

UNIVERSITY
OF MINHO

1979



UMinho Editora

research and innovation

2018



University of Minho





“RES IPSAS EXAMINARE: VERUS EST SCIENDI MODUS”

(Francisco Sanches)

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university
of minhho



MESSAGE FROM THE RECTOR



The University of Minho (UMinho) defined some years ago a comprehensive and integrative research policy in order to actively contribute to pushing the frontiers of human knowledge, to the reinforcement of the national scientific system, and to the consolidation of its institutional position both in national and international arenas.

Thus, the commitment to become a research university is stated in the different strategic documents approved by the University along the last decade.

UMinho defined a clear strategy in order to be an open and permanent space for the creation of knowledge and the furtherance of nationally and internationally relevant innovation across the different areas of knowledge. Being a comprehensive University, UMinho aims at fostering high quality research in all the scientific domains in which our Research Units inscribe their activity: Sciences, Health and Life Sciences, Engineering and Technology, Social Sciences and Arts and Humanities.

From the very beginning, UMinho has adopted the principles of open access and open science. We aim at carrying out our scientific activity in a transparent and collaborative way, actively promoting the sharing and communication of research processes, data and outputs. We are convinced that we do better science when we make it both more sensitive to the needs of society and also more effective in what concerns the allocated resources. As we see it, accountability is a pre-requisite for reinforcing citizen awareness of the contributions of science to a better world. These are the reasons why UMinho played a pioneering role in allowing open access to its publications and why it is currently expanding its sharing of research data.

At UMinho, research is carried out in close connection with education. The University is increasingly involving students of the different learning cycles in research activities. Conversely, both PhD students and post-doctoral researchers play a role in teaching activities. Acting in this way, not only do we guarantee better quality education but we also establish the basis for a sustainable development of the scientific system and the fostering of scientific culture.

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

The University's high-quality scientific performance is clear when we consider: (i) the results of the international evaluation of our Research Units carried out by the National Science Foundation (FCT); (ii) the position that UMinho has been achieving in important international rankings; (iii) the number and diversity of University projects approved under the 7th Framework Program and the H2020; and (iv) the large collaboration projects with companies and other organisations that are under development.

The high standards of the activity of our Research Units is made clear in this publication. When we consider the characteristics of their human resources, their publications, the projects funded by national and international agencies, the national and international recognition of their researchers, the networks with which they are engaged, and the scientific events they promote it becomes clear how well positioned in the national and international context our Research Units are.

This publication gives a general overview of research in UMinho along the year of 2018. It is the first of a series providing detailed information about the research work of the University.

Research at UMinho is governed by a permanent concern with providing feedback to the scientific community and to our fellow citizens as most of our funding is from public sources. Together with the adoption of external evaluation procedures, providing feedback is one of the best ways to establish the relevance of science undertaken for the public good, and for guaranteeing the scientific independence of our researchers and their Research Units.

Nowadays, science is essential for fostering social and economic development. Through this publication we reveal the relevant role that UMinho is playing in this enterprise.

Rui Vieira de Castro
Rector

THE UNIVERSITY OF MINHO

Founded in 1973, the University of Minho (UMinho) welcomed its first students in the academic year of 1975/76. Currently, the University is renowned for its competence and the quality of its teaching staff, its excellence in scientific research, its wide range of undergraduate and graduate courses offered, and its high level of interaction with other institutions.

For these reasons, UMinho has a central role in the region, is an important reference for the country, and is a recognised partner in the European and global scene. Located in the north of Portugal, the University has a campus in Braga - Gualtar Campus, and two others in Guimarães - Azurém Campus and Couros Campus. Originating from the ancient Roman town of Bracara Augusta, Braga is currently the third largest city in Portugal. Guimarães is known as the “cradle of the nation” and is classified as World Cultural Heritage by UNESCO.

The University’s organisational structure is flexible and conducive to innovation and interdisciplinary research on emerging topics. The teaching and research courses and the Schools and the Institutes are the basic structure of the University: Schools of Architecture; Sciences; Health Sciences; Law; Economics and Management; Engineering; Psychology; Nursing and the Institutes of Social Sciences; Education; Biomaterials, Biodegradables and Biomimetics; Arts and Human Sciences.





University of Minho
uminho.pt



Institute of Arts and Humanities
ilch.uminho.pt



Institute of Education
ie.uminho.pt



Institute of Social Sciences
ics.uminho.pt



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



School of Architecture
arquitectura.uminho.pt



School of Economics and Management
eeg.uminho.pt



School of Engineering
eng.uminho.pt



School of Law
direito.uminho.pt



School of Medicine
med.uminho.pt



School of Nursing
ese.uminho.pt



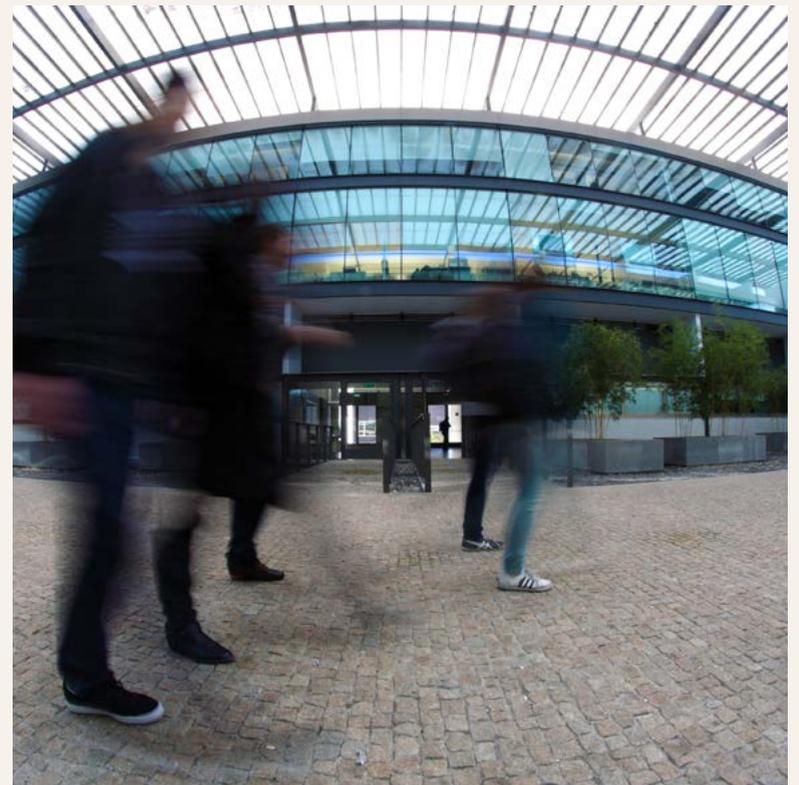
School of Psychology
psi.uminho.pt



School of Sciences
ecum.uminho.pt

UMinho is a research university, committed to the value chain of knowledge, namely: Research, Development and Innovation. It is also involved in the socio-economic environment, with many successful partnerships in research, cultural and socio-economic development projects.

Internationalization is a strong commitment and international activities are quite intense, not only within the EU and Portuguese Official Language African Countries (PALOP), but also with several other countries on different continents. The academic year of 2010/2011 was marked by the introduction of a wide range of courses which extended to distance-learning programmes and evening classes. This educational offer had a great social impact and while guaranteeing quality, a Hallmark of this Institution, made the University accessible to a new public.



MISSION

“The University’s mission is to create, spread and apply knowledge, with free thinking and pluralism as its core values. Our goals are to promote higher education and to contribute to shaping a model of society based on humanistic principles, in which knowledge, creativity and innovation contribute towards growth, sustainable development, well-being and solidarity”.



The fulfilment of the mission referred to in the preceding paragraph is undertaken by pursuing the following goals in an international framework, where scientific research plays a leading role in close articulation with teaching:

- a) to achieve the highest level of education, in our ethical, cultural, artistic, scientific, technical and professional dimensions by providing a diversified range of educational options in a proper educational environment. We also aim to enhance the activity of our teaching staff, researchers, non-teaching and non-research staff, in addition to the personal, social, intellectual and professional development of our students, thus contributing to lifelong learning, and active and responsible citizens;
- b) to do research with and to participate in scientific institutions and events in the permanent quest for excellence as well as creativity, seeking innovative and unique solutions and also responses to the major challenges faced by society;
- c) to transfer, exchange and enhance scientific and technological knowledge through the development of suitable solutions, community service projects and continuous training and development support on the basis of reciprocal enhancement and the promotion of entrepreneurship;
- d) to promote the development of activities in order to provide access to and enjoyment of culture by all people and groups, whether internal or external to the University;
- e) to promote the cultural, scientific and technical exchange of students, teaching staff, researchers, non-teaching and non-research staff as well as national and international institutions and organisms. These exchanges are conducive to educational and research partnership-based programmes and contribute to international cooperation by placing a special emphasis on European countries besides Portuguese-speaking countries, which is beneficial to a multilingual environment at the University;
- f) to interact with society by fostering people's understanding of culture, along with the analysis of solutions to address the main problems of everyday life. We also aim to set up partnerships in furtherance of social and economic development in international, national and regional contexts;
- g) to contribute to the social and economic development of Minho, which includes the development of knowledge and the protection and spread of the region's natural and cultural heritage;
- h) to promote the University's institutional sustainability and competitiveness in a global context.

THE INTERNAL ORGANISATION

The University of Minho (UMinho) has 31 Research Units (plus the UMinho Nucleus of the Health Sciences Research Unit, which is in the process of creating an official pole), 13 of which have been classified as Exceptional (1) and Excellent (12) by the 2014 international round of assessment by FCT. In addition, the university also has 10 Research Units classified as Very Good. This means that 75% of the Research Units were recognized with the three highest ratings. As a result of this outcome, more than 90% of UMinho's researchers work in Research Units classified as Very Good, Excellent or Exceptional, within diverse fields such as Sciences, Health and Life Sciences, Engineering and Technology, Social Sciences and Arts and Humanities.

The following figures show the current organisation of the Research Units.

	Institute of Arts and Humanities	CENTRE FOR HUMANISTIC STUDIES
		CENTRE FOR ETHICS, POLITICS AND SOCIETY
	Institute of Education	RESEARCH CENTRE ON EDUCATION
		RESEARCH CENTRE ON CHILD STUDIES
	Institute of Social Sciences	COMMUNICATION AND SOCIETY RESEARCH CENTRE
		CENTRE OF STUDIES IN GEOGRAPHY AND SPATIAL PLANNING
		INTERDISCIPLINARY CENTRE OF SOCIAL SCIENCES
		CENTRE FOR RESEARCH IN ANTHROPOLOGY PORTUGAL
		LANDSCAPES, HERITAGE AND TERRITORY LABORATORY
	Research Institute on Biomaterials, Biodegradables and Biomimetics	3B's RESEARCH GROUP

	School of Architecture	LANDSCAPES, HERITAGE AND TERRITORY LABORATORY
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	School of Economics and Management	RESEARCH CENTRE IN POLITICAL SCIENCE CENTRE FOR RESEARCH IN ECONOMICS AND MANAGEMENT
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	School of Engineering	MECHANICAL ENGINEERING AND RESOURCE SUSTAINABILITY CENTRE ALGORITMI CENTRE CENTRE OF TEXTILE AND SCIENCE TECHNOLOGY CENTRE OF BIOLOGICAL ENGINEERING CENTRE OF TERRITORY ENVIRONMENT AND CONSTRUCTION INSTITUTE FOR POLYMERS AND COMPOSITES INSTITUTE FOR SUSTAINABILITY AND INNOVATION IN STRUCTURAL ENGINEERING HIGH-ASSURANCE SOFTWARE LABORATORY CENTRE FOR MICROELECTROMECHANICAL SYSTEMS
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	School of Law	RESEARCH CENTRE FOR JUSTICE AND GOVERNANCE
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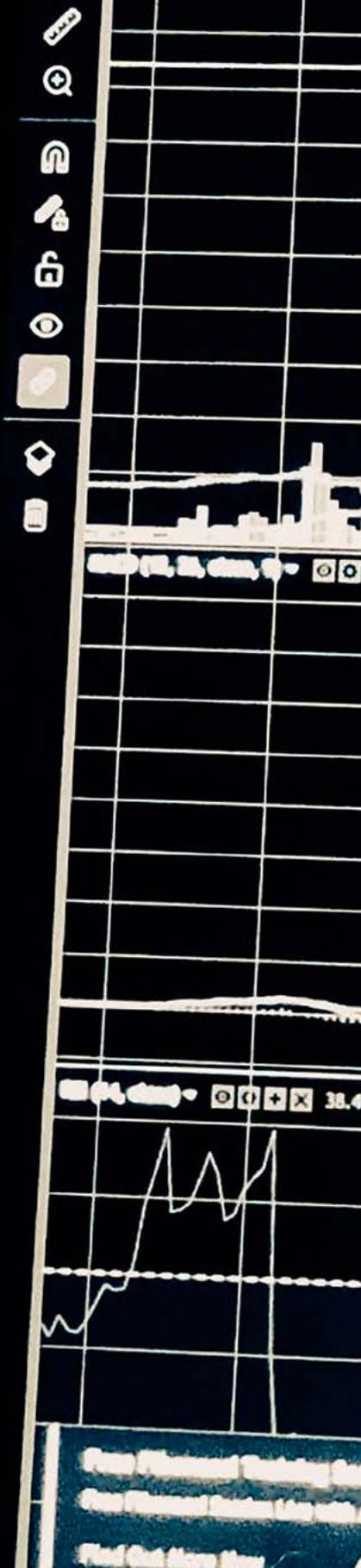
	School of Medicine	LIFE AND HEALTH SCIENCES RESEARCH INSTITUTE
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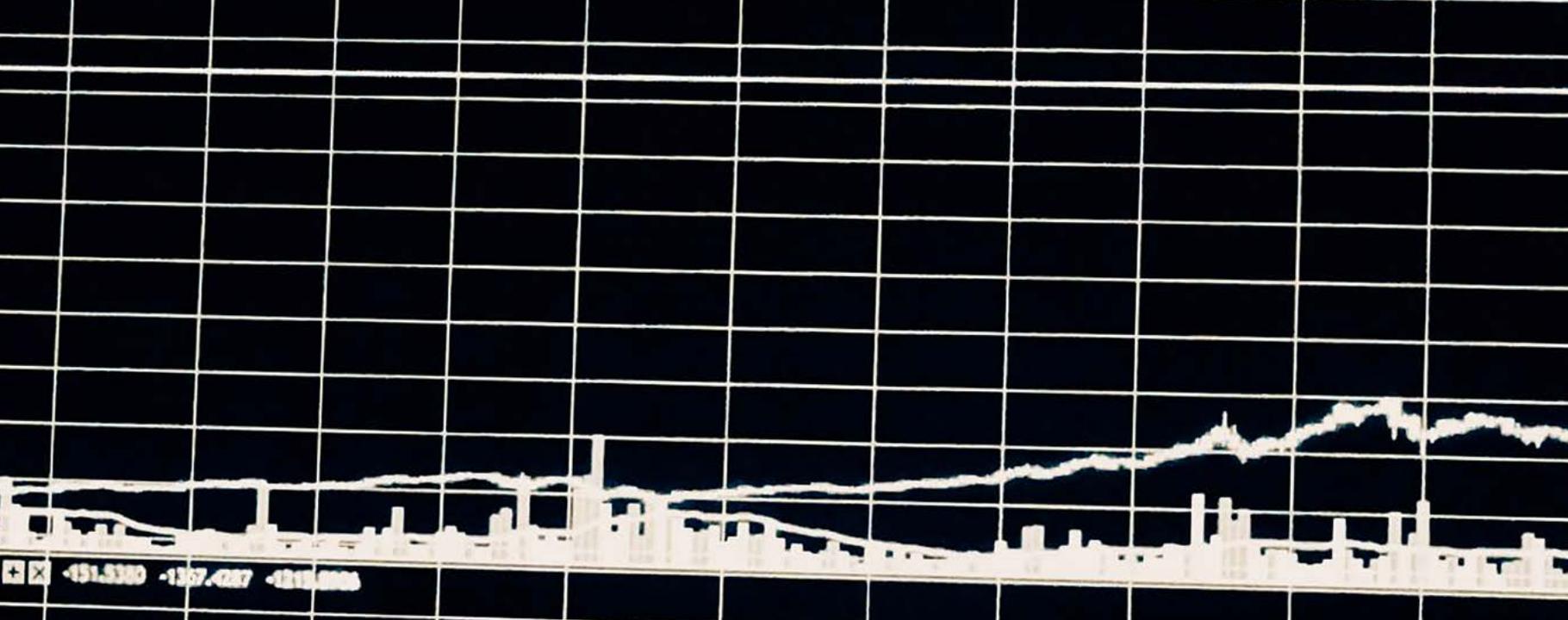
	School of Nursing	HEALTH SCIENCES RESEARCH UNIT: NURSING - NUCLEUS UMINHO
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	School of Psychology	PSYCHOLOGY RESEARCH CENTRE
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	School of Sciences	CENTRE OF PLANT FUNCTIONAL BIOLOGY CENTRE OF MOLECULAR AND ENVIRONMENTAL BIOLOGY CENTRE OF EARTH SCIENCES CENTRE OF PHYSICS CENTRE OF MATHEMATICS CENTRE OF CHEMISTRY LABORATORY FOR INSTRUMENTATION AND EXPERIMENTAL PARTICLE PHYSICS
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research centres





Currently, UMinho has 31 Research Units (plus the Nucleus of the Health Sciences Research Unit from the School of Nursing) belonging to the 12 Organic Units. In the international Research Unit evaluation programme, conducted by the National Science Foundation (FCT) for the period 2015-2020 (Table 1), 23 of the Research Units (i.e. 74%) were ranked exceptional, excellent or very good (the highest ratings on the scale).

These results testify the external recognition of the quality of the research developed at UMinho. As a consequence of this evaluation, over 90% of the researchers are hosted in top level Research Units, across fields such as Exact Sciences, Natural Sciences, Engineering and Technology Sciences, Social Sciences and Arts and Humanities.



The Research Units organisation within the Organic Units of UMinho and the correspondent FCT evaluation results are summarized in Table 1.

A strong indicator of the research quality in UMinho is the success in securing EU funds. UMinho is among the Portuguese universities with the highest success rate in attracting European projects. Accordingly, the University has a very meaningful portfolio of projects coordination in all the fields of the European Commission's (EC) Widening Programme. After coordinating REGPOT projects during the 7th Framework-Programme, UMinho is coordinating a TEAMING project, currently in its second stage, plus two TWINNING projects and an ERA-Chairs project. UMinho is also an active participant in a second TEAMING project.

UMinho is also taking part in two large FET Flagship projects: FET Graphene and FET Brain. In the Horizon 2020 programme, UMinho has been particularly competitive in the fields of research involving companies and enterprises in diverse fields including nanotechnologies, (bio)materials and new production technologies, IT and communication technologies, food, agriculture, fishing and biotechnology.

UMinho has also been successful with projects submitted to FET - Future Emerging Technologies - a funding programme for disruptive ideas and projects. Likewise, the University is involved with most of the training grants and networks (ITNs) associated with the Marie Skłodowska-Curie actions.

Another set of projects in which the University has been very active are those related to cross-border cooperation (POCTEP), within the Euro-Atlantic area and CYTED, including several ERA-NET projects. Finally, it is also worth notice that UMinho takes part in all the international partnerships promoted by the Portuguese Government, namely the MIT- Portugal (Massachusetts Institute of Technology), the CMU-Portugal (Carnegie Mellon University), the UT Austin-Portugal (University of Texas at Austin) and the Harvard-Portugal (Harvard University) Programmes.

In 2018, UMinho had over 600 active research projects (including projects developed by the different Research Units and by the Organic Units centrally), corresponding to a total funding of around 160 million Euro (multiannual funding), as it is shown in Table 2. These running projects include those obtained before or during the year under consideration. Next, the projects executed by the different Research Units and the correspondent funding will be shown, together with the amount executed for the whole year of 2018.

For the purpose of this summary, projects that are shared between different Research Units count as one (for the PI Research Unit) and the budget appears divided between the participant Research Units.

TABLE 1.

FCT evaluation results of UMinho Research Units.

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

*Shared by the two Organic Units

**Evaluated as a single Unit

***This Nucleus, composed by 16 PhD full members, started the process of creation of an official pole.

TABLE 2.

Research projects and total funding for the different Organic Units of UMinho.

Organic Unit	European funding		International funding		National funding - PT2020		Other National funding		Total	
	nº	Funding	nº	Funding	nº	Funding	nº	Funding	nº	Funding
Institute of Arts and Humanities	0		0		3	626 972 €	1	300 000 €	4	926 972 €
Institute of Education	8	168 893 €	1	17 728 €	10	1 410 038 €	5	264 355 €	24	1 861 014 €
Institute of Social Sciences	2	1 404 048 €	1	115 999 €	10	2 915 230 €	3	186 241 €	16	4 621 518 €
Institute of Social Sciences / School of Architecture (Lab2PT)	1		1	84 190 €	5	716 372 €	3	76 728 €	10	877 290 €
Research Institute on Biomaterials, Biodegradables and Biomimetics	15	17 595 421 €	10	1 118 422 €	37	25 071 706 €	13	1 066 668 €	75	44 852 217 €
School of Economics and Management	0		0		10	1 457 081 €	4	724 754 €	14	2 181 835 €
School of Engineering	20	4 853 804 €	15	1 457 825 €	192	53 411 552 €	14	1 469 803 €	241	61 192 984 €
School of Law	1	46 518 €	1	169 222 €	1	220 202 €	3	104 625 €	6	540 567 €
School of Medicine	2	258 321 €	14	1 994 399 €	48	15 592 014 €	18	1 139 804 €	82	18 984 538 €
School of Nursing	0		0		2	171 059 €	0		2	171 059 €
School of Psychology	1	21 132 €	1	33 280 €	17	5 135 857 €	7	306 000 €	26	5 496 269 €
School of Sciences	7	910 474 €	10	817 415 €	106	15 985 368 €	15	1 765 133 €	138	19 478 390 €
Total	57	25 258 611 €	54	5 808 480 €	441	122 713 451 €	86	7 404 111 €	638	161 184 653 €

TABLE 3.

SCOPUS indexed publications for UMinho from 2009 till 2018.

Item	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Article	1683	1550	1620	1554	1418	1330	1199	960	836	720
Conference paper	594	621	574	614	585	618	558	480	443	367
Book Chapter	134	141	208	129	105	139	107	68	39	38
Review	152	127	118	103	84	69	78	61	40	37
Editorial	59	68	57	42	42	30	35	32	17	15
Note	16	8	11	15	6	8	6	6	5	4
Book	6	17	22	15	13	14	12	9	3	3
Erratum	7	15	9	15	8	5	3	1	10	3
Short Survey	6		9	8	4	2	5	3	1	3
Letter	17	7	8	11	5	6	11	8	5	1
Retracted				1	1					
Data Paper	2		1							
Undefined	43	10	1							
Total	2719	2564	2638	2507	2271	2221	2014	1628	1399	1191

The UMinho publications record is also worth mentioning. Table 3 summarizes all SCOPUS indexed publication items by UMinho researchers. The record demonstrates that there has been a clear and systematic increase in recent years, with the total number of documents published in 2018 being twice as much as the number of 2009.

The most important international rankings that emphasize the scientific research performance do highlight the relevant impact of UMinho in this particular respect. In Academic Ranking of World Universities (Shanghai Ranking), UMinho was placed in the range #401-500. Furthermore, UMinho has been ranked in the TOP 500 universities worldwide for the last 3 years and it is the 3rd best Portuguese University in the Shanghai Ranking. UMinho is the Portuguese institution with the highest number of Highly Cited Researchers (4) in the 2018 edition from the Web of Science Group (Clarivate Analytics).

CENTRE FOR HUMANISTIC STUDIES

The Centre for Humanistic Studies (Centro de Estudos Humanísticos/CEHUM) is the oldest Research Unit of the Institute of Arts and Humanities of UMinho. It was founded in 1994 as a follow-up Research Unit to the former Centre for Portuguese Studies (CEP), founded in 1980 with a central focus on Literary Theory and Portuguese Literature and Linguistics. Currently, CEHUM integrates research in the fields of Literature, Linguistics, Culture, Arts (Music and Theatre) and Philosophy, the main domains of expertise of the Institute of Arts and Humanities.

CEHUM's members develop their research activities within 11 consistent mono- and multidisciplinary research teams, with the aim of developing fundamental and competitive activities with international impact on diverse fields of the Humanities. Important vectors of research include studies on migrations and marginalization, on gender and arts, post-colonial studies, and studies on identity (human, animal, machine) combined with intermediality and interart poetics. As a kind of backbone, these multidisciplinary teams guarantee the cohesion of CEHUM in its diversity, fostering the dynamics between researchers in different domains. The multidisciplinary approach coexists with monodisciplinary research focused on theoretical and experimental linguistics and on Portuguese and Lusophone Literature. Emerging areas within the Centre, with impacting new work, are Digital Humanities, Asian studies and Performance studies, which combines sustained artistic practice with academic research.

Besides the ca. 55 senior researchers, CEHUM includes a significant number of junior researchers, having expanded the number of young researchers with PhD or post-doc fellowships, who contribute to the research dynamics of the Centre. A large number of external collaborators from other national and international institutions cooperate with CEHUM's teams. Also, most of CEHUM's senior researchers participate actively in international networks or projects. Due to these dynamics, this Research Unit is in the forefront of developing fundamental, multidisciplinary work in the area of the Humanities, recognized both nationally and internationally. CEHUM was evaluated as Good in FCT's 2014 evaluation process.

