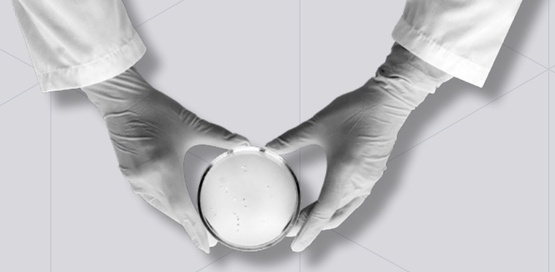
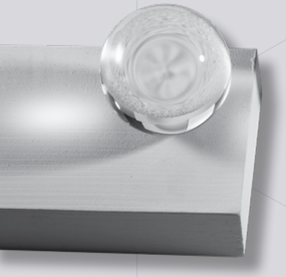
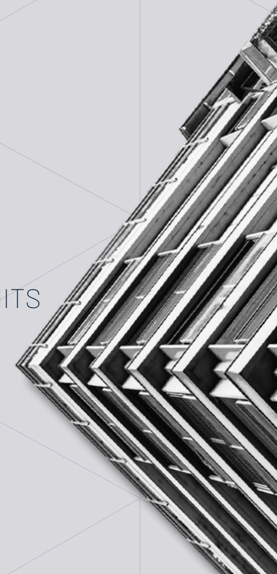

University
of Minho
RESEARCH
AND
INNOVATION
2020.2021.2022

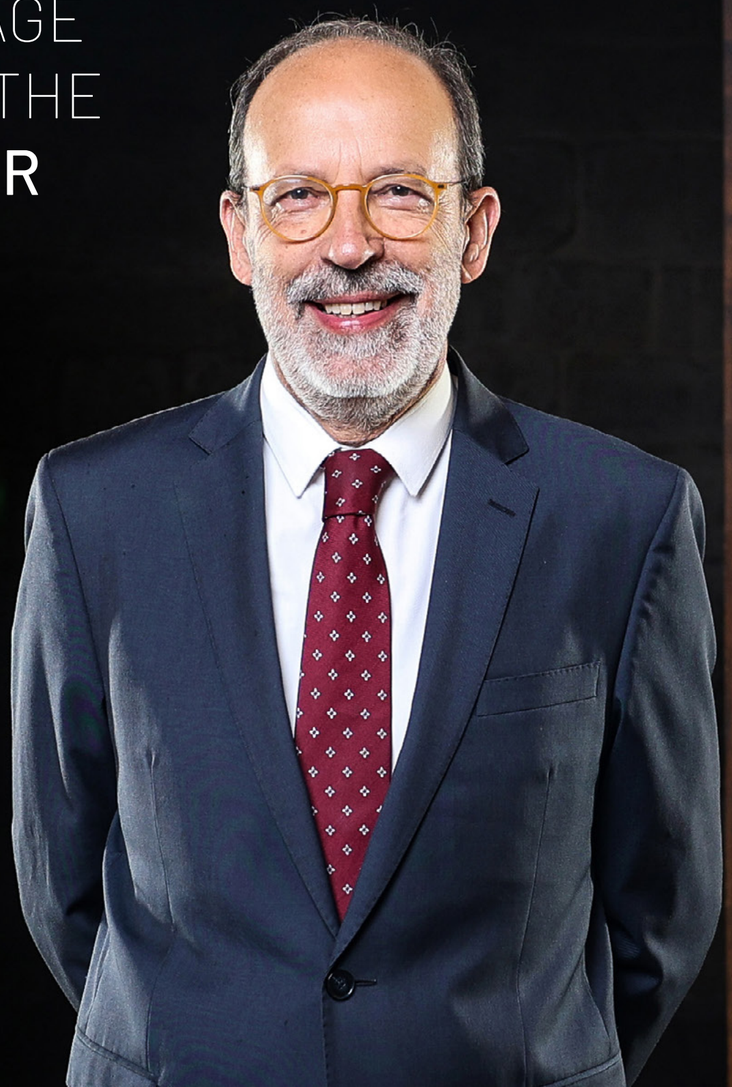

UNIVERSITY
OF MINHO







MESSAGE FROM THE **RECTOR**



Research and innovation are cornerstones of the University of Minho's mission. They are the pillars that underpin our pursuit of excellence, enabling us to respond to the challenges of an ever-evolving world.

Through the unwavering commitment of our researchers and students, we continue to expand the frontiers of knowledge and transform the outputs of our scientific endeavours into ideas and solutions that bring value to our communities, the region, the nation, and beyond. During the years 2020 to 2022, UMinho's research ecosystem achieved remarkable milestones, overcoming unprecedented challenges while solidifying its role as a leader in innovation.

This ecosystem thrives on the dynamism of its 31 research units, which span disciplines ranging from life sciences to social sciences, health sciences to engineering, and the humanities. These units have consistently demonstrated their excellence, with over 90% receiving classifications of "Very Good" or "Excellent" from the Foundation for Science and Technology.

UMinho's commitment to fostering collaboration with the economy and society is realised through its active participation in 12 collaborative laboratories and 11 interface units. These initiatives bridge the gap between knowledge producers and users. The collaborative laboratories provide platforms for multi-stakeholder engagement, enabling UMinho to address critical societal challenges by integrating expertise, resources, and cutting-edge technologies. At the same time, our interface units enhance the transfer of knowledge and technology, catalysing economic growth and societal progress.

Collaboration and internationalisation remain central to UMinho's mission. By partnering with leading institutions and participating in prestigious programmes such as Horizon Europe, or in European Research Council initiatives, we ensure that our research addresses global priorities while enhancing our international reputation. These efforts have resulted in significant achievements and contributions to fields such as sustainable materials, biomedical technologies, and cultural heritage.

This publication, *Research and Innovation 2020–2022*, celebrates the collective achievements of our research units, collaborative laboratories, and interface units. It highlights their pivotal role in fostering creativity and innovation through collaboration. The projects featured within these pages reflect UMinho's enduring commitment to addressing societal challenges, advancing science, and contributing to sustainable development.

As Rector, I am deeply proud of the accomplishments of our research community and grateful for the unwavering support of our partners and collaborators. Together, we are building a university that excels not only in academic and scientific endeavours but also in shaping a better, fairer world.

Rui Vieira de Castro
Rector of the University of Minho

THE UNIVERSITY OF MINHO

As stated in its strategic plan, the University of Minho (UMinho) sees itself in this context as an Institution that, based on its history and its present, projects itself as a comprehensive university, i.e., as a university that has a broad range of scientific and educational areas as its sphere of action, including social sciences and humanities, life and Earth sciences, health sciences, engineering and technology.

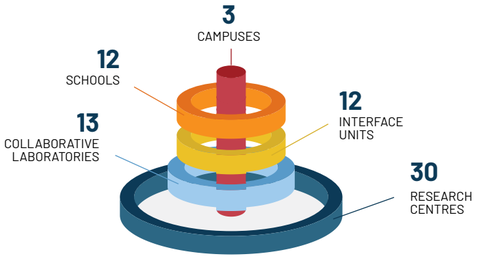
Furthermore, this plan reinforces the idea of an institution committed to research production and dissemination. It is clearly stated that we are a university that considers the production of scientific knowledge to be essential for the development of its mission, not only because this is the undeniable vocation of the university institution, but also because it is in new knowledge that education and interaction with society must be anchored.

But if research based on quality parameters is essential to be competitive in modern society, the idea of a university in close interaction with society, and, in particular, the region that gave it the name, is always a major concern in every step of its development.

It is assumed that we are building a university that, not calling into question what represents its historically constructed institutional identity, does not refuse to be open to its multiple surroundings, thus keeping an open dialogue with the economic, cultural and social actors, valuing, in the horizon of its action, the need to respond to the challenges that it faces.

Finally, there is a well-established idea to an internationalized university, i.e., a university that, without refusing its part in a specific regional and national context, assumes that the development of its action, and particularly its research ecosystem, in an international context is inherent to the fulfilment of its mission, facilitating a close articulation of its projects with major reference institutions.

FACTS AND FIGURES



334 NON-PERMANENT RESEARCHERS

900 FACULTY

460 RESEARCH FELLOWS

1.694 FACULTY AND RESEARCHERS

10.468 GRADUATE

8611 MASTERS

1803 PhD

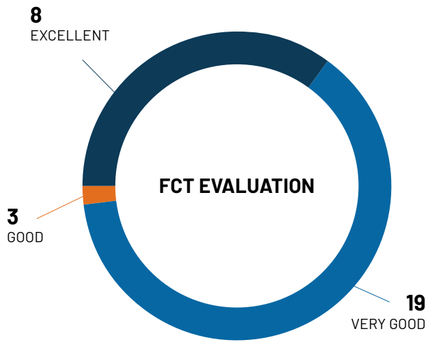
21.000 STUDENTS

ONGOING R&D PROJECTS	SCIENTIFIC PUBLICATIONS	PATENT FAMILIES
777	9.906	109
2022	2020 - 2022	2020 - 2022

A **RESEARCH** UNIVERSITY

RESEARCH UNITS

Results obtained from the evaluation exercise performed by the Portuguese Foundation for Science and Technology (2022)



UNIVERSITY OF MINHO
uminho.pt

GUALTAR CAMPUS

- **School of Arts and Humanities** ilch.uminho.pt
- **School of Medicine** med.uminho.pt
- **School of Economics and Management** eeg.uminho.pt
- **School of Nursing** ese.uminho.pt
- **Institute of Education** ie.uminho.pt
- **School of Psychology** psi.uminho.pt
- **School of Engineering** eng.uminho.pt
- **School of Sciences** ecum.uminho.pt
- **School of Law** direito.uminho.pt
- **Institute of Social Sciences** ics.uminho.pt

AZURÉM CAMPUS

- **School of Architecture** arquitetura.uminho.pt
- **School of Sciences** ecum.uminho.pt
- **School of Engineering** eng.uminho.pt
- **Institute of Social Sciences** ics.uminho.pt

AVEPARK

- **Research Institute on Biomaterials, Biodegradables and Biomimetics** i3bs.uminho.pt

UMinho was founded in 1973 and welcomed the first students in the academic year of 1975/76. Throughout this yet short history, the University has offered access to a wide range of academic opportunities and scientific breakthrough. Pursuing the excellence of its faculty members and its scientific research, UMinho has been strengthening its central role in the regional development and its importance for the country and the world, being recognized as partner in the European and global scene with growing importance.

UMinho considers R&D to be an essential dimension of its activity, which is why it has a clear, dynamic and ambitious scientific project, acting in the sense of: promoting the generation of knowledge as a relevant vector of differentiation of the educational offer and interaction with society and as a factor in affirming its national and international relevance; have robust research structures, creating conditions for the development of multidisciplinary projects and sharing of resources; practice a strong involvement of its researchers and research units in international networks, increasing the ability to attract postgraduate students; to have a frame of reference in the evaluation of their scientific activity, which accommodates the specificities of the different areas of knowledge.

Believing that the future of education and research lies in the Institutions ability to become more flexible, the University's organizational structure is flexible and conducive to innovation and interdisciplinary research on emerging topics. With very different sizes and focus, but aligned by the same standards of excellence, UMinho is composed of 12 Schools and Institutes, and 31 research units.

High-quality scientific performance is a measurable reality, reflected in the results achieved in the various lines of action, namely, 90% of research units classified as Very Good and Excellent/Exceptional), participation in 9 Associate Laboratories, the positioning of UMinho in important international rankings (ARWU, Leiden, Taiwan), as well as in the successful participation rates in international programs, in large collaborative projects with companies and, also, in its performance in national and regional funding programs.

Also noteworthy is the large increase in the number of scientific publications and patents submitted and granted, over the last years, the number of citations obtained by their publications, as well as the presence of UMinho researchers in the annual lists of "highly cited researchers".

UMINHO **RESEARCH FUNDING**

The strongly competitive, well-structured and implemented strategy for participation in important funding programs, such as H2020 (and more recently Horizon 2030) and NORTE 2020, has prioritized attracting international projects, with visible effects on the performance of the University, which allowed it to increasingly attract major European projects. Being one of the most successful Portuguese institutions in this context, it presents projects in various types of the Widening program of the European Commission (TWINNING and ERA-Chairs), large cross-border projects (POCTEP, SUDOE) and the Euro-Atlantic Space, as well as in several projects ERA-NET. UMinho has also stood out in the competitions of the European Research Council (ERC), having managed to obtain 3 "Advanced Grants", 4 "Consolidators Grants", 1 "Starting Grant" and 3 "Proof of Concept".

In Horizon 2020 programme, UMinho has been particularly competitive in diverse fields including nanotechnologies, (bio) materials and new production technologies, IT and communication technologies, biotechnology, and food & agriculture. Since 2017, UMinho has obtained 92 projects funded by the European Union in various subprograms (H2020, AMIF, JUST, REC, CREA, DIGITAL, SOCPL and Horizon) of "Widening participation", "Excellent Science", "Innovative Europe", "Industrial Leadership", "Science with and for Society", "Societal challenges", and "Global Challenges". UMinho is also successful in most types of grants and training networks (ITN) of the Marie Sklodowska-Curie actions (MSCA).

As a result of its strong commitment to creating and developing synergies and strategic partnerships, UMinho has been able to integrate consortia, either as a beneficiary or as coordinator of large international projects. With a policy aimed at reinforcing its position and affirmation within the framework of national research, UMinho participates in all international partnerships launched by the Portuguese government, with a large number of ongoing projects funded by FCT, by the National Innovation Agency, by La Caixa Foundation, EEA Grants, NIH, FLAD, among others. Under the Regional Program NORTE 2020, UMinho raised various funding for integrated programs and structured programs of IC&DT, requalification projects, reequipment and scientific infrastructures, enhancement and animation of cultural heritage and promotion and institutional capacity building.

Table 2 shows the distribution of the projects running in 2020-2022 between the different Organic Units of UMinho. Table 3 shows the total funding of research projects (global funding for the entire duration of the projects) within the different Organic Units of UMinho.

TABLE 2 | RESEARCH PROJECTS RUNNING IN 2020-2022*

* With the exception of Central Services, includes European cooperation projects (ERAMUS+) and physical and virtual infrastructures.

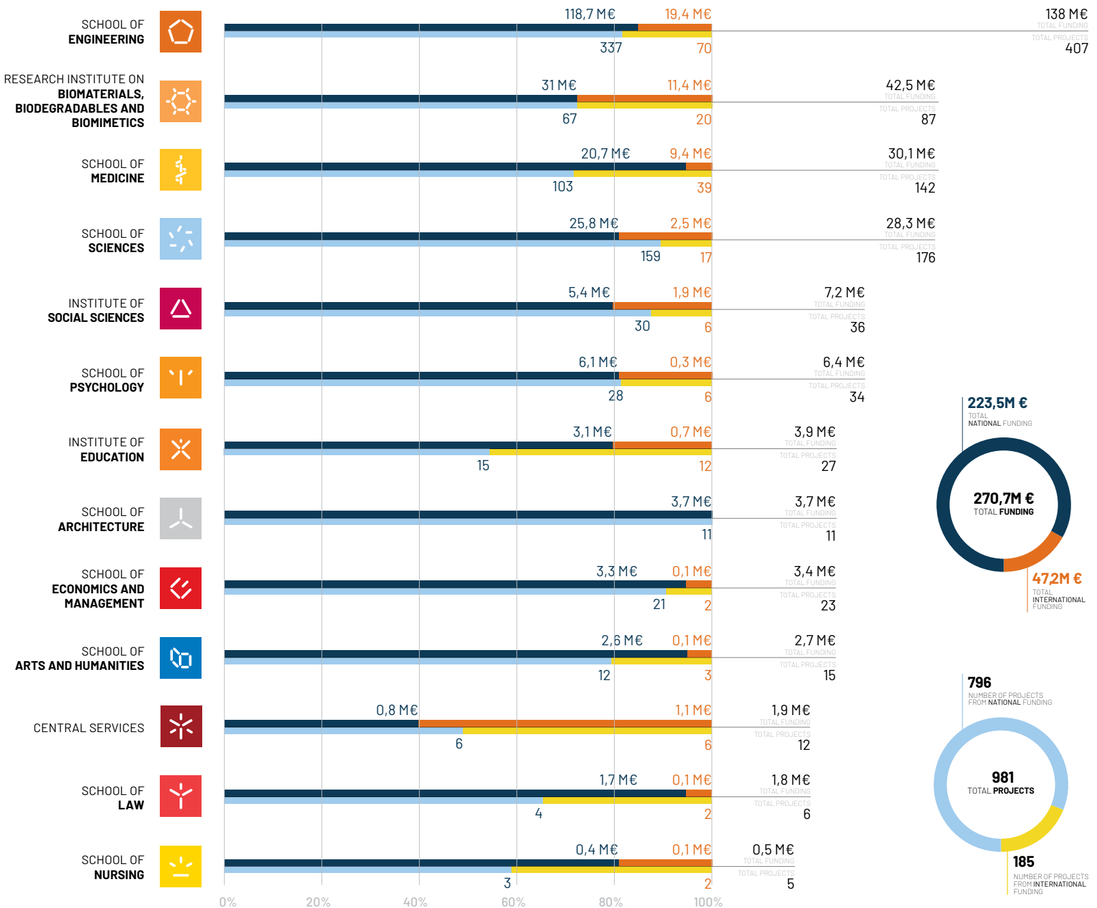
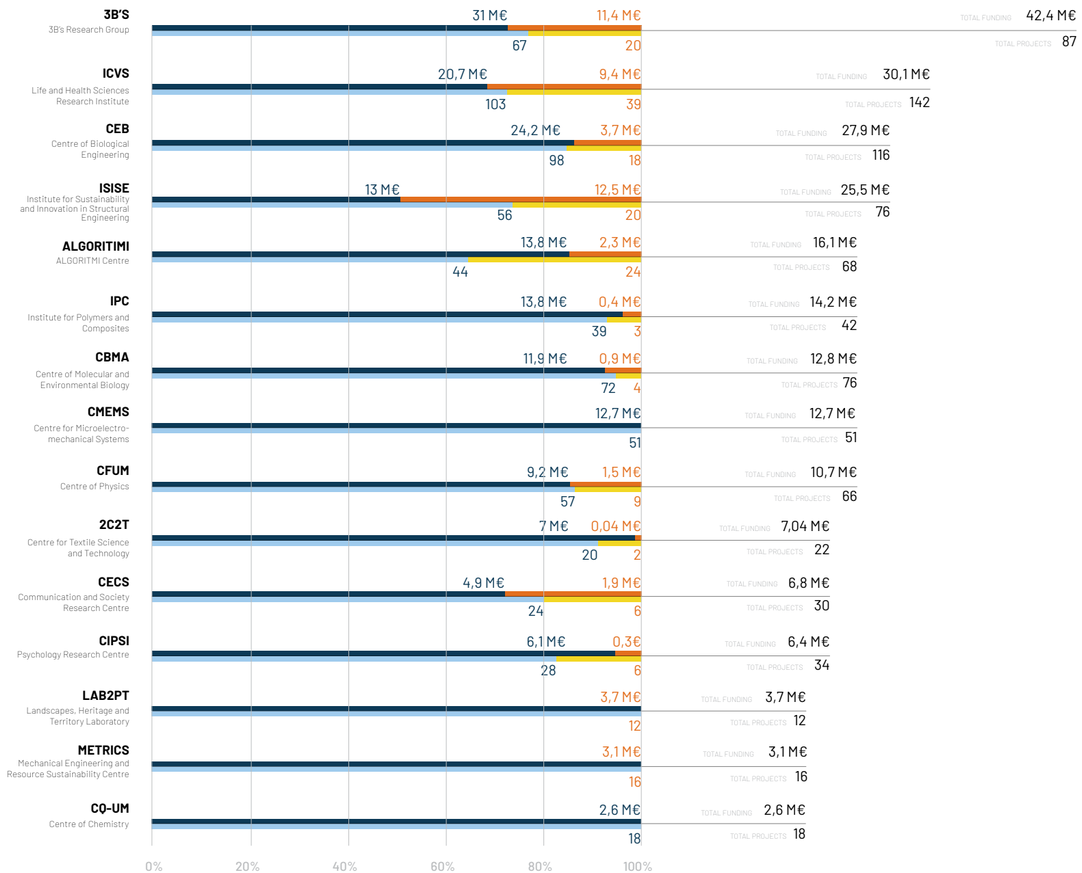
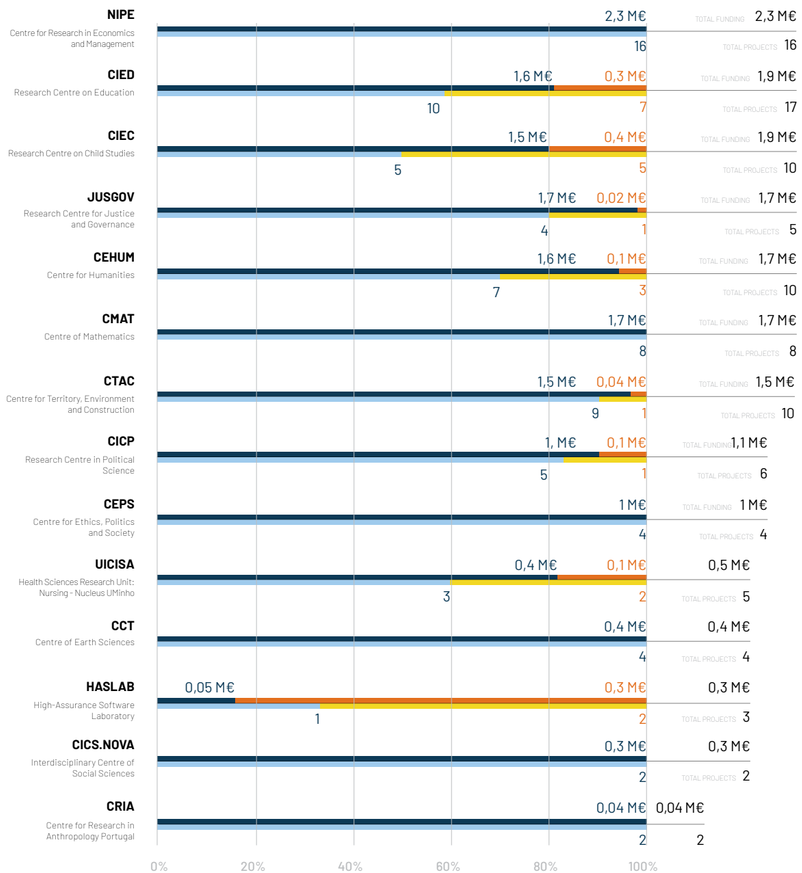


TABLE 3 | OVERAL FUNDING OF THE RESEARCH UNITS IN 2020-2022*

* With the exception of Central Services, includes European cooperation projects (ERAMUS+) and physical and virtual infrastructures.





