BFCARE CLUSTER

The BFCare Cluster unites manufacturers from the healthcare industry based in the Bourgogne-Franche-Comté region. Its missions include: facilitating the emergence of cooperation and synergy between members of the network, fostering the exchange of good professional practices, foster partnerships with academics, etc.

50
members

45
businesses

pole-bfcare.com

BESANÇON Bourgogne-Franche-Comté FRENCH TECH

MEMBRE DU RÉSEAU THÉMATIQUE FRENCH TECH #HealthTech : BioTech - MedTech - e-santé

BESANÇON CERTIFIED HEALTH TECH (Medtech – Biotech)

Since 2016, under French Tech for Bourgogne-Franche-Comté, Besançon has integrated the #HealthTech network, promoting the most dynamic territories in terms of innovation and creation of start-ups in the field of health. The certification is based on a 5-year action plan, validated by the State and intended to strengthen the innovation ecosystem in the regions.

healthtech.lafrenchtech.com

PROPULSEUR
A SPRINGBOARD FOR START-UPS

Powered by the Microtechnology Cluster, PROPULSEUR is a growth accelerator from French Tech certification, dedicated to the support of start-ups and innovative SMEs/SMIs in the field of health and microtechnology.

regional economic agency of bourgogne-franche-comté

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FOR MORE INFORMATION

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