CEHUM hosts three peer-reviewed journals (Diacrítica, Revista 2i, H2D - journal on digital humanities), and publishes two monograph series (Hespérides and Poliedro collections), as well as a large number of proceedings (e.g., the Autumn Colloquia) and anthologies of theoretical texts in Portuguese. These publications have enlarged the dynamics of the Centre as well as its national and international visibility. CEHUM shares (with the Centre for Ethics, Politics and Society) a specialized and constantly updated library on Human Sciences (Biblioteca Vítor Aguiar e Silva), which includes a special section of rare books.



director
Orlando Grossegeesse

vice-directors
Micaela Ramon
Cristina Flores

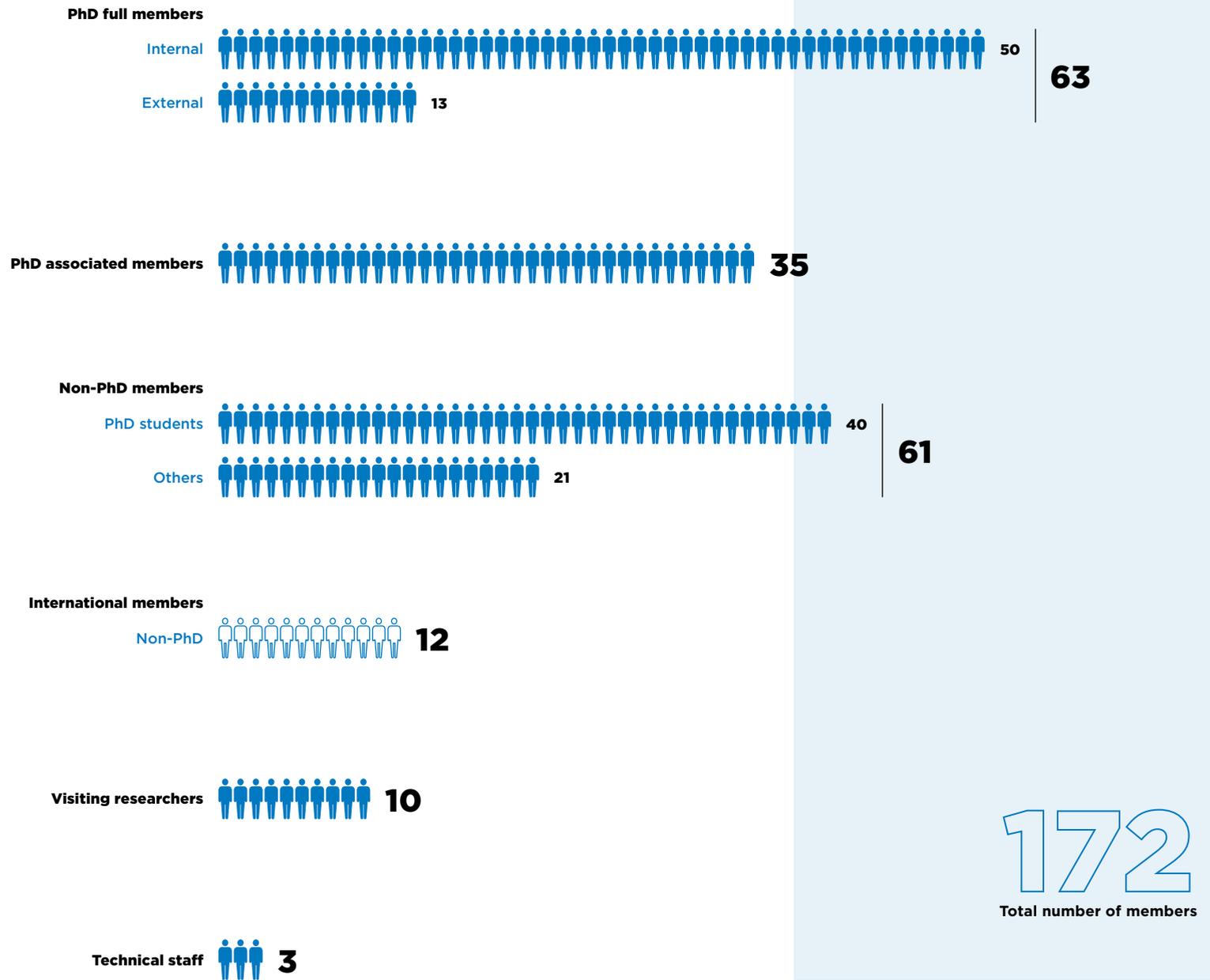
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STAFF MEMBERS



PUBLICATIONS

Indexed papers (SCOPUS)  **48** | 3 Q1 5 Q2 2 Q3 3 Q4 35 Others

Books  **20** | 11 International
9 National

Book chapters  **60** | 30 International
30 National

Journals or collections  **27** | 23 Editor
4 Guest editor

Communications | **Oral**  **253** | 128 International
125 National

Others
(artistic and judicial works,
critical reviews, book prefaces
and afterwords)  **29**

198

Number of citations

56

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **3**

On-going PhD Theses  **37** | 5 In cooperation with
international institutions

Master's Dissertations completed  **47**

2.10

Average impact factor

1

Non-indexed proceeding papers

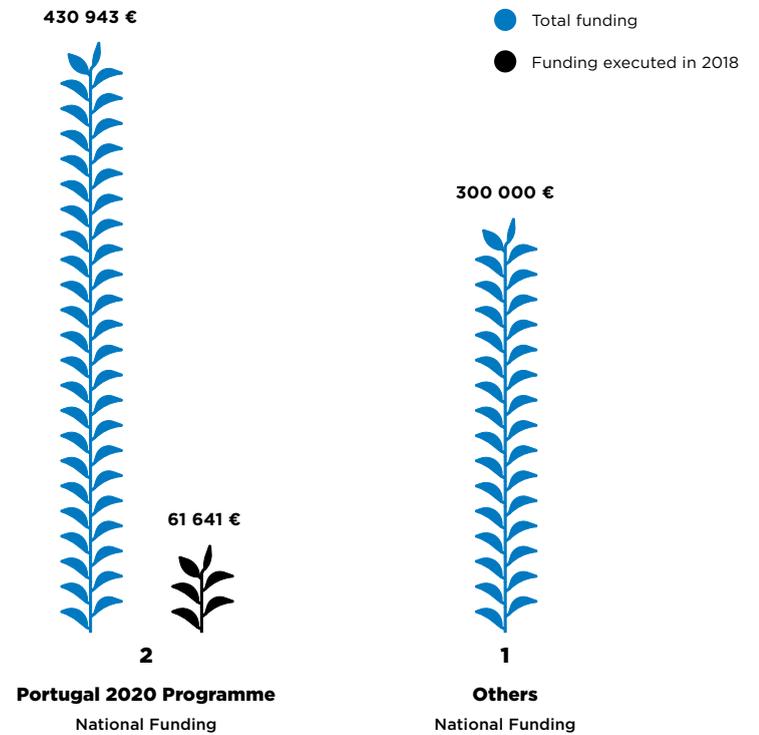
RESEARCH PROJECTS

3

Total number of on-going projects
National Funding

730 943 €

Total funding for UMinho
National Funding
(61 641 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

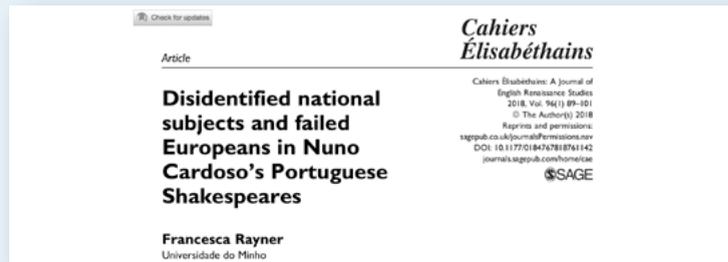
15

MAJOR ACHIEVEMENTS

Flagship Publications

Disidentified national subjects and failed Europeans in Nuno Cardoso's Portuguese Shakespeares

F. Rayner, 2018.



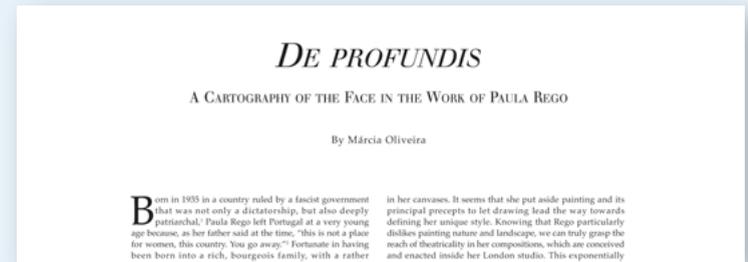
Null objects in the spontaneous speech of monolingual and bilingual speakers of European Portuguese

E. Rinke, C. Flores, P. Barbosa, 2018.



De Profundis A cartography of the face in the work of Paula Rego

M. Oliveira, 2018.



Tradición, innovación y mercado en lo fantástico en la cultura gallega: el thriller xacobeo

X.N. Sabarís, 2018.



Flagship Projects

WOMEN, ARTS AND DICTATORSHIP

**Portugal, Brazil and Portuguese speaking African Countries
(PI: A.G. Macedo)**



The project aims to produce an analysis of the work by women artists from Portuguese speaking countries, whose artistic practice reflects on or resists the authoritarian regimes/dictatorships in the second half of the twentieth century. The main goal is to make visible the presence of women as cultural creators.

NETLANG

The Language of Cyberbullying: Forms and Mechanisms of Online Prejudice and Discrimination in Annotated Comparable Corpora of Portuguese and English (PI: I. Ermida)



The project aims to construct comparable corpora of English and Portuguese online texts that voice prejudice in terms of gender, ethnicity, age, nationality and, more broadly, identity (be it sexual, social or religious), and to annotate the linguistic, discursive and pragmatic patterns of these texts in terms of their hate content.

PORTLINGUE

Specialized languages: mining open data for cross-language information retrieval (PI: S. Araújo)



PortLinguE is a multidisciplinary project, developed by members from ILCH and EEUM, which aims at the creation of a cross-language search engine capable of querying monomodal (open-access scientific papers) and multimodal content (e.g. digital narratives, infographics) on various fields of science.

Scientific Leadership

Vitor Moura

**Member of the Executive Committee of
The European Society for Aesthetics**



The European Society for Aesthetics was founded in 2008 and is now one of the main research and communication platforms for people interested in aesthetics, with a special focus on aesthetics in Europe. In 2018, V. Moura was elected as member of its Executive Committee.

Luís Pipa

President of the Portuguese committee of the European Piano Teacher's Association (EPTA PORTUGAL) & Vice-President of EPTA Internacional



EPTA is an international organisation that seeks to unite pianists and piano teachers all over the world. The President of the Portuguese branch, Luís Pipa, has sought to increase the activity in Portugal through an annual Conference and a Piano Festival, which includes concerts and masterclasses.

Isabel Cristina Mateus

Board member of the Portuguese Writers' Association (Associação Portuguesa de Escritores / APE)



APE seeks to value the irreplaceable place of literature in the affirmation of the country's cultural memory and identity, of the Portuguese language in the world and the recognition of its authors. Organizes cultural events, establishes awards of recognized national and international prestige, protocols, collaborations and exchanges with various partners.

CENTRE FOR ETHICS, POLITICS AND SOCIETY



The Centre for Ethics, Politics and Society (CEPS) is a Research Unit of the Institute of Arts and Humanities at UMinho, created on March 27, 2017. With 15 integrated researchers and 6 ongoing research projects, CEPS is the only research Centre in Portugal specializing in the areas of Political Theory and Applied Ethics. CEPS's distinctive ethical-political perspective is focused on social institutions rather than individual behaviours. CEPS's researchers are particularly interested in studying and evaluating specific types of institutions and practices in the contemporary world from the ethical-political perspective: those of constitutional democracy, those of social justice and those of technological intervention and their relation with the quality of life of populations. The study of these practices is carried out, respectively, within the framework of theories of political legitimacy, normative conceptions of social justice, and ethics applied to technology and populations, with a special concern regarding the historical reconstruction of all these theoretical frameworks. The mission of the Centre is to provide high quality research, knowledge, training and consulting in the fields of political philosophy and applied ethics. The main aims of the Centre for the 2018-2022 period are: to consolidate its role as an academic reference point in Europe by raising its research output and dissemination to the international benchmark; to continue developing the two fields of Political Philosophy and Applied Ethics in close articulation. CEPS intends to attain such goals through the development of the projects we have already launched, the reinforcement of cooperation with external institutions by co-promoting R&D projects and establishing new partnerships, the strengthening of its international profile, namely via the publishing of the Ethics, Politics & Society journal, the training of students and future researchers in Political Philosophy and Applied Ethics within the Masters in Political Philosophy and Applied Ethics within the Masters in Political Philosophy, and the organisation of outreach activities as follow-up of our research in order to increase its impact on the community.



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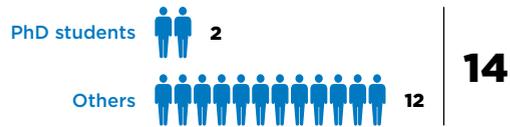


STAFF MEMBERS

PhD full members



Non-PhD members



International members



44

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  2 | Q2

Books  4 | International

Book chapters  12 | International

Journals or collections  3 | 1 Editor
2 Guest editor

Communications | Oral  34 | 24 International
10 National

Others
(artistic and judicial works,
critical reviews, book prefaces
and afterwords)  6

16
Number of citations

5
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  1

On-going PhD Theses  11 | 3 In cooperation with
international institutions

Master's Dissertations completed  3

0.52
Average impact factor

RESEARCH PROJECTS

1

Total number of on-going projects
National Funding

196 029 €

Total funding for UMinho
National Funding

196 029 €

● Total funding



1

Portugal 2020 Programme
National Funding

SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

4

MAJOR ACHIEVEMENTS

Flagship Publications

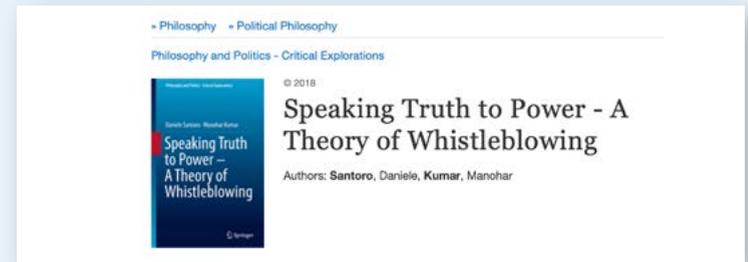
Ethics, Politics & Society **A Journal in Moral and Political Philosophy**

A. Abranches, E. Paez, 2018.



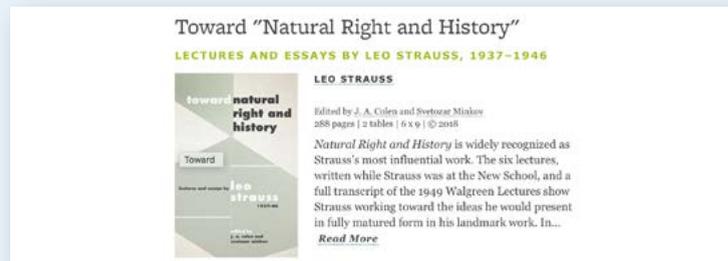
Speaking Truth to Power - A Theory of Whistleblowing

D. Santoro, M. Kumar, 2018.



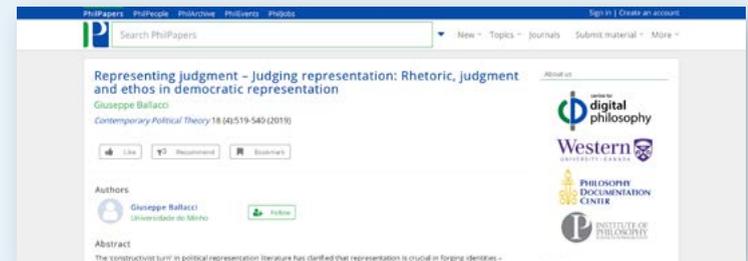
Toward "Natural Right and History"

J.A. Colen, S. Svetozar Minkov, 2018.



Representing judgment - Judging representation: Rhetoric, judgment and ethos in democratic representation

G. Ballacci, 2018.



Flagship Projects

SFIDA

Philosophical Innovative Solutions to the Anthropocene Challenge



The project intends to contribute for the awareness of environmental problems, their anthropogenic dimension and consequently, to enhance better ecosystem assessment, monitoring and protection systems, through the study of the philosophical implications of the shift of the power to shape the planet from nature to humans.

UBIEXP

Universal Basic Income Experiments



Project being developed in the field of Political Philosophy aiming to examine a series of philosophical and practical considerations related to the recent evolution towards increased evidence-based policy-making and, specifically, in relation with the role of pilots and experiments in relation to the UBI idea.

PHILHUMANR

Beyond The Human and Despite the State: Consequences of the Political Turn in the Philosophy of Human Rights



This project explores the so-called “political turn” in the philosophy of human rights by providing a new understanding of their function in the global order. Human rights are re-conceptualized as justificatory practices that produce urgent reasons for action, set limits to state sovereignty and trigger the subsidiary responsibilities of the international system.

Scientific Recognition

Acílio Estanqueiro Rocha

II Sapientia Award established by the Sociedad Interuniversitaria de Filosofía



Acílio Estanqueiro Rocha, UM's Emeritus Professor and member of the Portuguese Academy of Sciences, was awarded, at the end of 2019, at the University of Santiago de Compostela, with the II Sapientia Award established by the Sociedad Interuniversitaria de Filosofía, which aims to recognize the philosophical work of a prominent figure in European thought.

Scientific Leadership

João Ribeiro Mendes

President of the of the Philosophical Society of the Galician-Northern Portugal Euro-region



Since 2014, João Ribeiro Mendes is the President of the of the Philosophical Society of the Galician-Northern Portugal Euro-region, the first of its kind, focused on strengthening and deepening the relationship between the departments of Philosophy of UM and USC, and in the promotion and growing of the philosophical culture in the Euro-region.

RESEARCH CENTRE ON EDUCATION

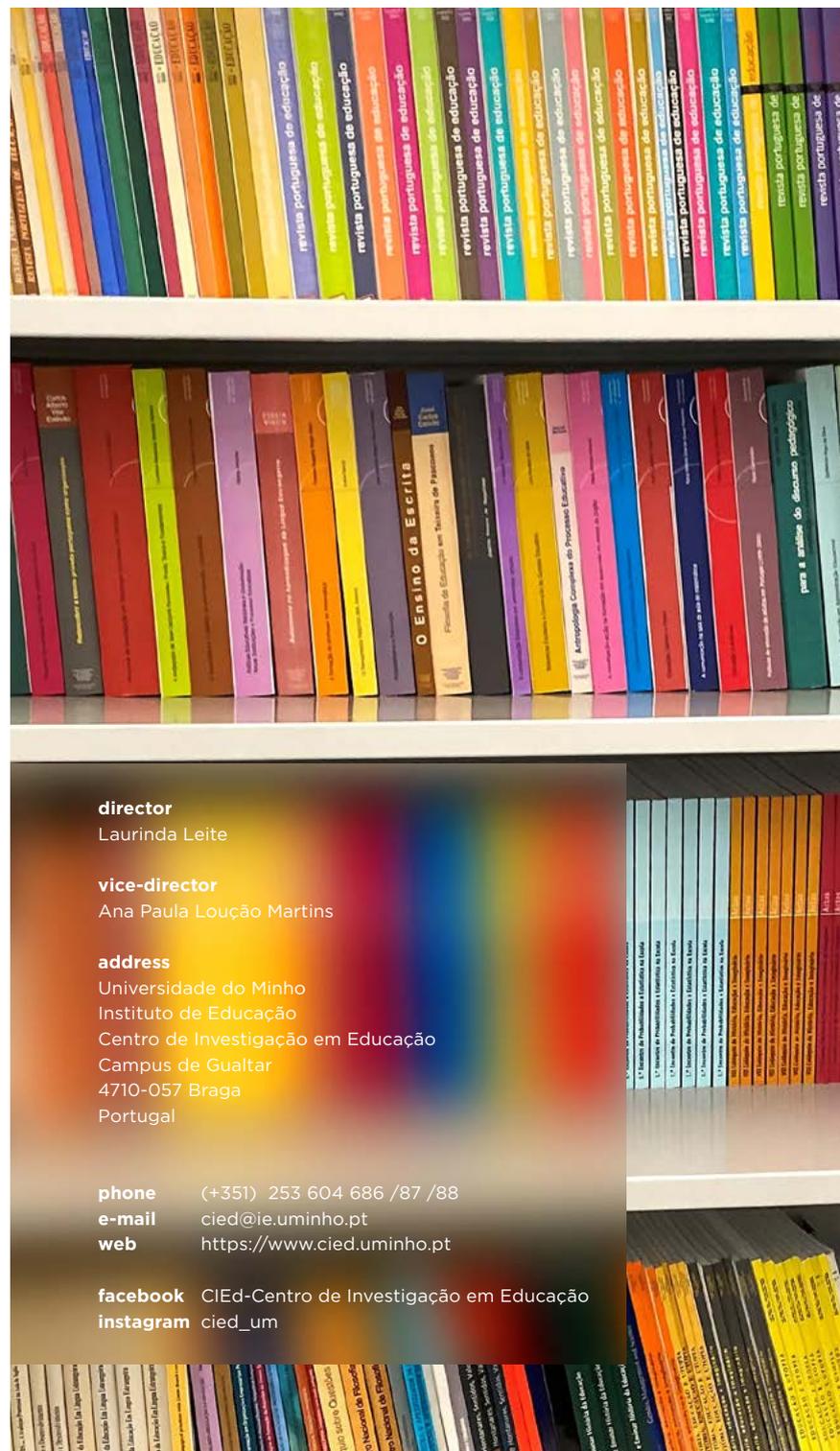
The Research Centre on Education (CIEd) is a multidisciplinary Research Unit of the Institute of Education, whose mission is to conduct educational research as a means of participating in the transformation of the lives of individuals and communities. Since 1976, research conducted at the Centre focuses on children, youth, adults, and elder, in a variety of social settings and types of communities, taking into consideration the diverse cultural and social constraints and resources that impact on learning, envisioning that all citizens are equally prepared to participate actively and critically in the society.

In order to achieve the CIEd main intent, to ensure better learnings for better futures, the research developed at this unit is guided by pivotal concerns such as: quality and internationalization, impact and outreach as well as the training of young researchers. The plurality and diversity of approaches to educational phenomena and the merging of traditional key areas with emergent educational topics in the study of school and non-school educational phenomena in a lifelong learning perspective, as well as the high number PhD students from different parts of the world, are distinctive aspects of the Centre, reflected in an increasing scientific production, at national and international levels. In the 2014 evaluation carried out by the National Science Foundation (FCT), the Centre was awarded with the grade of Good.

Four Research Groups implement the research Centre policy, mission and goals according to their main areas of knowledge, through medium and long-term objectives that guide the organisation and development of own and joint research projects: Education Policies, Governance and Management; Education 3D-Democracy, Inequality and Difference; Psychosocial Development, Learning and Special Needs; Science Education for Sustainable Development; Technology, Multiliteracies and Curriculum.

The mission of disseminating knowledge and more broadly interacting with the academic and social communities is also ensured by the edition of the 30-year-old Portuguese Journal of Education (RPE), a Scopus indexed peer reviewed online journal with wide national and international recognition.

Several projects, funded by national and international agencies are being developed in the context of CIEd, a Research Unit that is working towards an increasing international recognition for the quality of its research and training of young researchers.



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Laurinda Leite

vice-director

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STAFF MEMBERS

PhD full members



PhD associated members



Non-PhD members



293

International members



144

Visiting researchers



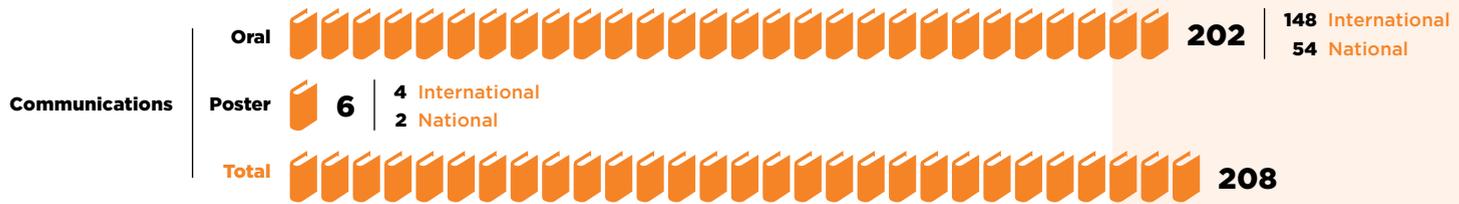
Technical staff



408

Total number of members

PUBLICATIONS



289

Number of citations

167

Open access documents
(UMinho Repositorium)

1.60

Average impact factor

THESES AND DISSERTATIONS



4

Indexed proceeding papers
(SCOPUS)

52

Non-indexed proceeding papers

RESEARCH PROJECTS

15

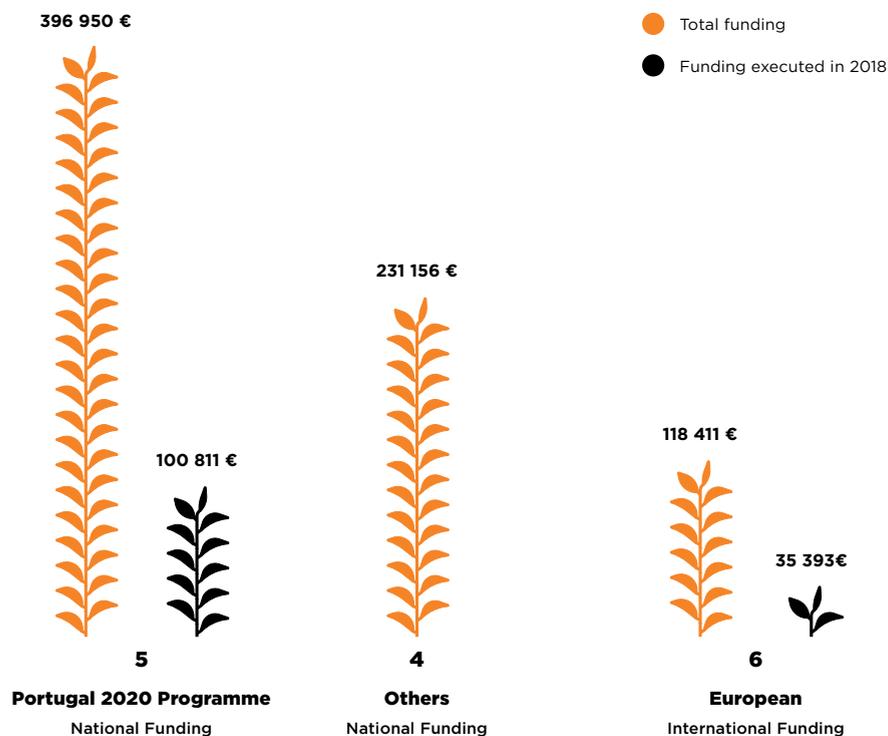
Total number of on-going projects

9 - National Funding
6 - International Funding

746 517 €

Total funding for UMinho

628 106 € - National Funding
(100 811 € - National Funding executed)
118 411 € - International Funding
(35 393 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

5

Others
(consultancy, exhibitions,
observatories and technical reports)

23

10 International
13 National

MAJOR ACHIEVEMENTS

Flagship Publications

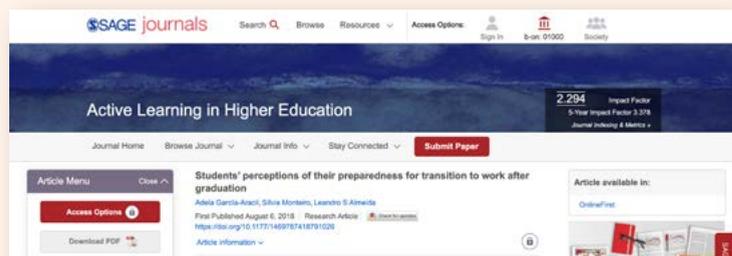
Adult and permanent education in times of crisis: A critical perspective based on Freire and Gelpi

L.C. Lima, 2018.



Students' perceptions of their preparedness for transition to work after graduation

A. García-Aracil, S. Monteiro, L.S. Almeida, 2018.



Elementary students' perspectives on a curriculum for literacy education

Í.S.P. Pereira, X.A.G. Riaño, 2018.



Flagship Projects

VET FOR EI

Vocational Training for Physiotherapists about Family Centered and Play Based Approaches in Early Childhood Intervention



The project aims to strengthen the competences of physiotherapists on new approaches in early intervention system. To achieve this, we generated an online curriculum and relevant training material for physiotherapists implying play-based and family centered approaches in early childhood intervention (based on ECVET learning outcomes approach).

TEACHUP

Teacher Upskilling Policy Experimentation



TeachUP is a policy experimentation. It aims to experiment, measure and evaluate new ways of teaching associated with new methods of online learning and assessment and promote workshops which provide opportunities for knowledge sharing between relevant stakeholders in the field of education.

EDUPLACES

Educating Places: practices, voices and pathways of inclusive education PTDC/MHC-CED/



The project sets out to understand the complexity of factors that sustain the reversal of the negative spiral of school failure and dropout, by studying cases of inclusive socio-educational practices. This is a multi-case study of 11 units of observation, in 4 Portuguese municipalities, developed in 3 phases/years, by a team of 15 researchers.

Scientific Recognition

Manuel F. Meira

The Portuguese Society of Education Sciences Prize



Prize awarded to the doctoral Thesis "Electronic bureaucracy: a study about electronic platforms in School Administration". The Portuguese Society of Education Sciences/De Facto Editores Prize is an annual award that selects the best academic work in the field of Education and Social Sciences in Portugal, to be published in book format.

Scientific Leadership

Maria José Casa-Nova

Coordinator of the Observatory of Roma Communities (ObCig) of the Portuguese High Commission for Migration



ObCig contributes to the achievement of some of the measures provided for in the National Roma Communities Integration Strategy, but also for the design, implementation and evaluation of public policies in this area, presenting itself as an engine for the creation of academic, scientific and institutional cooperation networks.

Ana Serrano

Board President of Eurllyaid - The European Association on Early Childhood Intervention (EAECI)



EAECI is a participative association of persons, interested in issues of early childhood intervention as well as a working party made up of representatives of parents' associations, professionals and researchers, from various countries of the European Union.

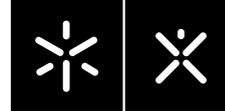
José Pacheco

Member of the Advisory Board of the Organisation of Ibero-American States for Education, Science and Culture



The Advisory Board of the Organisation of Ibero-American States (OEI) for Education, Science and Culture is the highest consultation and advisory body on the policies and strategies to be developed by this organisation. Its main function is to articulate the participation of experts, researchers and high-level policy makers in education.

RESEARCH CENTRE ON CHILD STUDIES



University of Minho
Institute of Education
Research Centre on Child Studies

The Research Centre on Child Studies (CIEC - “Centro de Investigação em Estudos da Criança”) was created in 2011, as a result of merging two former Research Units devoted to Child Studies (CESC and CIFPEC), both allocated to the Institute of Education of UMinho. Since both were dedicated to studies about children, although with slightly different approaches, it was decided to combine them to form a single R&D Unit, so increasing the Child Studies critical mass while retaining the same values, and also fostering synergies and cross-fertilisation among the groups from the former units.

CIEC-UM aims at undertaking research that contributes to improving children’s well-being, development and learning, through a holistic approach that considers a wide range of social factors that impact children’s development and education. Children are viewed in all civil, political, social, economic and cultural dimensions, where education and how they learn and develop their personal and social skills play a fundamental role.