RESEARCH UNITS

UMinho's research system comprises 31 R&D units, which are distributed across all organic units of the University. Currently, 90% of these research units are classified by the Foundation for Science and Technology (FCT) as Excellent and Very Good, which accommodate around 92% of the Institution's researchers.

Thirteen R&D units, belonging to 6 organic units, participate in 9 of the 40 FCT Associate Laboratories in the country, being the host institution in 3 of these institutions (ICBS/3Bs, LABBELS and LASI):

- ARISE - Advanced Production and Intelligent Systems, with the participation of ISISE;
- AR-NET - Aquatic Research Infrastructure Network, involving the CBMA;
- ICVS/3Bs, composed exclusively of two UMinho R&D units: ICVS and 3Bs group;
- IN2PAST - Associated Laboratory for Research and Innovation in Heritage, Arts, Sustainability and Territory, with the participation of Lab2PT and CRIA;
- INESC-TEC, through HASLab;
- LABBELS - Associated Laboratory in Biotechnology, Bioengineering and Electromechanical Systems, composed exclusively of 2 UMinho R&D units: CEB and CMEMS;
- LaPMET - Physics Laboratory for Emerging Materials and Technologies, with the participation of CFUM/UP;
- LASI - Associated Laboratory of Intelligent Systems, based at UMinho, involving the ALGORITMI Research Centre and the IPC;
- LIP - Instrumentation and Experimental Particle Physics Laboratory, through LIP – MINHO.

In the next pages, individual records of the 31 R&D units are presented.

BACK TO INDEX

RESEARCH UNITS PRESENTATION

These results demonstrate UMinho as a recognized higher education institution as far as its commitment to research is concerned. Research is a structuring axis of UMinho's activity, meaning that over 92% of UMinho's researchers work in Research Units ranked as Excellent or Very Good within diverse fields such as Exact Sciences, Natural Sciences, Engineering and Technology Sciences, Social Sciences and Arts and Humanities.

The figure shows the current organization of the 31 Research Units within the 12 Organic Units.

Color	Organic Unit & Research Units	Acronym	FCT Evaluation
	Institute of Education		
	Research Centre on Child Studies	CIEC	Very Good
	Research Centre on Education	CIEd	Very Good
	Institute of Social Sciences		
	Communication and Society Research Centre	CECS	Excellent
	Landscapes, Heritage and Territory Laboratory	Lab2PT*	Excellent
	Centre for Research in Anthropology Portugal	CRIA	Very Good
	Interdisciplinary Centre of Social Sciences	CICS.NOVA. UMinho	Good
	Research Institute on Biomaterials, Biodegradables and Biomimetics		
	3B's Research Group	3B's**	Very Good
	School of Architecture		
	Landscapes, Heritage and Territory Laboratory	Lab2PT*	Excellent
	School of Arts and Humanities		
	Centre for Ethics, Politics and Society	CEPS	Very Good
	Centre for Humanities	CEHUM	Very Good
	School of Economics and Management		
	Research Centre in Political Science	CICP	Excellent
	Centre for Research in Economics and Management	NIPE	Very Good
	School of Engineering		
	Centre of Biological Engineering	CEB	Excellent
	Centre for Microelectromechanical Systems	CMEMS	Excellent
	Institute for Sustainability and Innovation in Structural Engineering	ISISE	Excellent
	ALGORITMI Centre	ALGORITMI	Very Good
	Centre for Textile Science and Technology	2C2T	Very Good
	High-Assurance Software Laboratory	HASLab	Very Good
	Institute for Polymers and Composites	IPC	Very Good
	Mechanical Engineering and Resource Sustainability Centre	MEtRICs	Very Good
	Centre for Territory, Environment and Construction	CTAC	Good
	School of Law		
	Research Centre for Justice and Governance	JusGov	Very Good
	School of Medicine		
	Life and Health Sciences Research Institute	ICVS**	Very Good
	School of Nursing		
	Health Sciences Research Unit: Nursing - Nucleus UMinho**	UICISA:E NUMinho	Very Good
	School of Psychology		
	Psychology Research Centre	CIPsi	Excellent
	School of Sciences		
	Laboratory for Instrumentation and Experimental Particle Physics	LIP	Excellent
	Centre of Chemistry	CQ-UM	Good
	Centre of Earth Sciences	CCT	Very Good
	Centre of Mathematics	CMAT	Very Good
	Centre of Molecular and Environmental Biology	CBMA	Very Good
	Centre of Physics	CFUM	Very Good
	Centre of Plant Functional Biology	CBFP	Good

*Shared by the two Organic Units **Evaluated as a single Unit (Associated Laboratory).

INSTITUTE OF EDUCATION

University of Minho
Institute of Education
Research Centre on Child Studies

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 212
E: ciec@ie.uminho.pt
ciec-um.com

fct **Very Good**
47 PhD Researchers
1,9 M€ Total Funding

Research Centre on Child Studies was founded in 2011 with the aim of improving understanding of children's lives by adopting a multi and interdisciplinary approach. It also focuses on the views of adults with whom children interact on a daily basis (e.g.teachers, caring professionals) by investigating the conditions and contexts of their activity and their professional development.The Centre develops strategic actions that enhance the social and political relevance of research to promote policies, rights, cultures and practices aimed at improving the living conditions of children, particularly in contexts of social vulnerability.

CIEd Centro de Investigação em Educação
INSTITUTO DE EDUCAÇÃO · UMINHO

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 686/87/88
E: cied@ie.uminho.pt
ie.uminho.pt/CIEd

fct **Very Good**
57 PhD Researchers
1,9 M€ Total Funding

CIEd's mission is to conduct research that transforms the lives of individuals and communities, and ensures better learning for better futures. Looking at a variety of social settings, communities and stages of life, and considering the constraints and resources that impact on learning and active participation, it houses a plurality of approaches to educational phenomena, merging traditional areas with emergent educational topics, in a lifelong learning perspective.

INSTITUTE OF SOCIAL SCIENCES

CECS centro de estudos de comunicação e sociedade

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 695
E: cecs@ics.uminho.pt
cecs.uminho.pt

fct **Excellent**
71 PhD Researchers
6,8 M€ Total Funding

CECS is the leading research unit in **Communication Sciences in Portugal** (rating Excellent by FCT since 2008). Internationally renowned, the research team focuses on media and journalism, communication and cultural policies, media literacy, media arts, intercultural communication, strategic communication, science communication, social challenges (ageing, health…) and territorial planning. This group regards communication as pivotal to the development of sustainable societies and takes quality information as a priority for promising changes.

CICS.NOVA
INTERDISCIPLINARY CENTRE OF SOCIAL SCIENCES

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 752
E: cics@ics.uminho.pt
cics.uminho.pt

fct **Good**
29 PhD Researchers
0,3 M€ Total Funding

CICS.NOVA has been, since 2015, an **Interdisciplinary Social Sciences Research Unit**. It is headquartered at the Faculty of Social and Human Sciences of the Universidade Nova de Lisboa. It has branches at the University of Minho, the University of Azores, the University of Évora and the Polytechnic Institute of Leiria, which work cooperatively. The mission of CICS.NOVA.UMinho is to promote the production and transfer of knowledge alongside community intervention, recognizing the importance of the plurality of ideas and critical thinking and aiming to contribute to a more unified, fair and cohesive society.

INSTITUTE OF SOCIAL SCIENCES

CRIA
ISCTE-IUL NOVA FCSH UC UMinho
CENTRO EM REDE DE INVESTIGAÇÃO EM ANTROPOLOGIA

Campus de Gualtar
4710-057 Braga, Portugal

E: lmcunha@ics.uminho.pt

cria.org.pt

fct **Very Good**

7 PhD Researchers

0,04 M€ Total Funding

CRIA is an interuniversity R&D unit founded in 2007 and qualified as Very Good by FCT in 2007, 2013 and 2017. Since 2021, it is part of IN2PAST – Associate Laboratory for Research and Innovation in Heritage, Arts, Sustainability and Territory. Research in CRIA is structured in four major research groups which compose its scientific core and bring together researchers from the different institutional divisions. These groups build upon specific fields of research: Circulation and Place Making; Environment, Sustainability and Ethnography; Governance, Policies and Livelihoods and Practices and Politics of Culture.

INSTITUTE OF SOCIAL SCIENCES / SCHOOL OF ARCHITECTURE

lab2pt Laboratory of Landscapes, Heritage and Territory

Campus de Gualtar / Campus de Azurém
4710-057 Braga / 4800-058 Guimarães

T: (+351) 253 601 756 / 253 510 526

E: sec@lab2pt.uminho.pt

lab2pt.net

fct **Excellent**

55 PhD Researchers

3,7 M€ Total Funding

Lab2PT is a R&D unit focused on **Social Sciences, Arts and Humanities**, evaluated as Excellent by FCT. Three interdisciplinary research groups - Landscapes and Societies (LandS), Design and Technology (DeTech), Space and Representation (SpaceR) - gather different scientific areas - Archaeology, Architecture/Urbanism, Design, Geography, Geology, History, Visual Arts - and share interest in the study of the territory, its landscapes and heritage, understood as the material, spatial and cultural expressions of societies over time.

RESEARCH INSTITUTE ON BIOMATERIALS, BIODEGRADABLES AND BIOMIMETICS

3B's

AVEPARK - Parque de Ciência e Tecnologia,
Zona Industrial da Gandra
4805-017 Barco Guimarães, Portugal

T: (+351) 253 510 900

E: info@i3bs.uminho.pt

3bs.uminho.pt

fct **Very Good**

86 PhD Researchers

42,4 M€ Total Funding

The activity of the **3B's Research Group (Biomaterials, Biodegradables and Biomimetics)** is focused on the development of new biodegradable or biomimetic biomaterials, as well as on human stem cell sourcing and differentiation, towards new solutions that may lead to relevant patient-centred clinical applications. The 3B's is among the leading groups in Tissue Engineering and Regenerative Medicine worldwide. It has established long-term collaborative partnerships with major research groups in Europe, Asia, and North America, providing opportunities for student and postdoctoral exchange programs and joint research projects.

SCHOOL OF PSYCHOLOGY

CIPsi
Centro de Investigação em Psicologia

Campus de Gualtar
4710-057 Braga, Portugal

T: (+351) 253 604 223

E: cipsi@psi.uminho.pt

cipsi.uminho.pt

fct **Excellent**

46 PhD Researchers

6,4 M€ Total Funding

CIPsi is the Research Unit of the School of Psychology. Founded in 2003, it is one of the most productive research units of UMinho and has been consistently evaluated as "Excellent" by FCT. Research at CIPsi is organized in Research Labs and Groups where faculty professors and researchers and students conduct high quality research. The scientific expertise at CIPsi reflects the breadth of Psychological Science, ranging from experimental psychology and cognitive neuroscience to developmental, health, clinical, educational and forensic psychology.

SCHOOL OF ARTS AND HUMANITIES

CEHUM

Centro de Estudos Humanísticos da Universidade do Minho

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 60 4184
E: dircehum@ilch.uminho.pt
ceh@ilch.uminho.pt
cehum.elach.uminho.pt

- fct **Very Good**
- **55 PhD** Researchers
- **1,7 M€** Total Funding

The **Centre for Humanities** is the oldest Research Unit of the School of Letters, Arts and Human Sciences of UMinho. It was founded in 1994 as a follow-up Research Unit to the former Centre for Portuguese Studies, founded in 1980. Currently, CEHUM integrates research in the fields of Literature, Linguistics, Culture, Arts (Music and Theatre) and Philosophy. 78 senior researchers and a significant number of junior researchers develop their research activities within 11 consistent mono- and multidisciplinary research teams in a wide variety of areas.

CEPS

Centro de Ética, Política e Sociedade
Centre for Ethics, Politics and Society

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 670
E: ceps@ilch.uminho.pt
ceps.elach.uminho.pt

- fct **Very Good**
- **14 PhD** Researchers
- **1 M€** Total Funding

CEPS is the main research centre in Portugal specializing in Political Philosophy and Applied Ethics. CEPS's research focuses on studying social institutions and practices, with particular attention to issues of political legitimacy, constitutional democracy, social justice, and public policy. Its mission is to provide high quality research and knowledge, and consolidate its role as a reference point in Europe through R&D projects and dissemination. In 2019 FCT evaluation, CEPS was graded "Very Good", with the highest per capita funding at UMinho.

SCHOOL OF ECONOMICS AND MANAGEMENT

cicp Research Center in Political Science

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 947
E: cicp@eeg.uminho.pt
cicp.eeg.uminho.pt

- fct **Excellent**
- **34 PhD** Researchers
- **1,1 M€** Total Funding

The **Research Centre in Political Science (CICP)** is a R&D Unit with the University of Minho as a proponent institution (School of Economics and Management-EEG) and the University of Évora as a participating institution, ranking at the top of FCT with the Excellent grade. Its success is based on fine articulation between the four different research groups: (1) Public Policy and Management; (2) Governance and Democracy; (3) States, International Organizations and Challenges in Contemporary International Relations; and (4) Society, Europe and Global Dynamics.

NIPE

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 504 518
E: nipe@eeg.uminho.pt
nipe.eeg.uminho.pt

- fct **Very Good**
- **33 PhD** Researchers
- **2,3 M€** Total Funding

NIPE is a research sub-unit of the School of Economics and Management. It integrates 39 full members organised along five research lines in Economics and Management. Ranked "Very Good" by FCT, it is an internationally oriented research centre with high publication performance. It organises a very successful Summer School attracting researchers globally. NIPE provides consulting services that contribute to a better and more scientifically based foundation of public and private decision-making, including in international organizations.

SCHOOL OF ENGINEERING

CENTRE OF BIOLOGICAL ENGINEERING

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 407
E: ceb@ceb.uminho.pt
ceb.uminho.pt

Excellent
118 PhD Researchers
27,9 M€ Total Funding

The **Center of Biological Engineering (CEB)** combines key expertise in fundamental science with engineering sciences, covering the molecular, cellular and process scales, to obtain value-added products or processes. With the motto "Linking life and technology to shape the future", CEB develops its activity in 4 interdisciplinary thematic areas: Industrial, Food, Environmental and Health Biotechnology. CEB has strong ties with industrial partners, leading many projects with industrial consortia and launching more than 14 spin-offs.

isise

Campus de Azurém
4800-058 Guimarães
T: (+351) 253 510 215
E: isise@civil.uminho.pt
isise.net

Excellent
41 PhD Researchers
25,5 M€ Total Funding

ISISE involves the Civil Engineering Departments from Universities of Minho and Coimbra. The Unit is based on strong leaderships, with a proven record of internationalization, contracted research, cooperation with industry, top-level dissemination in the international arena, addressing the societal challenges of safety, industry 4.0, blue economy, energy, cultural heritage, cities of the future and the effects of climate change, and to provide solutions for those problems, based on research and innovation strategies for smart specialisation.

SCHOOL OF ENGINEERING

2C2T CENTRO DE CIÊNCIA E TECNOLOGIA TÊXTIL

Campus de Azurém
4800-058 Guimarães, Portugal
T: (+351) 253 510 289
E: mjose@det.uminho.pt
2c2t.uminho.pt

Very Good
30 PhD Researchers
7,04 M€ Total Funding

The **Centre for Textile Science and Technology (2C2T)** was established in 1978, working in the area of Fibrous Materials Engineering and Design. The vision and mission of 2C2T is to help society to tackle the most pressing problems and provide the knowledge for maintaining the textile value chain for global competition through research innovation, excellent education and involvement with industrial partners. Three key research themes were identified: Nano and multifunctional materials; Sustainable and advanced processes and technologies; Design and product engineering. In the 2019 FCT evaluation, 2C2T was classified as Very Good.

CENTROALGORITMI

Campus de Azurém
4800-058 Guimarães, Portugal
T: (+351) 253 510 180
E: secretaria@algoritmi.uminho.pt
algoritmi.uminho.pt

Very Good
101 PhD Researchers
16,1 M€ Total Funding

ALGORITMI is a research unit that develops R&D activity into six major fields: (1) Computer Science and Technology (CST); (2) Information Systems and Technology (IST); (3) Computer Communications and Pervasive Media (CCPM); (4) Industrial Electronics (IE); (5) Industrial Engineering and Management (IEM); (6) Systems Engineering and Operational Research (SEOR). It is a multi-disciplinary research unit, with a heterogeneous international activity. ALGORITMI is the coordinating unit of the Associate Laboratory of Intelligent Systems (LASI).

SCHOOL OF ENGINEERING

Campus de Azurém
4800-058 Guimarães, Portugal
T: (+351) 253 510 380
E: diretor@cmems.uminho.pt
dei-s2.dei.uminho.pt/mems

Very Good
43 PhD Researchers
12,7 M€ Total Funding

CMEMS is a research center classified as excellent by FCT, and member of LABBELS Associated Lab. CMEMS has a multidisciplinary research team, from engineering, physics, medical, and from academic and industrial fields. The focus is on computational modelling, development and micro/nano fabrication of devices and components for two major domains: industrial applications (automotive, aerospace, energy, textile) and biomedical applications (neuroengineering, microendoscopy, surgical microinstruments, smart prostheses, rehabilitation, organ-on-chip).

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 430 / 40
E: haslab-secr@inesctec.pt
inesctec.pt/haslab

Very Good
28 PhD Researchers
0,3 M€ Total Funding

The **High-Assurance Software Laboratory (HASLab)** was founded in 2011 and is a research centre of the Institute for Systems and Computer Engineering, Technology and Science. HASLab's mission is focused on the design and implementation of high-assurance software that is correct by design and resilient to environment faults and malicious attacks. HASLab accomplishes its mission by anchoring its research on a rigorous approach to three areas of computer science: Software Engineering, Distributed Systems and Cryptography and Information Security.

SCHOOL OF ENGINEERING

Campus de Azurém
4800-058 Guimarães
T: (+351) 253 510 320
E: ipc@dep.uminho.pt
ipc.uminho.pt

Very Good
22 PhD Researchers
14,2 M€ Total Funding

IPC is a Research Unit developing R&D activities in Polymer & Composite Science and Engineering, valued as Very Good by the National Foundation FCT. Providing advancements on the science, technology, design and sustainable development, it promotes added value to the industry and the socio-economic growth, wellbeing and society awareness on the polymeric based materials role/importance. Developing leading edge research and breakthrough concepts, IPC converts R&D into applications by adopting a multidisciplinary approach aggregating the scientific knowledge of the polymer/composite chemistry, physics, engineering and technology.

Campus de Azurém
4800-058 Guimarães
T: (+351) 253 510 236
E: jt@dem.uminho.pt
metrics.com.pt

Very Good
16 PhD Researchers
3,1 M€ Total Funding

The **MEtRICs** mission is to create scientific knowledge and provide technical solutions for a cleaner, safer and sustainable world. The center is organized in four research lines: Energy Conversion and Environment; Advanced Engineering Systems; Structures and Vehicle Engineering; Food Technology and Wellbeing. Up to date laboratory facilities, secure of competitive funding and partnerships with leading research institutions are the key ingredients that enable MEtRICs to be at the forefront of research in sustainable technologies.