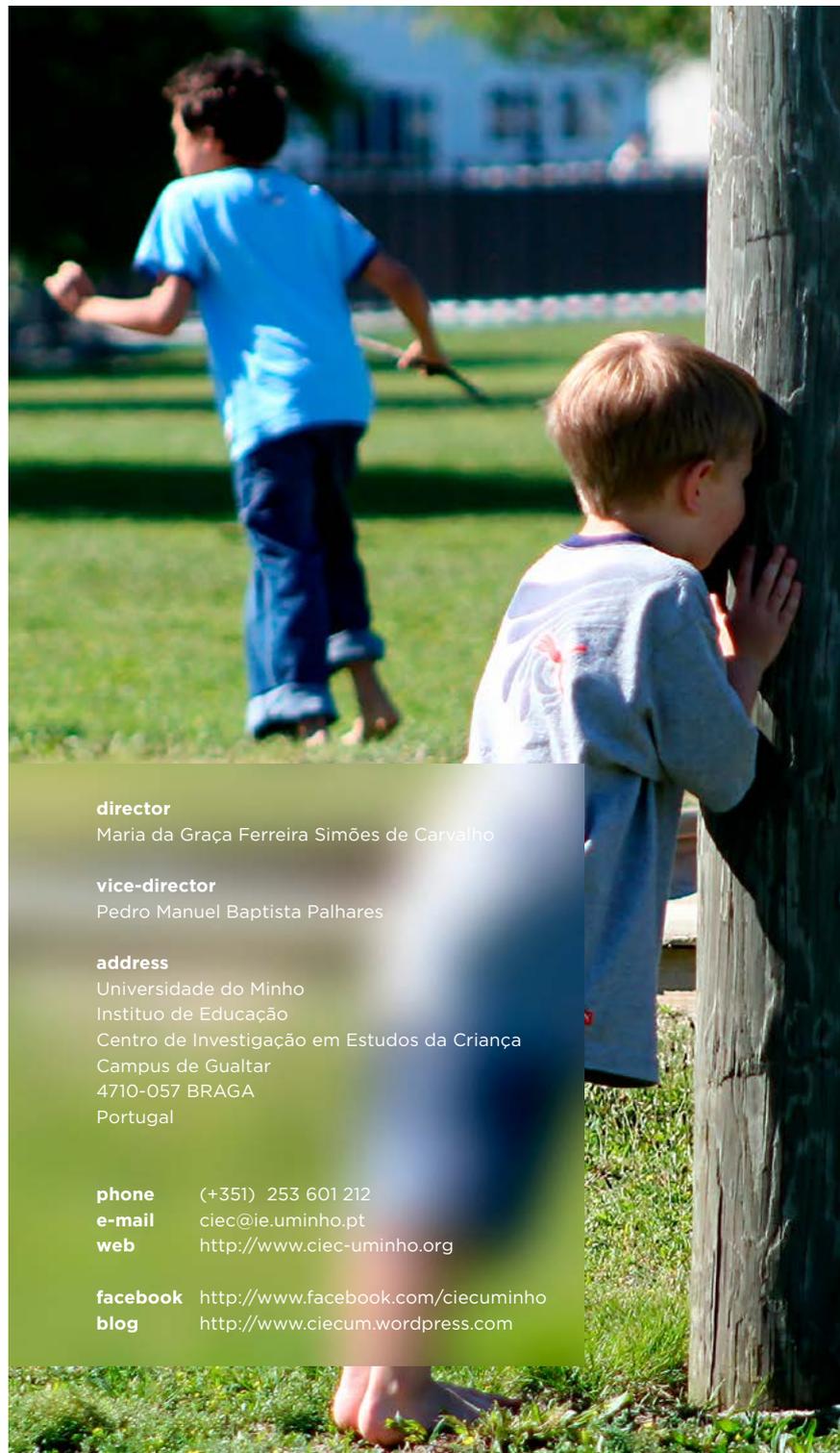
In the 2014 evaluation carried out by the National Science Foundation (FCT), CIEC-UM was awarded the grade of Very Good.

CIEC-UM is organised in 2 research groups: RG1 - Children’s contexts, their everyday life and well-being; RG2 - Children’s learning and development.

Although the research focuses mainly on children, conceptions and practices of adult professionals working with children are also studied. These include educators, teachers, social service professionals, nurses and other health professionals, who have a key role in enhancing capacity building and in the dissemination of the results to stakeholders, i.e. those who can make use of the research outcomes to address their problems. With this in mind, CIEC-UM develops in 5 thematic strands: TS1 - Children’s social practices and their contexts; TS2 - Child health, environment and physical education; TS3 - Childhood professionals; TS4 - Pedagogical resources for children; TS5 - Cultural productions for children.

CIEC-UM internationalisation includes international publications, international advanced training (PhD students and post-docs from other countries) and participation in international projects. Research collaboration occurs with Portuguese speaking countries (Brazil, Angola, Mozambique, Guinee-Bissau, Cape-Vert and East Timor) as well as with most of the European countries and several others from other continents.

CIEC-UM research provides nationwide social impact and knowledge transfer since many Integrated Members are from other national institutions, and the Portuguese PhD students are from all over the country. CIEC-UM has protocols of collaboration with many School Groups and works with local communities across the country (especially municipalities), local childcare institutions and hospitals, assisting in knowledge transfer.



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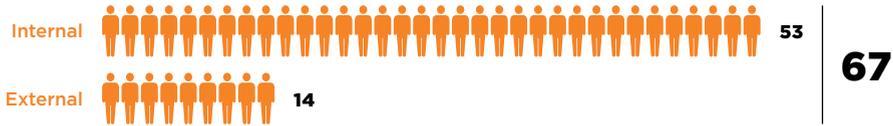
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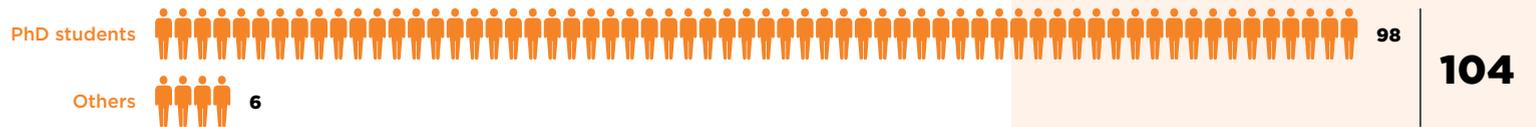


STAFF MEMBERS

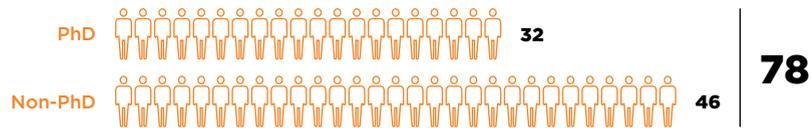
PhD full members



Non-PhD members

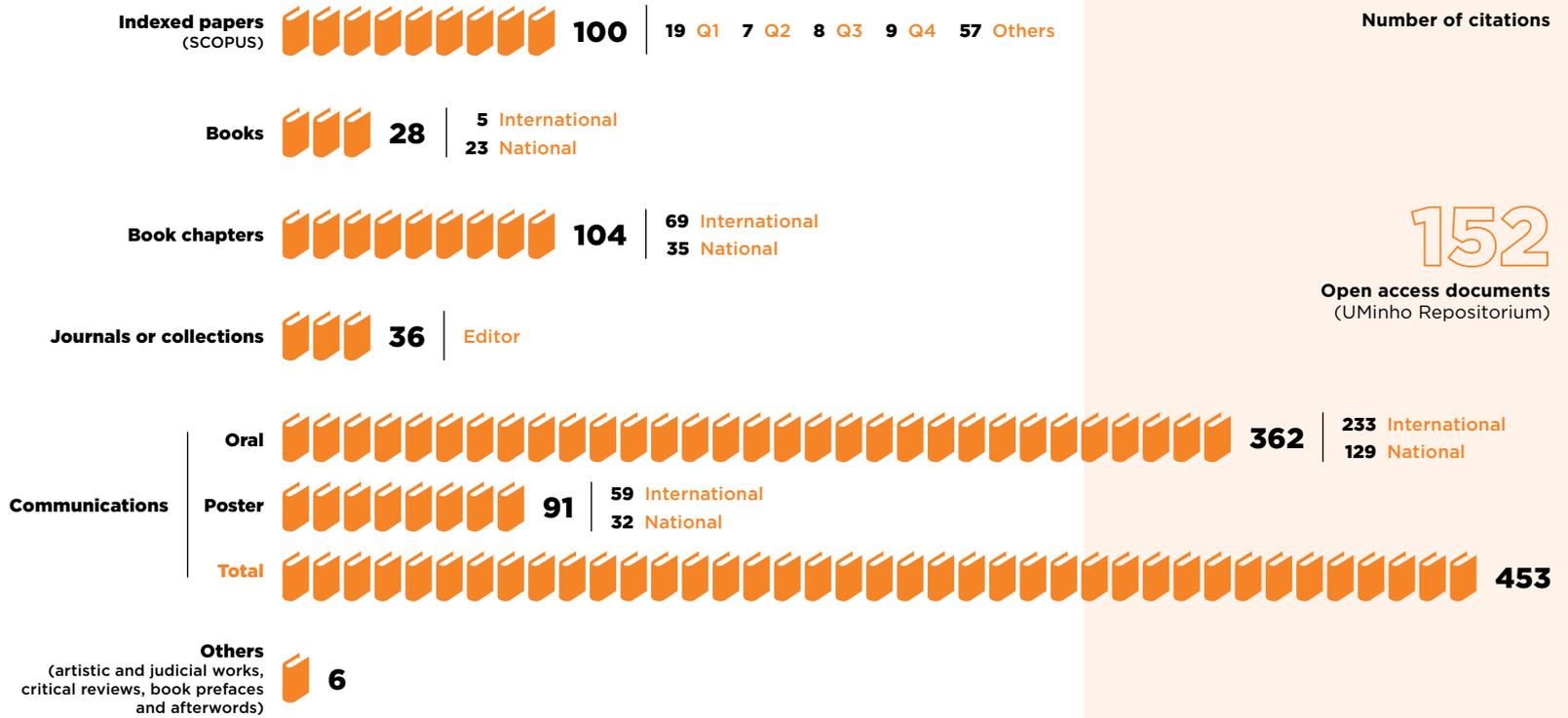


International members



305
Total number of members

PUBLICATIONS



524

Number of citations

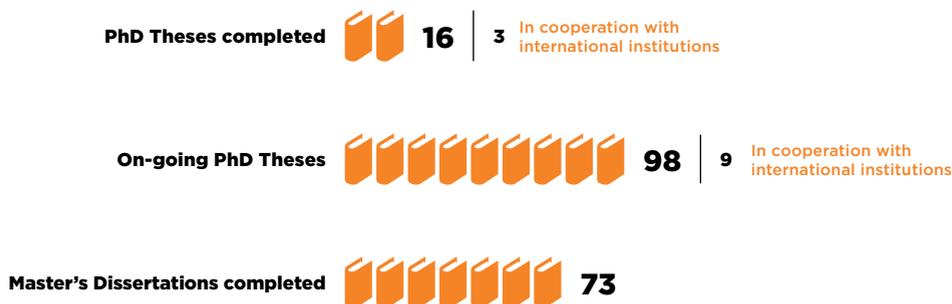
152

Open access documents (UMinho Repositorium)

1.69

Average impact factor

THESES AND DISSERTATIONS



9

Indexed proceeding papers (SCOPUS)

51

Non-indexed proceeding papers

RESEARCH PROJECTS

8

Total number of on-going projects

5 - National Funding
3 - International Funding

1 081 298 €

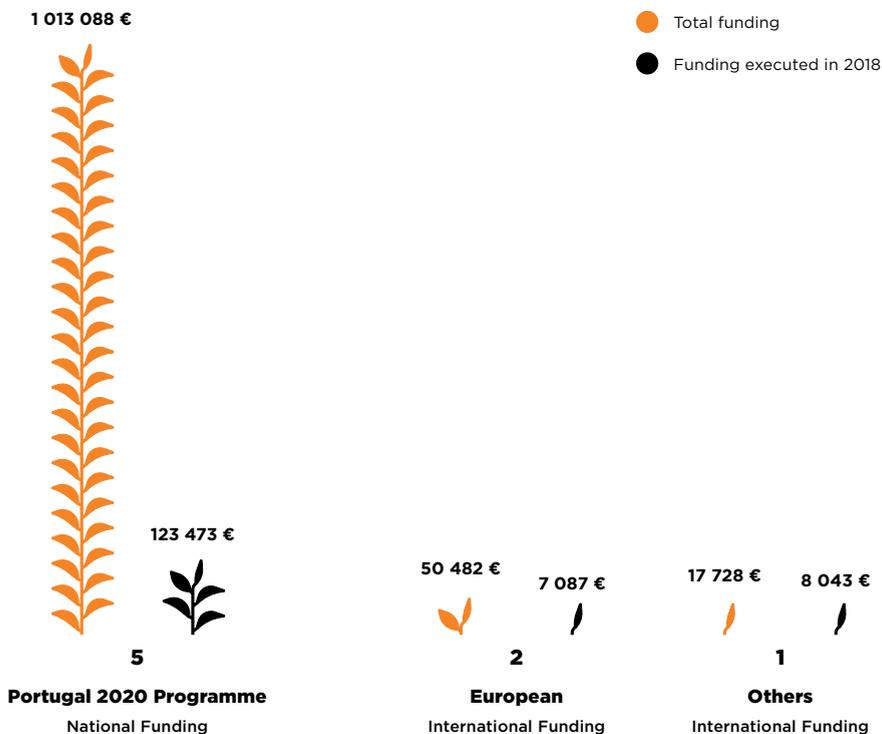
Total funding for UMinho

1 013 088 € - National Funding

(123 473 € - National Funding executed)

68 210 € - International Funding

(15 130 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

6

MAJOR ACHIEVEMENTS

Flagship Publications

Generic health literacy measurement instruments for children and adolescents: a systematic review of the literature

O. Orkan, E. Lopes, T.M. Bollweg, J. Bröder, M. Messer, et al., 2018.



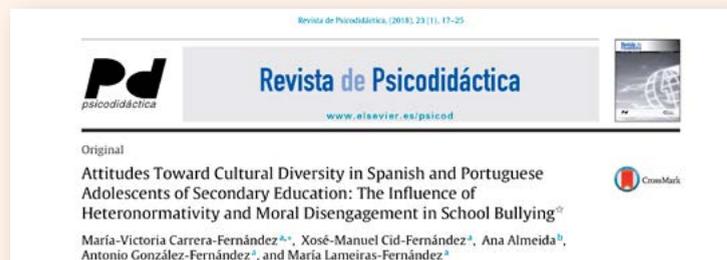
Teacher evaluation in Portugal: persisting challenges and perceived effects

M.A. Flores, 2018.



Attitudes Toward Cultural Diversity in Spanish and Portuguese Adolescents of Secondary Education: The Influence of Heteronormativity and Moral Disengagement in School Bullying

M. Carrera-Fernández, X. Cid-Fernández, A. Almeida, et al., 2018.



Flagship Projects

Environmental assessment of SHS exposure in private settings and outdoor settings in Europe



It is a research project funded by the European Union's Horizon 2020 Research and Innovation Programme. The main aim of the project is to provide scientific evidence on exposure assessment, burden of disease, and development and evaluation of interventions to tackle second-hand smoke (SHS).

CO-CREATION WELFARE

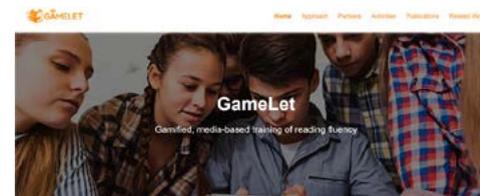
Co-Creation: a method to develop sustainable welfare solutions



The "Co-creating Welfare" project intends to develop, test and propose efficient ways of implementation of a common European set of training materials, which will assist professional practitioners on local level around Europe, to qualify them to carry out co-creation processes, which can push forward the effectiveness of the public welfare sector.

GAMELET

Gamified, media-based training of reading fluency



GameLet aims at developing and cultivating reading fluency in native and foreign languages, as well as promoting multilingualism and media competences in primary and secondary students. The project follows a gamified, media-supported approach and foresees the development of a multimedia platform that will be available to the general public.

Scientific Recognition

Ler+ Prize



The Ler+ Prize was instituted by the National Reading Plan 2017-2027, aiming at recognizing the work carried out in favor of improving the reading rates of the Portuguese people and promoting the will for reading and writing. In 2018, this award was attributed to the Platform "AEA- I'm Still Learning" ("Ainda Estou a Aprender").

Scientific Leadership

Maria Assunção Flores

President of International Study Association on Teachers and Teaching (ISATT)



ISATT is an international research association founded in 1983 which focuses on the role, contexts and work of teachers, and the process of teaching. It is one of the most prestigious scientific associations in the field whose members come from all over the world. M.A. Flores was the first Portuguese to serve as ISATT Chair.

Graça Simões de Carvalho

Board member of the European Science Education Research Association (ESERA)



Graça S. Carvalho is member of the executive ESERA Board (ESERA - European Science Education Research Association) being involved in the decisions of this European Association. She has the specific task of organizing the 14th ESERA Conference in 2021 (30/08 to 3/09) at the UMinho (venue Altice Forum Braga), involving about 2000 participants.

Fernando Azevedo

Member of the Honorary Committee of the National Reading Plan (PNL)



As a member of the Honor Committee of the Portuguese National Reading Plan, he is often asked about strategies and methodologies for reading practices among the general public, and specifically among young students. Some of his essays and papers are important pieces for the connection between theory and practice.

COMMUNICATION AND SOCIETY RESEARCH CENTRE



CECS is Portugal's leading Communication Sciences Research Unit – a consolidated, creative and dynamic team.

Evaluated by FCT as Excellent since 2008 and internationally renowned, the Centre focuses on the following scientific domains: media literacy, communication and cultural policies, visual and sound culture, intercultural communication, cultural studies, organisational and strategic communication, science communication, social challenges (ageing, health, disability...), media, digital languages and journalism.

From the outset, CECS has played a crucial role in strengthening this scientific field in Portugal and abroad, especially in Portuguese and Spanish-speaking countries. The group invests in collaborative activities, developing strong links with some of the most relevant global research networks, task forces and associations – such as Sopcom, EuroMedia Research Group, ECREA, IAMCR, Lusocom and Confibercom – and has forged partnerships with a series of relevant regional, national and international actors.

CECS' mission is oriented towards the following core objectives: pursuing cutting-edge research in media and communication; contributing to social and cultural development; producing research to enhance the development of sustainable societies; emphasizing the community dimension of communication, as an essential factor for the development of welcoming, inclusive and peaceful communities; and encouraging and supporting young researchers. CECS operates in four main fields: research, intervention, education and publication. The research team is organised into three groups: Communication, Organisations and Social Dynamics; Cultural Studies; and Media and Journalism.

Communication with, and for, communities is the leitmotiv of CECS' strategic project. This vision depends upon a critical and responsible outlook towards the media, the quality and diversity of intercultural relations, and the quality and solidity of democracy.

For this reason, the Centre's strategic project focuses on studying and discussing the role played by media and communication systems, providing citizens with high quality information and enhancing promising futures.

CECS publishes two well reputed scientific journals: *Comunicação e Sociedade*, the main journal in Communication Sciences in Portugal, and the *Lusophone Journal of Cultural Studies*. The Centre's commitment to society is expressed through two observatories (POLObs – Observatory of Communication and Cultural Policies; MILObs – Observatory of Media, Information and Literacy); two cultural platforms (Virtual Museum of Lusophony, and Passeio, a platform of art and urban culture), and the Think Tank Communitas.



director

Moisés de Lemos Martins

vice-directors

Rita Ribeiro
Luís Santos

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STAFF MEMBERS

PhD full members



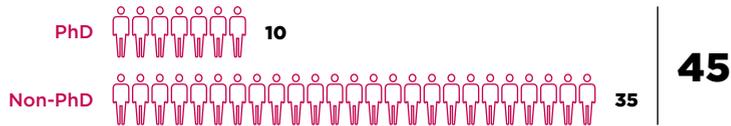
PhD associated members 43



Non-PhD members



International members



Visiting researchers 20



Technical staff 4



237

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **34** | 10 Q1 3 Q2 6 Q3 15 Q4

Books  **15** | 5 International
10 National

Book chapters  **52** | 31 International
21 National

Journals or collections  **9** | 5 Editor
4 Guest editor

Communications | **Oral**  **407** | 241 International
166 National

Others
(artistic and judicial works,
critical reviews, book prefaces
and afterwords)  **144**

406

Number of citations

143

Open access documents
(UMinho Repositorium)

2.46

Average impact factor

THESES AND DISSERTATIONS

PhD Theses completed  **18** | 2 In cooperation with
international institutions

On-going PhD Theses  **90** | 5 In cooperation with
international institutions

Master's Dissertations completed  **31**

1

Indexed proceeding papers
(SCOPUS)

30

Non-indexed proceeding papers

RESEARCH PROJECTS

11

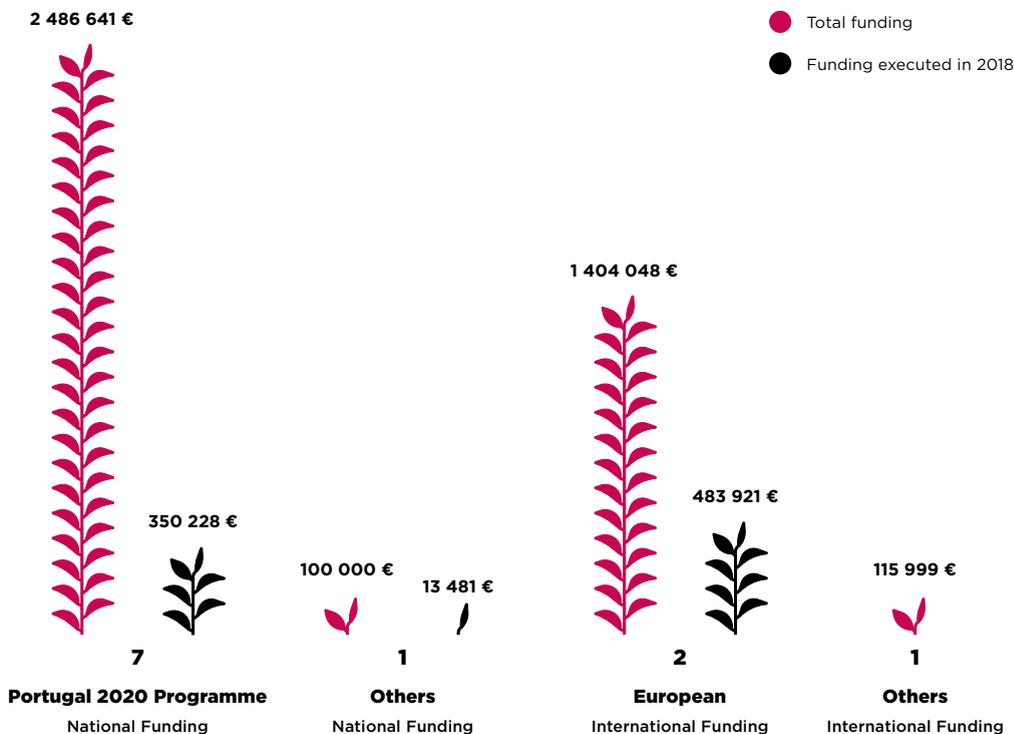
Total number of on-going projects

8 - National Funding
3 - International Funding

4 106 688 €

Total funding for UMinho

2 586 641 € - National Funding
(363 709 € - National Funding executed)
1 520 047 € - International Funding
(483 921 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation

17

National patents

1

Granted

Others
(consultancy, exhibitions, observatories and technical reports)

6

1 International
5 National

MAJOR ACHIEVEMENTS

Flagship Publications

Lusophone Studies and Communication Sciences

M.L. Martins, A. Costa, I. Macedo, 2018.



Discourses and Images of Cultural Tourism

Z. Pinto-Coelho, R. Pinto, 2018.



Levar os media para a escola. Agenda de atividades de transliteracia

S. Pereira, J. Fillol, P. Moura, 2018.



Flagship Projects

CULTURES PAST & PRESENT



The project, developed within the framework of the Virtual Museum of Lusophony, is a comparative and interdisciplinary study about the narratives conveyed by Mozambican and Portuguese museum's collections, History textbooks and films. It aims to engage students in the reinterpretation of narratives about past and present-day intercultural relations.

EXCHANGE

Forensic Geneticists and the Transnational Exchange of DNA data in the EU: Engaging Science with Social Control, Citizenship and Democracy



EU Law (Prüm Decision, 2008) compels Member States to create the conditions for the reciprocal automated exchange of DNA profiles, for the purpose of combating cross-border crime and terrorism. Supported by ERC, the project explores the societal, cultural, ethical, regulatory and political impacts of the implementation of Prüm Decisions in the EU.

AUDIRE

Saving sonic-based memories



AUDIRE: Saving sonic-based memories is a project focused on creating social awareness on the relevance of sound, promoting the preservation of auditory memory, exploring the innovative and creative potential of sound narratives and providing tools that may contribute to improve active listening.

Scientific Recognition

Festival Art & Tur 2018

Best Film from Porto and North



Promotional video of Braga's key sightseeing attractions, including the Sanctuary of Bom Jesus, the historic centre, São João festivities and Holy Week, also celebrating Braga's status as European City of Sport in 2018 and UNESCO Creative City of Media Arts.

Finisterra Arrábida Film Art & Tourism Festival

2nd Place, Best Advertising Film



Road trip to the main sites and festivities of the 24 municipalities of the Minho region, in celebration of the 2018 European Year of Cultural Heritage.

Cannes Corporate Media & TV Awards

Submitted to competition



This 7-day stage race brings athletes from 30+ countries to Portugal's only national park. The 2017 film won Best Sports film in Art&Tur 2017 and the 2018 film was submitted to Cannes. Both were broadcast by RTP2.

Scientific Leadership

Helena Sousa

International Council of International Association for Media and Communication Research



Helena Sousa was elected to the International Council of the International Association for Media and Communication Research (IAMCR) in 2016, after being member of the International Council as representative of the Political Economy Section.

Anabela Carvalho

IAMCR Environment Impact Committee



As a member of the Scientific Panel of the National Strategy on Adaptation to Climate Change panel, she has given input on national policy plans and co-authored the Research & Innovation Agenda on Climate Change, setting the national priorities for the next decade in collaboration with FCT and the Portuguese Environment Agency.

Madalena Oliveira

SOPCOM vice-president



Madalena Oliveira is vice-president of Sopcom, the Portuguese Association of Communication Sciences. Within this organisation, she coordinates the activities of 20 working groups, supervises the scientific events promoted by these research sections and assists the organising committees of the biennial national conference on Communication.

CENTRE OF STUDIES IN GEOGRAPHY AND SPATIAL PLANNING

CEGOT
Centro de Estudos de Geografia
e Ordenamento do Território

CEGOT is a non-profit research and development unit whose main goal is to pursue, advance and share scientific knowledge in the areas of social and economic geography and earth and related environmental sciences.

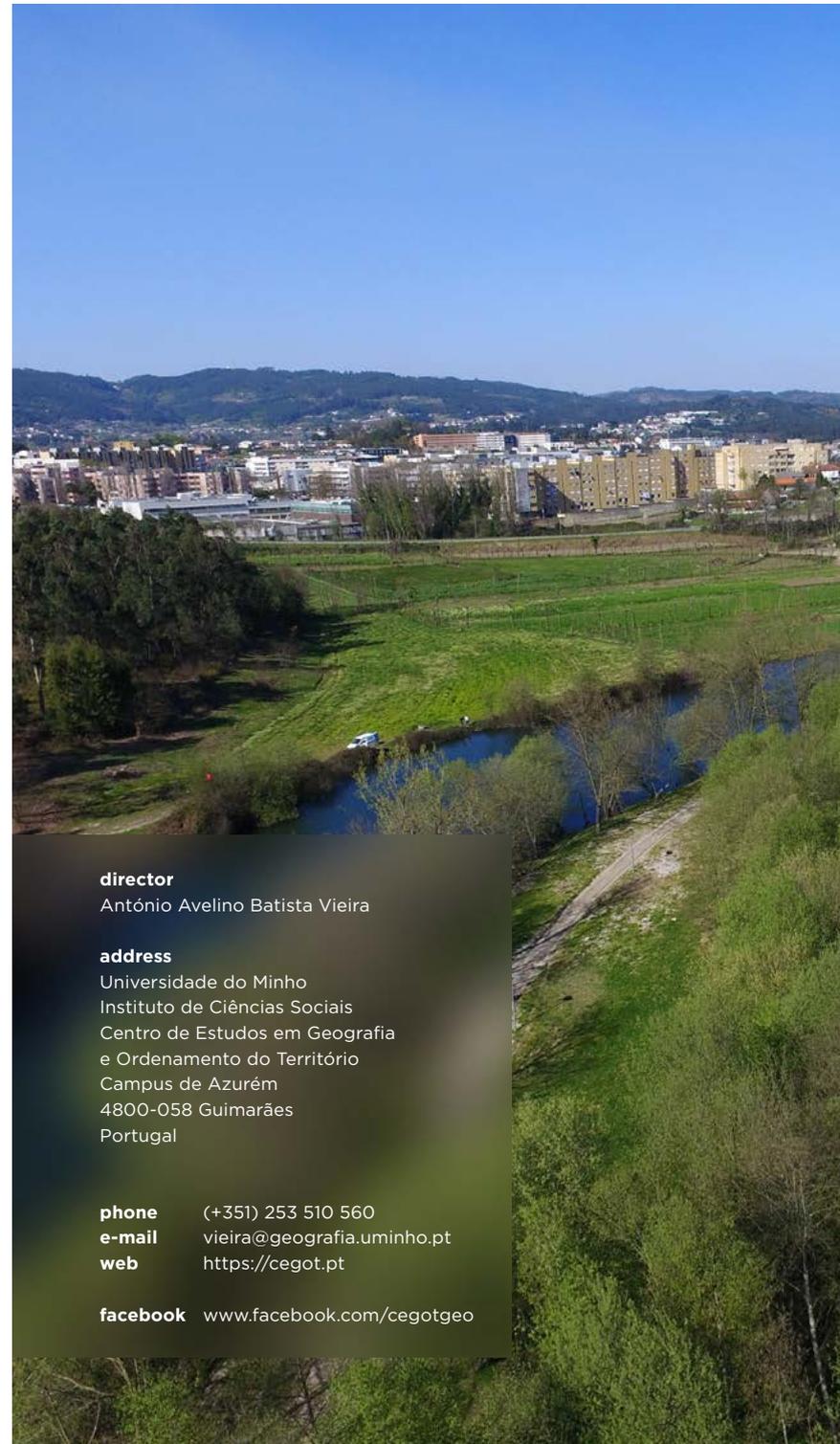
More specifically, CEGOT develops state-of-the-art research in: geomorphology, climatology and hydrologic dynamics; environmental landscape dynamics; natural risks; physical support in spatial planning; economic geography; competitiveness and innovation; urban geography and spatial planning; health geography; tourism; and spatial dynamics and development.