SCHOOL OF ENGINEERING

CTAC
Centre of Territory Environment and Construction

Campus de Azurém
4800-058 Guimarães, Portugal
T: (+351) 253 510 200 / 253 517 206
E: geral@ctac.uminho.pt
ctac.uminho.pt

Good
24 PhD Researchers
1,5 M€ Total Funding

The **Center of Territory, Environment and Construction** objective is produce knowledge to support its vision of Sustainable and Resilient Territories, developing innovative materials and technologies and systems in the fields of built environment, water and wastewater and for territory development, contributing to climate-change-resilient buildings and infrastructures, supporting a steady improvement in the quality of life. To fulfil this objective, CTAC combines R&D activities with advanced training, technology transfer, consulting and services.

SCHOOL OF LAW

JusGov
RESEARCH CENTRE FOR JUSTICE AND GOVERNANCE

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 841
E: jusgov@direito.uminho.pt
jusgov.uminho.pt

Very Good
42 PhD Researchers
1,7 M€ Total Funding

The **Research Centre for Justice and Governance (JusGov)** – classified as Very Good by FCT – aims to provide advanced research and dissemination of scholarly work in Law, offering relevant national and international ideas to the academic community, policymakers, industries and the public at large.

With its interdisciplinary team and approach, based on six research groups acting in the fields of EU law (CEDU), human rights (DH), technology (E.Tec), globalisation and democracy (Glob), criminal law and criminology (JusCrim) and judicial decision-making (JusLab), it seeks to explore how Law is approaching contemporary societal challenges.

SCHOOL OF MEDICINE

ICVS
Life and Health Sciences Research Institute
Instituto de Investigação em Ciências da Vida e Saúde

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 967
E: icvs.sec@med.uminho.pt
icvs.uminho.pt

Very Good
111 PhD Researchers
30,1 M€ Total Funding

The **ICVS** is the R&D Unit of the School of Medicine, University of Minho, strategically positioned within a fast-growing cluster of Biomedical Science, Technology and Healthcare organizations. Researchers with complementary academic backgrounds work jointly at the ICVS, covering the complete R&D pipeline, from in vitro research to animal models and pre-clinical validation, to clinical trials, and finally to reach the market as innovative medical solutions. The ICVS aspires to create scientific knowledge that improves Health outcomes.

SCHOOL OF NURSING

UICISA:E

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 300
E: amacedo@ese.uminho.pt
ese.uminho.pt/UICISA-E

Very Good
14 PhD Researchers
0,5 M€ Total Funding

The **UMinho Nucleus of the Health Sciences Research Unit: Nursing (UICISA: E)** is hosted by the School of Nursing of UMinho (ESE-UM). In the last National Science Foundation (FCT) evaluation, UICISA: E was awarded a Very Good grade. Nursing Research Center (CIEnf) is a sub-unit of research that expands all the conditions to be funded by FCT. They intend to respond to complex problems in a sustainable and socially responsible way, focusing on health promotion, disease prevention and care for people who are sick, disabled and in the end-of-life stage.

SCHOOL OF SCIENCES

LIP

Campus de Gualtar
CP3, 3.02
4710-057 Braga, Portugal
T: (+351) 253 604 320
E: geral-minho@lip.pt
lip.pt

fct **Excellent**
4 PhD Researchers
- Total Funding

LIP is the reference laboratory for experimental particle physics and associated technologies in Portugal. LIP is committed to R&D in three main areas: experimental particle and astroparticle physics; development of new instruments and methods; scientific computing. At the centre of our mission is also advanced training, knowledge transfer and the engagement of society with science. The node of LIP at UMinho was created in 2010 and today it has about 30 members, including researchers, students and technicians.

cbma centre of molecular and environmental biology

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 521
E: cbma_sec@bio.uminho.pt
cbma.uminho.pt

fct **Very Good**
58 PhD Researchers
12,8 M€ Total Funding

The strategy of the **Centre of Molecular and Environmental Biology (CBMA)** is based on three pillars: RESEARCH, ADVANCED TRAINING and SOCIETY, which are rooted in our mission to address the 2030 UN Agenda for Sustainable Development. The main goal is to protect natural life and the environment, while promoting human well-being and preserving the natural legacy for future generations. CBMA researchers use hypothesis-driven and high-throughput aproaches to develop 1) environmental monitoring and management tools to protect biodiversity and ecosystem services, and 2) bio-based products and processes to minimise environmental impacts.

SCHOOL OF SCIENCES

CF-UM-UP

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 060
E: centrodefisica@fisica.uminho.pt
cf-um-up.pt

fct **Very Good**
69 PhD Researchers
10,7 M€ Total Funding

The **Physics Centre of UMinho (CFUM)** is a Research Unit with a multi-disciplinary scientific activity in the fields of Pure and Applied Physics and adjacent areas. The research is focused on Condensed Matter and Quantum Physics, (Nano)materials Fabrication and Applications, Optics, Advanced Computation, Biophysics and Bionanosystems, Optometry and Vision Sciences.CFUM is part of the Physics Centre of Minho and Porto Universities (CF-UM-UP) (awarded with Very Good in the 2019 evaluation by FCT) and of the Associate Laboratory LaPMET (since 2021).

CMAT Center of Mathematics

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 367
E: sec@cmat.uminho.pt
w3.cmat.uminho.pt

fct **Very Good**
41 PhD Researchers
1,7 M€ Total Funding

CMAT is a Research Unit of the School of Sciences of UMinho with a pole at the University of Trás-os-Montes e Alto Douro (UTAD), classified with Very Good in the last evaluation of R&D Units by FCT. The Partnership with UTAD started in 2015 and is unique in the context of Portuguese Mathematics Centres. CMAT has 69 PhD members and 23 PhD students, structured in 4 research groups: Algebra, Logic and Computation; Analysis and Applications; Geometry, Topology and Applications; Statistics, Applied Probability and Operational Research.

SCHOOL OF SCIENCES

ICT
Instituto de Ciências da Terra
Institute of Earth Sciences

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 604 306
E: cct@dct.uminho.pt
icterra.pt

fct **Very Good**
12 PhD Researchers
0,4 M€ Total Funding

The **CCT** develops research on topics such as:

- "Geoconservation" with emphasis on geological heritage in UNESCO Global Geoparks and protected areas;
- "Environmental Monitoring and Remediation" focusing on water, sediments, soils, ecosystems and vulnerable coastal zones considered from the perspectives of environmental monitoring and remediation;
- "Lithosphere Dynamics" including structural mapping, stratigraphy, geochemistry and geochronology in order to better characterise the complex structure of the outermost layer of the planet.

CBFP
Centro de Biologia Funcional das Plantas
Escola de Ciências · Universidade do Minho

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 544
E: tlneto@bio.uminho.pt
ecum.uminho.pt

fct **Good**
- PhD Researchers
- Total Funding

The **Centre of Plant Functional Biology (CBFP)** is a permanent organic Research Unit of the School of Sciences of UMinho, located in Gualtar campus (Braga). The staff of CBFP beneficiates from the Pluriannual Financial Support Programme (FCT) of the Research Unit BioISI - Biosystems & Integrative Sciences Institute.

Specific research interests include: i) Developmental Plant Biology; ii) Plant Stress Biology; iii) Plant-microbe interactions. These aims contribute for the development of a coherent research program in the area of plant biology and biotechnology.

SCHOOL OF SCIENCES

CENTRO DE **QUÍMICA**
UNIVERSIDADE DO MINHO

Campus de Gualtar
4710-057 Braga, Portugal
T: (+351) 253 601 370
E: cqum@quimica.uminho.pt
cq.uminho.pt

fct **Good**
31 PhD Researchers
2,6 M€ Total Funding

The **Centre of Chemistry** of UMinho creates knowledge in the forefront of basic and applied chemistry with value to society and oriented to participation in R&D projects in collaboration with external research Centres and industry, in boundary areas of chemistry with biology, medicine, physics, materials science and nanotechnology.

The 29 integrated researchers and 50 collaborators are organized into three lines of research: Applied Biomolecular Chemistry, Heterocycles for Societal Challenges and Sustainable Chemistry: New Methods and Materials.

UMinho recognizes annually the merit of a Professor/ Researcher who has distinguished him(her)self for his(hers) research activity, through a prize awarded on the occasion of the anniversary ceremony. This is A Prize that is aimed to reward scientists with an intense career, recognizes the global action of a Researcher, which has contributed decisively to the University's name aggrandizement. A Researcher with a vision that may encourage others to sick for their best and to continue aspiring excellency in their research field.

One could argue that the need for recognition is just as strong as belonging, but there is a strong belief right from the begging that they complement each other. The excellence in Research at UMinho is, first of all, an example for young researchers, but also a recognition of the University to the effort, dedication and scientific value of its Researchers.

Since the first laureate in 2009, Nuno Peres from the School of Sciences, the list of winners includes Researchers from several schools, to whom UMlinho recognized excellence in their scientific careers.

2009 Nuno Peres (School of Sciences)

2010 Rui L. Reis (School of Engineering at the time, nowadays the I3Bs Institute)

2011 Carlos Mendes de Sousa (Institute of Arts and Humanities)

2012 Odd Rune Straume (School of Economics and Management)

2013 Nuno Sousa (School of Medicine)

2014 Armando Machado (School of Psychology)

2015 José António Teixeira (School of Engineering)

2016 Moisés de Lemos Martins (Institute of Social Sciences)

2017 Paulo Lourenço (School of Engineering)

2018 José González Méijome (School of Sciences)

2019 Leandro Almeida (Institute of Education)

2020 Patrícia Jerónimo (School of Law)

2021 António Vicente (School of Engineering)

2022 Helena Machado (Institute of Social Sciences) and Fernando Alexandre (School of Economy & Management)

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PATRÍCIA JERÓNIMO

UNIVERSITY OF MINHO
SCIENTIFIC
MERIT AWARDS

2020

Patrícia Jerónimo was awarded the UMinho Prize for Scientific Merit in 2020 for her research in the field of human rights. Her research interests cover a variety of human rights-related topics such as citizenship, migration, multiculturalism, minority rights, religious freedom, equality and non-discrimination. She is also interested in legal pluralism and comparative legal studies. In recent years, her main research focus has been on the ways domestic courts in Europe (Portugal, in particular) deal with cultural diversity.

She graduated in law from the University of Coimbra in 1995 and obtained her doctorate in law from the European University Institute in Florence in 2008 with a thesis on the interplay of identity, citizenship and otherness in Portugal's nationality and immigration laws and policies. She has been a faculty member of the Law School of UMinho since 1995, where she is currently Associate Professor with tenure. At the Law School, she has held, among others, the positions of Director of the Research Centre for Justice and Governance (JusGov), from 2018 until 2021, Director of Studies of the Master Programme in Human Rights, from 2014 until 2021, and Director of the Legal Theory Department, from 2022 until present. At UMinho, she was elected member of the General Council for the period 2017-2021, and is currently a member of the Ethics Committee for Research in the Social Sciences and Humanities. She is visiting fellow at the European University Institute, where she is regional coordinator for Portuguese-speaking countries at the GLOBALCIT Citizenship Observatory of the Robert Schuman Centre for Advanced Studies.

A lawyer by training, she has ample experience with interdisciplinary research projects at the intersection of law and anthropology, sociology, and political science. She is Principal Investigator of the project InclusiveCourts (Equality and cultural difference in the practice of Portuguese courts: Challenges and opportunities for an inclusive society), which was granted FCT funding between 2018 and 2022, and which brings together a multidisciplinary team of lawyers from different disciplines, anthropologists, sociologists, psychologists and linguists. She is country-expert for Portugal in the international interdisciplinary project CUREDI (Cultural and Religious Diversity under State Law across Europe), led by Marie-Claire Foblets at the Max Planck Institute for Social Anthropology in Halle, Germany. She has been frequent contributor to EU funded projects on citizenship-related topics, such as language naturalisation requirements, consular assistance, citizenship rights and immigrant integration policies. In 2022, she was invited by the UK House of Lords Justice and Home Affairs Committee to submit her opinion on the Life in the UK Test, by drawing on Portugal's experience in regulating access to Portuguese nationality, and by the Australian Government to issue an opinion on the nationality laws of Portugal and Timor-Leste.

ANTÓNIO VICENTE

UNIVERSITY OF MINHO
SCIENTIFIC
MERIT AWARDS
2021

António Augusto Martins de Oliveira Soares Vicente was born in Porto, 51 years ago. He graduated in Food Engineering from the School of Biotechnology of the Portuguese Catholic University in 1994, received his PhD in 1998 and did his Habilitation in 2010 in Chemical and Biological Engineering from the University of Minho. Today he is Professor in the Department of Biological Engineering, which he directed prior to his current appointments as vice-Dean of the School of Engineering and Director of the Doctoral College of that University.

António Vicente is a Senior Member and Specialist in Food Engineering by the Portuguese Engineers Association, where he is currently deputy coordinator of the Specialization Committee in Food Engineering. He is also a member of the International Society of Food Engineering (USA).

As a researcher, he is part of the Center for Biological Engineering (and the recently approved LABBELS Associate Laboratory) and has dedicated his work to the development of micro and nanotechnological systems for application in the Agro-food sector, to the evaluation of their behavior in dynamic in vitro digestion systems, to the study of the influence of the application of electric fields in cells and biomolecules to change their functionality and the development of new bioreactors and their application in bioprocesses.

He has published more than 350 articles in international ISI WoS journals and more than 30 chapters in books of international circulation. He is the author of more than 400 papers presented in congresses and 5 patents and editor of 5 scientific books. He has more than 13,000 citations and about 120,000 readings at the Research Gate, yielding an h-index of 74. He is member of the Editorial Advisory Board of the Journal of Agricultural and Food Chemistry. He has been a member of the Jury of the National Agricultural Prize since its institution in 2012. He won the Food and Nutrition Awards in 2015 and 2017 in the Research and Development category. In the last five years (2018, 2019, 2020, 2021, and 2022) he was distinguished as Highly Cited Researcher by Clarivate Analytics and in the last three years (2020, 2021 e 2022) he has integrated the list of the top 2 % most cited researchers according to the list published by Stanford University. In 2021 he was awarded the Scientific Merit Award from the University of Minho and the Diploma of Scientific Merit from the School of Engineering of the University of Minho.

FERNANDO ALEXANDRE

UNIVERSITY OF MINHO
SCIENTIFIC
MERIT AWARDS
2022

Fernando Alexandre is an Associate Professor with Aggregation at the School of Economics and Management at the University of Minho. He received his Bachelor's and Master's degrees in Economics from the University of Coimbra and completed his PhD in Economics at the University of London – Birkbeck College in 2003, with a thesis on monetary policy and financial markets.

Currently, he serves as the vice-president of the Economic and Social Council and is a member of the General Council of the Polytechnic Institute of Leiria. He is also a member of the Independent Technical Commission for the Strategic Environmental Assessment of the increase in airport capacity in the Lisbon region, where he is the coordinator of the economic-financial area.

Over the years, he has held various leadership roles, including President, Vice-President and President of the Pedagogical Council of EEG/UMinho, Director of the Department of Economics at UMinho, Pro-Rector for the Enhancement of Knowledge at the University of Minho, President of the University-Industry Association, TecMinho and President of the Board of SBS StartUpBraga – Investimentos em StartUps, S.A. From 2013 to 2015, he served as Secretary of State to the Minister of Internal Affairs in the 19th Constitutional Government.

His research interests are macroeconomics and economic policy, with a particular focus on the study of the Portuguese economy. His recent research has centered around the savings of households, the impact of European Union grants on the performance of firms, and the determinants of the productivity growth of the Portuguese economy.

He has coordinated seven projects on the Portuguese economy involving more than 10 Portuguese and foreign universities and dozens of researchers, resulting in 7 books and several papers published in international journals.

Fernando Alexandre is widely recognized for his expertise in the Portuguese economy and has been consulted by the Portuguese Government, the President of the Republic, and the European Commission. He has also participated in Commissions of the Portuguese Parliament, groups of experts from public agencies such as the Agency for Development and Cohesion and the National Agency for Innovation, and regulatory and supervisory bodies such as the Securities Market Commission and the Insurance and Pension Funds Authority. As an External Expert of the European Commission, he carried out an evaluation of European funds for Portuguese companies in the period 2007-2018.

Between 2018 and 2022, he was a scientific consultant for the area of Economics studies at the Francisco Manuel dos Santos Foundation, where he was at the origin of the creation of the "Economic Cycles Dating Committee for the Portuguese economy", coordinated the study "Do Made in ao Created in – a new paradigm for the Portuguese economy," and was the scientific coordinator of five documentaries in a partnership with RTP.

Fernando Alexandre is also a regular commentator on the Portuguese and European economies and has a weekly column on the online newspaper Observador.

In recognition of his contributions to the study of the Portuguese economy, he received the Scientific Merit Award from the University of Minho in 2022.

HELENA MACHADO

UNIVERSITY OF MINHO
SCIENTIFIC
MERIT AWARDS
2022

Helena Machado (she/her) is Full Professor of Sociology at the Institute for Social Sciences (ICS), University of Minho (Braga). Currently, she is the Chair of the Scientific Council for the Arts, and Humanities and Social Sciences of the Foundation for Science and Technology in Portugal (Ministry of Science, Technology and Higher Education); and previously Helena has served as Dean of ICS (2019-2022).

A sociologist by formation, Helena values interdisciplinary research, at the intersection of social studies of science and technology, surveillance studies, critical algorithm studies, and pragmatic ethics. She is an expert on social and ethical implications of cutting-edge genetic and genomic technologies for human identification. In that capacity, Helena is permanent member of the Forensic Databases Advisory Board, an interdisciplinary international ethics board issuing recommendations about privacy and security in human genetic databases to the members of the International Society of Forensic Genetics.

She was the Principal Investigator of the Exchange Project (Consolidator Grant by the European Research Council – 2015/2021) that explored political processes of reframing complex collective problems as problems of security (e.g. criminality and terrorism) and the role of genetic state surveillance in the fabric of suspicion. One of her main lines of work concerns regimes of expertise and performativity of ethics by scientists and police agencies when they deal with controversies about genetics and challenges to privacy, human rights, and democracy.

Other topic that made her busy was scientific and technological advances to capture the very essence of the body (genes) and turn it into information. Helena inquired how genetic data was used for state surveillance and control of suspect populations. At this respect, one point of the research was the ways national states enact borders through the flows of DNA data and other biometric information shared through ICT infrastructures

In the wake of the COVID-19 pandemic, Helena Machado was involved in interdisciplinary international networks that sharpened her understanding of the politics and ethics embedded in scientific and technological solutions to complex collective problems. In this context, she led the Portuguese arm of the international Consortium “Solidarity in times of a pandemic” (SolPan).

Today, Helena is captivated by artificial intelligence’s applications to the analysis of the human face. Her past research on forensic geneticists’ work on prediction of human visible characteristics provided some insights and inspiration for this new research strand. Now, Helena wants to dig deeper into the politics and power processes related to Artificial Intelligence (AI) developments of facial recognition technologies. On particular, she takes interest in exploring the imaginaries about facial recognition enacted by developers of AI, artistic and cultural counter-practices, stigmatized populations, and data activists.

EUROPEAN RESEARCH COUNCIL GRANTS

Right from its creation, the European Research Council (ERC) constitutes a significant change in the European policies for science, corresponding at the same time to the fulfilment of an ambition that has long been cherished by the scientific community. The ERC is oriented towards the development of excellent research and a leading scientific community in the European Research Area. This is clearly stated in its mission declaration, where the ERC is assumed to be a fundamental tool to "encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields, based on scientific excellence".

In basic terms, ERC has its main focus on strengthening and shaping the European research system, by setting up a high-quality peer-review procedure, the establishment of international benchmarks of success, and the provision of up-to-date information on who is succeeding and why. In this respect, the ERC grants stand out, asking researchers to reach their highest competitive and innovation capacity levels. No more than scientific excellence is expected, which is also the main criterion for selection. The aim is to recognize the best ideas, the think big approach.

There are three main schemes in the ERC funding, varying from the ERC Starting Grants, aimed for researchers with two to seven years' experience after PhD, to ERC Consolidator Grants that are focused on researchers with seven to twelve years experience after PhD and the ERC Advanced Grants, pointed to researchers with a track-record of significant research achievements in the last ten years. Additionally, there are two other sources of funding, which vary from the ERC Proof of concept, which is focused on those researchers that sick for the societal potential or commercialization of their previous funded ERC grant, and the ERC Synergy Grants, aimed for two to four researchers working together and bringing different skills and resources to tackle ambitious research problems.

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ALEXANDRA P. MARQUES

RESEARCHER

ECM_INK: CELLS-SELF EXTRACELLULAR MATRICES-BASED BIOINKS TO CREATE ACCURATE 3D DISEASED SKIN TISSUE MODELS

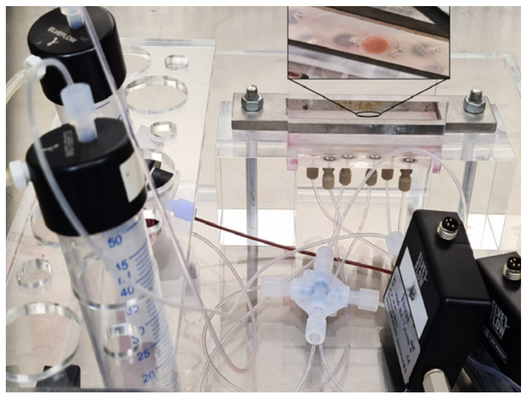
PROJECT TITLE

3B'S RESEARCH GROUP
RESEARCH CENTER

MEDICAL BIOTECHNOLOGY
MAIN SCIENTIFIC AREA

1.998.939 €
FUNDING AWARDED

MAY 2017 - JULY 2023
ERC GRANT PERIOD



Description

ECM_INK intends to develop cells-self extracellular matrices-based bioinks to create accurate and pathophysiological relevant 3D in vitro diseased skin tissue models. The use of cells from patients suffering from chronic, genetic and neoplastic skin diseases represents a major advantage that will be reflected in the accuracy and functionality of the respective 3D in vitro models. Ultimately it will contribute for the development of reliable 3D in vitro cell-based platforms with major impact in the reduction/elimination of animal experimentation, diseases modelling and drug development.

Main achievements

The main achievements so far are:

- A bank of skin cells obtained from patients suffering from dystrophic epidermolysis bullosa, squamous cell carcinoma and pemphigus vulgaris;
- Fingerprint of the cell's-self extracellular matrix associated to each disease;
- Method for extracting extracellular matrix components and prepare specific bioinks;
- 3D printer adapted to the specificities of the developed bioinks;
- Dynamic system capable of providing the culture requirements for the skin models;
- Protocol to establish in vitro skin models representing patho(physiological) markers.

HELENA MACHADO

RESEARCHER

EXCHANGE - FORENSIC GENETICISTS AND THE TRANSNATIONAL EXCHANGE OF DNA DATA IN THE EUROPEAN UNION: ENGAGING SCIENCE WITH SOCIAL CONTROL, CITIZENSHIP AND DEMOCRACY

PROJECT TITLE

COMMUNICATION AND SOCIETY
RESEARCH CENTER

SOCIOLOGY
MAIN SCIENTIFIC AREA

1.838.150 €
FUNDING AWARDED

OCT 2015 - SEPT 2021
ERC GRANT PERIOD

Description

There is a widespread cultural belief that DNA technology has the unrivalled capacity to identify authors of crimes. In light of this ideology, EU Law (Prüm Decision, 2008) obliges all Member States to create the conditions for the reciprocal automated searching and comparison of information on DNA data for the purpose of combating cross-border crime, terrorism and illegal immigration. EXCHANGE aims to understand the close links between a highly specialised field of expert knowledge – forensic genetics – and surveillance in the EU.

Main achievements

Main academic achievements included the production of 8 books, 13 chapters in books, and 11 articles; and 7 outreach activities targeting diverse audiences. The final symposium of the project (20th June 2020) was hosted by Isabel Estrada Carvalhais (Deputy of the European Parliament) and Georg Biekötter, Political Administrator at the General Secretariat of the Council of the European Union. Participants included practitioners in forensic institutes and police forces from European countries, as well as from Brazil, Mexico, Russia, Dubai, South Africa, and Saudi Arabia.

MANUELA E. GOMES

RESEARCHER

3B'S RESEARCH GROUP
RESEARCH CENTER

BIOMATERIALS ENGINEERING
MAIN SCIENTIFIC AREA

1.999.854 €
FUNDING AWARDED

MAY 2018 - OCT 2023
ERC GRANT PERIOD

MAGTENDON - MAGNETICALLY ASSISTED TISSUE ENGINEERING TECHNOLOGIES FOR TENDON REGENERATION

PROJECT TITLE

Description

Tendon injuries account for a considerable share of musculoskeletal pathologies that can dramatically affect patient's quality of life, being estimated that over 30 million human tendon-related procedures are taking place annually worldwide. The poor healing ability of tendons as well as the limitations of currently used therapies have motivated tissue engineering (TE) strategies to develop living tendon substitutes. However, the limited knowledge on tendon development and healing processes has hindered the design of TE procedures that more closely recapitulate tendon morphogenesis. The main goal of MagTendon consists in obtaining unique cell-laden 3D magnetically responsive systems that recapitulate key features of the native tissue and that can be further remotely modulated both in vitro and in vivo by the application of external magnetic stimuli. MagTendon is thus exploring conventional and innovative tools such as multimaterial 3D bioprinting to design magnetic responsive systems mimicking specific aspects of tendon tissue architecture, composition and biomechanical properties, which, combined with adequate stem cells, will render appropriate behavioural instructions to stimulate the regeneration of tendon tissue. Simultaneously, the 3D cell-laden magnetic system shall enable sophisticated 3D tissue models to unravel mechanisms behind tendon homeostasis and repair that will support the base knowledge to establish rational design criteria for the biofabrication of living tendon substitutes offering the prospect of tendon regeneration as opposed to simple tissue repair.

Main achievements

MagTendon main achievements in the past few years refer mostly to the development of fiber-based magnetic responsive systems using biotextile technologies as well as the development of different nano/microstructured bioinks for 3D printing of tissue analogues and tissue models (tendon-on-a-chip). A innovative matrix and magnetic assisted printed systems has been developed and is currently being explored in different directions, namely for the development of in vitro models to study physiological and pathological tissue-mimicking conditions. The 3D models are currently being used to study the crosstalk between relevant tendon cell populations namely, of the vascular and immune systems.

So far, this project resulted in the publication of 44 scientific articles in high impact factor journals.

ROGÉRIO SOUSA PIRRACO

RESEARCHER

3B'S RESEARCH GROUP
RESEARCH CENTER

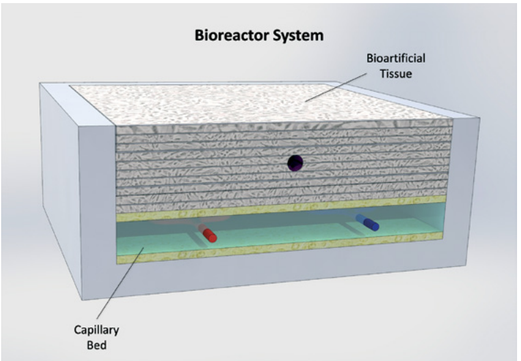
BIOENGINEERING
MAIN SCIENTIFIC AREA

1.499.940 €
FUNDING AWARDED

NOV 2018 - OCT 2023
ERC GRANT PERIOD

CAPBED - ENGINEERED CAPILLARY BEDS FOR SUCCESSFUL PREVASCULARIZATION OF TISSUE ENGINEERING CONSTRUCTS

PROJECT TITLE



Description

CapBed aims at developing a new technology to fabricate in vitro capillary beds that include a vascular axis that can be anastomosed with a patient circulation. Such capillary beds will be used as prime tools to prevascularize bioartificial tissues in bioreactor systems, which will allow fast perfusion of the tissues after transplantation to a patient, ensuring their viability and function.

Main achievements

Several peer-reviewed articles depicting works supported by the project were published between 2020 and 2022:

- Freitas-Ribeiro, S., Carvalho, A. F., Costa, M., Cerqueira, M. T., Marques, A. P., Reis, R. L., & Pirraco, R. P. (2019). Strategies for the hypothermic preservation of cell sheets of human adipose stem cells. *PLoS One*, 14(10), e0222597.
- Freitas-Ribeiro, S., Reis, R. L., & Pirraco, R. P. (2022). Long-term and short-term preservation strategies for tissue engineering and regenerative medicine products: state of the art and emerging trends. *PNAS Nexus*, 1(4), pgac212.
- Freitas-Ribeiro, S., Diogo, G. S., Oliveira, C., Martins, A., Silva, T. H., Jarnalo, M., ... & Pirraco, R. P. (2022). Growth Factor-Free Vascularization of Marine-Origin Collagen Sponges Using Cryopreserved Stromal Vascular Fractions from Human Adipose Tissue. *Marine Drugs*, 20(10), 623.
- Rodrigues, D. B., Moreira, H. R., Cerqueira, M. T., Marques, A. P., Castro, A. G., Reis, R. L., & Pirraco, R. P. (2022). Highly tailorable gellan gum nanoparticles as a platform for the development of T cell activator systems. *Biomaterials Research*, 26(1), 1-19.

PAULO B. LOURENÇO

RESEARCHER

INSTITUTE FOR SUSTAINABILITY AND INNOVATION IN STRUCTURAL ENGINEERING
RESEARCH CENTER

CIVIL ENGINEERING
MAIN SCIENTIFIC AREA

2.999.854 €
FUNDING AWARDED

SEPT 2019 - AUG 2025
ERC GRANT PERIOD

S4H - STAND4HERITAGE
NEW STANDARDS FOR SEISMIC ASSESSMENT OF BUILT CULTURAL HERITAGE

PROJECT TITLE

Description

STAND4HERITAGE ambitiously introduces new standards for safeguarding built cultural heritage for the next generations. Most masonry buildings are only designed to withstand gravity loads and are vulnerable to seismic actions, resulting in brittle out-of-plane failures, acknowledged as the main cause of losses and injuries to people. The project follows a stochastic approach because both material heterogeneity and seismic characteristics variation result in highly scattered seismic capacities. S4H will generate novel integrated stochastic-based models of seismic signals, datasets of masonry dynamic behaviour evaluated through shaking-table campaigns, computationally efficient numerical approaches, and an integrated analytical tool for the out-of-plane seismic assessment of heritage buildings. Finally, the methodology supported by the application of the developed tools will play an important role in the new code generation towards the definition of optimal intervention techniques.

Main achievements

The main achievements of the project include the development of a framework to model the stochastic behaviour of seismic signals, with a particular focus on correlating the seismic signal with the type of collapse mechanism formula. The input signals are further employed to develop a probabilistic approach for estimating the nonlinear response of several masonry structures and computing fragility curves for incorporation in vulnerability models.

The project also comprised the design and instalment of tilting, settlement and shaking tables together with a six-camera digital image correlation acquisition system, which is fully operational and turned the laboratory of UMinho into one of the most advanced facilities for investigating the dynamic behaviour of structures. This equipment allowed the study of masonry corner failures, characterisation of dry-joint limestone specimens, and free and forced rocking motion of limestone blocks.

PROJECTS
OVER
2 M€

At UMinho, research is seen as a global enterprise, seeking for the answers to the main challenges of our times. In this sense, research is essentially international and it requires the continuous reinforcement of international collaborations and participation in international initiatives, namely in the context of European Research Area. At the same time, we are always committed with the multiplier effects of the science in socio-economic and cultural development of the country and of our region.

In this sense, research projects and their global funding is something that we are much concerned in strengthening and support. I the past few years there has been a rise in project funding, which shifted control over large amounts of research funds towards funding agencies that distribute these funds across groups or individuals. The distribution of funds takes place through competitive selection procedures for which our researchers have to apply by writing complex proposals.

The attraction of competitive funding for research (national and international) has changed over the past few years in UMinho, not only as a result of an increasing involvement of our research units and their researchers, but also from the increase of quantity and, above all, the quality and recognition of our research.

The introduction of performance-based and competitive project funding mechanisms is introducing a differentiating effect on the distribution of research funding across our research units and individual researchers. One of the clearest demonstrations of this effect is the increasing number of projects with relatively high budgets. Beyond the ERC grants, UMinho had in the 2020-2022 period ten (10) projects running with a budget of more than 2 M€ (internal budget). This research funding leads to the continuous growth and strengthening of the organizational level by the increase of research quality aimed at creating critical mass and sustainability of UMinho's research.

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EASY RIDE

PROJECT TITLE

ENGINEERING SCHOOL
RESEARCH CENTER

ANTÓNIO V. PONTES
UMINHO PRINCIPAL INVESTIGATOR

BOSCH CAR MULTIMEDIA
PROJECT CONSORTIUM

ELISEU VIEIRA
PRINCIPAL INVESTIGATOR

9.181.896,31 €
UMINHO FUNDING

29.457.747,77 €
GLOBAL FUNDING

JUL 2018 - DEC 2021
PROJECT FUNDING PERIOD

EASY RIDE
PROJECT WEBSITE

Description

The Easy Ride program included the development of intelligent sensors that are critical to the capacities required in the context of autonomous driving, namely in the fields of in-vehicle sensing (IVS), V2X communications, two wheeled vehicles and the intelligent cockpit. The program was composed by 5 program to address the capacities required, including the development of IVS systems for monitoring both the car interior and passenger's condition, V2X communication solutions and applications, new technologies for the connected 2-wheelers and a set of advanced systems and solutions for the intelligent cockpit.

Program innovations generated 18 patent applications, 60 technical and scientific publications, and are forecasted to contribute to international sales of € 972 millions in 2024. The program reinforced the R&D capacity of the program partners and increased youth employment, through the hiring of highly qualified young researchers.

Main achievements

Regarding the innovative features, the Program achieved 93% of them (38/41), being 76% (31/41) completely achieved and 17% (7/41) partially achieved.

During its execution, the Program reached 55 technical-scientific publications: 38 articles in scientific journals or in proceedings of international conferences, 3 presentations/communications and 14 dissertations for the acquisition of a master's degree.

It was also submitted 18 patent applications.

The Easy Ride Program brought together a total of 97 technical-scientific results

FACTORY OF FUTURE

PROJECT TITLE

ENGINEERING SCHOOL
RESEARCH CENTER

ANTÓNIO V. PONTES
UMINHO PRINCIPAL INVESTIGATOR

BOSCH CAR MULTIMEDIA
PROJECT CONSORTIUM

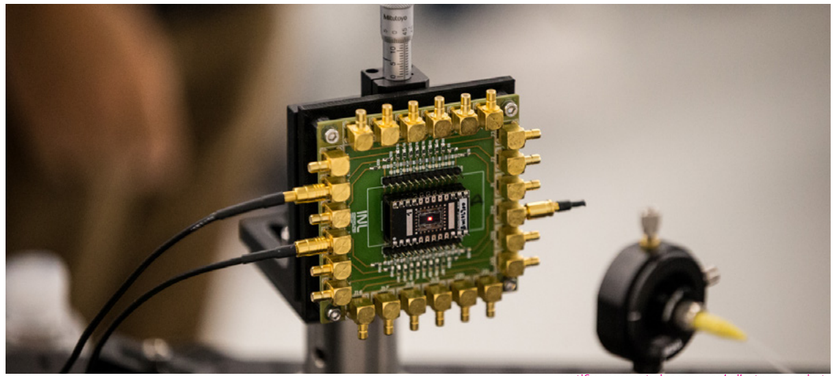
PEDRO PEREIRA
PRINCIPAL INVESTIGATOR

9.386.750,53 €
UMINHO FUNDING

26.3970,53 €
GLOBAL FUNDING

JUL 2018 - DEC 2021
PROJECT FUNDING PERIOD

FACTORY OF FUTURE
PROJECT WEBSITE



certificar que esta imagem pode ilustrar o projecto

Description

The program Factory of Future aimed to research and develop new materials and devices for quality control, industrialization, manufacturing and factory management, systems and tools for quality control; new prototyping and manufacturing processes and techniques, new communication technologies, information systems and decision-making systems for operations and business management.

This program led to scientific and technological advances that were translated into a set of processes, systems and tools for the highest flexibility, efficiency and quality standards of the main operations involved at the different stages of new product industrialisation, assuring at the same time competitive costs.

The Program gathered at least 47 technical and scientific publications in renowned conferences and scientific publications, and 8 patent applications. It reinforced the R&D capacity of the program partners and increased youth employment, through the hiring of highly qualified researchers.

Main achievements

Regarding From June 2018 to December 2021, the Factory of Future Program concluded 95% (260/273) of the planned deliverables.

During the Program, it was possible to achieve 45 innovative features. This represents an innovative feature more than what was previously established.

The Program reached 47 technical-scientific publications, also more than what was previously established. It was submitted 8 patent applications.

The Factory of Future Program brought together a total of 94 technical-scientific results.

SENSIBLE CAR

PROJECT TITLE

ENGINEERING SCHOOL
RESEARCH CENTER

JORGE CABRAL
UMINHO PRINCIPAL INVESTIGATOR

BOSCH CAR MULTIMEDIA
PROJECT CONSORTIUM

DIÓGENES ARAÚJO
PRINCIPAL INVESTIGATOR

11.061.321,74 €
UMINHO FUNDING

34.913.774,85 €
GLOBAL FUNDING

JUL 2018 - DEC 2021
PROJECT FUNDING PERIOD

SENSIBLE CAR
PROJECT WEBSITE

Description

The Sensible Car Program aimed the development of intelligent sensors that are critical to the capacities required in the context of autonomous driving: complete perception of the surroundings, accurate and real-time positioning and fail-proof actuation. The program was composed by 4 projects to address the capacities required, including the development of LiDAR systems and road condition sensors for 360º perception capacity; the development of the Automotive Precise Positioning sensor for the localisation and positioning capacity; the development of the steering angle sensor and DC motor sensors for steering systems in the framework of the actuation capacity.

The Program gathered at least 38 technical and scientific publications in renowned conferences and scientific publications, and 31 patent applications. It reinforced the R&D capacity of the program partners and increased youth employment, through the hiring of highly qualified researchers.

Main achievements

From June 2018 to December 2021, the Sensible Car Program concluded 99,5% (203/204) of the planned deliverables.

During the Program, it was possible to achieve 17 from the 18 planned innovative features. However, six new features were achieved during the phase of execution, which globally translates in 23 innovative features reached.

The Program originated 38 technical-scientific publications, more than what was previously established (30).

It was also submitted 31 patent applications, compared to the 15 originally planned.

The Sensible Car Program brought together a total of 45 technical-scientific results.

BIOTECNORTE

UNDERPINNING BIOTECHNOLOGY TO FOSTER THE NORTH OF PORTUGAL BIOECONOMY

PROJECT TITLE

CENTRE OF BIOLOGICAL ENGINEERING
RESEARCH CENTER

EUGÉNIO CAMPOS FERREIRA
UMINHO PRINCIPAL INVESTIGATOR

–
PROJECT CONSORTIUM

–
PRINCIPAL INVESTIGATOR

3.498.352 €
UMINHO FUNDING

–
GLOBAL FUNDING

JUL 2016 - SEPT 2020
PROJECT FUNDING PERIOD

BIOTECNORTE
PROJECT WEBSITE

Description

The project aimed at fostering northern bio-based-economy, by bringing value to resources, wastes and by-products, aligned with the circular economy and industrial symbiosis concepts. Our goal was to develop and make-use of green and sustainable key innovative technologies, namely industrial biotechnology and nanotechnology, to create added-value products to meet our future societal needs in health and food sectors ensuring environmentally friendly practices.

BioTecNorte was built around the following three research lines that are aligned with the most relevant fields of interest in the North region:

- The Bio-factory – Biotechnology as a key enabling technology for new processes, products and resource recovery;
- The Smart food factory – Smart systems for a sustainable and environmentally friendly food industry;
- The Nature factory – innovative biopharmaceutics, medical devices, cosmetics and fine chemistry.

Main achievements

Publications through international peer reviewed journals and books target researchers and professionals to new biotechnology applications regarding industry, agro-environmental sciences and Food & Health. 336 papers and 120 book chapters were published in the context of BioTecNorte. Also, 29 patents were registered to protect the generated knowledge. The project also contributed to the training of young researchers validated by the conclusion of 32 PhD theses.

Several events were organised with the aim to disseminate BioTecNorte and drive communities involved in the project, fostering the recruitment for activities carried out such as the training needs assessment, dialogue events, workshops, open days and others.

TSSIPRO

TECHNOLOGIES FOR SUSTAINABLE AND SMART INNOVATIVE PRODUCTS

PROJECT TITLE

INSTITUTE OF POLYMER AND COMPOSITES
RESEARCH CENTER

JÚLIO C. VIANA, IPC
ANA VERA MACHADO NÓBREGA, IPC
MARIA ROCHA, 2C2T
UMINHO PRINCIPAL INVESTIGATOR

2C2T
CALG
IPC
LAB2PT
PROJECT CONSORTIUM

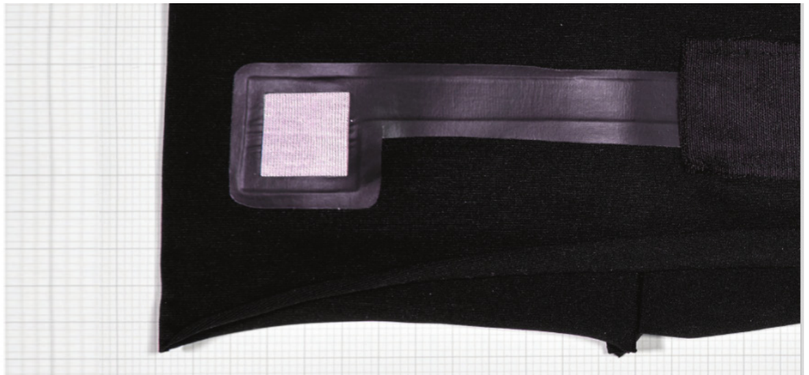
JÚLIO C. VIANA (IPC)
PRINCIPAL INVESTIGATOR

2,2 M€
UMINHO FUNDING

1,7 M€
GLOBAL FUNDING

MAY 2016 - NOV 2020
PROJECT FUNDING PERIOD

–
PROJECT WEBSITE



Description

TSSIPRO project investigated and provided cutting edge scientific and technological advancements on sustainable and smart innovative technologies and systems based on polymers and textiles, integrating embedded systems and design/eco-design tools. The project was structured in 3 integrated research lines:

- RL1 – Sustainable and Multifunctional Material: development novel sustainable and multifunctional polymeric systems, porous membranes, and advanced filaments/fibres / films for sensors and energy storage.
- RL2 – Smart polymer technologies: based on microtechnologies, polymeric moulded products with embedded functions, multifunctional films/fibres and smart e-composites.
- RL3 - smart textile systems: based on novel wearable sensors, energy harvesting and storage textiles, micro-nano surfaces functionalization processes, and smart e-composites.