Although research synergies between its group members have existed for a much longer period, CEGOT was officially recognized by FCT in December 2008. The Centre is constituted of members of the Geography Departments of three host universities in Central and Northern Portugal: Coimbra, Minho and Porto.

Today, CEGOT is home to 148 researchers (71 integrated, 77 collaborators). Most of the integrated members are professors/researchers at their universities and are complemented by a significant number of doctoral and post-doctoral researchers that are either pursuing their own investigations (many with FCT scholarships) or working in research projects coordinated by CEGOT. Most members have a background in Geography, but, over the years, CEGOT has also attracted researchers from Urban Planning, Architecture, Sociology, Economics, Engineering, Public Health and Tourism, strengthening its multidisciplinary. This is directly associated with the vision of CEGOT that to tackle contemporary societal challenges - climate change, demographic change, economic transitions or social and health inequities - a collaborative, holistic and territorial-based approach is needed, albeit grounded in a geographical understanding of the world.

CEGOT aims to continue to provide strong, action-oriented contributions to science and society in order to respond to the most current and impending challenges at various geographical scales. To do this, CEGOT wishes to strengthen its existing national and international reputation as a hub of scientific advancement and learning in key areas of geographical knowledge, whilst nurturing a more permanent and fluid connection between research, policy and society through a comprehensive and open diffusion strategy.

At UMinho the research Centre (CEGOT-UMinho) is part of the Social Sciences Institute and is constituted by 14 researchers. In the last evaluation carried out by the FCT, the Centre was awarded with the grade of Very Good.



director

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STAFF MEMBERS



14

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **3** | 1 Q2 2 Q3

Books   **4** | 2 International
2 National

Book chapters        **13** | 9 International
4 National

Journals or collections        **16** | Editor

Communications | Oral                                       

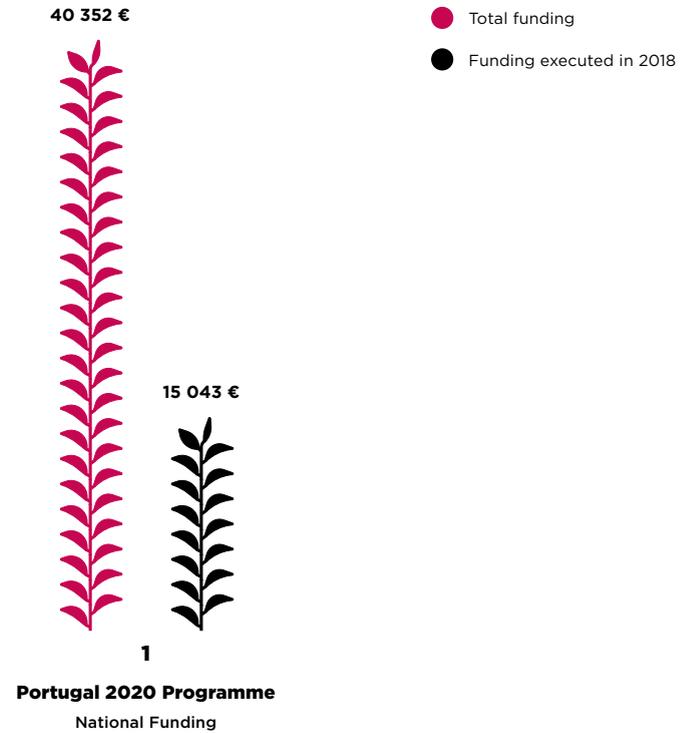
RESEARCH PROJECTS

1

Total number of on-going projects
National Funding

40 352 €

Total funding for UMinho
National Funding
(15 043 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

1

Others
(consultancy, exhibitions,
observatories and technical reports)

5

National

MAJOR ACHIEVEMENTS

Flagship Publications

Geopatrimónio - geoconhecimento, geoconservação e geoturismo: experiências em Portugal e na América Latina

A. Vieira, A. Figueiró, L. Cunha, V. Steinke, 2018.



**Water policy(ies) in Portugal
Inertia and challenges within the European framework**

F. da Silva Costa, 2018.



Changes in mainland Portuguese forest areas since the last decade of the XXth century

A. Bento-Gonçalves, A. Vieira, L. da Vinha, Safa'Hamada, 2018.



**A paisagem como problema
(volumes I-V)**

F.M. Follmann, E.M. Foletto, F.S. Costa, 2018.



Flagship Projects

SOIL PROTEC

Emergency measures to protect soils after forest fires



The project Soil Protec aims to test low cost treatments to reduce soil erosion immediately after low/medium intensity forest fires in Pinus pinaster stands in the northwest of Portugal.

Atlas of the Video Game Industry in Portugal 2020



The project aims to map and characterize this sector on a national scale, using a diversified methodology that involves the survey of its main agents and detailed characterization, through representative surveys of companies as well as to independent creators.

FONDED

Propuesta de Estándares en infraestructura crítica para edificaciones y viviendas localizadas en zonas de interfaz urbano-forestal, con el objetivo de minimizar el nivel de peligro en la propagación del fuego



The project aims to propose standards in critical infrastructure to minimize the potential impact on the spread of fire in congruence with a complementary emergency coordination plan, considering the San José de Maipo Commune as a research area.

Scientific Leadership

President of the Portuguese Association of Geomorphologists



APGeom was created in 2000 with the objective of joining efforts, taking common initiatives, defending rights, and, above all, promoting scientific knowledge within the scope of Geomorphology and its application in several areas of national interest. It is affiliated with the International Association of Geomorphologists.

Member of the Direction board of the Portuguese Association of Geographers



APG is a professional association that aims to contribute to the professional development and the correct deontological performance of geographers in order to better serve society and the territory, fostering, developing and disseminating Portuguese geographic science and its applications.
<https://www.apgeo.pt/>

Vice-President of RISKS

Portuguese Association of Risks, Prevention and security



Portuguese Association of Risks, Prevention and Security, is a private, non-profit association that brings together citizens and institutions that have responsibilities in risk management, from prevention to the rehabilitation of the areas affected by them, or who ensure the safety of people and their property.
<https://www.riscos.pt/>

INTERDISCIPLINARY CENTRE OF SOCIAL SCIENCES

CICS.NOVA.UMinho is a unit at UMinho of CICS.NOVA, created in 2015, as the result of a synergetic merges of: CESNOVA – Centre for Sociological Studies and e-GEO – Centre for Geography and Regional Planning, both hosted by NOVA FCSH, and CICS – Research Centre for Social Sciences hosted by UMinho. CICS.NOVA is one of the largest Research Units with national scope. Located in Lisbon, it has poles at UMinho, University of Évora, University of the Azores and Polytechnic Institute of Leiria. It has several Laboratories and Observatories. In the last evaluation carried out by the National Science Foundation (FCT), the Centre was ranked as Very Good.

CICS.NOVA.UMinho's mission is to produce and promote knowledge in the areas of Sociology and other Social Sciences, based on the freedom of thought and the diversity of critical thinking, while also aiming for the promotion of knowledge transfer activities and intervention in the community, in order to contribute to a more unified, just and cohesive society. CICS.NOVA.UMinho develops innovative and high quality interdisciplinary research in the field of social sciences to support the design of public policies in their areas of expertise. It attributes the same preponderance to fundamental and applied research from an interdisciplinary point of view, taking into account their relationship to the surrounding spatial and social contexts, and fostering opportunities for cooperation between researchers, organisations and individual civil society actors. Currently, the unit integrates a range of researchers in different research groups, which include: “Social Inequality and Public Action”, “Citizenship, Work and Technology” and “Environmental Change, Territory and Development”.

The vision that CICS.NOVA.UMinho has for the near future and the goals proposed in its strategic programme are based on a solution of continuity in light of a recent past, while also including more critical mass, innovating and creating new management solutions that are translated into an improvement in terms of research, its organisation level, internationalization and external visibility. The solid investment in scientific dissemination through the edition of publications, such as the journal *Configurações*, indexed in international databases, CICS.NOVA.UMinho e-books and Working Papers *ComTextos*, as well as the organisation of advanced training and scientific events, are activities that the Centre determines as a priority in order to achieve this strategy.



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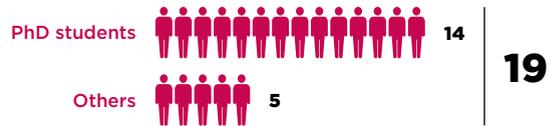


STAFF MEMBERS

PhD full members



Non-PhD members



42

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **10** | 4 Q1 2 Q2 2 Q3 1 Q4 1 Others

Books  **8** | 4 International
4 National

Book chapters  **34** | 19 International
15 National

Journals or collections  **3** | Editor

Communications | **Oral**  **85** | 40 International
45 National

17

Number of citations

0.70

Average impact factor

THESES AND DISSERTATIONS

PhD Theses completed  **2** | 1 In cooperation with
international institutions

On-going PhD Theses  **14**

Master's Dissertations completed  **24**

1

Indexed proceeding papers
(SCOPUS)

11

Non-indexed proceeding papers

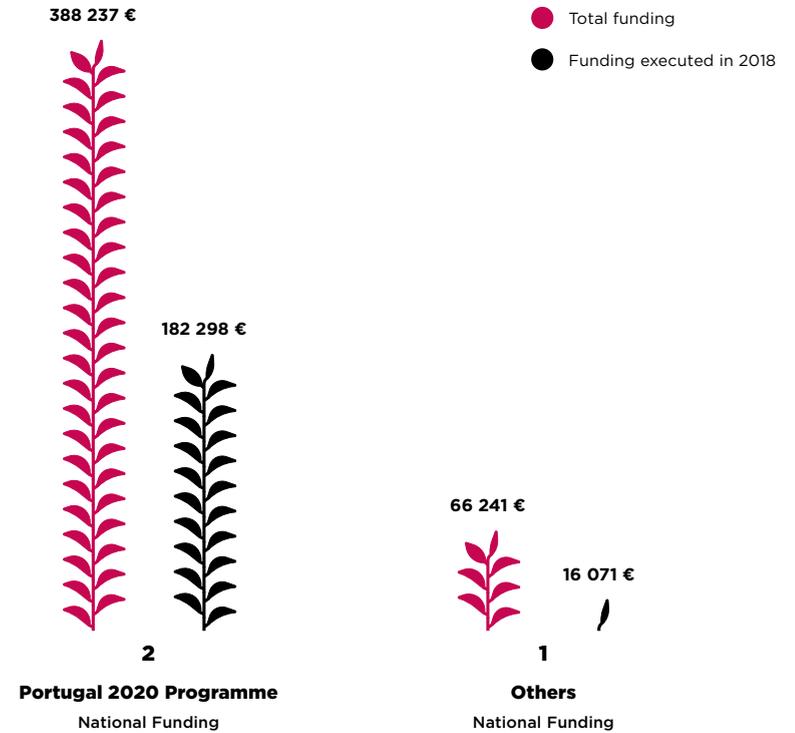
RESEARCH PROJECTS

3

Total number of on-going projects
National Funding

454 478 €

Total funding for UMinho
National Funding
(198 369 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation

3

Others
(consultancy, exhibitions, observatories and technical reports)

1

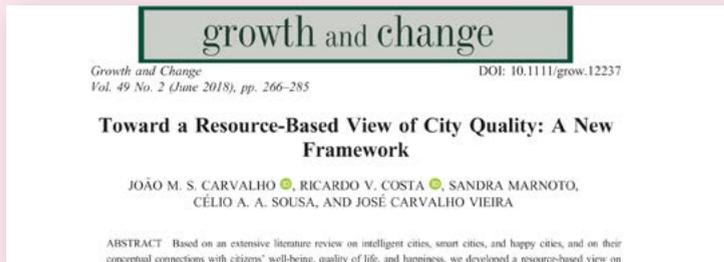
National

MAJOR ACHIEVEMENTS

Flagship Publications

Toward a Resource-Based View of City Quality: A New Framework

J.M.S. Carvalho, R.V. Costa, S. Marnoto, C.A.A. Sousa, J.C. Vieira, 2018.



What about ethics?

Developing qualitative research in confinement settings

S. Gomes, V. Duarte, 2018.



Health policies in Southern Europe and deregulation of labour relations: a glimpse of Portugal

A.P.P. Marques, A.P.M.C. Macedo, 2018.



Flagship Projects

Roadmap for Portuguese Family Businesses



This project aims to map family businesses in the North of Portugal, in order to get to know them and assess their impact on the local, national and international economy, supporting political actors in making relevant economic and social decisions. For its development it has the partnership of the Portuguese Business Association (AEP).

Ways of life and modes of inhabiting: Social Housing in Poor Neighbourhoods in Oporto and Braga



This project focuses on the multidimensional study of the Poor Neighborhoods of Porto and Braga. The project analyzes the role of state and municipal public institutions in the scope of housing, equipment and collective consumption, as well as associations and urban social movements of resistance and accommodation.

Scientific Recognition

Agostinho Roseta Award (9th edition)

Honorable Mention to the book “Prepared to Work”



This Prize, awarded in the Research Studies and Works category, is intended to honor individuals or legal entities who have been most distinguished in carrying out studies and research in relevant fields to: improving and dignifying the job; improvement of the conditions under which the work is performed; increase the social dialogue.

Scientific Leadership

Ana Maria Brandão

Coordinator of the thematic section on Sexuality and Gender of the Portuguese Sociological Association (APS)



The proposal for create the Thematic Section on Sexuality and Gender was based on the need to form a stable network of national researchers working in these areas, supported by the growing relevance that these disciplinary fields have been acquiring in Portuguese Sociology. <https://aps.pt/pt/seccao-tematica-sexualidade-e-genero/>

Fernando Bessa Ribeiro

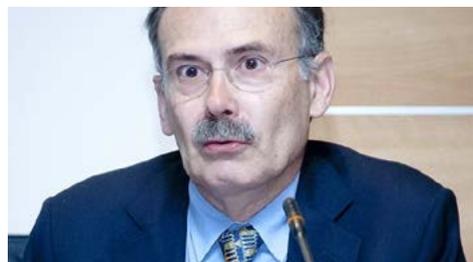
Coordinator, with Alcides Monteiro e Carlos Graça, of the thematic section on “Globalization, Citizenship and Politics” of the Portuguese Sociological Association (APS)



This section seeks to benefit from the theoretical and empirical contributions of sociologists and other social scientists who work on globalization, politics and citizenship in the most diverse geographies and scales, and it thereby constitutes as a space for open debate on the global dynamics that confront citizens and contemporary societies.

José Lopes Cordeiro

President of APPI: The Portuguese Association for Industrial Heritage



APPI is a non-profit association that aims to promote the study and archaeological research of industrial heritage; promote the defense and safeguard of the industrial heritage; encourage an interdisciplinary approach to industrial heritage, as well as its enhancement in a perspective that contributes to economic and cultural development.

CENTRE FOR RESEARCH IN ANTHROPOLOGY PORTUGAL



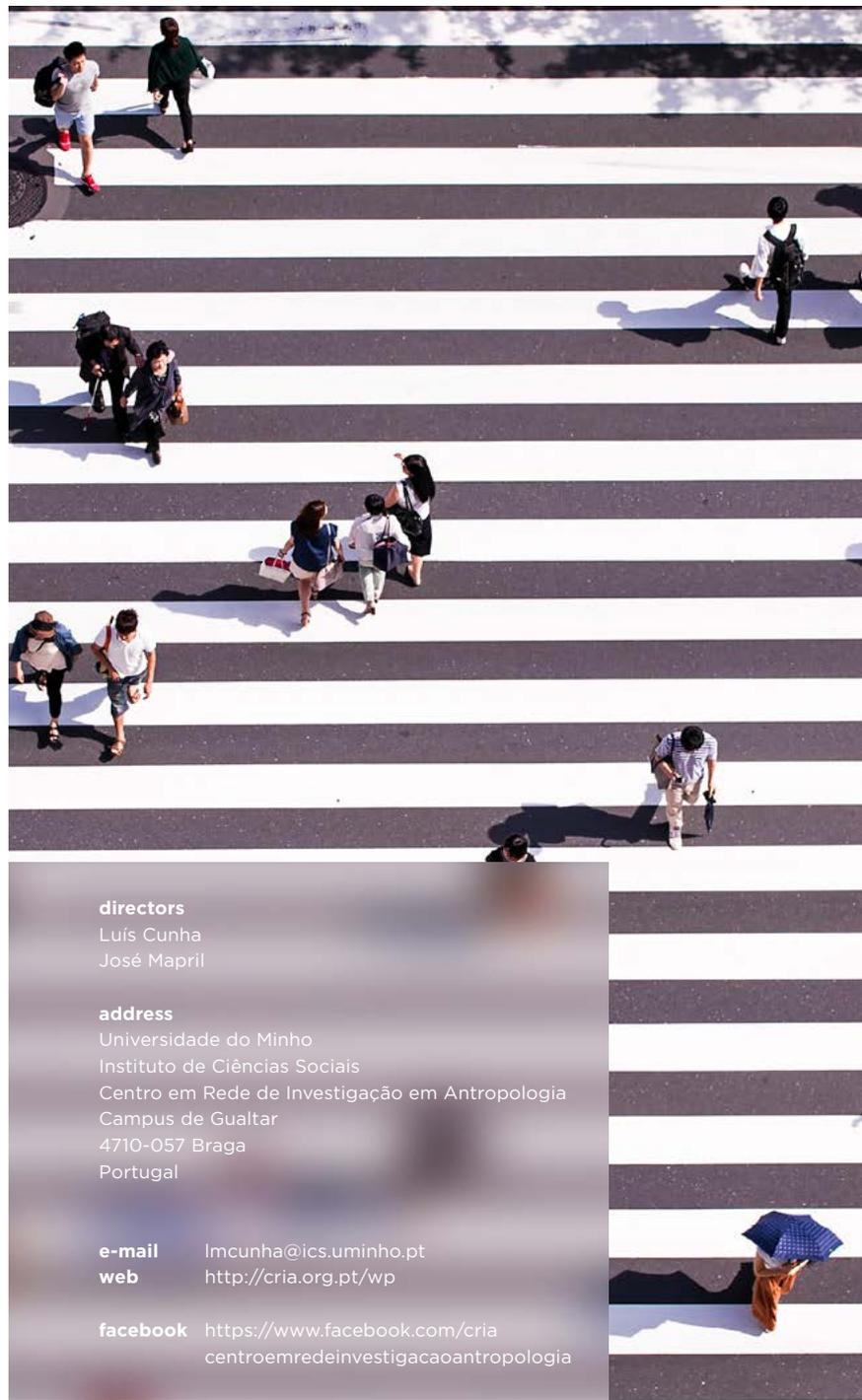
Founded in 2007, CRIA is the main Portuguese research Centre in Anthropology, occupying a significant position in the institutional field of Portuguese social sciences. It is an interuniversity R&D unit – composed by ISCTE-IUL, NOVA FCSH, University of Coimbra and UMinho, with shared management, fundraising, research dissemination, teaching and knowledge transfer capabilities. In the 2014 evaluation carried out by the National Science Foundation (FCT), CRIA was awarded with the grade of Very Good.

CRIA is a mature project and a stimulating multi-dimensional space of anthropological research. It is a unique and innovative project at the European level, and its institutional brand is internationally recognized and valued. CRIA will develop this leverage by promoting international collaborations in research and dissemination, attuned to debates in anthropology and relevant interventions in the public sphere.

Bringing together scholars from multiple and intersecting anthropological traditions, CRIA intervenes in the geopolitical restructuring of anthropological discourse and analysis, launching creative dialogues between bodies of knowledge frequently kept apart.

CRIA makes a solid contribution to the knowledge of contemporary cultural and social dynamics. Research in Portugal along with various geographical contexts – Portuguese-speaking countries (Brazil, Angola, Mozambique, Guinea-Bissau, Cape Verde, São Tomé and Príncipe, East Timor), other European countries, and India, Malaysia, Indonesia, Bangladesh, Sri Lanka, Sierra Leone, Morocco, Mauritania, Madagascar, Israel, Palestine, Canada, USA, Cuba – promotes comparative, articulated and transversal analyses on different spatial and historical scales – the landmark of CRIA’s scientific strategy. Interdisciplinarity and subdisciplinary articulation support and complement this unique approach.

Research in CRIA is structured in four major research groups which compose the scientific core of the Centre and bring together researchers from the different institutional divisions. These groups build upon specific fields of research: (1) Circulation and Place-Making, (2) Environment, Sustainability, and Ethnography, (3) Governance, Policies and Livelihoods, and (4) Practices and Politics of Culture. In conjunction with the research activities, CRIA also promotes the organisation of scientific meetings and several activities outside the academy that favour the discussion and dissemination of research results, and encourages the publishing of articles and books that facilitate the circulation of research in anthropology. Namely, CRIA’s journal *Etnográfica* is the main journal in anthropology published in Portugal, being listed in significant international databases (e.g. Web of Knowledge, Scopus, AIO, EBSCO, Latindex, Capes Qualis, ERIH Plus).



directors

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STAFF MEMBERS



PhD full members



PhD associated members  **1**

International members

PhD  **1**

Visiting researchers  **2**

9

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **10** | 4 Q1 2 Q2 1 Q4 3 Others

Books  **2** | National

Book chapters  **4** | 2 International 2 National

Journals or collections  **1** | Editor

Communications

- Oral**  **16** | 10 International 6 National
- Poster**  **1** | International
- Total**  **17**

42

Number of citations

7

Open access documents
(UMinho Repositorium)

1.63

Average impact factor

THESES AND DISSERTATIONS

PhD Theses completed  **2**

On-going PhD Theses  **15** | 4 In cooperation with international institutions

Master's Dissertations completed  **6**

RESEARCH PROJECTS

1

Total number of on-going projects
National Funding

20 000 €

Total funding for UMinho
National Funding
(7 550 € - National Funding executed)

20 000 €



● Total funding
● Funding executed in 2018

1

Others
National Funding

SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

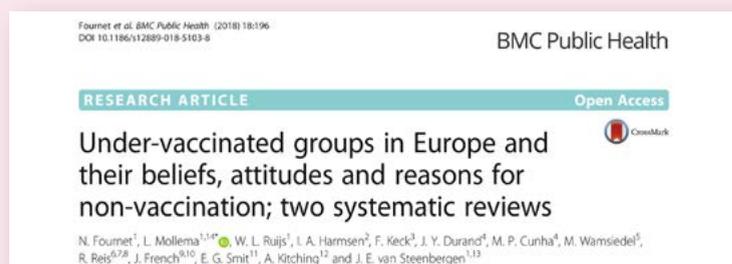
4

MAJOR ACHIEVEMENTS

Flagship Publications

Under-vaccinated groups in Europe and their beliefs, attitudes and reasons for non-vaccination; two systematic reviews

N. Fournet, L. Mollema, W.L. Ruijs, I.A. Harmsen, F. Keck, et al., 2018.



Onstage and Off: The Shifting Relevance of Gender in Women's Prisons

M.I. Cunha, 2018.



Rules, skills and autonomy: Pathological concepts of youth offending in Portuguese juvenile justice and custody

P.A. Zoettl, 2018.



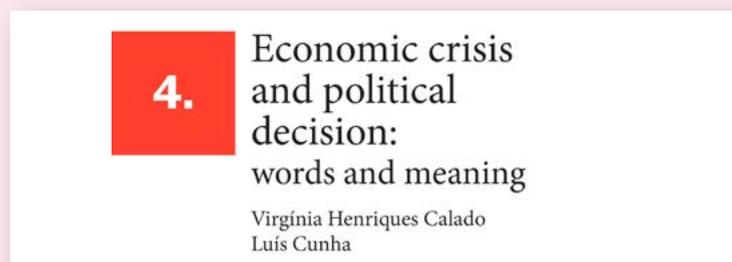
The educational (im)mobilities and status (il)legalities of Cape Verdean youth in Portugal

E.P. Challinor, F. Martins, 2018.



Economic crisis and political decision: words and meaning

V.H. Calado, L. Cunha, 2018.



Flagship Projects

INCLUSIVE COURTS

Equality and cultural difference in the practice of Portuguese courts: Challenges and opportunities for an inclusive society



The project aims a better understanding of the legal challenges raised by cultural diversity in Europe, by looking into the practice of domestic and international courts. It focuses on the way courts deal with concepts such as identity, culture, ethnicity and religion, and on the way they balance equality and respect for cultural difference in a wide range of cases.

THE NICOLINAS FESTIVITIES OF GUIMARÃES

Solemnity and Laughter in Updating a Secular Ritual



Anthropological study, commissioned and funded by the Guimarães township, of the centuries-old Saint Nicholas festival and of the social and cultural dynamics affecting it in the present context of heritagization.

Articulations in human and social sciences: contemporary human rights challenges in Latin America and Europe



The project aims to identify the main contemporary challenges to Human Rights faced by both Latin American and European contexts, the commonalities and differences between them, and to promote international and interdisciplinary discussions among researchers centered on these issues.

Scientific Leadership

Humberto Martins

Vice-President of Portuguese Anthropology Association (APA)



APA aims to represent anthropology and anthropologists in Portugal. It has sought to bring together, in a pluralistic manner, practitioners from the various fields of anthropology. Its main objectives are the promotion of anthropological knowledge and the defense of the value of scientific and professional skills linked to training in anthropology.

Jean-Yves Durand

Member of the Scientific Council of the Musée et Jardins de Salagon (France)



The museum is located in Mane in the heart of Haute-Provence and the Luberon, near Forcalquier, France. Composed of a priory classified as a historic monument and 6 hectares of gardens, it is at the same time a place of historical, cultural and scientific life. Salagon is home to collections that retrace the life and traditions of Haute-Provence.

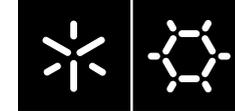
Jean-Yves Durand

Member of the Editorial Council of the Journal Ethnologie Française



Founded in 1971 by Jean Cuisenier within the Centre d'Ethnologie Française, Ethnologie française made an early

3B's RESEARCH GROUP



Universidade do Minho
Research Institute on Biomaterials,
Biodegradables and Biomimetics

The 3B's Research Group (Biomaterials, Biodegradables and Biomimetics) was established in 1998 at the UMinho and supports a multidisciplinary and highly skilled team working at the interface of biomedical engineering, materials science, biotechnology and life sciences. It is now a Unit of the recently created Research Institute on Biomaterials, Biodegradables and Biomimetics (I3Bs), a “Unidade Orgânica de Investigação” of UMinho that also integrates the 3B's Innovation & Services Units. The 3B's is part of Portuguese Government Associate Laboratory ICVS/3B, evaluated with excellent, together with the Institute of Health and Life sciences also from UMinho.

The research activity of 3B's 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. These include regeneration of human tissues and organs, advanced therapies against cancer and degenerative diseases. 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. Moreover, the innovation character is clear, building an important Intellectual Property asset: it is the research group with more patent applications in Portugal and several spin-offs are arising.

The 3B's coordinates the European Institute of Excellence on Tissue Engineering and Regenerative Medicine. It aims to strengthen its research thematic areas and its competences to consolidate its leading position worldwide, contributing with scientific knowledge and political influence to address European health-related societal challenges. The 3B's Research Group has been one of the most active groups in Europe on attracting highly competitive large grants for research, educational programs, and supporting infrastructure. This strategy has been also positioning the Group as a continuously growing and world-respected Centre on Biomaterials, Tissue Engineering and Regenerative Medicine research.