Main achievements

TSSIPRO project involved 74 researchers, from which 21 PhD and 9 MSc grants were contracted over the project duration. A total of 15 MSc and 5 PhD students were graduated. A total of 25 articles were published in indexed international journals, more than 20 presentations in international conferences were delivered, and 3 patents were submitted. The project also delivered in 2019, 11 New methods/materials and 8 prototypes.

FRONTHERA

FRONTIERS OF TECHNOLOGY FOR THERANOSTICS OF CANCER, METABOLIC AND NEURODEGENERATIVE DISEASES

PROJECT TITLE

3B'S RESEARCH GROUP
RESEARCH CENTER

NUNO JOÃO ALVES DAS NEVES
UMINHO PRINCIPAL INVESTIGATOR

3B'S
ICVS
INL
PROJECT CONSORTIUM

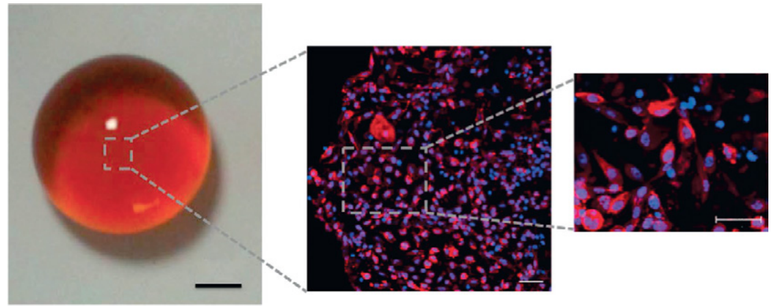
–
PRINCIPAL INVESTIGATOR

3,2 M€
UMINHO FUNDING

3.9 M€
GLOBAL FUNDING

JUL 2018 - JUL 2020
PROJECT FUNDING PERIOD

–
PROJECT WEBSITE



Description

FROnTHERA aims at significantly impact the field of tissue engineering and regenerative medicine, cancer, diabetes and neurodegenerative diseases by means of strengthening research within the interdisciplinary domains of 3D tissue engineered in vitro models of diseases, microfluidics, nanotechnologies, molecular biology and embedded biosensors for theranostic of RIS3 priority diseases, and in particular, for cancer, diabetes and neurodegenerative diseases.

FROnTHERA is an initiative of three top leading research units, located in the PT convergence region (Norte de Portugal), whose main goal is to advance in research for developing tools and technologies to be used as alternative to animal experimentation and in personalized therapies for human health. This scientific endeavour will result from a research collaboration process between 3B's (coordinator) and ICVS, both from UMINHO, and INL (International Iberian Nanotechnology Laboratory), institutions of research and innovation of excellence and aims to have a spillover effect on the regional economy.

Main achievements

The activities of this project promoted the scientific cooperation between the involved Research Units ICVS and 3Bs from the UMINHO, and with the INL during the course of the FROnTHERA project. It enabled the development of strong scientific outputs in the following areas:
1) Scientific and technological progress in 3D tissue engineered in vitro models of diseases, microfluidics, nanotechnologies, molecular biology and embedded biosensors for theranostic;
2) Stronger collaboration between the 3Bs and ICVS at the UMINHO and INL that will facilitate the establishment of international partnerships for the attraction of private and public research funds, namely from Horizon EUROPE.

ACCELERATING TISSUE ENGINEERING AND PERSONALIZED MEDICINE DISCOVERIES BY THE INTEGRATION OF KEY ENABLING NANOTECHNOLOGIES, MARINE-DERIVED BIOMATERIALS AND STEM CELLS

PROJECT TITLE

3B'S RESEARCH GROUP
RESEARCH CENTER

RUI L. REIS
UMINHO PRINCIPAL INVESTIGATOR

–
PROJECT CONSORTIUM

–
PRINCIPAL INVESTIGATOR

3,5 M€
UMINHO FUNDING

–
GLOBAL FUNDING

APR 2016 –JUL 2020
PROJECT FUNDING PERIOD

–
PROJECT WEBSITE

Description

The main aim was to develop new and sophisticated interventions to prevailing major health problems, in alignment with regional and national agendas.. This Structured Program operated in the interface Health-Sciences/Technologies and biomaterials, being organized in 3 research lines: 1) Marine-derived biomaterials and enabling nano-based production technologies for effective healthcare devices and therapies; 2) Tissue Engineering and Personalized Medicine approaches for the regeneration of human tissues; 3) Targeting ageing-associated diseases/disorders by exploring stem cells biology and biochemistry.

Main achievements

Among the main scientific achievements, one can find the production and characterization of various compounds and materials from marine biological resources, their functionalization and subsequent processing using various technologies, including nanotechnology approaches, for the development of biomaterials for biomedical application. These and other systems have been used in different tissue engineering and regenerative medicine strategies, using acellular approaches or in combination with cells, including stem cells, targeted to the tissues of interest. In particular, strategies were studied for the regeneration of bone tissue, the osteochondral region and entheses – the interface between bone and tendon.

PERSONALIZEDNOS

NEW AVENUES FOR THE DEVELOPMENT OF PERSONALIZED MEDICAL INTERVENTIONS FOR NEUROLOGICAL, ONCOLOGIC AND SURGICAL DISORDERS

PROJECT TITLE

LIFE AND HEALTH SCIENCES RESEARCH INSTITUTE
RESEARCH CENTER

NUNO SOUSA
UMINHO PRINCIPAL INVESTIGATOR

–
PROJECT CONSORTIUM

–
PRINCIPAL INVESTIGATOR

3,8 M€
UMINHO FUNDING

–
GLOBAL FUNDING

APR 2016 - JUL 2021
PROJECT FUNDING PERIOD

–
PROJECT WEBSITE

Description

The project PersonalizedNOS is fully aligned with the goals of RIS3, addressing forefront developments on neurosciences, oncology and surgical sciences. By providing scientific breakthroughs in the understanding of molecular, cellular and genetic profiles that contribute for the disease susceptibility, this project contributed to diagnostic procedures, to generate predictive data and to tailor therapeutic interventions.

Main achievements

The scientific and technological objectives have been achieved, as measured by the proposed indicators which, were, in several cases, greater than the outcomes originally expected.

Overall, in addition to generating highly qualified scientific jobs (15 positions), this project has resulted in more than 250 scientific articles published in international peer-reviewed journals to date, more than 100 doctoral theses, 10 patents international and 5 software solutions.

TERM RES-HUB

TISSUE ENGINEERING AND REGENERATIVE MEDICINE RESEARCH HUB

PROJECT TITLE

3B'S RESEARCH GROUP
RESEARCH CENTER

RUI L. REIS
UMINHO PRINCIPAL INVESTIGATOR

A4TEC - ASSOCIATION FOR THE ADVANCEMENT OF TISSUE ENGINEERING AND CELL BASED TECHNOLOGIES & THERAPIES

EXPERTISSUES - EUROPEAN INSTITUTE OF EXCELLENCE ON TISSUE ENGINEERING AND REGENERATIVE MEDICINE

UNIVERSITY OF MINHO - 3B'S RESEARCH GROUP OF THE PT ASSOCIATE LABORATORY ICVS/3BS

PROJECT CONSORTIUM

–
PRINCIPAL INVESTIGATOR

9,5 M€
UMINHO FUNDING

10,8 M€
GLOBAL FUNDING

SEPT 2017 - JUN 2023
PROJECT FUNDING PERIOD

–
PROJECT WEBSITE

Description

The TERM RES-Hub is a Scientific Infrastructure that is established on the existing facilities at AvePark, Taipas - Guimarães that is based on the present building of the 3B´s that resulted from the coordination of the network of excellence NoE EXPERTISSUES. The TERM RES-Hub will be complemented with a 2nd building, fully equipped with state-of-the-art equipment and trained human resources to operate the facility.. In Association with the Municipality of Guimarães it will also host the so-called City of Guimarães Institute of Advanced Biomedical Materials.

Main achievements

The project involves different multidisciplinary researchers and it has, so far, being able to reinforce its technical-administrative team by means of hiring experienced researchers and technicians. All equipment available at TERM RES-Hub infrastructure facilities can be used by internal and / or external users. The TERM RES-Hub scientific infrastructure is expected to be fully operational in June 2023.

FORECAST

FOREFRONT RESEARCH IN 3D DISEASE CANCER MODELS AS IN VITRO SCREENING TECHNOLOGIES

PROJECT TITLE

3B'S RESEARCH GROUP
RESEARCH CENTER

RUI L. REIS
UMINHO PRINCIPAL INVESTIGATOR

–
PROJECT CONSORTIUM

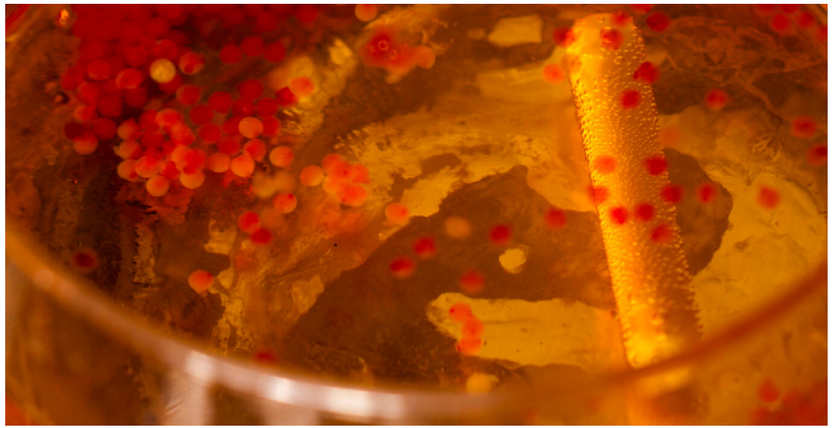
–
PRINCIPAL INVESTIGATOR

2,5 M€
UMINHO FUNDING

2,8 M€
GLOBAL FUNDING

JUL 2015 - DEC 2022
PROJECT FUNDING PERIOD

FORECAST
PROJECT WEBSITE



Description

The project aims to provide a step change in this important area by developing highly realistic 3D tumour models that can be used to better understand the dynamic mechanisms driving cancer progression, invasion and metastasis and to predict the effect of drugs on cancer patients. The models are based on the use of biomaterials in combination with different healthy and cancer cells.

Work being conducted through the project draws on the existing expertise, at 3B's Research Group, research in the fields of natural materials and tissue engineering, as well as cutting-edge technologies, such as microfluidics, bio-printing and bio-sensing.

Main achievements

FoReCaST has developed a real-time model that represents the various stages of cancer from the formation of the tumour through to its spread – or metastasis – to the organs.

The project team has identified a component of a molecule which is heavily present in breast cancer patients. The results could be used to identify people who are most vulnerable to the disease. In addition, a type of stem cell has been identified which acts as a 'double agent' by contributing to the spread of cancer while stopping its initial appearance in the body.

FoReCaST's 3D models will be used by pharmaceutical and biotech companies to speed up and improve the drug testing process.

The Highly Cited Researchers™ list from Clarivate™ identifies scientists and social scientists who have demonstrated significant influence through publication of multiple highly cited papers during the last decade around the world. Researchers are selected for their exceptional performance in one or more of 21 fields or across several fields.

Researchers who, within a defined field, publish highly cited papers are judged to be influential, so the production of multiple highly cited papers is interpreted as a mark of exceptional impact. Highly cited papers are defined as those that rank in the top 1% by citations for field and publication year. Only highly cited papers in the sciences and social sciences journals indexed in the Web of Science Core Collection™ during the 11-year period were surveyed.

More details on the methodology: https://clarivate.com/highly-cited-researchers/methodology

The Highly Cited Researchers annual lists for the 2020-2022 period include António Vicente and José António Teixeira, from the Centre of Biological Engineering (CEB). In 2022 these two HCRs were joined by Rui L. Reis, from 3B's group.

The following table shows the numbers of HCRs for 2020-2022 period:

	2020	2021	2022
WORLD	6167	6602	6938
PORTUGAL	10	16	20
UMINHO	2	2	3

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ANTÓNIO AUGUSTO VICENTE

CENTRE OF BIOLOGICAL ENGINEERING
RESEARCH CENTER

FOOD SCIENCE AND TECHNOLOGY
MAIN SCIENTIFIC AREA

Professor at UMinho since January 2022, director of the Doctoral College UMinho and vice-Dean of the School of Engineering of UMinho since October 2019. He keeps a close contact with the food industry and he is/has been involved in >50 research projects, both national and international, together with industrial partners both as participant and as project leader.

His main research interests are:

- micro and nanotechnology applied to Food Technology;
- in vitro digestion system for evaluation of the fate of foods in the GI tract;
- food processing by ohmic heating/moderate electric fields, namely the study of the effects of electric currents on biomolecules and cells;
- edible films and coatings for food applications;
- bioreactor technology for the growth of microalgae and cyanobacteria.

Main achievements

He is member of the Jury of the National Agriculture Prize in Portugal, since its institution in 2012. In the last five years (2018, 2019, 2020, 2021 and 2022) he was distinguished as Highly Cited Researcher by Clarivate Analytics and in the last three years (2020, 2021 and 2022) he has integrated the list of the top 2 % most cited researchers according to the list published by Stanford University. He was awarded the Scientific Merit Award from the University of Minho in February 2021 and the Diploma of Scientific Merit from the School of Engineering of the University of Minho in October 2021 and October 2022.

RUI L. REIS

3B'S RESEARCH GROUP. I3B'S
RESEARCH CENTER

MATERIALS SCIENCE AND ENGINEERING
BIOMEDICAL ENGINEERING
APPLIED MEDICAL SCIENCES AND TECHNOLOGIES
MAIN SCIENTIFIC AREA

Rui L. Reis, the President/Dean of I3Bs and Founding Director of the 3B´s Research Group – Biomaterials, Biodegradables and Biomimetics of University of Minho is the scientist with more citations (56472) to his work and more publications (1626) listed in ISI WoK, being also by far the highly cited scientist working in Portugal in 2022 with higher h-index (107).

Further details on the HCR of 2022 can be seen in the following link, by looking at the respective individual profiles.

Main achievements

Rui L. Reis is particularly recognized internationally "for contributions to biomaterials and tissue engineering in regenerative medicine" as stated in the election citation by the US National Academy of Engineering (NAE), using original natural origin polymers and different types of stem cells. This line of work lead to an all range of major international awards.

JOSÉ ANTÓNIO TEIXEIRA

CENTRE OF BIOLOGICAL ENGINEERING
RESEARCH CENTER

INDUSTRIAL AND FOOD BIOTECHNOLOGY
MAIN SCIENTIFIC AREA

Full Professor at UMinho since January 2001. He started his academic career in UPorto in 1980 and moved to UMinho from UPorto, where he was Associate Professor, in 1994. At UMinho he was, for several years, Head of the Department of Biological Engineering and Head of Centre of Biological Engineering from 2012 to 2016. Currently is the Program Director of the PhD Program in Food Science and Technology and Nutrition. He has been involved in several research projects, both national and international, several of them involving close collaboration with industrial partners. His main research interests are focused on two main areas – industrial and food biotechnology:

- bioreactors development and characterization for the production of different metabolites;
- process intensification using oscillatory mixing systems;
- biomass processing for the sustainable production of chemicals;
- development of innovative extraction technologies for the valorization of agro-food residues and by-products;
- development of clean label food products;
- in vitro system for the evaluation of prebiotics and their effect on human health.

Main achievements

He has been considered a Highly Cited Researcher (Clarivate Analytics) in the area of Agricultural Sciences in 2020/2021/2022, having published more than 750 research articles in international peer-reviewed journals, yielding an h-index of 89 (Scopus) and over 35400 citations. He was also included in the group of the 2% most influential in the world in 2021 and 2022, according to a study by Stanford University (USA) and Elsevier.

From the research projects coordinated, MOBFOOD and CLabel+, two mobilizing projects involving relevant stakeholders for the food sector must be highlighted.

In 2022, he was the chair of BioIberoAmerica 2022 conference, the 3rd Biotechnology conference for Ibero- America countries.

COLLABORATIVE LABORATORIES

Collaborative Laboratories (CoLABs) are non-profit private associations or companies aiming at an enriched model of R&D cooperation between private or public institutions and non-corporate R&I organizations, namely higher education institutions (through their R&D Units), technological interface centres and other intermediate or interface institutions.

In terms of composition, CoLABs must consist of at least one company and one R&D unit associated with a higher education institution, funded by FCT, I.P., and may result from a technology interface center that already has this partnership structure. In the case of R&D units without legal personality, the participating entity is the institution with legal personality in which such units are integrated.

The creation of CoLABs is supported within the scope of the Interface Programme, aiming at, directly and indirectly, creating qualified employment and scientific employment in Portugal through the implementation of research and innovation agendas aimed at the creation of economic and social value.

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DTX
DIGITAL TRANSFORMATION COLAB

-
COLAB COORDINATOR

RICARDO J. MACHADO
UMINHO COORDINATOR

ACCENTURE
AERNNOVA
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CACHAPUZ
CCG ZGDV- CENTRO DE COMPUTAÇÃO GRÁFICA
CEIIA
CELOPLÁS
DST GROUP
IKEA
INL - INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY
MOBILEUM
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SIMOLDES
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UCP - UNIVERSIDADE CATÓLICA PORTUGUESA
UM - UNIVERSITY OF MINHO
UNIVERSITY OF ÉVORA
PROJECT CONSORTIUM

24 M€
FUNDING AWARDED

MAY 2020
STARTING DATE

DTX-COLAB
PROJECT WEBSITE

Mission and vision

The mission is to create innovative solutions for the digital transformation, from creativity and knowledge, meeting the needs of our associates and society, creating economic/social value, including qualified employment. Its vision is to be a reference partner to associates, in the fields of innovation and digital transformation, through knowledge, competency, quality and passion in the development of cyber-physical systems (CPS).

Description

DTx is a non-profit private association, undertaking applied research in digital transformation. It aims to create/implement holistic approaches in the conception and development of CPS, with complexity and multidisciplinary of knowledge, promoting innovation and sustainability in the creation of products, services and interfaces in cyber-physic technologies DTx assesses the impacts from the digital transformation in the industrial and organizational fields and promotes cooperation academy - industry.

Main achievements

- Completed 11 collaborative innovation projects with the shareholders;
- Launched 7 (2nd gen) collaborative innovation projects with the shareholders;
- Implemented and embedded a Project Management Office;
- Optimized organizational structure to improve scalability and multidisciplinary in projects;
- Successful Missão Interface application;
- Member of 5 Agendas Mobilizadoras para Inovação Empresarial, totaling 16M€ in funding – PRR (EU Recovery and Resilience Program);
- Founding member of 5 Digital Innovation Hubs (3 with European seal of excellence, one of which with EU funding).