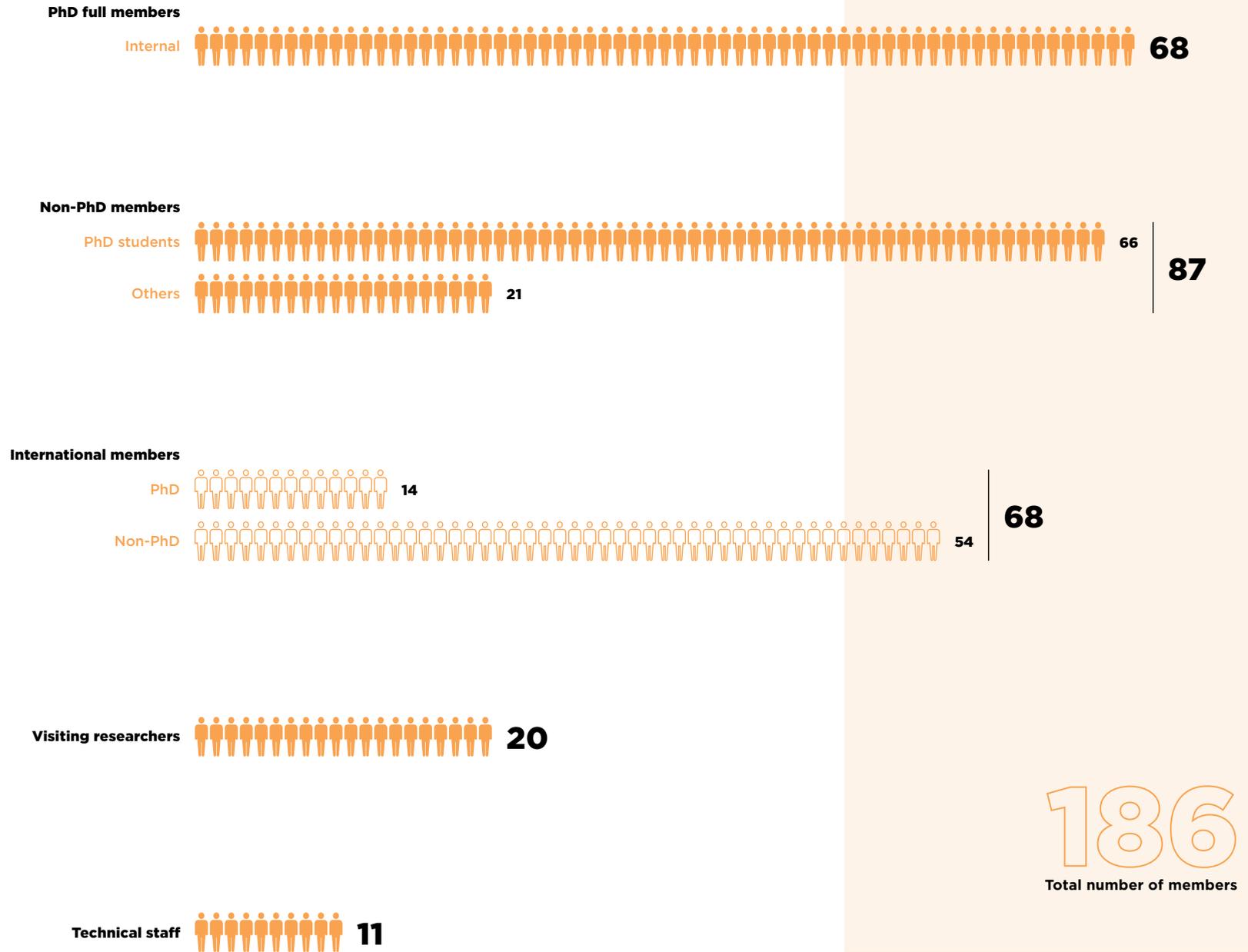
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Rui Luis Reis

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STAFF MEMBERS



PUBLICATIONS

Indexed papers (SCOPUS)  **108** | **63** Q1 **21** Q2 **18** Q3
6 Others

Books  **3** | International

Book chapters  **27** | International

Journals or collections  **2** | Editor

Communications

- Oral**  **24** | International
- Poster**  **33** | International
- Total**  **57**

6 996
Number of citations

52
Open access documents
(UMinho Repositorium)

5.26
Average impact factor

THESES AND DISSERTATIONS

PhD Theses completed  **4** | **1** In cooperation with international institutions

On-going PhD Theses  **56** | **50** In cooperation with international institutions

Master's Dissertations completed  **9**

17
Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

75

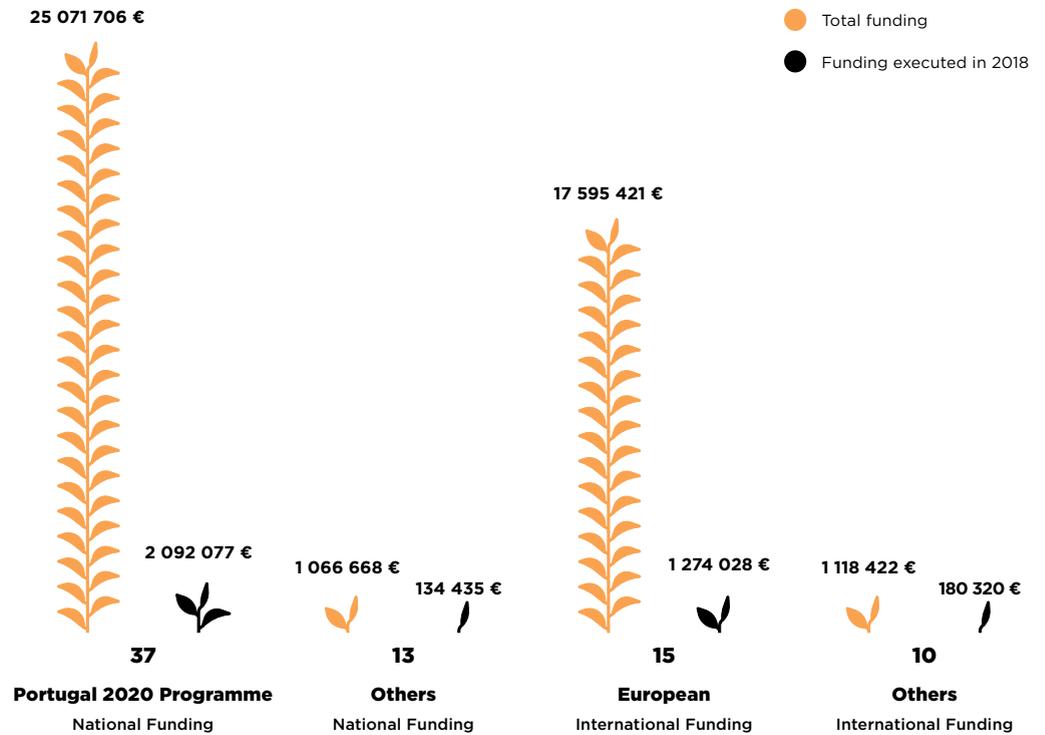
Total number of on-going projects

50 - National Funding
25 - International Funding

44 852 217 €

Total funding for UMinho

26 138 374 € - National Funding
(2 226 512 € - National Funding executed)
18 713 843 € - International Funding
(1 454 347 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation

4

National patents

2

Submitted

International patents

29

27 Submitted
2 Granted

MAJOR ACHIEVEMENTS

Flagship Publications

Blood derivatives awaken in regenerative medicine strategies to modulate wound healing

B. Mendes, M. Gomez-Florit, P. Babo, R. Domingues, R. Reis, M. Gomes, 2018.



Mimicking the 3D biology of osteochondral tissue with microfluidic-based solutions: breakthroughs towards boosting drug testing and discovery

M. Carvalho, R. Reis, J. Oliveira, 2018.



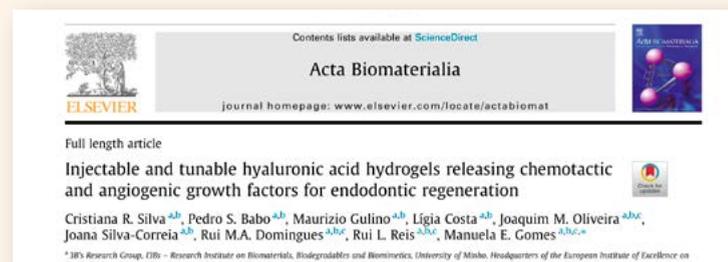
Emerging tumor spheroids technologies for 3D *in vitro* cancer modeling

T. Rodrigues, B. Kundu, J. Silva-Correia, S. Kundu, J. Oliveir, R. Reis, V. Correlo, 2018.



Injectable and tunable hyaluronic acid hydrogels releasing chemotactic and angiogenic growth factors for endodontic regeneration

C. Silva, P. Babo, M. Gulino, L. Costa, J. Oliveira, J. Silva-Correia, et al., 2018.



Engineering nanoparticles for targeting rheumatoid arthritis: Past, present, and future trends

I. Oliveira, C. Goncalves, R. Reis, J. Oliveira, 2018.



Flagship Projects

ECM_INK

Cells-self Extracellular Matrices-based Bioinks to create accurate 3D diseased skin tissue models



ECM_INK will address the need for reliable 3D in vitro cell-based platforms with major impact in the reduction/elimination of animal experimentation, diseases modelling and drug development by advancing cells-self extracellular matrices-based bioinks to bioprint accurate and pathophysiological relevant models of diseased skin tissue.

ERC Consolidator Grant - MAGTENDON

Tissue Engineering Technologies Associated with Magnetic Stimulation Methodologies for Tendon Regeneration



MagTendon explores conventional and innovative technologies such as multimaterial 3D bioprinting to develop magnetic responsive systems mimicking specific aspects of tendon tissue architecture, composition and biomechanical properties, which, combined with adequate stem cells, will render appropriate behavioral instructions to stimulate the regeneration of tendon tissue.

ERC Starting Grant - CAPBED

Engineered Capillary Beds for Successful Prevascularization of Tissue Engineering Constructs



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 and provide fast perfusion of those after transplantation to a patient, ensuring their viability.

Scientific Recognition

Rui Reis

UNESCO International Life Sciences Award



One of the greatest awards in the field of life sciences, it is attributed to Rui L. Reis by UNESCO, with the high sponsorship of Equatorial Guinea government, for his exceptionally innovative contributions in the development of biomaterials of natural base and its biomedical applications, with potential for the improvement of human health.

Honoris Causa degree by the University Politecnica of Bucharest



Attributed to Rui L. Reis in November, represents the recognition of his international leadership in the field of regenerative medicine and tissue engineering, biomaterials and stem cells. The accomplishments achieved by the scientist to develop and lead large partnerships, promoting this scientific field internationally, are here highlighted.

IET AF Harvey Engineering Research Award



The research prize of 400,000 euros, considered one of the most important in the field of engineering, will be used to create innovative 3D models of cancer to preview the efficacy of drugs, avoiding the resort to animal tests and some pre-clinical trials. It recognizes Rui Reis' medical research of excellence in the field of 3D tissue engineering for new regenerative therapies and 3D disease models.

LANDSCAPES, HERITAGE AND TERRITORY LABORATORY



Laboratory of Landscapes,
Heritage and Territory

Lab2PT, Landscape, Heritage and Territory Laboratory, is a R&D unit of UMinho focused on Social Sciences, Arts and Humanities and evaluated as Very Good by the National Science Foundation (FCT). Currently, it comprises 60 PhD integrated researchers from different scientific areas (Archaeology, Architecture and Urbanism, Design, Geography, Geology, History and Visual Arts), 44 PhD students, and other Post-doc fellows or collaborators. Such a critical mass converges to a common interest in the study of the territory, its landscapes and heritage, which are understood as the material, spatial and cultural expressions of societies over time. Lab2PT's truly interdisciplinary basis of research is ensured by its organic articulation with two schools of UMinho - the School of Architecture and the Institute of Social Sciences, merging research and teaching programmes. This unit is formed by three research groups, designed according to their identity and goals: Landscapes and Societies (Lands), Design and Technology (DeTech) and Space and Representation (SpaceR), each group comprising researchers from different scientific areas.

Lab2PT develops fundamental and applied research, thriving on its laboratorial capacity, namely the Unit of Archaeology of UMinho, the Laboratory of Construction and Technology or the Design Institute of Guimarães and its Advanced Ceramics R&D Lab. It wishes to understand and interpret territories and their natural and cultural landmarks, assuming heritage resources that can and should promote economic and social strategies within regional (partnerships with municipalities), national (collaborations with other Research Units and public stakeholders) and international (representation and leadership in networks) contexts.

The activity plan for Lab2PT is guided by 4 major objectives, wishing to approach the territory from a holistic perspective that crosses the three research groups: 1) to deepen fundamental multidisciplinary research; (2) to foster applied research with territorial and social impact for development services; 3) to extend the articulation between research and postgraduate training; 4) to expand the internationalization of the team, projects and the results of research.



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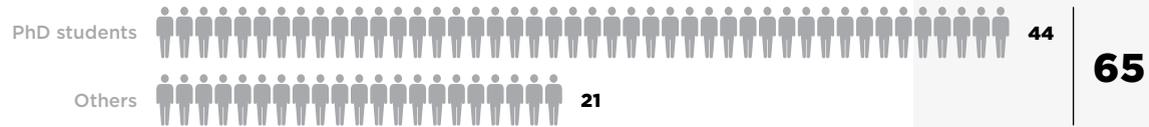
STAFF MEMBERS

PhD full members

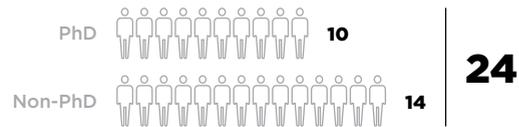


PhD associated members 22

Non-PhD members



International members

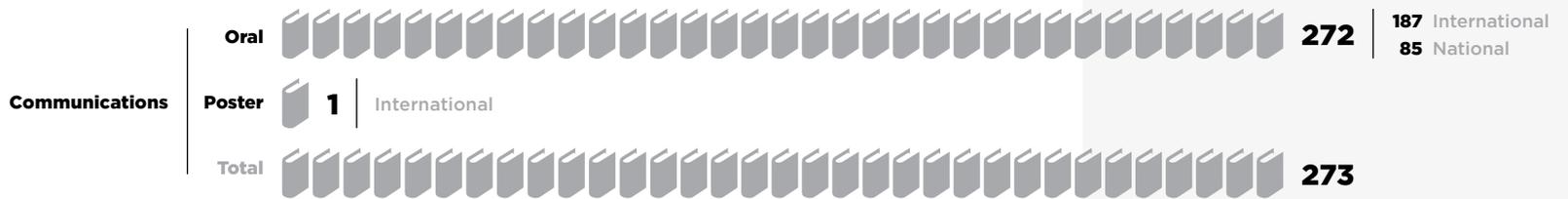


Technical staff 3

150

Total number of members

PUBLICATIONS



364

Number of citations

13

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS



2.79

Average impact factor

2

Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

10

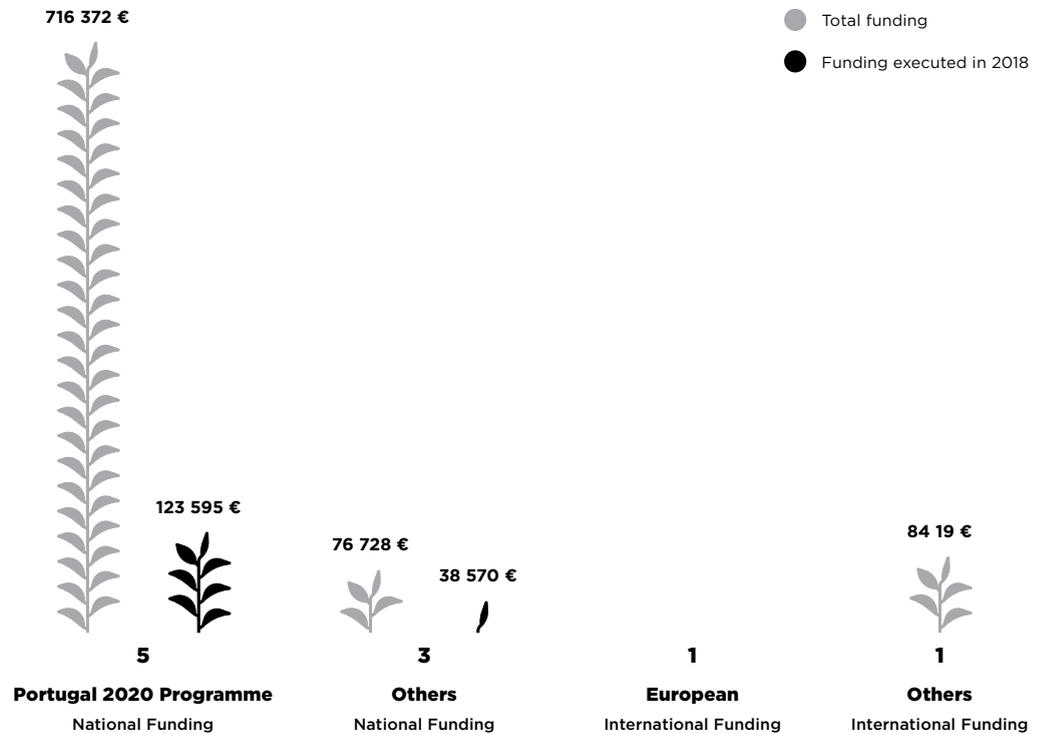
Total number of on-going projects

8 - National Funding
2 - International Funding

877 290 €

Total funding for UMinho

793 100 € - National Funding
(162 165 € - National Funding executed)
84 190 € - International Funding



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

33

International patents

2

| Submitted

Others
(consultancy, exhibitions,
observatories and technical reports)

30

| 1 International
29 National

MAJOR ACHIEVEMENTS

Flagship Publications

The Convent of St. Francis of Jesus of Monção in the Early Modern Era

M.M.L. de Araújo, F. Oliveira, 2018.



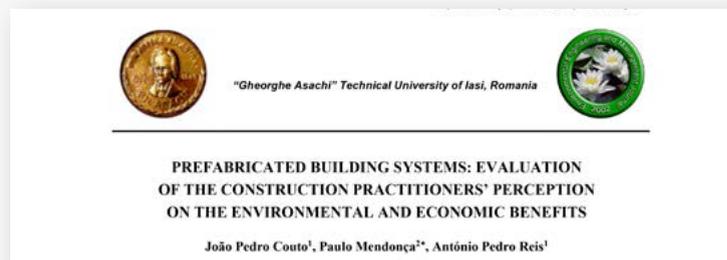
Crop diversity and storage structures in the settlement of Crastoeiro (Northwest Iberia): new approaches

L. Seabra, J.P. Tereso, A.M.S. Bettencourt, A. Dinis, 2018.



Prefabricated building systems: Evaluation of the construction practitioners' perception on the environmental and economic benefits

J.P. Couto, P. Mendonça, A.P. Reis, 2018.



Flagship Projects

MEDCRAFTS

Crafts regulation in Portugal in Late Middle Ages: 14th - 15th centuries



This project intends to study the regulation of crafts activities in late medieval Portugal, (14th and 15th centuries), through the analysis of several Portuguese towns, from different regions, in a comparative perspective. The focus on regulations and control is the best starting point for studying crafts.

KERAMOS

Additive Manufacturing of Innovative and Multifunctional Ceramic Products of Achitectoral Systems



This project aims at exploring 3 objectives for the first time: the integration of additive manufacturing techniques of ceramic and hybrid architectural components; the expansion of functionalities of ceramic components with sustainable and durable performances; the application of magnetron sputtered coatings with multifunctional characteristics.

CREATOUR

Creative Tourism Destination Development in Small Cities and Rural Areas



CREATOUR is an incubator/demonstrational and multidisciplinary research initiative, supporting collaborative research processes involving five research centres working with a range of cultural/creative organisations and other stakeholders located in small cities across Portugal in the Norte, Centro, Alentejo and Algarve regions.

Scientific Recognition

Marta Lobo

Medal of merit by the city of Braga, grade silver



The Municipality of Braga awards medals of merit to individuals for their civic and personal achievements. History professor and Lab2PT researcher, Marta Lobo was awarded with the Silver Degree for her outstanding work for the promotion of Braga's historical heritage.

Archiprix Portugal 2018 competition



Each year, Archiprix rewards the best final Master degree Thesis in the fields of Architecture, Urbanism and Landscape Architecture. Student Joana Rocha and her adviser Jorge Correia were finalists in this prestigious competition with a Thesis in Architecture, combining research and graphical analysis.

EU Mies Award

Pedro Bandeira nominated with the project "Rotative House in Coimbra"



The Mies Van Der Rohe Award aims at promoting and understanding the significance of quality and reflecting the complexity of Architecture's own significance in terms of technological, constructional, social, economic, cultural and aesthetic achievements.

Scientific Leadership

Paulo Cruz

President of the International Association of Structures and Architecture (IASA)



Since 2016, the International Association of Structures and Architecture aims at exploring and promoting the merging of the fields of Structures and Architecture, encompassing all the aspects related with recent advances in the art, practice and theory of teaching, researching, designing and building structures.

Jorge Correia

Vice-President of the European Architectural History Network (EAHN)



Established in 2005, the European Architectural History Network supports research and education by providing a public forum for the exchange and dissemination of knowledge of the histories of architecture. Based in Europe, it is open to architectural historians and scholars in allied fields from all countries.

Maria Manuel Oliveira

Vice-President of the Cõa-Parque Foundation



The Cõa Parque Foundation was created in 2011 to manage the Cõa Valley Archaeological Park and the Museum. The major aim is to promote the integrated development of the region, bringing together partners and private economic agents, highlighting the importance of cultural dynamics and its contribution to the well-being of the country.

RESEARCH CENTRE IN POLITICAL SCIENCE



The Research Centre in Political Science (CICP) is a R&D Unit with the University of Minho as proponent institution (School of Economics and Management - EEG) and the University of Évora as participating institution. CICP was created in 2015, but its history is longer – dating back to 2002 – because CICP was the result of the merger of two successful units: the Centre for Studies in Public Administration and Politics (NEAPP) and the Research Centre in Political Science and International Relations (NICPRI). The merger was beneficial and the results are clear: two of the country's best centres in Political Science joined their human and intellectual capital to create a unit that is at the top of FCT's ranking with the EXCELLENT grade.

CICP's mission is to achieve the highest level of quality in research in Political Science in Portugal. For this goal, CICP aims at taking a synergistic advantage of its resources and the natural approximation of human capital, working closely in the subfields of the political science spectrum, and a strong commitment to the internationalization through the integration of its members into international networks and projects, as well as publishing its research in scientific journals and books of renowned international publishers. CICP also anticipates the future by investing in the promising potential of PhD students attending its Doctoral Programs.

In order to strengthen CICP's position and recognition, the Centre's members invest in several collaborative activities. Many of the main publications are developed in collaboration with renowned national and international colleagues, and CICP researchers have been participating in international projects, mainly in Brazil and Spain. CICP has been developing strong links and long-term collaborative partnerships with relevant scholars and institutions from Europe and North and South American countries, and is an active presence in several networks such as ECPR, CEPS and CIGAR among many others, and has built strong relations with foreign universities, like Florida State University, London School of Economics and University of Sao Paulo, just to name a few.

CICP's richness also lies in the articulation of differentiated but complementary perspectives in Political Science based on a principle of teamwork and fine articulation between the four different research groups: (1) Public Policy and Management, with the research lines Public Management, and Policy Making and Policy Evaluation; (2) Governance and Democracy, with the lines Political Behaviour and Multi-level Governance; (3) States, International Organizations and Challenges in Contemporary International Relations, comprising the lines Portugal, European Union and International Security Dynamics; and (4) Society, Europe and Global Dynamics, with the line Power, Rights and Cosmopolitanism in a Global Era.

These different structuring elements form CICP's strength and identity, and the main challenge is simply to continue to grow with rigor and professionalism.



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vice-directors

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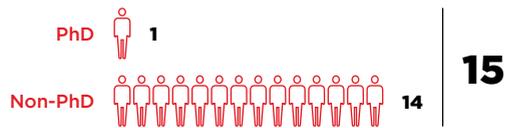
PhD full members



Non-PhD members



International members



52

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **34** | 11 Q1 6 Q2 4 Q3 2 Q4 11 Others

Books  **5** | National

Book chapters  **22** | 11 International
11 National

Journals or collections  **25** | 24 Editor
1 Guest editor

Communications | **Oral**  **62** | 41 International
21 National

274

Number of citations

1

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **7** | 2 In cooperation with
international institutions

On-going PhD Theses  **19**

Master's Dissertations completed  **17**

1.68

Average impact factor

5

Indexed proceeding papers
(SCOPUS)

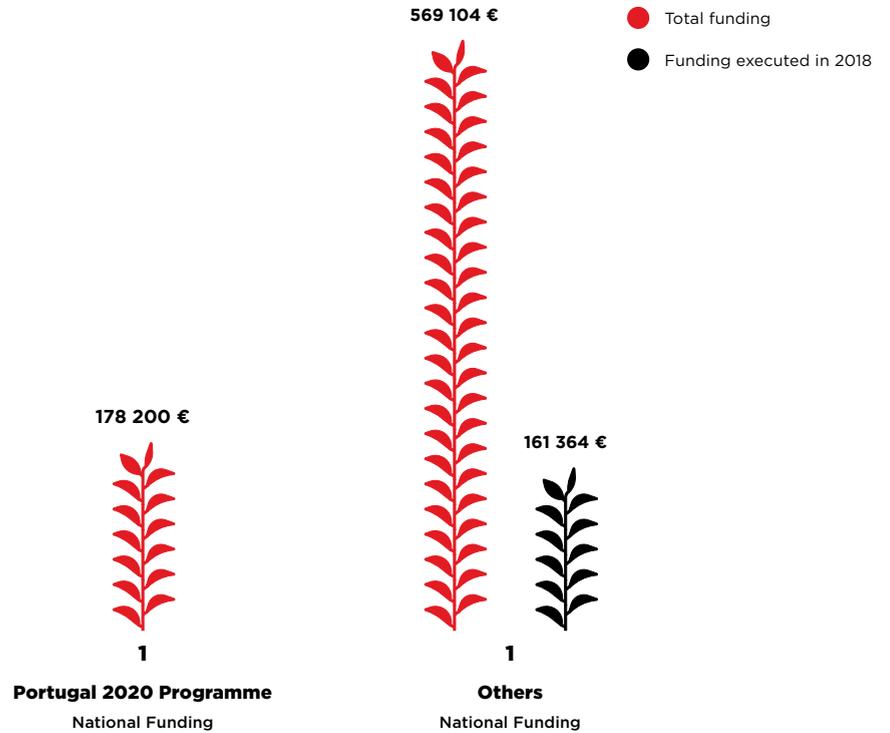
RESEARCH PROJECTS

2

Total number of projects
National Funding

747 304 €

Total funding for UMinho
National Funding
(161 364 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

Others
(consultancy, exhibitions,
observatories and technical reports)

2

1 International
1 National

MAJOR ACHIEVEMENTS

Flagship Publications

Explaining the transparency of local government websites through a political market framework

A.F. Tavares, N.F. da Cruz, 2018.



“Is there anybody out there?” Political implications of a territorial integration

M. Rodrigues, O.D. Meza, 2018.



Policy of Delay: Evidence from a Bayesian Analysis of Metropolitan Land-Use Choices

A. Deslatte, A.F. Tavares, R.C. Feiock, 2018.



Juvenile Victimization in Portugal through the Lens of the ISRD-3: Lifetime Prevalence, Predictors, and Implications

P.C. Martins, S.M. Mendes, G.A. Fernández-Pacheco, I. Tendais, 2018.



Determinants of Local Governments' Transparency in Times of Crisis: Evidence From Municipality-Level Panel Data

F. Tejedó-Romero, J.F.F.E. de Araújo, 2018.



Flagship Projects

Quality of Local Governance



The Quality of Local Governance project, funded by Fundação Francisco Manuel dos Santos, sought to analyze and evaluate the state of local governance in Portugal. The authors identified a set of principles internationally associated with good local governance. The project aimed to create a broad debate on local good governance.

TRIVPLAT

A monitoring, management and evaluation tool for electronic public procurement



Electronic Public Procurement (EPP) has been considered an important tool for promoting competition, simplifying procedures and ensuring transparency in decision-making processes. This project aims to design and develop the TrivPlat, a free access tool for monitoring, managing and evaluating the electronic platforms of public procurement.

Asymmetries and Regional Convergence: Implications for Decentralization and Deconcentration of the State in Portugal



This Project aims to analyze and describe the asymmetries and their evolution at the level of NUTS III regions, and publish a book with the results. The findings of this project are intended to provide knowledge and enlighten policy-makers on the implications of regional convergence on State decentralization.

Scientific Leadership

Section Chair of the European Consortium of Political Research



One CICP member was the Section Chair of the standing group on Local Government and Politics, on the section "Local Government as a Democratic and Functional Space: Governance, Complexity, and Uncertainty" of ECPR (European Consortium for Political Research) General Conference of 2018.

Board member of both international (CIGAR) and national (APCP) academic/scientific network.



CICP is on the Directive board of the section Public Accounting of the research network Comparative International Governmental Accounting Research (CIGAR), since June of 2009. On the Portuguese Association of Political Science, CICP has members on the Directive boards and coordination of the International Relations section.