PROCHILD COLAB

PROCHILD COLAB AGAINST POVERTY AND SOCIAL EXCLUSION – ASSOCIATION

ANA JUSTINO
COLAB COORDINATOR

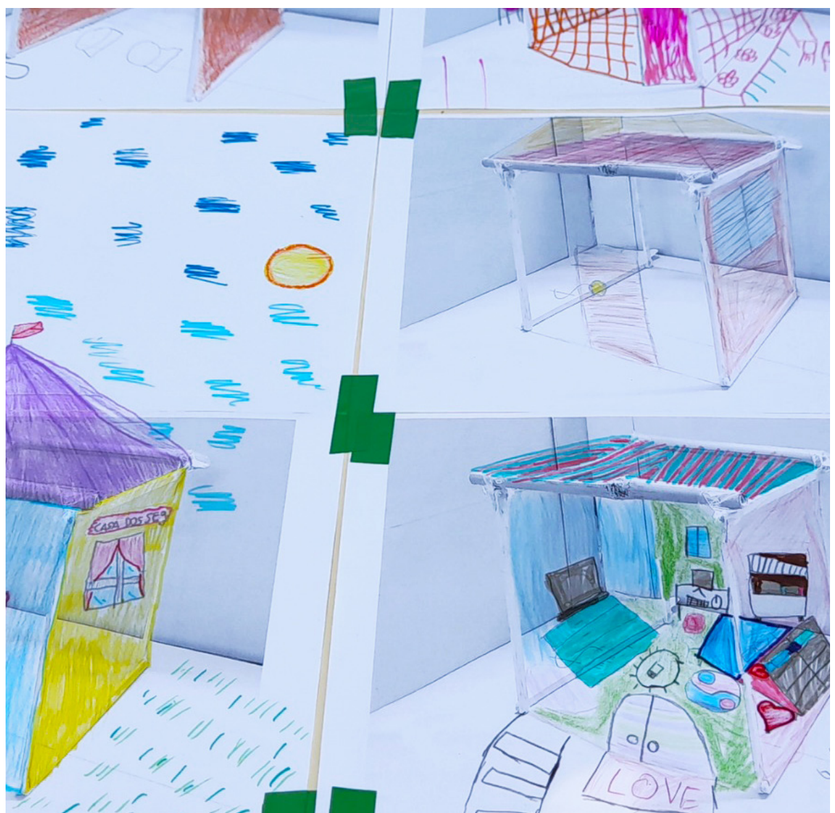
ISABEL SOARES
UMINHO COORDINATOR

CCG ZGDV- CENTRO DE COMPUTAÇÃO GRÁFICA
CENTRO DE ESTUDOS SOCIAIS
CÂMARA MUNICIPAL DE GUIMARÃES
DST - DOMINGOS DA SILVA TEIXEIRA
FACULDADE DE PSICOLOGIA DA UNIVERSIDADE DE LISBOA
FUNDAÇÃO BELMIRO DE AZEVEDO
FUNDAÇÃO VASCO VIEIRA DE ALMEIDA
IRMÃOS RODRIGUES
ISEG - INSTITUTO SUPERIOR DE ECONOMIA E GESTÃO
ISP - INSTITUTO DE SAÚDE PÚBLICA DA UNIVERSIDADE DO PORTO
SCML - SANTA CASA DA MISERICÓRDIA DE LISBOA
UA - UNIVERSIDADE DE AVEIRO
UC - UNIVERSIDADE DE COIMBRA
UCP - UNIVERSIDADE CATÓLICA PORTUGUESA
UM - UNIVERSIDADE DO MINHO
UP - UNIVERSIDADE DO PORTO
PROJECT CONSORTIUM

-
FUNDING AWARDED

DEC 2018
STARTING DATE

PROCHILDCOLAB
PROJECT WEBSITE



ProChild
laboratório colaborativo

Mission and vision

Mission: Develop a strategy against child poverty and social exclusion, framed in a transdisciplinary scientific approach, articulating the public and private sectors, promoting children's well-being both at the economic and social interface and contributing to public policies to stand upon their rights.

Vision: To be the national reference institution

Description

ProChild CoLAB is a private non-profit Association aiming to develop a strategy against child poverty and social exclusion. By placing children at the centre of R&I, and through an articulated intersectorial collaboration, ProChild CoLAB's alliance between social intervention and technological innovation allows for more effective co-creation of programs, products and services tailored to fit children, families and professionals' needs, and to contribute scientifically-informed public policies.

Main achievements

- Creation of highly qualified scientific employment
- Development of transdisciplinary R&I&I projects and programs
- Implementation and validation of tailored intervention models
- Creation of innovative products, services and solutions in the childhood field
- Promotion of organizations' CSR agendas
- National and international scientific publications and communications
- Training, supervision and content provision to professionals and community agents
- Contribution to scientifically-informed local/public policies

B2E

ASSOCIATION FOR BLUE ECONOMY - COLABORATIVE LABORATORY

ANTÓNIO ISIDORO
(SOJA DE PORTUGAL)
MARLOS HENRIQUE DA SILVA
(SONAE MC)
COLAB COORDINATOR

TIAGO H. SILVA
UMINHO COORDINATOR

ARMONA FISH FARMS
CESAM - CENTRO DE ESTUDOS DO AMBIENTE E DO MAR UNIVERSIDADE DE AVEIRO
CIIMAR
CONGELAGOS
ENTOGREEN
FÓRUM OCEANO
ICVS/3BS - UNIVERSIDADE DO MINHO
INESC TEC
NAVIA
SAVINOR
SEA EIGHT
SONAE MC
SORGAL
SPAROS
UP - UNIVERSIDADE DO PORTO
PROJECT CONSORTIUM

4,2 M€
FUNDING AWARDED

B2E
PROJECT WEBSITE

Mission and vision

B2E aims to stimulate the active participation of national scientific, business and public communities in the analysis and solution of complex problems related to the sustainable use of marine biological resources. It will promote the creation of qualified jobs, actively contributing to increase the economic and social value of products and services associated to new uses and valorization of those resources, including internationalization of scientific and technological capacity.

Description

The Association for the Blue Economy – B2E pursues the definition and implementation of research and technology transfer agendas, promoting economic and social development in two of the Blue Growth sectors with highest potential: Biotechnology and Aquaculture. Under the motto “Inspired by the Ocean - Driven by the Market - Powered by Knowledge, B2E realizes its mission by launching mobilizing projects on a national or global scale, promoting collaboration between knowledge centers and companies, encouraging the sharing of knowledge between Associates, supporting the integration in international networks and access to the global market, supporting applications for public structural funds and European calls, as well as carrying out promotional activities with national and international investors. These activities are being developed under the scope of 3 thematic areas: 1) valorization of marine biological resources, 2) marine biotechnology, 3) sustainable aquaculture.

Main achievements

The non-profit association constituting the B2E CoLAB was formalized in February 2019, enabling the start of operation. Together with the establishment of the governing bodies, B2E was installed at UPTEC Mar in Matosinhos, under the patronage of the local municipality, and the direction elaborated an application for funding (under PT2020) envisaging the recruitment of highly qualified human resources. The first recruitment processes were initiated, targeting the selection of the Technical-Scientific Director and Innovation Technician, who should be hired at the beginning of 2020. The corporative image of B2E was developed, with the creation of logo, registration of web domain and set-up of official contacts and social network accounts. The technical work was initiated, by starting the design of a research agenda, with contributions from the associates, under the established 3 thematic lines.

BUILT COLAB

COLABORATIVE LABORATORY FOR THE FUTURE BUILT ENVIRONMENT

BUILTCOLAB
DIGITAL BUILT ENVIRONMENT

JOÃO MOUTINHO
COLAB COORDINATOR

DANIEL V. OLIVEIRA
UMINHO COORDINATOR

3DRIVERS
A400
AEC CLUSTER
BIMMS
CONTACTO ATLÂNTICO
GRUPO ACA
GRUPO CASAIS
INESCTEC - INST. DE ENG. DE SIST. E COMPUTADORES, TECN. E CIÊNCIA
IPL - INST. POLITÉCNICO DE LEIRIA
ISEL - INST. SUP. DE ENG. DE LISBOA
IST - INSTITUTO SUPERIOR TÉCNICO
ITECONS - INST. DE INVEST. E DESENVOLVIMENTO TECN. PARA A CONSTRUÇÃO, ENERGIA, AMBIENTE E SUSTENTABILIDADE
LNEC - LAB. NACIONAL DE ENG. CIVIL
MOTA ENGIL
OUZO ENGENHARIA
PFP
SECIL
TEIXEIRA DUARTE
UM - UNIVERSIDADE DO MINHO
UP - UNIVERSIDADE DO PORTO
PROJECT CONSORTIUM

2.4 M€
FUNDING AWARDED

JAN 2020
STARTING DATE

BUILTCOLAB
PROJECT WEBSITE

Mission and vision

BUILT CoLAB aims to develop research, innovation, and knowledge transfer activities, with a view to increasing productivity, competitiveness, and sustainable growth of the Ecosystem of the AEC sector – Architecture, Engineering, and Construction, promoting the digital and ecologic transformation of buildings and infrastructures, making them adaptable, intelligent, resilient and sustainable.

Description

BUILT CoLAB is guided by a "Technology to Market" approach between knowledge centres, industry and end-users in a co-creation environment, promoting the Twin Transition (digital and ecological) and the transformation of the Built Environment of the Future.

Its R&D agenda covers the Life Cycle of the Built Environment, including architecture, design, and data-driven manufacturing, and ultimately deconstruction and recycling, promoting the use of Digital Twin of the entire AEC ecosystem based on BIM methodology and technologies.

Main achievements

BUILT CoLAB has several successful milestones in the first years of activity: the approval of the "Missão Interface" project (base funding project until 2027), the approval of DIGITALbuilt (European Digital Hub), an approved "Agenda Mobilizadora" (PRR) – Sustainable Stone, the development of the "National Construction Circularity Plan" (https://circularidade.builtcolab.pt/), and the conclusion of the "Future of Construction", a SIAC funded project with a very successful and impactful final event.

CECOLAB

COLLABORATIVE LABORATORY TOWARDS CIRCULAR ECONOMY

JOÃO MIGUEL NUNES
BLC3 COORDINATOR

LÍGIA RODRIGUES
UMINHO COORDINATOR

AQUITEX
BLC3
ISQ
LIPOR
LNEC - LAB. NACIONAL DE ENG. CIVIL
MOTA-ENGIL
RAIZ
TMG - TÊXTEIS MANUEL GONÇALVES
UA - UNIVERSIDADE DE AVEIRO
UC - UNIVERSIDADE DE COIMBRA
UCP - UNIVERSIDADE CATÓLICA PORTUGUESA
UM - UNIVERSIDADE DO MINHO
UNL - UNIVERSIDADE NOVA DE LISBOA
UP - UNIVERSIDADE DO PORTO
PROJECT CONSORTIUM

3,2 M€
FUNDING AWARDED

FEB 2020
STARTING DATE

CECOLAB
PROJECT WEBSITE

Mission and vision

CECOLAB aims to develop sustainable market solutions in a Circular Economy model for strategic national value chain, with high impact on other economy value chains. Its mission is to support the transition from a linear economy model to a more responsible economy towards resources and people; more efficient in its life cycle; develop and transfer knowledge and technology to the market; create scientific jobs; and assume Portugal's leadership and position in the Circular Economy.

Description

CECOLAB is a private, non-profit institution, headquartered in Oliveira do Hospital, Portugal. Started its activities in February 2020 and is an integral part of the National Roadmap for Research Infrastructures of National Strategic Interest. It provides high quality innovation management consulting services, advice and knowledge transfer to corporations, investors, governments, associations, NGOs and universities, adding value and enabling economic growth at all levels.

CECOLAB innovation pipeline includes technological platforms (Industrial Biotechnology; Sustainable Separations Process and Green Chemistry; Ecodesign) to develop knowledge with high impact in Circular Economy; support activities of the value chains (Life Cycle, Market; Artificial Intelligence; Resource Use) to increase its innovations competitiveness; and innovation value chains focus (Forest; Agroindustry; Urban; Water; Manufacturing Industry; Construction; Servitization) to increase impact in the market.

Main achievements

- Established and trained the team to prepare and lead European projects;
- Created highly skilled job opportunities engaging a number of new team members;
- Submitted several proposals to national (e.g., PRR, PT2020) and European funding (31% success rate);
- Approved and started the StartUp Zero project which is the 1st national program to support start-ups in the field of Circular Economy;
- Consolidate its commercial activities as services provider and started the implementation of the NP4457 innovation standard;
- Developed new products, services (e.g., circular economy platform) and internal projects (e.g., 2nd Life)

COLAB BIOREF

LABORATÓRIO COLABORATIVO PARA AS BIORREFINARIAS

FRANCISCO GÍRIO
LNEC COORDINATOR

LUCÍLIA DOMINGUES
UMINHO COORDINATOR

A4F
BIOTREND
BLC3
DOUROGÁS
GALP
HYCHEM
IPP - INST. POLITÉC. DE PORTALEGRE
IST - INSTITUTO TÉCNICO LISBOA
LNEC - LAB. NACIONAL DE ENG. CIVIL
RAIZ
SILICOLIFE
SYSADVANCE
TAP
TRATOLIXO
UA - UNIVERSIDADE DE AVEIRO
UL - UNIVERSIDADE LISBOA
UM - UNIVERSIDADE DO MINHO
UNL - UNIVERSIDADE NOVA LISBOA
UP - UNIVERSIDADE DO PORTO
UTAD - UNIVERSIDADE DE TRÁS-OS-MONTES E ALTO DOURO
PROJECT CONSORTIUM

10,3 M€
FUNDING AWARDED

MAY 2020
STARTING DATE

BIOREF
PROJECT WEBSITE

BIOREF
Laboratório Colaborativo para as Biorrefinarias

Mission and vision

CoLAB BIOREF's vision is to be an international reference in biorefining technologies, multiproduct, multipurpose.

CoLAB BIOREF's mission is to improve the competitiveness of the biorefinery sector and bio-based products in Portugal and Europe, contributing for a very low carbon economy, generating new value chains, job creation, and boosting bioeconomy.

Description

The CoLAB BIOREF - Collaborative Laboratory for Biorefineries connects highly qualified knowledge and innovation with the industrial sector. Our mission is to identify and address the specific requirements of companies in the field of biorefining technologies, while actively promoting the areas of bioeconomy and bioenergy.

At CoLAB BIOREF, we work to promote a market-oriented Research and Innovation (R&I) Agenda that focuses on two strategic domains: Bioenergy & Renewable Gases and Sustainable Bioeconomy. We aim to reform the current economic development paradigm by using the potential of biomass as a renewable resource, and we are committed to the national and EU strategic goals, being the entity responsible for drawing up the Portuguese Biomethane Action Plan.

In addition to our national activities, we also actively participate in international associations such as the European Energy Research Alliance, the European Biogas Association, and the Bio-Based Industries Consortium. Through these collaborations, we continuously expand our network and stay at the forefront of cutting-edge advancements in our field.

Main achievements

CoLAB BIOREF is paving the way to be recognized as the benchmark institution in the field of biorefineries at an international level and the diversity of associates who share this vision supports its expectations.

Concerning competitive R&I projects, 2022 was a significant year for our R&I teams, as we have been awarded of three additional competitive R&I projects as well as the renew of Public Funding (Missão Interface) for next 3-yrs period, marking a major milestone in CoLAB BIOREF's history. The other four projects represent a major step forward in our efforts to advance knowledge and innovation in the biorefineries field. The Move2LowC project started in October 2021 and mobilizes Universities, R&D Institutes, Companies to cooperate with the goal of increasing the use of aquatic biomass and residual forest biomass to produce biofuels, in a circular economy logic. HYFUELUP (Hybrid Biomethane Production from Integrated Biomass Conversion) is a new project funded by the European Union's Horizon Europe Research an Innovation Programme, which initiated its activities in November 2022 and is already making progress toward its objectives. Besides research activities in the area of methanation the project is also coordinated by CoLAB BIOREF.

H2DRIVEN and MOVING2 NEUTRALITY are two PRR projects in which BIOREF collaborates with EFACEC and PETROGAL, as Project Coordinators. H2DRIVEN is a proposal for the implementation and valorization of a new value chain in green e-fuels in Portugal, with the capacity for design, development and production of green H2, biogenic CO^2 and e-methanol.

Moving2Neutrality Agenda responds to the challenge of energy transition in transport by producing sustainable fuels towards carbon neutrality.

COLAB VINES&WINES

ROSA AMADOR
ADVID COORDINATOR

HERNÂNI VARANDA GERÓS
UMINHO COORDINATOR

ADVID - ASSOCIAÇÃO PARA O DESENVOLVIMENTO DA VITICULTURA DURIENSE

INESCTEC - INST. DE ENGENHARIA DE SISTEMAS E COMPUTADORES, TECNOLOGIA E CIÊNCIA

INIAV - INSTITUTO NACIONAL DE INVESTIGAÇÃO AGRÁRIA E VETERINÁRIA

ISA - INST. SUP. DE AGRONOMIA

UCP - UNIVERSIDADE CATÓLICA PORTUGUESA

UMINHO - UNIVERSIDADE DO MINHO

UTAD - UNIVERSIDADE DE TRÁS-OS-MONTES E ALTO DOURO

PROJECT CONSORTIUM

2.1 M€
FUNDING AWARDED

JUL 2019
STARTING DATE

COLABVINESANDWINES
PROJECT WEBSITE

ADVID COLAB VINES & WINES
Cluster da Vinha e do Vinho
Vine and Wine Cluster

Mission and vision

1) to generate and communicate knowledge and technology that enhances the expressed ambition of the sector to increase the export value.

2) supports the ambition expressed by the sector to increase the export value of portuguese wines.

3) ensures that the portuguese wine system becomes more efficient, resilient and flexible in order to respond to climate, demographic and economic challenges.

Description

CoLAB VINES&WINES, an initiative led by ADVID – the Association for the Development of Viticulture in the Douro Region which is the national Vine and Wine Cluster, together with the portuguese viticulture ecosystem, aims to be the ideal partner in the innovation of products, processes and services of companies in the Portuguese wine sector.

Main achievements

Associates of Colab Vines&Wines include University of Minho, University of Trás-os-Montes e Alto Douro, Instituto Superior de Agronomia, Universidade Católica Portuguesa, Instituto Nacional de Investigação Agrária e Veterinária and INESCTEC which actively collaborate with ADVID and its associates in many R&D strategic projects https://www.colabvinesandwines.pt/en/#projectswine sector.

COLAB4FOOD

LABORATÓRIO COLABORATIVO PARA A INOVAÇÃO DA INDÚSTRIA AGROALIMENTAR

MIGUEL TEIXEIRA
COLAB COORDINATOR

JOSÉ ANTÓNIO TEIXEIRA
UMINHO COORDINATOR

ASSOCIAÇÃO INTEGRALAR - INTERVENÇÃO DE EXCELÊNCIA NO SETOR AGRO-ALIMENTAR • **ARCADIA INTERNATIONAL** • **CEREALIS** - PRODUTOS ALIMENTARES, S.A. • **CISAS** - CENTER FOR RESEARCH AND DEVELOPMENT IN AGRIFOOD SYSTEMS AND SUSTAINABILITY • **COFAC** – FACULDADE MEDICINA VETERINÁRIA DA U. LUSÓFONA • **FRULACT** – INDÚSTRIA AGROALIMENTAR, S.A. • **GRUPO PRIMOR, S.A.** • **INSTITUTO SUPERIOR DE AGRONOMIA DA UNIV. DE LISBOA** • **INL** - INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY • **INSA** – INSTITUTO NACIONAL DE SAÚDE DOUTOR RICARDO JORGE • **INSTITUTO NACIONAL DE INVESTIGAÇÃO AGRÁRIA E VETERINÁRIA** • **MENDES GONÇALVES, S.A.** • **REQUIMTE** - REDE DE QUÍMICA E TECNOLOGIA • **SENSE TEST** – SOCIEDADE DE ESTUDOS DE ANÁLISE SENSORIAL A PRODUTOS ALIMENTARES, LDA • **SUMOL + COMPAL MARCAS, S.A.** • **SUPER BOCK MARCAS, S.A.** • **TAGUSVALLEY - PARQUE DE CIÊNCIA E TECNOLOGIA** • **UNIVERSIDADE DO PORTO** • **UNIVERSIDADE DO MINHO** • **UNIVERSIDADE CATÓLICA PORTUGUESA** • **UNIVERSIDADE DE TRÁS OS MONTES E ALTO DOURO** • **UNIVERSIDADE DE AVEIRO** • **UNIVERSIDADE DE COIMBRA** • **VIEIRA DE CASTRO** - PRODUTOS ALIMENTARES, S.A.
PROJECT CONSORTIUM

2 M€
FUNDING AWARDED

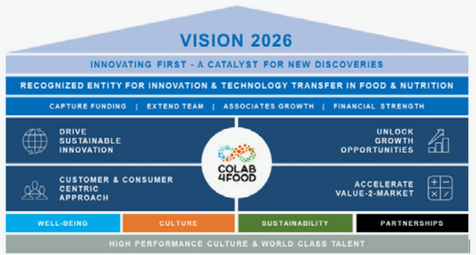
MARCH 2023
STARTING DATE

COLB4FOOD
PROJECT WEBSITE

Mission and vision

Colab4Food bridges the gap between academia and industry through a collaborative framework based on knowledge and creativity with the motto "Innovating First – A Catalyst for new Discoveries" which reflects our aim to develop innovative market-oriented solutions quickly in the areas of food safety and high-quality foods, healthy nutrition and wellbeing, sustainable food processes and circular economy within the food sector.

Colab4Food aims to be the ley platform for collaborative innovation, knowledge and technology transfer in the National agrifood sector.



Description

Colab4Food is a R&I non-profit association with 24 associates & partners (45% from industry). It is a platform for collaborative innovation, knowledge & technology transfer in the national agrifood sector representing Portugal in the international innovation ecosystem.

Action areas:

1. Characterization of ingredients and new food formulation;
2. Application of new food processing methods;
3. Circular economy and sustainability through promotion of by-products valorisation and eco design packaging;
4. Product design & development;
5. Sensory testing and consumer validation;
6. Fundraising and consulting;
7. International networking in food sector;
8. Monitoring research studies on new technologies and ingredients and promote technology transfer.

Main achievements

Corporately, nine new entities joined Colab4Food contributing to our organic and sustainable growth. In terms of our Innovation & Funding Strategy, 50+ project proposals were submitted, having been granted (so far) 10 projects totaling >4.500.000,00€. This includes the Colab4Food public base funding, as well as calls like PRR Agendas, FCT, Interreg, Horizon Europe, EEA, Digital Innovation Hubs, among others. In terms of our Value-2-Market Strategy, more than 200.000,00€ private revenues were achieved through contracted services, partnerships and other businesses.

DATA COLAB

COLLABORATIVE LABORATORY FOR DATA DRIVEN INNOVATION

NUNO MALTA
COLAB COORDINATOR

PAULO SAMPAIO
UMINHO COORDINATOR

BRIDGEPOINT - ENG.DE SISTEMAS
CÂMARA MUNICIPAL DE VIANA DO CASTELO
F.INICIATIVAS
IPVC - INSTITUTO POLITÉCNICO DE VIANA DO CASTELO
SGS PORTUGAL - SOCIEDADE GERAL DE SUPERINTENDÊNCIA
SMARTWATT ENERGY SERVICES
UM - UNIVERSIDADE DO MINHO
UNINOVA - INSTITUTO DE DESENVOLVIMENTO DE NOVAS TECNOLOGIAS
UP - UNIVERSIDADE DO PORTO
PROJECT CONSORTIUM

4 M€
FUNDING AWARDED

JULY 2021
STARTING DATE

DATACOLAB
PROJECT WEBSITE

Mission and vision

Data CoLAB vision is to develop a cross sectorial ecosystem with multiple stakeholders that will use data to reshape the way we produce, consume and live. To achieve this vision Data CoLAB will provide data-driven services to citizens, enterprises, and the public sector, actively contributing to their digital transformation.

Description

Data CoLAB's works to develop a cross-sector ecosystem with diverse stakeholders who will use data to improve the way we produce, consume and live.

Aiming to drive a secure digital revolution, Data CoLAB works across the entire data flow chain to generate innovative solutions that favour informed decision-making. Thus, Data CoLAB develops specific and tangible knowledge that will be transferred to the market in order to maintain and grow the competitiveness of the business and also to raise awareness for the need to adapt these businesses to the emerging reality of data-driven innovation. Data CoLAB develops its scientific agenda having a cross sectorial approach in mind, mainly because the same data sets could have value for different sectors.

The data sets identified are:

1) Industrial (manufacturing);
2) Green Deal;
3) Mobility;
4) Health data;
5) Financial;
6) Energy;
7) Agricultural;
8) Public administrations;
9) Skills and Education and
10) Open Science Cloud.

Main achievements

Leveraged by seven multidisciplinary shareholders, Data CoLAB focuses on the specificities of different value chains, identifying certain data spaces to develop specific services and innovation initiatives, having as its main objective to promote and carry out Research and Development (R&D) initiatives and activities to create a cross-sector innovation ecosystem.
The Data CoLAB intends to use data to redefine the way we produce, consume and live, from data generation and standardization to data analysis and the development of decision-making support tools, guaranteeing data integrity and security throughout the value chain.
Data CoLAB is currently developing several technological projects in areas as diverse as Agriculture, Forestry and Biodiversity (for which Data CoLAB has been developing digital solutions aimed at facilitating the assessment of the impact that various entities may have on Natural Capital), Industry (with business intelligence and data traceability services and IoT solutions), Smart Cities and urban intelligence and traceability.
In addition to this, Data CoLAB working towards the creation of a Technology Free Zone (ZLT) focused on Natural Capital management, to manage and test new technologies that will make it possible to map, analyse and evaluate the natural capital in Portugal.

WATER CO-RE COLAB

WATER-DRIVEN COLLABORATIVE LABORATORY FOR RESILIENT COMMUNITIES

GABRIEL SILVA
(ÁGUAS DE PORTUGAL)
COLAB COORDINATOR

CLÁUDIA PASCOAL
UMINHO COORDINATOR

ADP – ÁGUAS DE PORTUGAL
UM – UNIVERSIDADE DO MINHO
IST-UL – INSTITUTO SUPERIOR TÉCNICO, UNIVERSIDADE DE LISBOA
REQUIMTE, REDE DE QUÍMICA E TECNOLOGIA
FEUP – FACULDADE DE ENGENHARIA DA UNIVERSIDADE DO PORTO
IPP – INSTITUTO POLITÉCNICO DO PORTO
ATP – ASSOCIAÇÃO TÊXTIL E VESTUÁRIO DE PORTUGAL
AST – SOLUÇÕES E SERVIÇOS DE AMBIENTE, LDA
DOUROECI – ENGENHARIA, CONSULTORIA E INOVAÇÃO
EDIA – EMPRESA DE DESENVOLVIMENTO E INFRAESTRUTURAS DO ALQUEVA
ASSOCIAÇÃO FRAUNHOFER PORTUGAL RESEARCH
GALP ENERGIA
SUPER BOCK BEBIDAS
VENTILAQUA
VEOLIA PORTUGAL
PROJECT CONSORTIUM

WAITING FOR FUNDING
FUNDING AWARDED

OCT 2022
STARTING DATE

–
PROJECT WEBSITE

Mission and vision

The vision of the WATER Co-Re is to bring water to the forefront of sustainable growth, establishing it as a societal and economic pillar.

The mission of WATER Co-Re is to leverage scientific and technological capacity in the Portuguese water sector, promoting multidisciplinary research as an engine for capacity building, innovation, internationalization, and valorisation of water resources, stimulating the economy through talent acquisition of high qualified jobs.

Description

WATER Co-Re contributes to water sustainability in alignment with the EU agenda 2030. The R&I lines focus on

1) strategies for water use efficiency;

2) solutions for water and effluent treatment;

3) water reuse and regeneration to promote circular economy and sustainability;

4) water governance to deal with conflicts of interests;

5) empowering the public perception on the water value as natural resource;

6) promote systems adaptation and resilience to global change by promoting biodiversity and ecosystems restoration; and

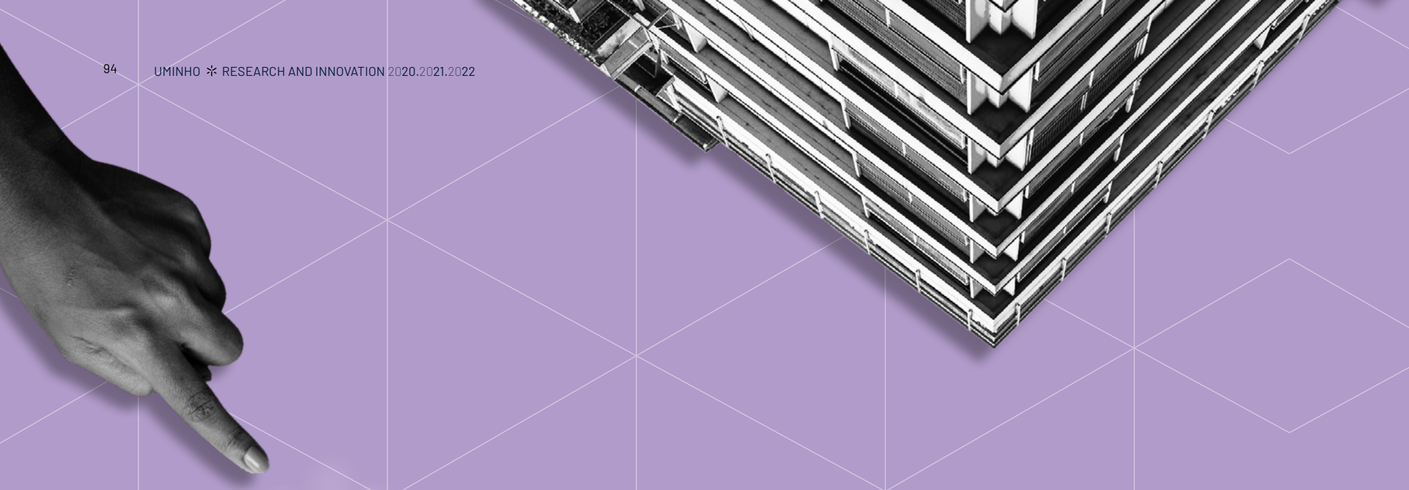
7) use optimization and risk management in infrastructures.

Main achievements

The non-profit association constituting the B2E CoLAB was formalized in February 2019, enabling the start of operation. Together with the establishment of the governing bodies, B2E was installed at UPTEC Mar in Matosinhos, under the patronage of the local municipality, and the direction elaborated an application for The COLAB was approved by FCT in May 2022.

The WATER Co-Re CoLAB Association was created on the 13th October 2022, to comply with the FCT requirements.

The first General Assembly of the Association occurred on 11 November 2022 to elect its management bodies.



INTERFACE UNITS

UMinho has as its main mission to generate, disseminate and apply knowledge, based on freedom of thought and the plurality of critical exercises, promoting higher education and contributing to the construction of a model of society based on humanistic principles, with knowledge, creativity and innovation as factors of growth, sustainable development, well-being and solidarity.

In the last decade there has been an enormous increase in the number of research deals between universities and general society, including private and public companies, health care providers, cultural players etc. In this particular, UMinho is being increasingly known to play a major role in regional innovation, by interacting directly with regional stakeholders. This process has resulted in an increased intensity of university-society knowledge transfer, but competitive forces in the knowledge economy are accelerating innovation activities and the need for universities to perform the role of important contributors for real economies.

Beyond the "simple" research and innovation developers and providers, Universities are increasingly expected to engage in regional innovation policy. This has reinforced the need for an organization change in the university structure to respond to these new challenges. This need for change in the typical knowledge transfer structures resulted in the appearing of the so-called strategic interface units. These units are multidisciplinary and cluster-like formal networks led or participated by universities in collaboration with businesses, government authorities and other organizations. These interface units, typically of private non-profit associations type, cooperatives of limited liability public interest or foundations, were created to support the alignment of the universities with the needs of society and its development.

The scope of activity of these interface units typically involves actions in the fields of development, production and transaction of products and services, development of R&D projects, specialized training, management and exploration of science and technology parks, entrepreneurship and business incubation, promotion and dissemination of cultural activities, promotion of regional development, among others. In fact, the Interface Units of the University are key players in the regional research and innovation ecosystem as evidenced in a recent study conducted by EUA (European University Association) while stating the central role of the University of Minho in that respect.

BACK TO
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2CA - BRAGA

CENTRO CLÍNICO ACADÉMICO - BRAGA

2CA Braga
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NUNO SOUSA
JOÃO PORFÍRIO OLIVEIRA
CHAIRMANS

28	STAFF MEMBERS
01	AREAS OF INTERVENTION
12	RESEARCH PROJECTS
4,2 M€	

Description

The Clinical Academic Center-Braga (2CA-Braga), is a non-profit partnership between the University of Minho (UMinho), through the School of Medicine (EM) and the Life and Health Sciences Research Institute (ICVS), the Hospital de Braga-EPE and Hospital Cuf Porto was created in 2012. 2CA-Braga aims to run clinical trials in collaboration with international industrial partners but also research-initiative clinical studies, to operate as an academic contract research organization (CRO), as a clinical research center and to promote clinical services. The 2CA-Braga combines a team of researchers, physicians and other health professionals, to which is associated a team of project managers, nurses, pharmacists, neuropsychologists, imaging technicians and study coordinators/monitors, ensuring a professional management of all the operations.

STAFF

Category	Number
PhD	4
MsC	20
University degree	2
Technical staff	2
TOTAL	**28**

RESEARCH PROJECTS

National Funding	Number	Total funding
Portugal 2020 Programme	9	3.928.162,20 €
Others	1	44.937,50 €
Total	15	3.973.099,70 €
International Funding	**Number**	**Total funding**
European	1	211.133,94 €
Total	1	211.133,94 €
TOTAL	**16**	**4.184.233,64 €**

(National + International)

MAJOR ACHIEVEMENTS

During the year of 2022, a total of 262 clinical research projects were carried out in the 2CA-Braga, divided as follows by study type:

- 132 research-driven clinical studies (7 clinical trials, 96 observational studies and 29 medical device clinical studies) and
- 130 industry-driven clinical studies (109 clinical trials, 20 observational studies and 1 medical device clinical study).

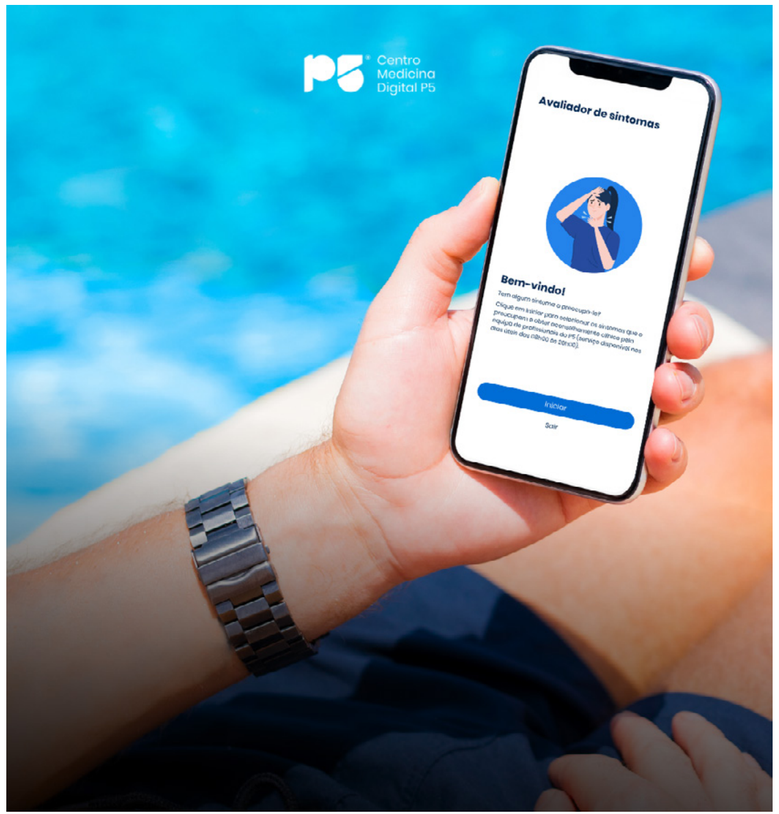
The 2CA-Braga is a highly dynamic and results-oriented institution, firmly rooted in the clinical research arena in Portugal and with a strong reputation among its partners and stakeholders.

After 10 years of growth and consolidation, and since opening its Phase 1 Clinical Trials wing, it supports more of 38% of all the Phase 1-4 commercial clinical studies performed in Portugal as registered by the Infarmed (Portuguese Authority in Medical Products) and, with the partner ICVS, the 2CA it is one of the few units in the Iberian Peninsula to be able to conduct research throughout the entire drug development pipeline, from cells and animal models to clinical trials.

Member of the national scientific system, integrating national and international clinical research networks, 2CA-Braga is certified under ISO 9001:2008 Caspe Healthcare Knowledge Systems (CHKS).

ACMP5

ASSOCIAÇÃO CENTRO MEDICINA P5



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NUNO JORGE CARVALHO DE SOUSA
CHAIRMAN

19	STAFF MEMBERS
04	AREAS OF INTERVENTION
12	RESEARCH PROJECTS
1,6 M€	

Description

The Association P5 Digital Medical Center (ACMP5) is a non-profit association that results from an initiative of the School of Medicine of University of Minho and its association of former students, Alumni Medicine. It was founded in 2018 and has its headquarters in the School of Medicine of University of Minho.

ACMP5 is a digital healthcare provider with a set of services that range from clinical triage and counselling, health promotion initiatives, psychotherapy to multidisciplinary programs in domains such as chronic pain, palliative care and sleep. It has also a research unit that support the development and validation of health solutions and the impact of its use in the community.

DEPARTMENTS/AREAS OF INTERVENTION

- Clinical Unit
- Health Promotion Unit
- Research and Development Unit
- IT Unit

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

Through the use of digital tools, ACMP5 offers health services to the public and evaluates the impact of its programs on health outcomes, patient's quality of life and impact in health services quality and efficacy.

ACMP5 has formed protocols with municipalities, organizations, and IPSS and contributes to the needs assessment and to the development of the solutions that better suit the community. Since 2019, ACMP5 has reached more than 15,000 people through its multidisciplinary programs, mobile apps, and online screenings and consultations. Despite providing care through digital tools, ACMP5 has also developed initiatives that allows for the face-to-face interaction with the community, namely through health screenings, training and health education initiatives, such as health education and health literacy promoting sessions in schools, companies or IPSS. In addition, ACMP5 and APsi (of the School of Psychology at University of Minho) have been collaborating since the pandemic on a psychologic telephone crisis response line that is accessible to University of Minho academics.

STAFF

Category	Number
PhD	5
MsC	9
Licenciate	3
Secondary Education	2
TOTAL	**19**

MAJOR ACHIEVEMENTS

Since 2019, ACMP5 has been able to create protocols with the municipalities of Paredes de Coura, Guimarães, and Braga and provide health services through digital tools to their residents. On a scale of 0 to 5, the feedback from service users is over 4.8 in terms of satisfaction. Since last year, ACMP5 has been collaborating closely with several businesses to develop and execute customized mental health initiatives to promote a healthier work place environment. Furthermore, ACMP5 has also helped one school of Paredes de Coura municipality to get the "Saudavelmente" seal. Additionally, ACMP5 has been consolidating its research division and recently received funds totalling more than one million euros.

APSI-UMINHO

PSYCHOLOGY ASSOCIATION OF THE UNIVERSITY OF MINHO

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ADRIANA SAMPAIO
CHAIRMAN

58	STAFF MEMBERS
06	AREAS OF INTERVENTION
08	RESEARCH PROJECTS
370k €	

Description

The Association of Psychology at the University of Minho (APsi-UMinho) is a service-oriented organization that promotes and develops psychology projects in collaboration with the local community. APsi-UMinho is an association headed by the School of Psychology that disseminates scientific knowledge, offers professional services, and fosters training activities, emphasizing evidence-based practices.

DEPARTMENTS/AREAS OF INTERVENTION

Psychological Intervention Unit	Clinical and Health Psychology Subunit	Childhood Clinical Psychology Consultation Adolescent Psychology Consultation Psychotherapy for Adults Psychotherapy for Health and Illness Sports Psychology Consultation Eating Disorders Consultation Neuropsychology Consultation
	School and Educational Psychology Subunit:	Educational Psychology Consultation Vocational Psychology Consultation
	Social, Community, and Organizational Psychology Subunit:	Offender Consultation Consultation for Victims of Crime Trauma Consultation Harassment Consultation Organizational and Work Psychology Consultation
Training and Professional Development Unit		
Projects and Innovation Unit		
Administrative Department		

MAJOR ACHIEVEMENTS

Some of the major achievements of APsi-UMinho include comprehensive programs, manuals, and webinars on various topics; psychological support during crises; projects for positive adolescent development; participation in international initiatives; events for reflection and knowledge exchange in psychology; and the provision of specific interventions for emotional and behavioral problems in children. Additionally, APsi-UMinho has successfully implemented specialized psychological consultations, providing individual support to individuals in need, including collaborations with social support entities and municipal councils.

RESEARCH PROJECTS

- Gulbenkian Education Summit
- Erasmus Project + (IN)school - developing skills for life"
- Project "Diagnostic risk assessment and Psychological Intervention at Ascendi"
- Gulbenkian Knowledge Academies
- GAP – Gulbenkian Aprendizagem
- Valer – Valongo to Read and Learn to Learn
- Erasmus Project - Play with Your Future

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

APsi-UMinho demonstrates a clear commitment to knowledge transfer and interaction with society across all its activities. The scope of its programs and projects is broad, addressing diverse areas of Psychology, from Sports and Organizational Psychology to Clinical and Health Psychology.

We have illustrated below the main scope of selected projects:

- Erasmus+ and Gulbenkian Projects:
- 1 on 1 Mentoring Program and UMinho Mentoring Program
- Community Interventions and Support Programs

The APsi-UMinho also develops the following activities:

- Webinars and Workshops
- Partnerships and Collaborations
- Research and Evaluation
- Innovation and Funding Applications

B.ACIS
SCIENCE INNOVATION HEALTH

B.acis Science Innovation Health

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JORGE PEDROSA
CHAIRMAN

07	STAFF MEMBERS
03	AREAS OF INTERVENTION
02	RESEARCH PROJECTS
0,4 M€	

Description

B.ACIS is the Center for health innovation of the Medical School (EMUM) of the University of Minho (UMinho). Created to support the "third" mission of the UMinho and its School of Medicine, as well as working towards the economic valorization of knowledge, the B. ACIS - Health Innovation Centre develops its activity in three business units: 1) R&D Services in close coordination with the EMUM Life and Health Sciences Research Institute (ICVS); 2) Innovation, through the transfer of knowledge, fostering and supporting the creation of scientifically and technologically based startups, and promoting partnerships between University and Industry; and 3) Advanced Scientific Training, implemented through a distinctive training offer with international reach.