CENTRE FOR RESEARCH IN ECONOMICS AND MANAGEMENT

NIPE

Founded in 1999, the Centre for Research in Economics and Management (NIPE) is a sub-unit of the School of Economics and Management of UMinho. Initially a small research centre with a more specialized profile in macroeconomics and political economy, the growth of membership broadened NIPE's research interests to other areas of Economics and, more recently, to Management. In the 2014 evaluation performed by the Portuguese Foundation for Science and Technology, NIPE was ranked with Very Good.

NIPE's main objective is to foster scientific progress in Economics and Management through publications in leading international journals. Since 2016, NIPE's research activities are organized in four research groups: Industrial and Labour Economics, Macroeconomics, Public and Regional Economics and Management and Finance.

NIPE is an internationally oriented research centre. A large number of its members are involved in international research collaborations. The seminar series involves researchers from many foreign universities. Every year, NIPE organizes several events and a very successful Summer School that attract researchers from all over the world.

The Research Unit also aims to transfer knowledge to economic agents, through the provision of consulting services, that contribute to a better and more scientifically based analysis of the economic environment, and to a more solid foundation of public and private decision-making. Several NIPE members are consultants for private and public entities, the Portuguese government and the parliament, as well as for international organisations such as the World Bank, the United Nations and OECD.

NIPE is a leading research centre on the Portuguese Economy. Its members are actively involved in several research projects that analyse various aspects of the Portuguese economy. The output of these projects has resulted in many international publications and attracted extensive media coverage.



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STAFF MEMBERS

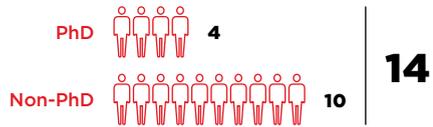
PhD full members



Non-PhD members



International members



72

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **54** | **36** Q1 **13** Q2
4 Q3 **1** Q4

Books  **1** | **National**

Book chapters  **6** | **5** International
1 National

Journals or collections  **16** | **12** Editor
4 Guest editor

Communications | **Oral**  **52** | **43** International
9 National

1 841
Number of citations

29
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **8** | **2** In cooperation with international institutions

On-going PhD Theses  **46** | **5** In cooperation with international institutions

Master's Dissertations completed  **60**

1.98
Average impact factor

2
Indexed proceeding papers
(SCOPUS)

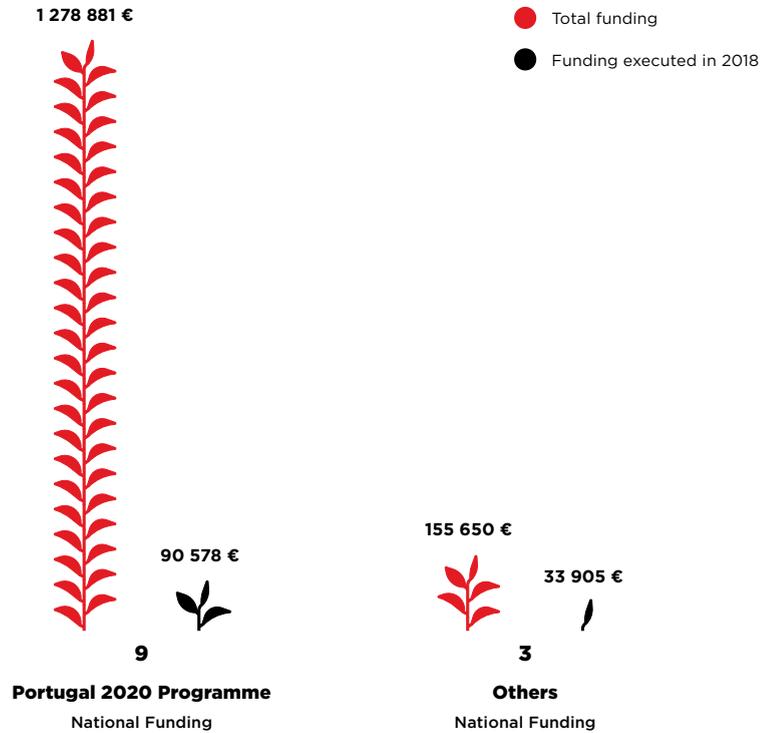
RESEARCH PROJECTS

12

Total number of projects
National Funding

1 434 531 €

Total funding for UMinho
National Funding
(124 483 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

39

Others
(consultancy, exhibitions,
observatories and technical reports)

8

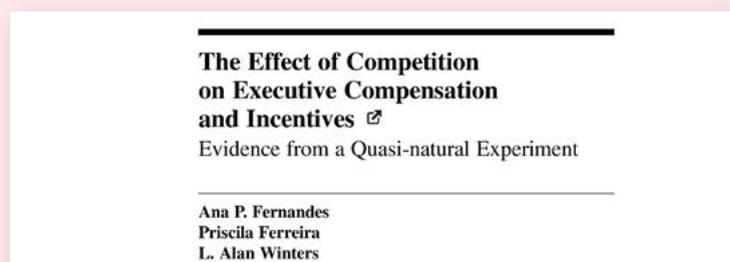
1 International
7 National

MAJOR ACHIEVEMENTS

Flagship Publications

The Effect of Competition on Executive Compensation and Incentives: Evidence from a Quasi-natural Experiment

A.P. Fernandes, P. Ferreira, L.A. Winters, 2018.



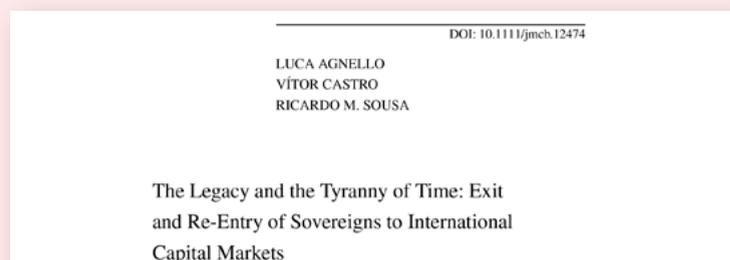
Foreign acquisition and internal organization

P. Bastos, N.P. Monteiro, O.R. Straume, 2018.



The Legacy and the Tyranny of Time: Exit and Re-Entry of Sovereigns to International Capital Markets

L. Agnello, V. Castro, R.M. Sousa, 2018.



Flagship Projects

It's All About Productivity: contributions to the understanding of the sluggish performance of the Portuguese economy



Globalization and the industrial revolution 4.0 pose great challenges to the competitiveness of companies and the sustainable growth of the Portuguese economy. It is intended to characterize the main determinants of productivity, identify structural changes and contribute to the design of public policies that induce productivity gains.

Advances in Nonlinear Time Series Econometric Modelling and Applications



The aim of this research project is to develop new nonlinear time series econometric methods for describing the observed data using the underlying theory or using the data when the former is vague or non-existent. In particular, the focus lies on introducing new models capable to explain nonlinear features of financial, energy and climate data.

Information asymmetry, conflicts of interest, and securities regulation



The integration of capital markets in the E.U. led to the adoption of rules to enhance competitiveness, reduce market abuse and increase transparency. The goal is to study the impact of these regulations on firms' information asymmetry and how it affects managerial practices and outcomes around corporate events.

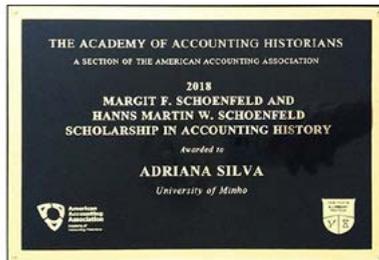
Scientific Recognition

Prize for best scientific paper attributed by the Office for Strategy and Studies of the Ministry of Economy



The effect of entrepreneurial origin on firms' performance: The case of Portuguese academic spinoffs," by Natália Barbosa and Ana Paula Faria. The study shows that academic spinoffs are contributing to economic development by creating new jobs, but their relevance as a source of sustained economic value is limited so far.

Best PhD Thesis in Accounting History by the Academy of Accounting Historians of the American Accounting Association



The main contribution of this Thesis (by Adriana Rodrigues Silva, co-supervised by L.L. Rodrigues) is to increase our understanding of the use of accounting for the control of workers, who although 'Free' were repressed due to their ethnical differences: 'Free Africans'. It also shows how ideology limited the capacity of Brazil to be accountable.

Prize "Competition in Markets," a joint initiative of the Office for Strategy and Studies of the Ministry of Economy and of the Mutualist Association Montepio.



The study "Product market competition and gender discrimination," co-authored by Priscila Ferreira shows that increased competition following a business registration reform reduces the gender pay gap for middle-managers and for medium- and high-skilled workers and that discriminatory firms are more likely to die.

Scientific Leadership

Francisco Veiga

President of the European Public Choice Society



Founded in 1972, the EPCS aims at promoting scientific research on the economic and interdisciplinary analysis of non-market decision making processes and institutions, and to facilitate the exchange of work and ideas about it. EPCS annual meetings are attended by around 400 researchers. Francisco Veiga is the first Portuguese EPCS president.

Manuel Rocha Armada

President of the European Financial Management Association (EFMA)



To encourage research worldwide about financial decision making, European Financial Management Association (EFMA) holds Annual and highly International meetings. Manuel Rocha Armada was the first Portuguese to take the role as its President. A Nobel Prize was the Guest Speaker in 2019.

Francisco Cruz

Member of the executive committee (EOC) of the European Regional Science Association (ERSA)



ERSA is the supranational grouping of national regional science associations across Europe. ERSA has some 3500 members in its constituent associations. Francisco Cruz is in his third term and acts as internal auditor of the association. He represents ERSA in the Council of the Regional Science Association International global association.

MECHANICAL ENGINEERING AND RESOURCE SUSTAINABILITY CENTRE



The Mechanical Engineering and Resource Sustainability Centre (MEtRICs) was created in 2013 by joining researchers from the Mechanical Engineering Department at UMinho and the Department of Biomass Sciences and Technologies at the New University of Lisbon. In 2018, a partnership agreement with the Centre for Residue Valorisation – CVR, a non-profit R&D organisation based at UMinho was signed.

The MEtRICs mission is to create scientific knowledge and provide technical solutions for a cleaner, safer and sustainable world. MEtRICs is, at UMinho, the single research centre evaluated within the FCT's Mechanical Engineering panel. Although most of the research activities are at the frontier with environment issues, this identification avows Mechanical Engineering to be a core discipline for sustainable development. MEtRICs is part of the School of Engineering at UMinho and, therefore it is a key element of the education offer in graduate and post-graduate training and research provided to the region and the society.

The centre is organized in four research lines: Energy Conversion and Environment; Advanced Engineering Systems; Structures and Vehicle Engineering; Food Technology and Wellbeing.

MEtRICs has been collaborating with various scientific institutions from North and South America, Europe, Asia and North Africa. These extend to projects and advanced training. The extensive collaboration with other national research centres both in the University (MEMEMS, ALGORITMI, ISISE) and through the Nation: IST, IPB, IPP, FEUP, Centi, INL, should also be mentioned.

The centre is an active member in various networks: AEBIOM (European Biomass Association); FP7 technology platform “Renewable Heat and Cooling”; European Pellet Council; founding member of WASTE CLUSTER PORTUGAL; platform Shared Waste Solutions (SWS); platform CTS - Centre of Technology and Systems; platform INTEROP-VLab; DYMAT – European association for the promotion of research into the dynamic behaviour of materials and its applications.

The strategy for the centre is based on: a) developing the network of collaborations with international partners; b) fostering the collaboration with industry; c) promoting a balance between fundamental research, applied technologies and dissemination; d) making scholarships available for the PhD programs; e) developing initiatives to promote the dissemination of scientific know how with the industry and community; f) participation in international networks; g) attracting high quality researchers; h) promoting inclusion within the institution.



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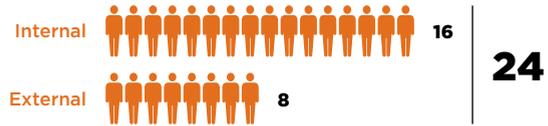
web

www.metrics.pt

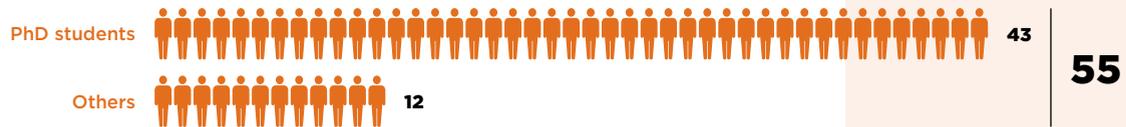


STAFF MEMBERS

PhD full members



Non-PhD members



International members



Visiting researchers 1

Technical staff 1

81

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **68** | 18 Q1 15 Q2 14 Q3 9 Q4 12 Others

Books  **1** | National

Book chapters  **12** | International

Journals or collections  **3** | Guest editor

Communications | **Oral**  **75** | International

1 483
Number of citations

8

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **6**

On-going PhD Theses  **41** | 3 In cooperation with international institutions

Master's Dissertations completed  **67**

1.94

Average impact factor

29

Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

12

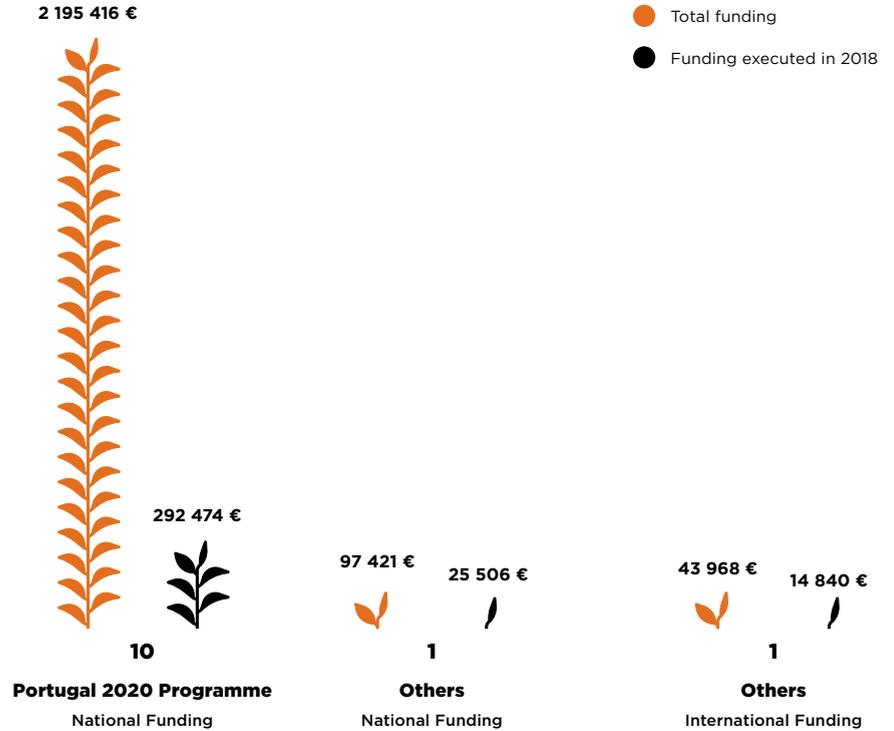
Total number of on-going projects

11 - National Funding
1 - International Funding

2 336 805 €

Total funding for UMinho

2 292 837 € - National Funding
(317 980 € - National Funding executed)
43 968 € - International Funding
(14 840 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation **10**

National patents **3** | 2 Submitted
1 Granted

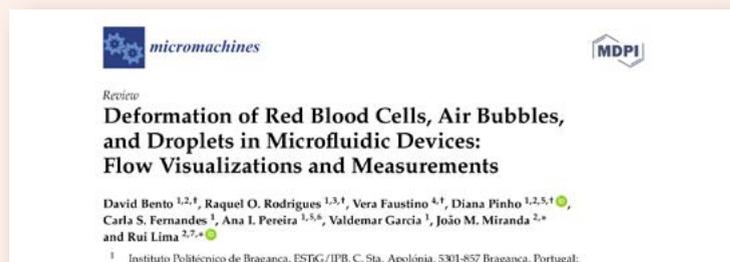
International patents **2** | 1 Submitted
1 Granted

MAJOR ACHIEVEMENTS

Flagship Publications

Deformation of Red Blood Cells, Air Bubbles, and Droplets in Microfluidic Devices: Flow Visualizations and Measurements

D. Bento, R.O. Rodrigues, V. Faustino, D. Pinho, C.S. Fernandes, et al., 2018.



Chitosan/montmorillonite bionanocomposites incorporated with rosemary and ginger essential oil as packaging for fresh poultry meat

J.R.A. Pires, V.G.L. de Souza, A.L. Fernando, 2018.



Highly efficient removal of fluoride from aqueous media through polymer composite membranes

J. Nunes-Pereira, R. Lima, G. Choudhary, P.R. Sharma, S. Ferdov, et al., 2018.



Efficient coverage of ZnO nanoparticles on cotton fibres for antibacterial finishing using a rapid and low cost *in situ* synthesis

R.B. d'Água, R. Branquinho, M.P. Duarte, E. Maurício, et al., 2018.



Collaborative manufacturing based on cloud, and on other I4.0 oriented principles and technologies: A systematic literature review and reflections

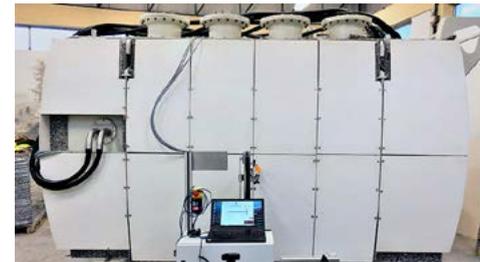
M.L.R. Varela, G.D. Putnik, V.K. Manupati, G. Rajyalakshmi, et al., 2018.



Flagship Projects

ICUBAS5D

Intelligent Design and Manufacturing of Power Transformer Tanks



The project combines the potential of modern 3D representation, with the automatic calculation and drawing algorithms to minimize the development time of structural design, allowing simpler and optimized solutions from the point of view of manufacturing, responding to the concerns of Quality, Environment and Safety.

BIOREG

Absorbing the Potential of Wood Waste in EU Regions and Industrial Bio-based Ecosystems



The project proposes to create a platform of stakeholders who are able to influence and develop their regions towards bio-based industries and products. Demonstrator case studies have been selected among European regions to set up renewable wood waste-based systems at different stages of the waste wood value chain.

EXHAUST2ENERGY

Automotive Exhaust Heat Recovery with Thermal Control



The project is a research project that aims to explore the potential of automotive exhaust thermoelectric generators in conjunction with an innovative thermal control strategy patented by the project. This enables to maximize the production of electricity from exhaust waste heat, by performing a control over the hot source temperature through a phase-change medium.

ALGORITMI CENTRE



ALGORITMI's origin can be traced back to 1990. A few researchers in the middle of the 90s, in the North of Portugal, identified the need of further research classes in two main areas: Information Systems and Technologies, and Electronics and Systems Engineering. In 2020, ALGORITMI will be celebrating its 26th Anniversary.

The ALGORITMI Research Centre is a Research Unit of the School of Engineering, UMinho, that develops R&D activity in Information and Communications Technology and Electronics (ICT&E), spreading 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). This centre is a multi-disciplinary Research Unit, with a heterogeneous international activity, maintaining active exchange programs with universities and research centres all around the world.

Nowadays, ALGORITMI is focused on: enhancing its international publications track record; increasing its funding track record; supporting researchers applying for funding and project management; increasing its potential for sustainable development through external funding and/or commercialization of its research outputs; adding value to its overall research strategy; contributing to regional and national economic development and enhancing the quality of the postgraduate offer.

The majority of PhD-level researchers of the Centre are also Faculty members of four departments of the School of Engineering, namely: Industrial Electronics (DEI), Information Systems (DSI), Industrial Engineering & Management (DPS) and Informatics (DI). Furthermore, the MSc and PhD projects supervised by those Faculty members are developed at ALGORITMI. ALGORITMI Research Centre focuses its activity on projects that explore a strong link with the community, namely, the industry and the public administration.

UMinho is located in an industrialized region with an important footprint in the textile and footwear industries and in an emerging field on ICT services enterprises, pushed by the e-phenomena age. The automotive industrial field also gained recently an important share of the regional market. Another external factor that influences our target field of application is the growth of the cities in the region, which introduces several demands for the co-operation of researchers, namely in the field of logistics, communication, e-government, health and resource management. The results of this policy are stated by the number of applied research projects in cooperation with companies (funded by ANI and QREN) and by specific national projects, namely POSI, POCTI and POE programmes.

In the 2014 evaluation carried out by the National Science Foundation (FCT), ALGORITMI was awarded with the grade of VERY GOOD.



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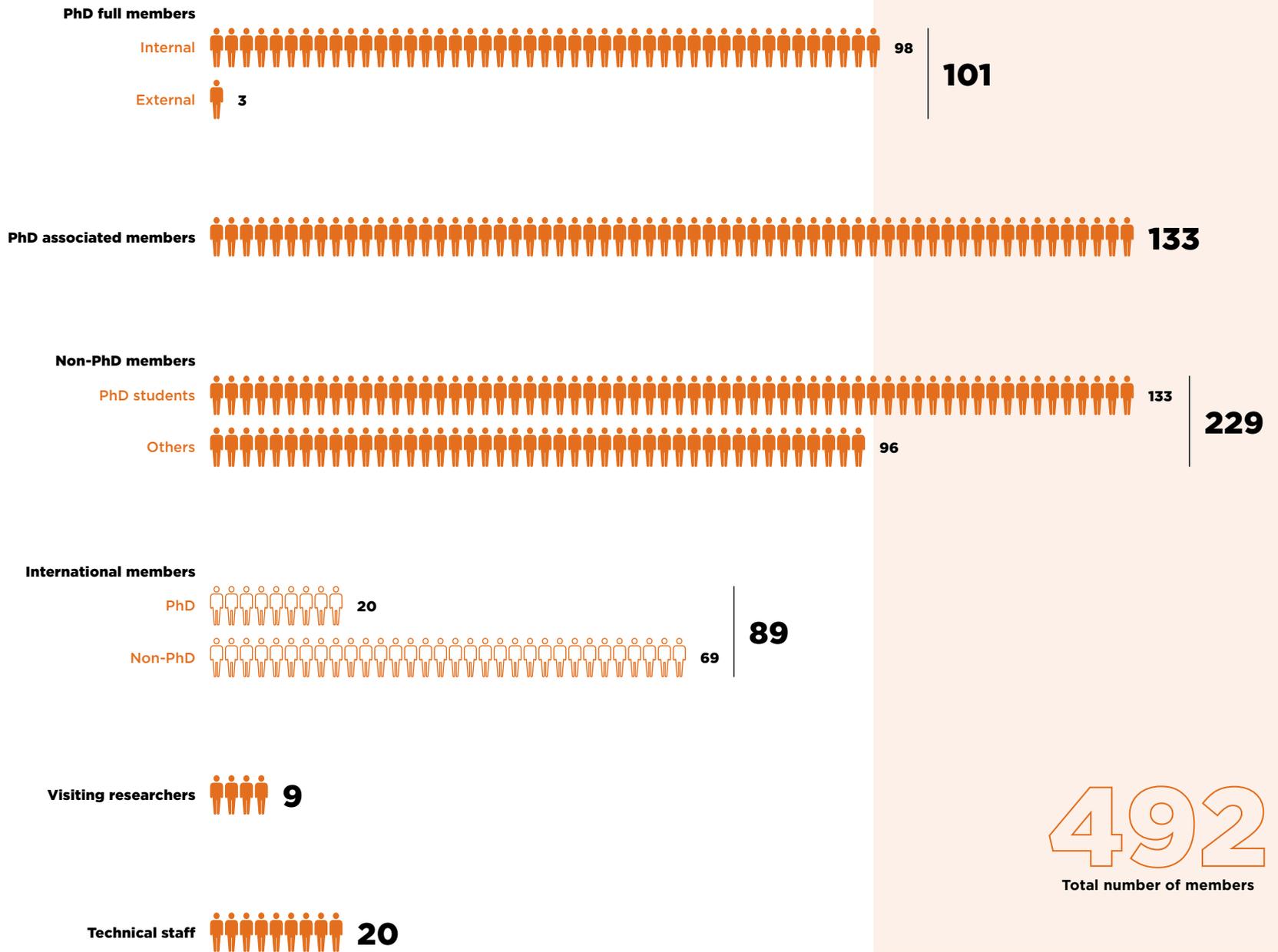
facebook www.facebook.com/CentroAlgoritmi

twitter twitter.com/#!/CentroAlgoritmi

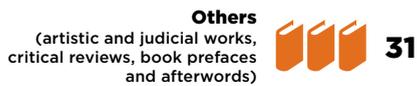
instagram www.instagram.com/centroalgoritmi



STAFF MEMBERS



PUBLICATIONS



8 327
Number of citations

127
Open access documents
(UMinho Repositorium)

0.61
Average impact factor

THESES AND DISSERTATIONS



101
Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

34

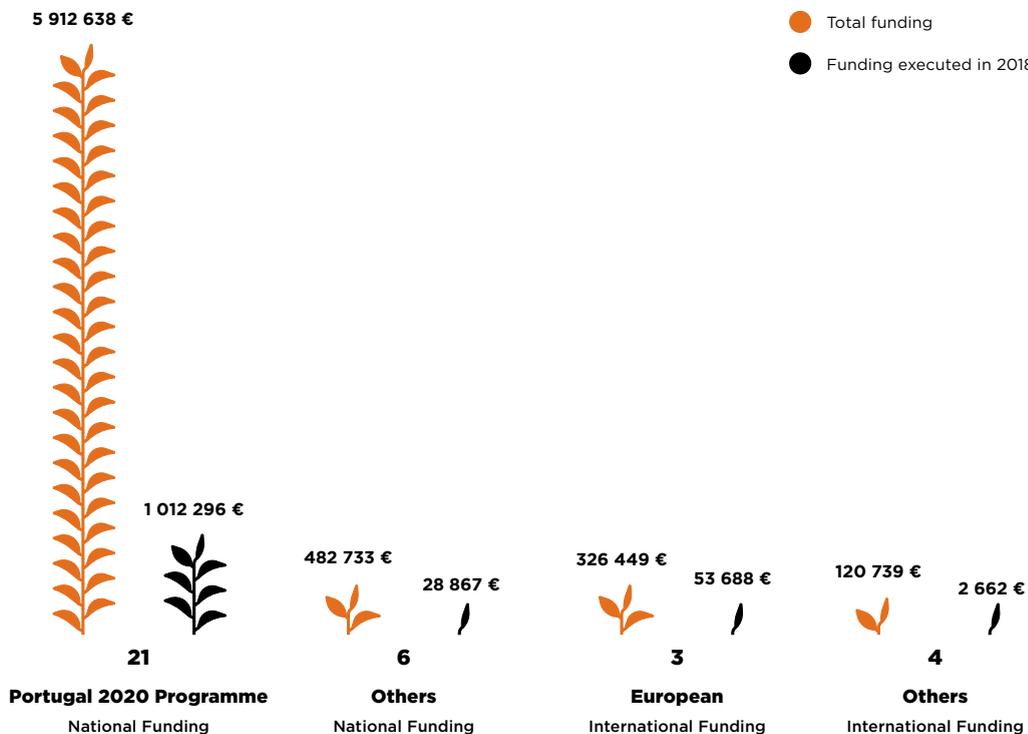
Total number of on-going projects

27 - National Funding
7 - International Funding

6 842 559 €

Total funding for UMinho

6 395 371 € - National Funding
(1 041 163 € - National Funding executed)
447 188 € - International Funding
(56 350 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

16

National patents

7

6 Submitted
1 Granted

Spin-offs and Start-ups
with UMinho label

1

MAJOR ACHIEVEMENTS

Flagship Publications

MITT: Medical Image Tracking Toolbox

S. Queirós, P. Morais, D. Barbosa, J.C. Fonseca, J.L. Vilaça, J. D'hooge, 2018.



A 6LoWPAN Accelerator for Internet of Things Endpoint Devices

T. Gomes, F. Salgado, S. Pinto, J. Cabral, A. Tavares, 2018.



Automatic human trajectory destination prediction from video

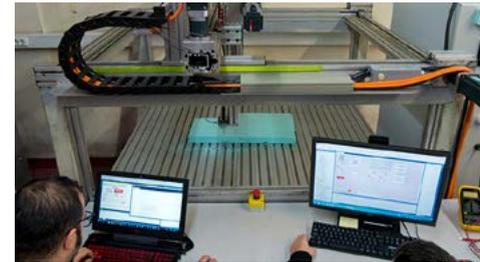
P. Afsar, P. Cortez, H. Santos, 2018.



Flagship Projects

FIBR3D

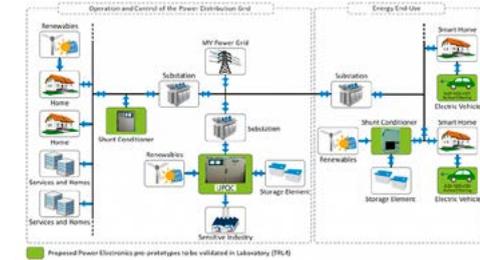
Additive Manufacturing-based Hybrid Process for Long or Continuous Fibre Reinforced Thermoplastic Matrix Composites



The project consists in developing a hybrid and integrated process that is combined into a single-step platform for additive and subtractive operations that allows CAD-to-Part production with freeform shapes using long or continuous fiber reinforced thermoplastics (F RTP).