DEPARTMENTS/AREAS OF INTERVENTION

- Technology transfer
- R&D services
- Advanced training

RESEARCH PROJECTS

- Project ACCELERAMED (04/SIAC/2021 - SIAC Transferência de Conhecimento Científico e Tecnológico, projeto 181316)
- Project Health from Portugal (PRR - «Agendas/Alianças mobilizadoras para a Inovação Empresarial» Aviso Convite n.º 02/C05-i01/2022)

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

B.ACIS has enormously contributed towards the visibility of UMinho's scientific and innovation drive in the biomedicine and health researchers. As an example, we refer to the organization of the TECHTOUR Digital Health event that took place on the 1st and 2nd of September 2022; this initiative brought together a large part of Europe's healthcare innovation ecosystem. The event was attended by over 150 participants, including entrepreneurs, investors, guest speakers, and industry experts. The event focused on Digital Health and covered different topics such as remote monitoring, telemedicine, mental health, point-of-care, predictive diagnosis, and data platforms, also involving spin-offs and spin-in companies officially incubated in the EMUM building, namely BH4U.

MAJOR ACHIEVEMENTS

B.ACIS has successfully promoted knowledge transfer and entrepreneurship within the EMUM health cluster. With just three years of activity, B.ACIS expanded the dynamics of the innovation ecosystem in health and medicine. B.ACIS contributed to taking researchers, students, teachers, and staff of the EMUM cluster (ICVS; 2CA - Academic Clinical Centre, Braga; P5 - Digital Medicine Centre) and innovation partners, industrial players, and multidisciplinary networks, meeting the needs of these organizations, which are increasingly outsourcing their innovation processes.

CCG/ZGDV INSTITUTE

CENTRO DE COMPUTAÇÃO GRÁFICA

CCG/ZGDV
ICT Innovation Institute

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RICARDO J. MACHADO
CHAIRMAN

ANA LIMA
TECHNICAL DIRECTOR

90	STAFF MEMBERS
08	AREAS OF INTERVENTION
70	RESEARCH PROJECTS
17 M€	

Description

The CCG/ZGDV Institute, founded in 1993, is a non-profit applied research and development organization with an extensive experience in providing innovation services and designing and prototyping new high-value processes, services, and products in the areas of computer graphics, ubiquitous computing, human-machine interaction, and information engineering.

As an interface centre of University of Minho for digital economy, CCG/ZGDV Institute focus its action in various fields of application: software industry, ICT, and media; digital transformation in manufacturing and process industry; smart cities, smart mobility, and smart energy; intelligent building and environment; digital heritage, culture, and tourism; eHealth and medical care; sustainability and circular economy, and eGovernment.

Formally recognized by the Presidency of the Portuguese Council of Ministers as a Public-Interest R&I (Research and Innovation) organization (2021);

Formally recognized by the Ministry of Economy as a Centre for Technology Innovation (2022).

STAFF

Category	Number
PhD	8
MsC	35
Licenciate	42
Secondary Education	5
TOTAL	**90**

RESEARCH PROJECTS

National Funding	Number	Total funding
Portugal 2020 Programme	22	4.662.820,44 €
PRR	37	11 882 895,12 €
Others	1	43.077,50 €
Total	60	16 588 793,06 €

International Funding	Number	Total funding
European	4	839.418,50 €
Others	1	37.389,52 €
Total	5	6.661,80 €

TOTAL (National + International)	**70**	**17 472 262,88 €**

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

- Hannover Messe trade fair presence;
- COOPERATIVE Webinar: Shared-Control for road vehicles : Human-Machine Cooperation for Enhanced Driving;
- Webinars “InteractTalk”.

MAJOR ACHIEVEMENTS

With an extensive experience in providing innovation consultancy, research, and development services for digital economy, the CCG/ZGDV is one of the most renowned and innovative technological centres in the ICT domain, in Portugal, as well as being an important hub for employment and settlement of highly qualified workers.

During the year 2022, it was involved in 70 innovation projects in products, processes, or services, most of it focused on national industry, in a journey that has already brought together more than 200 partners and 400 projects developed over the last 30 years.

Present in 7 Mobilizing Agendas for Business Innovation (PRR) in health, production technologies, energy, and digital transition sectors, and in Test Bed AI-CENTER network, CCG/ZGDV has more than €17 million funding.

Is also the coordinator of “Test before investing” at Produtech DIH (Digital Innovation Hub), and member of Portuguese Delegate Expert at Ergonomics in Road Vehicles; Technical Commissions for Standardization; and European Federation of Data-Driven Innovation Hubs.

CEJUR

CENTRO DE ESTUDOS JURÍDICOS DO MINHO

Cejur Centro de Estudos Jurídicos do Minho

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ELIZABETH FERNANDEZ
CHAIRMAN

03	STAFF MEMBERS
01	AREAS OF INTERVENTION
-	RESEARCH PROJECTS
-	

Description

The CEJUR - Centro de Estudos Jurídicos do Minho was established in 1993, the year in which the Law degree program was opened at the University of Minho. Its purpose is the development of legal studies, promoting various initiatives, namely, establishing study groups, conducting research work, and organizing conferences and seminars.

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

With the objective of contributing to the deepening of legal knowledge, CEJUR carries out various activities such as organizing seminars and courses, and publishing legal publications.

In addition, CEJUR maintains a close relationship with law students and graduates, organizing initiatives aimed at acquiring, renewing or updating knowledge in various fields of law.

Thus, since its creation, CEJUR has played a fundamental role in promoting and developing legal studies in the Minho region, contributing to the training of qualified jurists and advancing knowledge in the field of law.

MAJOR ACHIEVEMENTS

The activities with the greatest dimension and impact in the history of CEJUR are:

- the three legal journals, the first of which has been published since 1994, of which CEJUR is the owner and editor: Cadernos de Justiça Administrativa, Cadernos de Direito Privado and Cadernos de Justiça Tributária;
- the Seminars on Administrative Justice, held annually since 1995;
- and, more recently, the preparation courses for the entrance exams to the Centro de Estudos Judiciários and the Family Mediation Training Course.

CVR
CENTRE FOR WASTE VALORISATION

CENTRO PARA A VALORIZAÇÃO DE RESÍDUOS

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MARIA CÂNDIDA L. GUERRA VILARINHO
CHAIRMAN

JORGE M. M. GRANJA DE ARAÚJO
EXECUTIVE DIRECTOR

20	STAFF MEMBERS
07	AREAS OF INTERVENTION
17	RESEARCH PROJECTS
1,9 M€	

Description

CVR - Centre for Waste Valorisation is a non-profit institution recognized as a Public Utility Entity and as a Centre for Technology and Innovation (CTI). CVR has 86 associates from several different fields of activity and, since 2002, it has been offering research, scientific analysis and actual application services in the waste valorisation area. The founding members of CVR are the Minho Industrial Association, the Portuguese Foundry Association, TecMinho and the University of Minho.

Regardless of the industrial activity, CVR has the necessary know-how to support projects and initiatives related to the management of a wide variety of industrial waste streams.

The Centre's capabilities allow it to intervene in different aspects of a process, namely in laboratory analysis and the provision of specialized consultancy services. CVR has also an important role as an entity providing technical and scientific support to R&D projects, having the necessary know-how to develop sustainable solutions for waste treatment, from an environmental and economic point of view.

CVR has been organizing the International Conference "Wastes: Solutions, Treatments, and Opportunities" since 2011. WASTES aims at bringing together academia and industry experts from the Waste Management and Recycling sectors, from around the world, offering state of the art knowledge and sharing experiences with all in attendance.

RESEARCH PROJECTS

National Funding	Number	Total funding
Portugal 2020 Programme	13	1.416.704,45 €
Others	2	341.111,62 €
Total	15	1.757.816,06 €
International Funding	**Number**	**Total funding**
European	1	69.865,88 €
Others	1	37.389,52 €
Total	2	107.255,39 €
TOTAL (National + International)	**17**	**1.865.071,46 €**

STAFF

Category	Number
PhD	2
MsC	9
University degree	4
Bachelor degree	1
Technical staff	4
TOTAL	**20**

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

Type	Number
International meetings organization	12

MAJOR ACHIEVEMENTS

Flagship projects

- CVR.TechRe4C project, third CVR reequipment
- BBTWINS project - Digital Twins for the optimization of agri-food value chain processes and the supply of quality biomass for bioprocessing
- BioShoes4all - Innovation and Capacity Building of the Footwear Industry for Sustainable Bioeconomy
- AmbWTE.: Biomass & Waste to Energy System
- UpCycle4Biz - Upcycling Materials Towards a Circular Economy

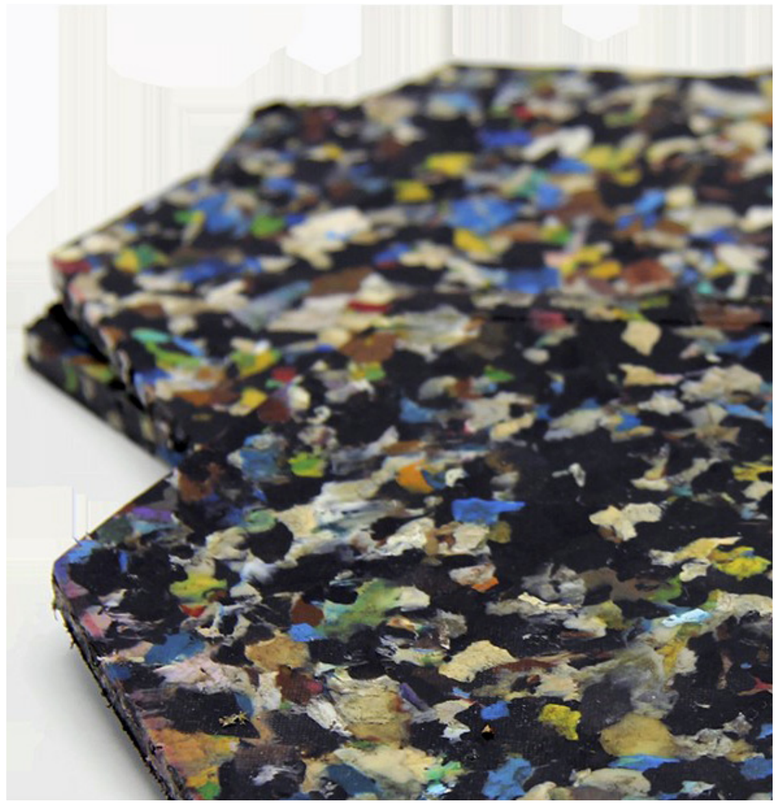
Prizes, Awards, Nominations

Recognition as a Centre for Technology and Innovation (CTI)

Wastes: Solutions, Treatments and Opportunities | 6th International Conference (6-8th September 2023)

FIBRENAMICS ASSOCIATION

INSTITUTE OF INNOVATION ON FIBER-BASED MATERIALS AND COMPOSITES



Fibrenamics

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RAÚL FANGUEIRO
CHAIRMAN

FERNANDO CUNHA
ADMINISTRATOR

25	STAFF MEMBERS
05	AREAS OF INTERVENTION
11	RESEARCH PROJECTS
5,4 M€	

Description

Fibrenamics operates under the motto “From Science to People”, generating, valorizing and transferring advanced knowledge on fibrous and composite materials, converted into innovative products and technologies, with very high added value and highly differentiated. Fibrenamics has been recognized by the European Commission for its expertise in knowledge transfer, and the organization remains committed to challenging boundaries and promoting business growth and social advancement.

DEPARTMENTS/AREAS OF INTERVENTION

Fibrenamics operates in several sectors with particular emphasis on architecture, building, sports, medicine, defence, and mobility.

Over the years, it has adapted its strategy to ensure that the results generated from R&D activities respond pragmatically to different societal challenges, in topics as important as sustainability, personal protection, safety, social inclusion, digitalization, among many others.

The innovation model includes four main pillars: Intelligence, Science, Technology and Business and focuses on knowledge transfer to society in order to create integrated and customized solutions based on fibrous and composite materials.

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

Fibrenamics is the link between the university, companies and society, based on a highly innovative model, recognized by the European Commission as a case-study to be followed in the European region, on the relationship between academia and companies.

Fibrenamics promotes knowledge transfer and interaction with society through R&D projects with companies and events (National and International Conferences, Webinars and Workshops). These events bring together universities, research centers, companies, and individuals interested fibrous and composite materials.

RESEARCH PROJECTS

National Funding	**Number**	**Total funding**
Services	3	102.500,00 €
Competitive funding	5	5.086.078,80 €
Total	8	5.188.578,80 €
International Funding	**Number**	**Total funding**
Services	2	215.521,68 €
NATO Program	1	20.000,00 €
Total	3	235.521,68 €
TOTAL (National + International)	**11**	**5.424.100,48 €**

MAJOR ACHIEVEMENTS

Fibrenamics was recognized in 2022 as a Technological and Innovation Center by the Portuguese National Agency for Innovation (ANI). The institute has achieved significant metrics with 500 partners, 4200 registered members, 900 publications, 70 innovative commercialized products, 45 patent registers, and 25 ongoing R&D projects. Fibrenamics is also participating actively in international COST Actions (HISTRATE and CONTEXT).

IDEGUI
DESIGN INSTITUTE OF GUIMARÃES

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PAULO J. S. CRUZ
CHAIRMAN

24	STAFF MEMBERS
02	AREAS OF INTERVENTION
03	RESEARCH PROJECTS
125k €	

Description

The Design Institute of Guimarães is a Technology Transfer and Valorisation Centre dedicated to design research, to the incorporation of design in product development, to specialized training, as well as to the promotion and dissemination of design driven industrial products. It is also an open hub for the cooperation among industry, designers and researchers with the aim of promoting economic development through design.

DEPARTMENTS/AREAS OF INTERVENTION

The Design Institute hosts a wide range of laboratories, workshops and studios where students, designers and researchers can develop their activity, taking advantage of the most diverse and modern technological means. The Advanced Ceramics R&D Lab (www.aclab-idegui.org) stands out among these laboratories. It aims to explore the integration of digital additive manufacturing (AM) techniques in the architectural design and production processes of ceramic elements for building envelopes.

KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

Since its creation in 2012, IDEGUI has manifested its vocation to serve companies by providing them with differentiating capabilities and valuing their industrial products with the incorporation of design, constituting an important partner in the modernization and competitiveness of the productive fabric.

RESEARCH PROJECTS

IDEGUI's participation in the MIT-Portugal Program Exploratory Project KERAMOS - "Additive manufacturing of innovative and multifunctional Ceramic products for architectural systems" made evident the great benefits of the AM of advanced and customizable ceramic products. It will encourage the wider use of innovative ceramic products in architectural systems by exploring the potential of tailoring their multiple properties and the great benefits of AM advanced ceramic customized and sustainable products.

MAJOR ACHIEVEMENTS

Some prototypes of free-form stoneware components for building envelopes have been shown in important exhibitions, helping to reshape and expand the boundaries of what is possible to achieve with masonry construction, such as:

- Power/Architecture - the inaugural exhibition of the Casa da Arquitectura in Matosinhos, Portugal (2017-2018);
- Material Xperience - the leading event for creative professionals focused on material innovation, Rotterdam, The Netherlands (2018);
- BE-AM Built Environment Additive Manufacturing that was held at Formnext, the leading global exhibition on additive manufacturing and the next generation of intelligent industrial production, Frankfurt, Germany (2019, 2021).

PIEP

CENTRE FOR INNOVATION IN POLYMER ENGINEERING

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NUNO GUIMARÃES
CHAIRMAN

CLÁUDIA CRISTÓVÃO
MANAGING DIRECTOR

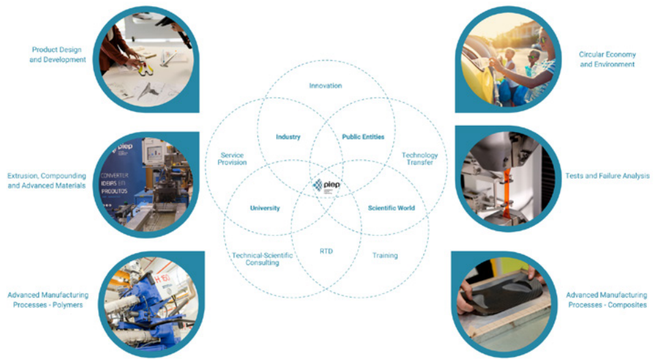
70	STAFF MEMBERS
06	AREAS OF INTERVENTION
85	RESEARCH PROJECTS
21,8 M€	

Description

Founded on December 13, 2000, the Centre for Innovation in Polymer Engineering (PIEP) is a private association, with a technological and scientific matrix with a business management model. PIEP aims to provide a prompt response in the delivery of products and services, oriented to the Research, Development and Innovation needs of companies in the plastics and related sectors, through innovation activities, technology transfer, technical-scientific consultancy, and services provision, materializing the vocation of converting ideas into products. Based on the promotion of the principles of sustainable development, PIEP seeks to create value on an ongoing basis, fostering the economic development and industrial competitiveness.

RESEARCH PROJECTS

National Funding	Number	Total funding
National Funding	50	19.000.000 €
International Funding	2	900.000 €
Direct Projects with Industry	33	1.900.000 €
TOTAL	**85**	**21.800.000 €**



MAJOR ACHIEVEMENTS

PIEP is a leading research institute in the field of polymer engineering. Over the past three years, PIEP has been involved in several ground-breaking research projects. Among the research projects that PIEP has participated in between 2020 and 2022, some of the most notable include the development of new products and methods for polymer processing, the investigation of novel polymer materials for use in several applications and sectors, the exploitation of new techniques for recycling and repurposing plastic waste and on the implementation of circular approaches to minimize environmental impact for polymers and composites. Through these projects, PIEP has helped to pave the way for a more sustainable and efficient use of polymer materials in industry and beyond.

There were several major achievements for PIEP between 2020 and 2022. Here are some of the most notable ones:

- ISO 9001 certification approved
- NP 4457 certification approved
- 2 European Projects approved
- 10 PRR Projects approved
- PIEP has achieved the milestone of having more than 50 (2022) people working full-time
- Approval, from the Portuguese Government, the recognition has a CTI Institution
- 1 Patent registered
- + 30 Scientific publications

TECMINHO

ASSOCIAÇÃO UNIVERSIDADE-EMPRESA PARA O DESENVOLVIMENTO

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21	STAFF MEMBERS
03	AREAS OF INTERVENTION
63	RESEARCH PROJECTS
2,6 M€	

Description

TecMinho is the interface of UMinho responsible for managing its Intellectual Property and supporting Knowledge Transfer. This is achieved through licensing, strategic partnerships with industry, the setting-up of knowledge-intensive spin-offs, and continuous training and organisational development. TecMinho is a private, non-profit organisation, with an extensive track record spanning 30 years of experience.

TecMinho is a certified training organisation accredited by DGERT (Portuguese Directorate-General for Employment and Work Relations). Its main purpose is to support services in the fields of innovation and new technologies and deliver continuous, advanced and specialised training and strategic information.

DEPARTMENTS/AREAS OF INTERVENTION

Training & Development	Continuous, advanced and specialised/ professional education and training for individuals and companies; e-learning training services; research and innovation in education and training, organisational development projects, career and professional development service.
Technology transfer & innovation with emphasis on intellectual property rights	Promotion of national and European initiatives aimed at the transfer of experience and technological innovation between academia and industry; research and technological development; diffusion of scientific and technological information; patent research, industrial property and registration; and support in specialised services.
Entrepreneurship	Acceleration programmes, business start-ups and university spin-offs. TecMinho has a large experience in these fields and has collaborated in over 170 European and international projects, worked with approximately 900 European and international partner institutions (HEI, companies, business associations, ONGs, local authorities, etc.) from over 40 countries worldwide.

RESEARCH PROJECTS

National Funding	**Number**	**Total funding**
Portugal 2020 Programme	26	1.830.327,64 €
Others	28	513.700,79 €
Total	54	2.344.028,43€
International Funding	**Number**	**Total funding**
European	7	109.562,36 €
Others	2	190.891,84 €
Total	29	300.454,20 €
TOTAL (National + International)	**63**	**2.644.482,63 €**

MAJOR ACHIEVEMENTS

- Project Erasmus+ "OptimTex - Software Tools for Textile Creatives"
- European Innovative Teaching Award 2021, for the project Erasmus+ "TAD - The Ability Advisor"

UMINHO PRIZE FOR
INITIATION IN SCIENTIFIC RESEARCH

Created in 2020, the "UMinho Prize for Initiation in Scientific Research" aims to bring 1st cycle students in contact with the university's scientific research and include them in experienced research teams.

Within the scope of this initiative, which has already had 3 editions, around 115 students from the various UMinho Research Centers have already had the opportunity to compete and get involved in supervised research activities that foster their interest in science.

The Prize has also contributed to guide students towards subsequent study cycles, in which scientific research is central and the students assume increasingly leading roles in the expansion of scientific knowledge.

2022

2021

2020

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