ESGRIDS

Enhancing Smart GRIDs for Sustainability



The project aims at developing new scientific methodologies that result in disruptive solutions to meet the challenges that future electrical power systems will face. This will be achieved by implementing a multidisciplinary approach that brings significant developments with respect to the main actors of the electrical power system.

DEUS EX-MACHINA

Symbiotic Technology for Societal Efficiency Gains



The project aims to create new detection and sensing mechanisms to access existing devices and develop new sources of detection of the Internet of Things; investigation of local information fusion algorithms to obtain local information from various detection devices; implementation of information fusion from multiple distributed devices, among others.

Scientific Recognition

Top 10 most downloaded papers in International Transactions in Operational Research



The paper "Optimization of logistics services in hospitals", International Transactions in Operational Research, 25 (1) (2018) 111-132, surveys several applications of Operations Research in the domain of Healthcare. Reviews key contributions addressing contemporary optimization issues in this area, focusing on a variety of optimization problems and solutions.

Scientific Leadership

Anabela Mesquita

President of "SPACE Network" - European Network of Universities of Applied Sciences, 2018-2021



The SPACE network is an international network of predominantly professional higher education institutions including universities and VET schools servicing researchers, teachers and students on levels 5, 6 and 7, in the field of (broad sense) business, languages, entrepreneurship and hospitality.

Paulo Novais

Nominated President of APPIA (the Portuguese Association for Artificial Intelligence)



APPIA aims to promote research, teaching and dissemination of Artificial Intelligence as a scientific domain.

Isabel Ramos

Nominated President of the Portuguese Association for Information Systems



The Portuguese Association for Information Systems (APSI) is an association of a technical-scientific nature created as a result of several interactions between various stakeholders in the field of information systems, linked to higher education institutions.

CENTRE OF TEXTILE AND SCIENCE TECHNOLOGY



The Centre for Textile Science and Technology (2C2T) is a Research Unit established in 1978, working in the area of Fibrous Materials Engineering and Design.

The vision and mission of 2C2T is to be recognized for excellent research in this area, helping society to tackle the biggest and most pressing problems and providing the knowledge base for the continuing viability of the textile value chain for global competition. To accomplish this the Unit defined three strategic goals:

- 1) Scientific and technological leadership in the field together with a robust interaction research innovation, that will ensure continuing advances and will foster the development of novel materials and technologies, helping the industry to become more competitive, sustainable and improve human condition.
- 2) Excellent education with a strong research base through the incorporation of innovative attitudes and approaches to provide human resources with the competences needed to address current and future industrial and societal challenges.
- 3) Strong involvement with industrial partners exploring new opportunities addressed in the National and European strategies to strengthen the national economy and ensure that research outcomes are translated into benefits to society.

Three crosscutting research themes were identified key to generate knowledge and promote innovation to maintain European industrial leadership and economic growth:

- a) Nano and Multifunctional Materials;
- b) Sustainable and Advanced Processes and Technologies;
- c) Design and Product Engineering.

The research activity is organized in the Fibrous Materials Engineering group and the Fibre based Product Design group. The research goal of the Fibrous Materials Engineering group is mainly focused on the development of new materials and processes, including technology and process optimization whereas the group of fibre based Product Design is more orientated to the development of fibre based products, considering the complete Product Life Cycle.



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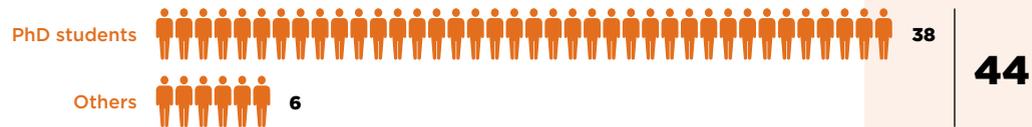


STAFF MEMBERS

PhD full members



Non-PhD members



International members



78

Total number of members

PUBLICATIONS



1 014
Number of citations

79
Open access documents
(UMinho Repositorium)

4.13
Average impact factor

THESES AND DISSERTATIONS



26
Indexed proceeding papers
(SCOPUS)

14
Non-indexed proceeding papers

RESEARCH PROJECTS

22

Total number of on-going projects
National Funding

4 204 963 €

Total funding for UMinho
National Funding
(909 710 € - National Funding executed)

4 179 963 €



909 710 €



20

Portugal 2020 Programme
National Funding

● Total funding
● Funding executed in 2018

25 000 €



2

Others
National Funding

SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation 2

Spin-offs and Start-ups with UMinho label 1

National patents 5 | 4 Submitted
1 Granted

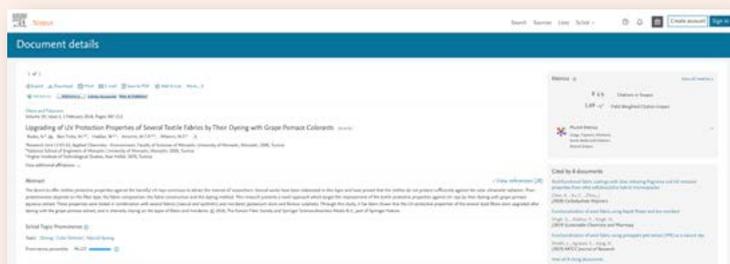
Others 28 | National
(consultancy, exhibitions, observatories and technical reports)

MAJOR ACHIEVEMENTS

Flagship Publications

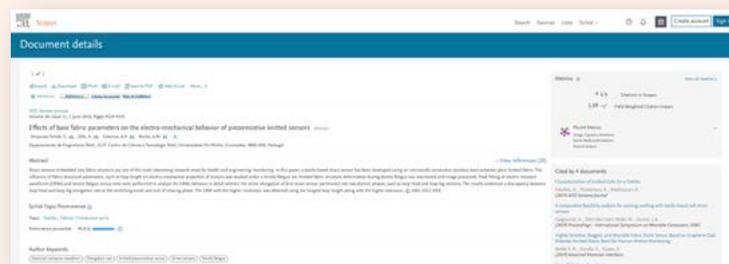
Upgrading of UV Protection Properties of Several Textile Fabrics by Their Dyeing with Grape Pomace Colorants

N. Baaka, M.B. Ticha, W. Haddar, M.T.P. Amorim, M.F. Mhenni, 2018.



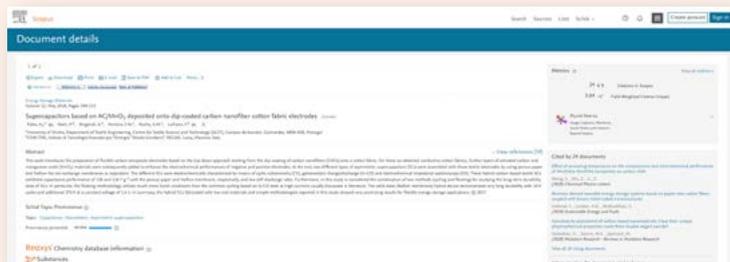
Effects of base fabric parameters on the electro-mechanical behavior of piezoresistive knitted sensors

S.D. Tohidi, A. Zille, A.P. Catarino, A.M. Rocha, 2018.



Supercapacitors based on AC/MnO₂ deposited onto dip-coated carbon nanofiber cotton fabric electrodes

A.J. Paleo, P. Staiti, A. Brigandi, F.N. Ferreira, A.M. Rocha, F. Lufano, 2018.



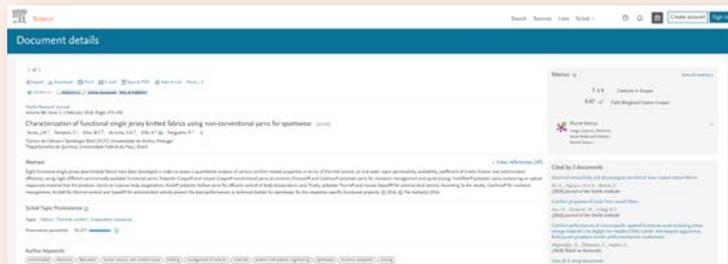
Structural coloration of chitosan coated cellulose fabrics by electrostatic self-assembled poly(styrene-methyl methacrylate-acrylic acid) photonic crystals

G. Yavuz, A. Zille, N. Seventekin, A.P. Souto, 2018.



Characterization of functional single jersey knitted fabrics using non-conventional yarns for sportswear

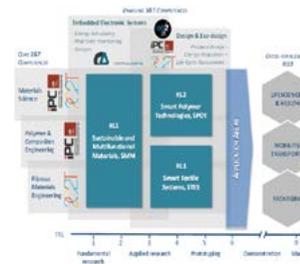
J.M. Souza, S. Sampaio, W.C. Silva, S.G. de Lima, A. Zille, R. Fanguero, 2018.



Flagship Projects

TSSiPRO

Technologies for Sustainable and Smart Innovative Products



Integrated project that will provide cutting edge S&T advancements on sustainable and smart innovative technologies and systems, based on polymers and textiles, integrating embedded electronic systems. Sustainable and Multifunctional Materials, Smart polymers and textiles are the main research lines of the project.

PLASMATEX

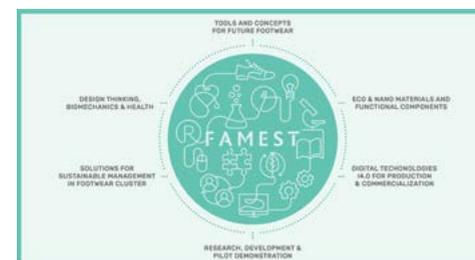
Novel type of antibacterial coatings on textile materials and plastics with controllable release of antibacterial agent



In the project, a new class of antibacterial coatings for medical textiles and plastics was developed. The approach was to use a layered coating, containing Ag nanoparticles and an additional barrier layer, for controlled release of the antibacterial agent. The coatings were deposited by atmospheric pressure plasma, producing uniform high quality coatings.

FAMEST

Footwear, Advanced Materials, Equipment and Software Technologies



The project mobilizes the entire Footwear and Fashion Cluster, aiming to study and develop materials, components and technologies; new concepts of fashion, technical, personalized and work footwear and; solutions to enhance production and reduce waste. It is promoted by a consortium of 23 companies and 9 R&D entities.

CENTRE OF BIOLOGICAL ENGINEERING



The Centre of Biological Engineering (CEB in a PT acronym) is a Research Unit of UMinho created 25 years ago, being recognized as a National reference Research Unit on Biotechnology and Bioengineering (B&B). Since 2002, CEB was awarded by FCT with the grade of Excellent.

CEB combines key expertise in fundamental science with engineering sciences, covering the molecular, cellular and process scales, to obtain value-added products or processes in the Food, Chemical, Biotech, Biomedical, Environmental and Agricultural sectors. With the motto “Linking life and technology to shape the future”, CEB is a unit aiming to be a strategic infrastructure for the development of R&D and innovation policies in 4 interdisciplinary thematic areas.

Industrial B&B - employing microorganisms as biocatalysts and industrial by-products and wastes as secondary raw materials.

Food B&B - enhancing the functionality, quality, safety and nutritional value of food, together with the integration of advanced technologies into food production.

Environmental B&B - remediation of contaminated environments and valorisation of recalcitrant and bio-waste materials by converting them into liquid and gaseous bioenergy carriers, bioelectricity, bulk chemicals or new catalysts.

Health B&B - biofilm science, virulence of pathogenic fungi, bioactive peptides/proteins, biomaterials and polymers for drug delivery and regenerative medicine and systems and synthetic biology approaches.

The 2nd level of organisation is implemented through 9 research groups: AMG- Applied Mycology; B.Factory - Molecular Biotechnology, Bioreactors, Biofuels and Food; BIOFILM Science & Technology; BIOSYSTEMS - Bioprocess Engineering & Computational Biosystems; BRIDGE - Bioresources, Bioremediation & Biorefinery; BBRG - Bioprocess & Bionanotechnology; FUNCARB - Functional Carbohydrates, FIT - Food Innovation and Technology; and BIOMARK -Biosensors Research.

The CEB research impact into industry, with translation of technology into the market, is also a driving force for CEB researchers and this has been accomplished through R&D projects in industrial consortia and launching of more than 14 spin-offs.



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STAFF MEMBERS

PhD full members



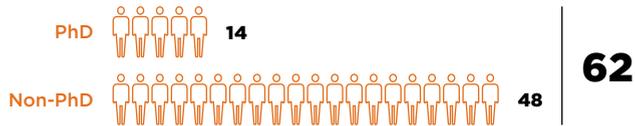
PhD associated members 26



Non-PhD members



International members



Visiting researchers 2



Technical staff 17



419
Total number of members

PUBLICATIONS



16 006
Number of citations

342
Open access documents
(UMinho Repositorium)

4.65
Average impact factor

THESES AND DISSERTATIONS



11
Indexed proceeding papers
(SCOPUS)

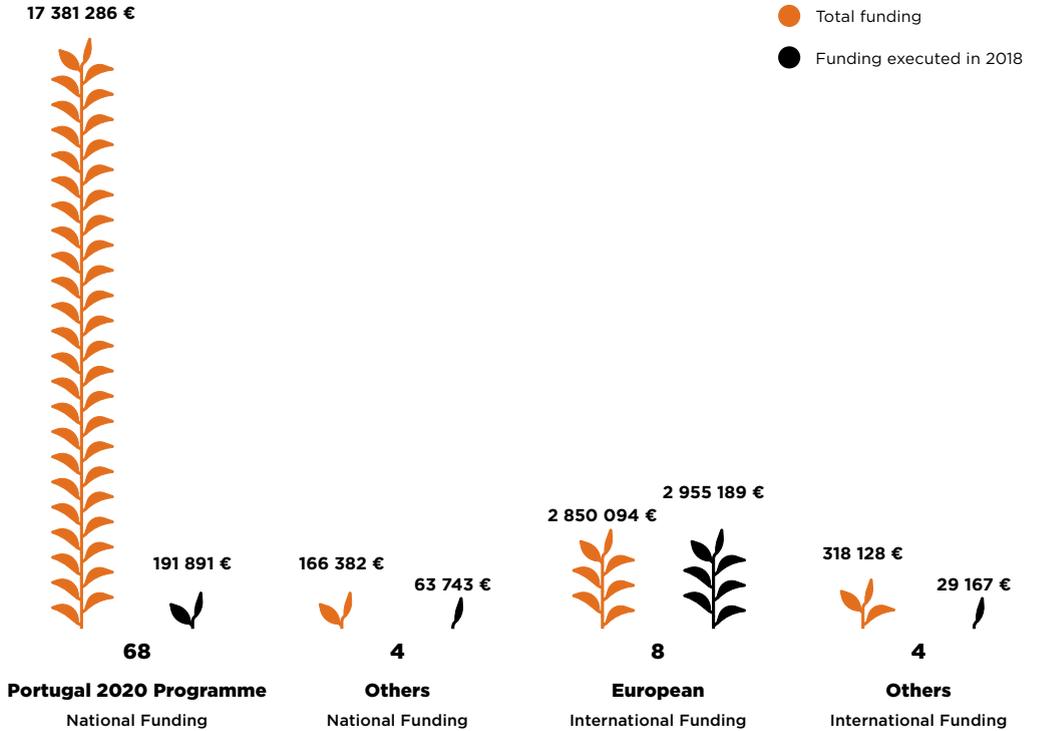
RESEARCH PROJECTS

84

Total number of projects
72 - National Funding
12 - International Funding

20 715 890 €

Total funding for UMinho
17 547 668 € - National Funding
(255 634 € - National Funding executed)
3 168 222 € - International Funding
(2 984 356 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation **2**

International patents **2** | 1 Submitted | 1 Granted

National patents **1** | Submitted

Spin-offs and Start-ups with UMinho label **3**

MAJOR ACHIEVEMENTS

Flagship Publications

Methane Production and Conductive Materials: A Critical Review

G. Martins, A.F. Salvador, L. Pereira, M.M. Alves, 2018.



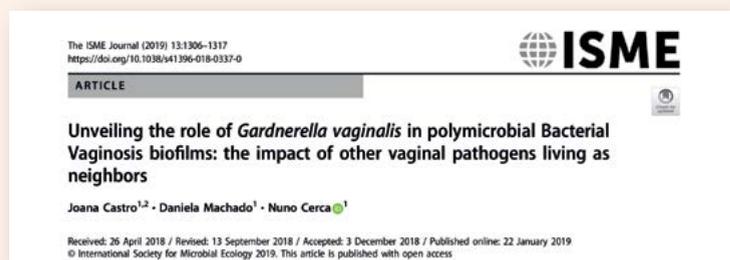
The deep-subsurface sulfate reducer *Desulfotomaculum kuznetsovii* employs two methanol-degrading pathways

D.Z. Sousa, M. Visser, A.H. van Gelder, S. Boeren, et al., 2018.



Unveiling the role of *Gardnerella vaginalis* in polymicrobial Bacterial Vaginosis biofilms: the impact of other vaginal pathogens living as neighbors

J. Castro, D. Machado, N. Cerca, 2018.



Flagship Projects

BIOTECNORTE

Underpinning Biotechnology to foster the north of Portugal bioeconomy



The project has 3 research "factories": 1. Bio-factory: Biotechnology as a key enabling technology for new processes, products and resource recovery; 2. Smart food factory: Smart systems for a sustainable and environmental friendly food industry and; 3. Nature factory: innovative biopharmaceuticals, medical devices, cosmetics and fine chemistry.

FOLSMART

Folate-Target Nanodevices to Activated Macrophages for Rheumatoid Arthritis



FOLSMART will bring to phase I clinical trials novel folate-based nanodevices (FBN) for the treatment of rheumatoid arthritis (RA). These nanodevices for folic acid-mediated targeting of activated macrophages showed improved clinical scores in a mouse model of RA when compared to methotrexate, a 1st-line drug therapy for the treatment of RA.

MULTIBIOREFINERY

Multi-purpose strategies for broadband agro-forest and fisheries by-products valorisation: a step forward for a truly integrated biorefinery



Aims at fostering the Portuguese bio-based economy by bringing value to forestry, agro-food, and fisheries wastes and by-products. Targeted to develop/use strategies and sustainable technologies, e.g. industrial biotechnology and green chemistry, for by-products valorization towards a truly integrated biorefinery dealing with multiple feedstocks.

Scientific Recognition

Three researchers among the world's most influential scientists



José Teixeira, António Vicente and Miguel Cerqueira were among the world's most influential scientists in 2018. They were included in the "Highly Cited Researchers" list from Clarivate Analytics.

Margarida Fernandes

Distinguished with the L'Oreal Portugal Medal of Honor for Women in Science



Margarida Fernandes, a Post-Doctorate researcher affiliated to the Centres of Physics and Biological Engineering, was distinguished with the L'Oreal Portugal Medal of Honor for Women in Science (awarded in January 2018). She also received a grant to develop new materials that would enable regeneration of bone tissues.

Scientific Leadership

CEB hosts the headquarters of the pan-European Microbial Resource Research Infrastructure - MIRRI



MIRRI facilitates the access to a broad range of high quality bioresources and data in a legal compliant way. By offering access to human expertise and providing a collaborative platform, MIRRI supports research and development in the field of biotechnology and generate solutions to societal challenges.

CEB hosts the headquarters of the Portuguese Society of Biotechnology (SPBT)



SPBT aims to:
(i) encourage, stimulate, support and conduct study and research in Biotechnology and other sciences directly applied to it; (ii) provide a forum for the discussion, and publication of the R&D results, for the advancement of the community and pursuit of common well-being; (iii) promote know-how in Biotechnology.

CENTRE OF TERRITORY ENVIRONMENT AND CONSTRUCTION



The Centre for Territory, Environment and Construction (CTAC) is a Research Unit of the School of Engineering of UMinho, recognized by the National Science Foundation (FCT), associated to the Department of Civil Engineering (DEC), with whom it shares resources and namely human resources.

Currently CTAC aggregates 37 researchers holding a PhD of which 27 are faculty professors of the Civil Engineering Department.

The general objective of the unit is to produce knowledge to support its vision of “Sustainable and Resilient Cities and Territories”, developing innovative materials and technologies and systems in the fields of built environment, systems and infrastructures for transport, 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, aiming at fostering engineering and construction sectors and environmental entities to support the quality of cities and territories. In the last evaluation procedure carried out by the National Science Foundation (FCT), the Centre was awarded with the grade of Good.

CTAC develops fundamental and, mainly, applied and experimental research focused on two interdisciplinary “main research areas of activity”: Sustainable Built Environment & Energy Efficiency; Sustainable and Resilient Systems and Infrastructures. CTAC researchers are integrated in five Research Areas of Competence, related with the civil engineering specialisations: Ecomaterials; Sustainable Construction Territorial Planning and Governance; Transport Systems and Infrastructures; Water Resources and Environment; supported by specific laboratories.

CTAC has a dynamic international cooperation through partnerships covering the development of research projects by participating in international research networks, mainly in the fields of sustainable environment and cities as well as in international projects of knowledge transfer, as well as in the Doctoral Programme of Sustainable Built Environment led by CTAC.

The link between research and society constitutes the driving force of intervention of the unit, where, in addition to the contribution for more sustainable built environment, cities and territories, people play the central role, contributing to the improvement of the quality of life.

CTAC is also involved in several masters and doctoral programmes, covering the main research fields of the unit, under the leading principle “to teach what is being researched”, together with other Research Units, from UMinho and other universities.



director

Paulo Pereira

deputies

Manuela Almeida

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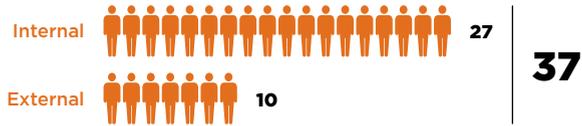
e-mail geral@ctac.uminho.pt

web <http://www.ctac.uminho.pt>

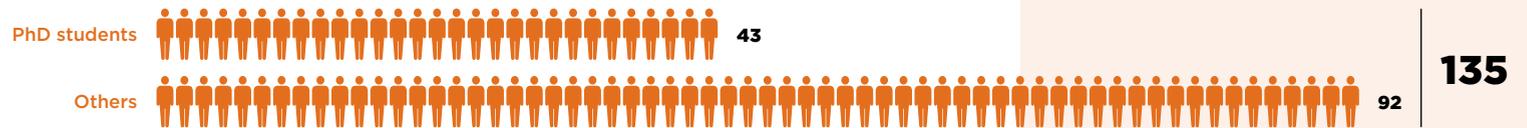


STAFF MEMBERS

PhD full members



Non-PhD members



194
Total number of members

PUBLICATIONS

Indexed papers
(SCOPUS)



61

21 Q1 **14** Q2 **8** Q3
3 Q4 **15** Others

Books



3

International

Book chapters



15

12 International
3 National

Communications

Oral



58

36 International
22 National

1 045

Number of citations

78

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed



9

On-going PhD Theses



43

2.20

Average impact factor

2

Indexed proceeding papers
(SCOPUS)

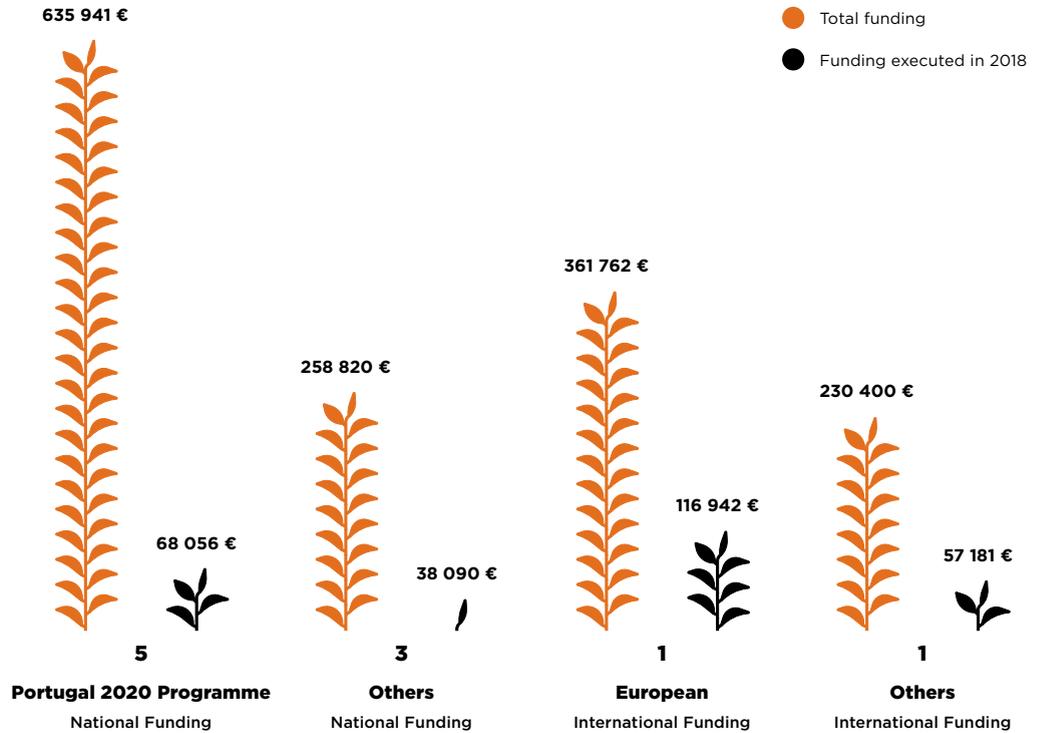
RESEARCH PROJECTS

10

Total number of projects
8 - National Funding
2 - International Funding

1 486 923 €

Total funding for UMinho
894 761 € - National Funding
(106 146 € - National Funding executed)
592 163 € - International Funding
(174 123 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation **3**

National patents **1** | Submitted

Others (consultancy, exhibitions, observatories and technical reports) **1** | National

MAJOR ACHIEVEMENTS

Flagship Publications

Carbon dioxide sequestration of fly ash alkaline-based mortars containing recycled aggregates and reinforced by hemp fibres

M. Mastali, Z. Abdollahnejad, F. Pacheco-Torgal, 2018.



Developing enhanced modified bitumens with waste engine oil products combined with polymers

S.R.M. Fernandes, H.M.R.D. Silva, J.R.M. Oliveira, 2018.



Ten questions concerning cost-effective energy and carbon emissions optimization in building renovation

M. Almeida, M. Ferreira, 2018.



Traffic noise: Annoyance assessment of real and virtual sounds based on close proximity measurements

F. Soares, E. Freitas, C. Cunha, C. Silva, J. Lamas, S. Mouta, et al., 2018.



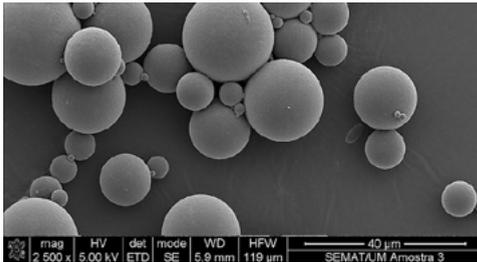
Development of a healthcare building sustainability assessment method – Proposed structure and system of weights for the Portuguese context

M.F. Castro, R. Mateus, L. Bragança, 2018.



Flagship Projects

Sustainable Cement-Polymer Composites



The project developed polymer composite materials with cement, fly ash and phase change materials, contributing to a more sustainable construction. This contribution can be considered innovative both in the use of an industrial waste and the incorporation of materials for improving the thermal performance of buildings. The objectives were attained.

BAMB

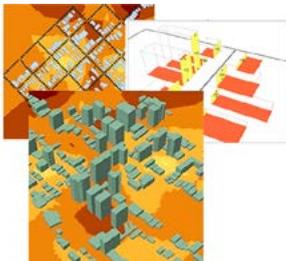
Buildings As Material Banks: Integrating Materials passports and Reversible Building Design for Circular Industrial Value Chains



BAMB project would like to promote a dynamic and flexible systemic shift where buildings can be incorporated into a circular economy. The Project has developed and integrated tools that enable the shift: Materials Passports and Reversible Building Design supported by new business models, policy propositions and management and decision-making models.

THIS

Tool For The Simulation of Heat Islands



In the field of environmental impact and climate changes risks, THIS is a GIS App extension model to calculate urban heat island intensity based on urban geometry. THIS verifies how urban geometry influences the development of urban heat islands. The algorithm adapts the tool to different urban contexts and simulates changes in urban environment.

Scientific Recognition

José Barroso Aguiar

Owen Nutt Award 2018 for outstanding research in the field of polymers in concrete



Owen Nutt is an Award dedicated to distinguish persons:

1. who have made years of contributions to the field of Concrete-Polymer Composites.
2. who have made outstanding achievements for academic or technological developments in the field of Concrete-Polymer Composites.

INSTITUTE FOR POLYMERS AND COMPOSITES

IPC is a Research Unit of the Engineering School of UMinho that aims at developing R&D activities in the field of Polymer Science and Engineering. From 2006-2018, IPC developed its activities in the Associated Laboratory i3N - Institute of Nanostructures, Nanomodelling and Nanofabrication (awarded with the grade of Exceptional in the last evaluation carried out by the National Science Foundation (FCT)). IPC is redefining its strategic position and started a new RU with novel challenges.

IPC main stated mission is to provide advancements on polymer and composites science and technology for social sustainable development; to generate added value to the polymer, mouldmaking and related industries and, in general, to the society, contributing to the socio-economic growth and to the social wellbeing; and to promote the society awareness of the role and importance of polymeric materials.

IPC is the unique national RU totally devoted to scientific and technological advancements in polymer and composite science and engineering. In this field, IPC adopts a multidisciplinary approach, covering and integrating the scientific disciplines of polymer chemistry, physics, engineering and technology. IPC develops basic research and integrative applied R&D into applications. IPC targets the promotion of scientific excellence and innovation, developing activities at the international leading edge, fostering breakthrough concepts and their practical exploitation.

IPC envisages contributing to the advancement of scientific knowledge in:

- **BASIC KNOWLEDGE R&D AREAS** - Advanced materials; Advanced manufacturing technologies; Advanced engineering design.
- **INTEGRATIVE R&D AREAS** - Integration of advanced materials; Integrative manufacturing; Embedding functions into systems; Immersive engineering.
- **R&D APPLICATIONAL CHALLENGES** - Polymers for advanced applications; Circular economy; Digital transformation.

IPC identified 3 main leading themes around which its activities are developed:

1. Sustainability and Eco-efficiency;
2. Smaller, Stronger, Smarter;
3. High-value manufacturing.



director

Júlio César Machado Viana

vice-director

Ana Vera Machado

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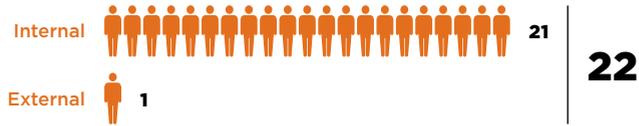
web

www.ipc.uminho.pt



STAFF MEMBERS

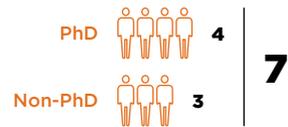
PhD full members



Non-PhD members



International members



118

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **53** | 21 Q1 19 Q2
8 Q3 4 Q4

Book chapters  **9** | International

Journals or collections  **3** | 2 Editor
1 Guest editor

Communications | Oral  **51** | International

1 699

Number of citations

14

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **3**

On-going PhD Theses  **22** | 1 In cooperation with
international institutions

Master's Dissertations completed  **26**

2.68

Average impact factor

24

Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

24

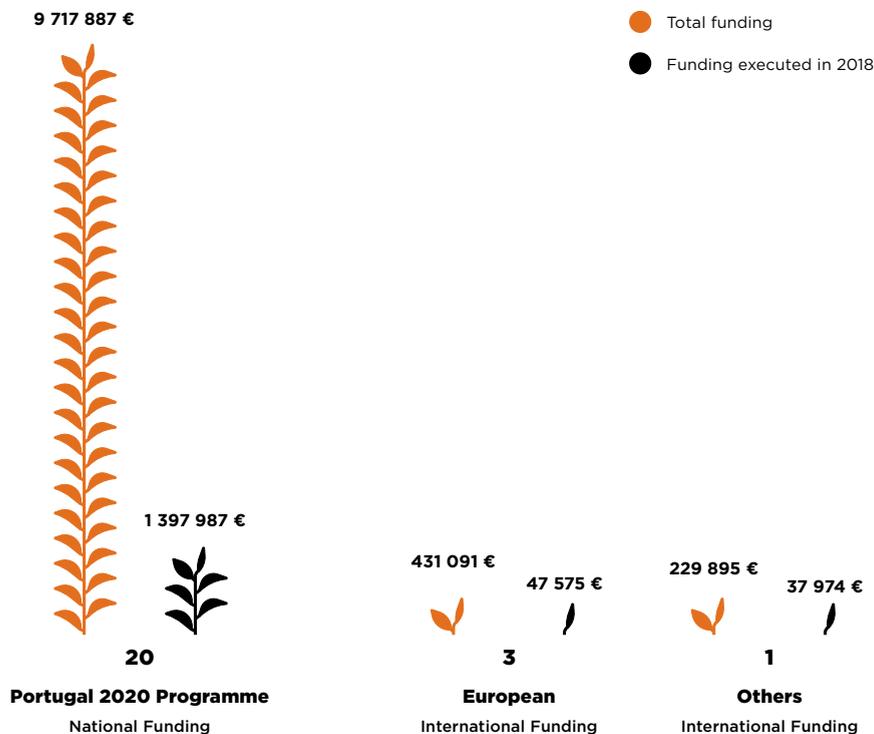
Total number of on-going projects

20 - National Funding
4 - International Funding

10 378 873 €

Total funding for UMinho

9 717 887 € - National Funding
(1 397 987 € - National Funding executed)
660 986 € - International Funding
(85 549 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

2

National patents

2

Submitted

International patents

6

Submitted

MAJOR ACHIEVEMENTS

Flagship Publications

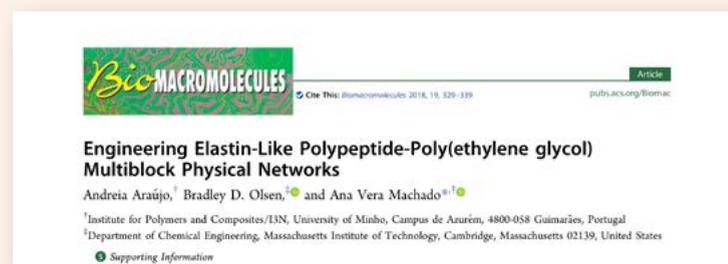
Multi-material 3D printing: The relevance of materials affinity on the boundary interface performance

L.R. Lopes, A.F. Silva, O.S. Carneiro, 2018.



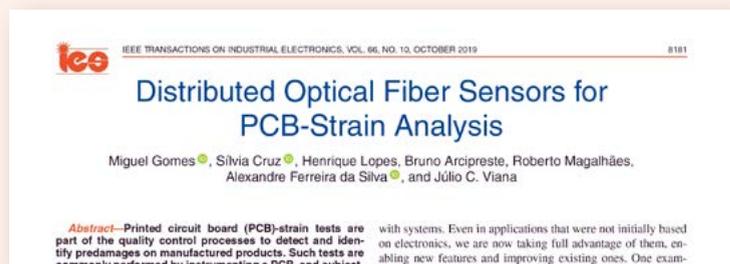
Engineering Elastin-Like Polypeptide-Poly(ethylene glycol) Multiblock Physical Networks

A. Araújo, B.D. Olsen, A.V. Machado, 2018.



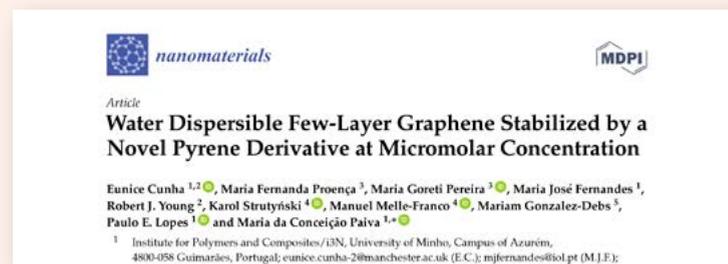
Distributed Optical Fiber Sensors for PCB-Strain Analysis

M. Gomes, S. Cruz, H. Lopes, B. Arcipreste, R. Magalhães, A.F. da Silva, J.C. Viana, 2018.



Water Dispersible Few-Layer Graphene Stabilized by a Novel Pyrene Derivative at Micromolar Concentration

E. Cunha, M.F. Proença, M.G. Pereira, M.J. Fernandes, et al., 2018.



Microstructural-mechanical properties relationship in single polymer laminate composites based on polyamide 6

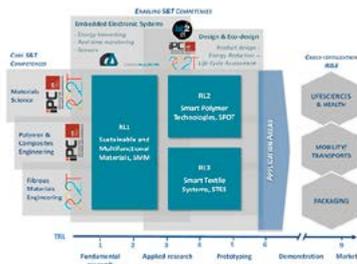
S.D. Tohidi, A.M. Rocha, N.V. Dencheva, Z. Denchev, 2018.



Flagship Projects

TSSiPRO

Technologies for Sustainable and Smart Innovative Products



TSSiPRO aims at investigating and promoting technical-scientific advancements in sustainable and intelligent technologies and innovative systems based on polymers and textiles, integrating ICT (embedded electronic systems), design and eco-design tools and advanced production technologies.

FIBR3D

Additive Manufacturing-based hybrid process for long or continuous fibre reinforced thermoplastic matrix composites

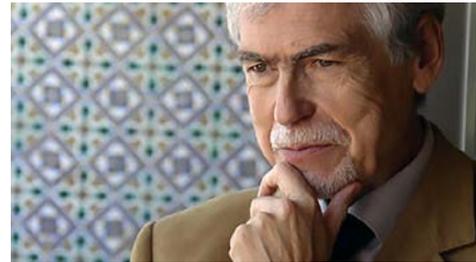


FIBR3D will develop a hybrid and integrated process that combines in a single platform, additive and subtractive operations and allows CAD-to-Part productions with free geometries using thermoplastic materials reinforced with long or continuous fibres.

Scientific Leadership

Carlos Bernardo

Board of Administration of CEiiA



CEiiA was created in 1999 with the goal of supporting the competitiveness of the Portuguese automotive industry. Since then, CEiiA has increased its activity, and is now focused on aeronautics, urban mobility, automotive, ocean and space, always pushing the industry.

INSTITUTE FOR SUSTAINABILITY AND INNOVATION IN STRUCTURAL ENGINEERING



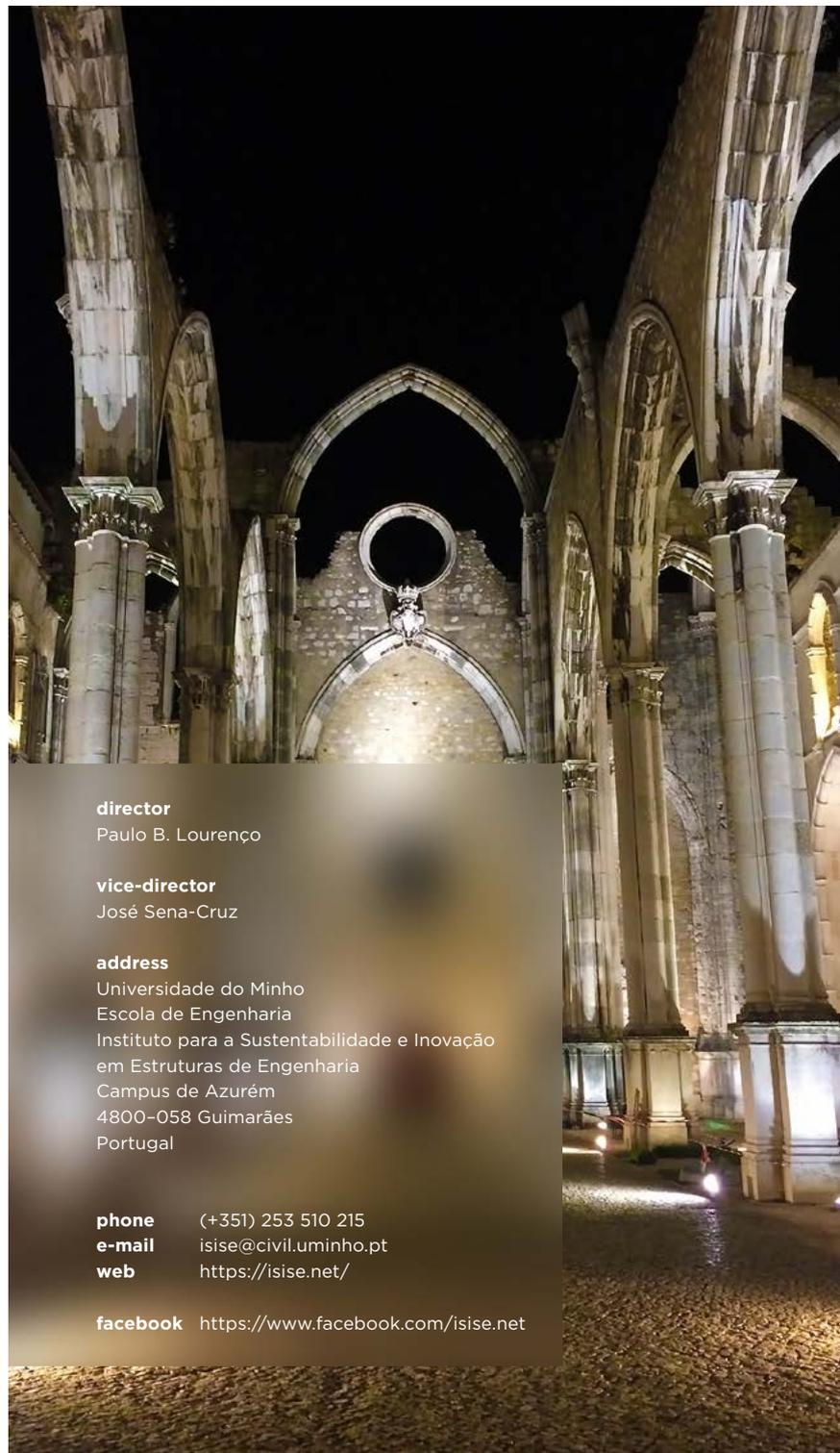
ISISE was created in 2007 involving the Civil Engineering Departments from UMinho and University of Coimbra (UC). The objective was to achieve excellence in research and to create a leading cluster in Structural Engineering, with top quality R&D+I and active members. The Unit is based on strong leaderships, with a proven record of internationalization, contracted research, cooperation with industry, top level dissemination in the international arena, PhD students and post-doc collaborators.

ISISE has 60 integrated PhD members (2/3 faculty and 1/3 post-docs) and approximately 120 PhD students, 20 M€ of competitive funding granted (last 5 years), 45 I&D projects in the 2013-2017 period, 4 European Master Courses (3 Erasmus Mundus), 3 PhD Programs and 5 journals as editors and 2 COST Actions. The unit is now organized in 4 Research Groups related to Functional Performance (FP), Historical and Masonry Structures (HMS), Structural Composites (SC), and Steel and Mixed Construction Technologies (SMCT). A Management Board (Directors and Coordinators of each group) manages the unit, with monthly video conferences.

The hosting institutions have recent, well-equipped and complementary laboratory facilities, with a total area about 5000 m².

The main objective of the Unit is to increase the structural and functional performance of Civil Engineering Works, from a perspective of advanced technology and innovation, from Materials to Life Cycle Performance. The approach includes aspects such as advances in experimental and numerical techniques, product development and technology transfer to the industry, durability and reliability, recycle, reuse, conservation and rehabilitation, condition assessment, and risk assessment. These aims are aligned with visions from the European Construction Technology Platform, the European Steel Technology Platform and Priorities in Horizon 2020 but also current and future demands, including aspects such as digital transformation, circular and blue economy, energy, defence and security, infrastructure management, heritage or active ageing. In short, ISISE aims at promoting innovation and sustainability, with a link to the construction industry and an up to date focus on a swiftly changing world.

The information in the following sections concerns only ISISE at UMinho.



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Paulo B. Lourenço

vice-director
José Sena-Cruz

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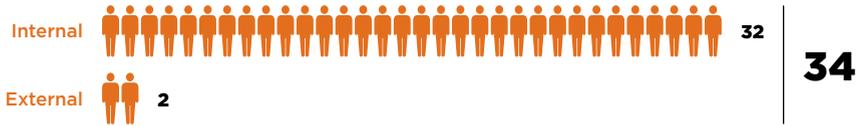
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web <https://isise.net/>

facebook <https://www.facebook.com/isise.net>



STAFF MEMBERS

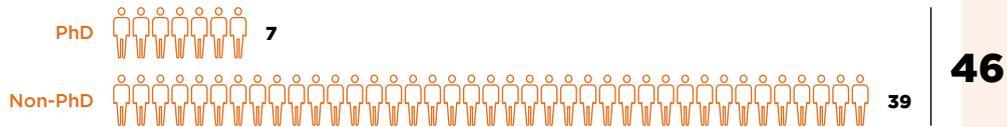
PhD full members



Non-PhD members



International members



Visiting researchers **15**

Technical staff **8**

165
Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **92** | 75 Q1 | 12 Q2 | 5 Q3

Books  **10** | 8 International | 2 National

Book chapters  **2** | International

Journals or collections  **3** | 2 Editor | 1 Guest editor

Communications | **Oral**  **146** | 110 International | 36 National

2 816
Number of citations

70
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **16** | 9 In cooperation with international institutions

On-going PhD Theses  **78** | 18 In cooperation with international institutions

Master's Dissertations completed  **31**

2.80
Average impact factor

42
Indexed proceeding papers
(SCOPUS)

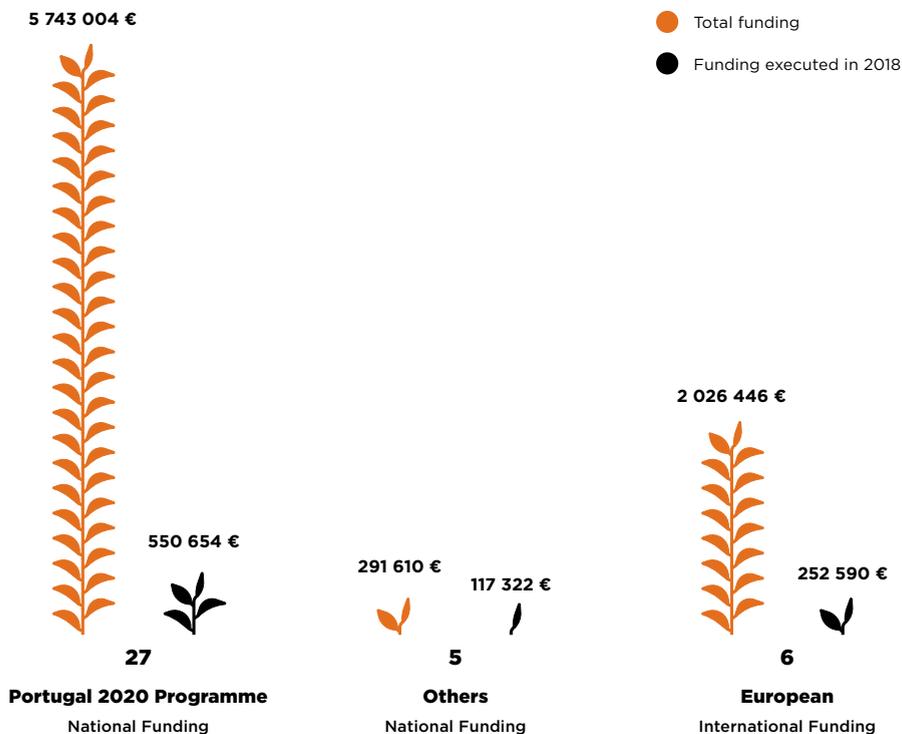
RESEARCH PROJECTS

38

Total number of on-going projects
 32 - National Funding
 6 - International Funding

8 061 060 €

Total funding for UMinho
 6 034 614 € - National Funding
 (667 976 € - National Funding executed)
 2 026 446 € - International Funding
 (252 590 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation **3**

National patents **1** | Granted

Others (consultancy, exhibitions, observatories and technical reports) **5** | National

MAJOR ACHIEVEMENTS

Flagship Publications

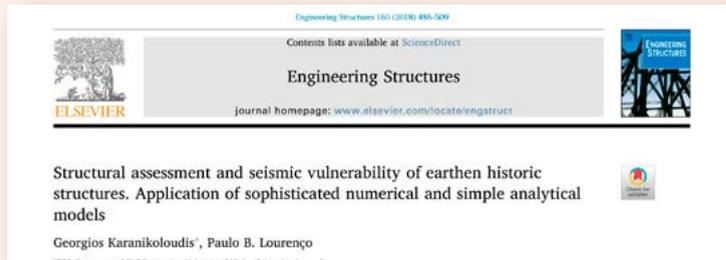
Durability of bond in NSM CFRP-concrete systems under different environmental conditions

P. Fernandes, J. Sena-Cruza, J. Xavier, P. Silva, E. Pereira, J. Cruz, 2018.



Structural assessment and seismic vulnerability of earthen historic structures. Application of sophisticated numerical and simple analytical models

G. Karanikouloudis, P.B. Lourenço, 2018.



In-plane behavior of cavity masonry infills and strengthening with textile reinforced mortar

F. Akhouni, G. Vasconcelos, P. Lourenço, L.M. Silva, et al., 2018.



Flagship Projects

BIM A+

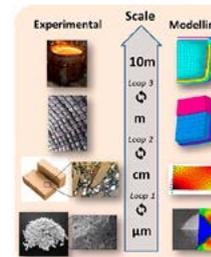
European Master in Building Information Modelling



The objective of BIM A+ is to offer an advanced education programme on BIM integrated design, construction and operation processes, with a focus on collaborative. The Master combines the diversity of expertise at leading European universities in the relevant fields (Univ. Minho, Ljubljana, Milan), and 27 Associated Partners.

ATHOR

Advanced THERmomechanical mODELLing of Refractory linings



Refractories are heat-resistant materials used in high temperature furnaces, reactors and processing units, usually as advanced ceramics linings of vessels with fluids at high temperatures, e.g. glass or steel. This project includes major industrial partners and provides research and training activities for a new generation of professionals.

NEXT-SEA

Next Generation Monitoring of Coastal Systems in a Scenario of Global Change

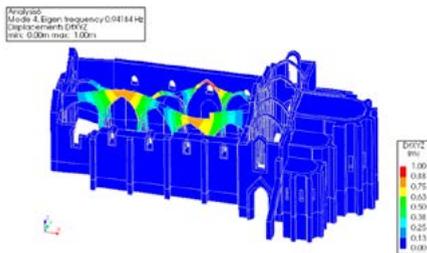


NEXT-SEA is developing cutting-edge strategies to monitor, anticipate and mitigate the unprecedented effects of global changes on coastal ecosystems. A multidisciplinary team is jointly developing novel autonomous sensors and biosensors, bioreceptive materials and biomimetic structures for coastal ecosystems rehabilitation and sustainability.

Scientific Recognition

SAHC

International Master in Structural Analysis of Monuments and Historical Constructions



SAHC is a unique 1-year master's program specifically addressing conservation of the built cultural heritage and the threats the practice faces. This was selected by EC as an "inspirational example of what can be achieved when education, training and youth work meet cultural heritage" in the framework of the European Year of Cultural Heritage 2018.

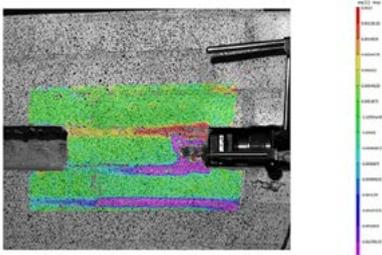
David Fischetti Award

Association for Preservation Technology



David Fischetti Award (Association for Preservation Technology International) for an article that advances the field of conservation engineering entitled "Design and Analysis of Cross Vaults Along History". APT is over 50 years old and has over 1500 members. It is a tribute to art and history, and their use to solve complex problems in historic structures.

Three Best MSc Theses in Europe, Portugal and USA



"Optical monitoring & modelling of masonry behavior under shear load", PTBIM (Portugal), "BIM implementation in the context of inspection and management of bridges" and WTA Conservation and Rehabilitation, "Experimental study of the in-plane behavior of rammed earth strengthened with TRM".

Scientific Leadership

Paulo B. Lourenço

Leader of the Team for the Revision of the European Masonry Code



Eurocodes are a series of European Technical Standards that provide a common approach to the structural design of civil engineering works. Eurocodes help make Europe more competitive, and increase safety in the construction industry. Paulo B. Lourenço was the Leader of the Project Team for the revision of the European Masonry Code (EN 1996-1-1)

António Gomes Correia

Vice President and Executive Steering Committee of International Society of Intelligent Construction



A. Gomes Correia is an expert from academy coordinating and promoting intelligent construction for infrastructure combining modern science and innovative construction technologies.

José C. Matos

Chairman Task Group 8.4 fib Life cycle cost (LCC) - Design life and/or replacement cycle



This group involves representatives from renowned worldwide universities, laboratories and companies. The main outcome of this Task Group is a State of Art report covering the existing frameworks which are being applied for the LCC of concrete infrastructures.

HIGH-ASSURANCE SOFTWARE LABORATORY

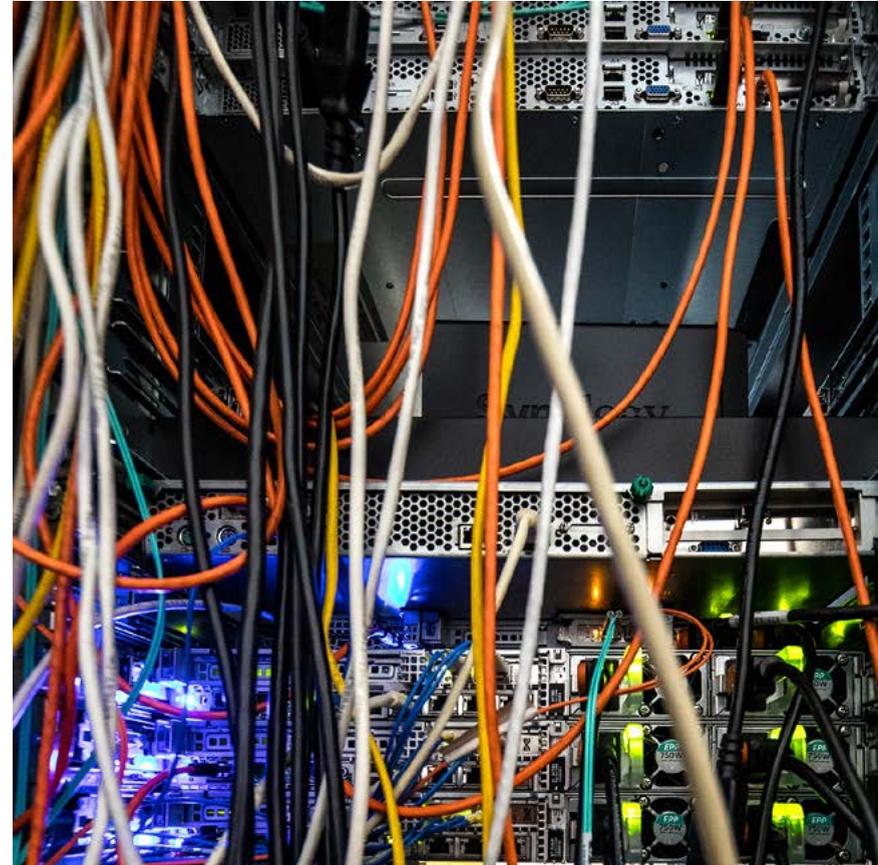


The High-Assurance Software Laboratory (HASLab) was founded in early 2011 by researchers at the Department of Informatics of the School of Engineering, of which it is currently a Research Unit. Briefly after its creation, HASLab joined the Institute for Systems and Computer Engineering - Technology and Science (INESC TEC), an Associated Laboratory with researchers from several higher education institutions in the north of Portugal. UMinho is currently one of the shareholders of INESC TEC, being HASLab the pole of INESC TEC at this university. In the last evaluation carried out by the National Science Foundation (FCT), INESC TEC was ranked as Excellent.

HASLab's mission is focused on the design and implementation of high-assurance software systems: 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, with a focus on the formal design of safety-critical systems, static and dynamic program analysis techniques, and formal methodologies for quantum computing.
- Distributed Systems, namely dependable data management for cloud computing and data science support, dissemination and aggregation protocols for very large geographically distributed systems, and programmable software-defined storage systems.
- Cryptography and Information Security, focusing on provable security and formal verification of cryptographic protocols, efficient and secure implementation of cryptographic software, and privacy-enhancing technologies.

Most HASLab members collaborate regularly with key national and international research Centres and ICT companies. These collaborations occur mainly in the context of European and consultancy projects, that constitute the main revenue sources of the Centre. The strategy for the Centre evolution, in particular to attract top post graduate students, is also anchored in these connections. The Centre is currently focusing on improving its prototype-level software development tools to production-level open-source tools, targeting a significant user-base and high profile applications. These will enable the Centre to consolidate and establish new long term technology transfer collaborations with international giants in ICT, and thus ensure the real-world impact and visibility of its research.



director

José Nuno Oliveira

deputy director

Manuel Alcino Cunha

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STAFF MEMBERS

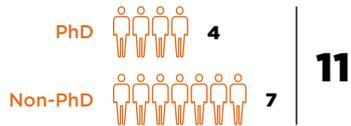
PhD full members



Non-PhD members



International members



133

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  8 | 6 Q1 2 Q2

Books  6 | International

Book chapters  1 | International

Journals or collections  1 | Guest editor

Communications | Oral  54 | International

631

Number of citations

4

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  8

On-going PhD Theses  18 | 2 In cooperation with international institutions

Master's Dissertations completed  22

2.94

Average impact factor

30

Indexed proceeding papers
(SCOPUS)

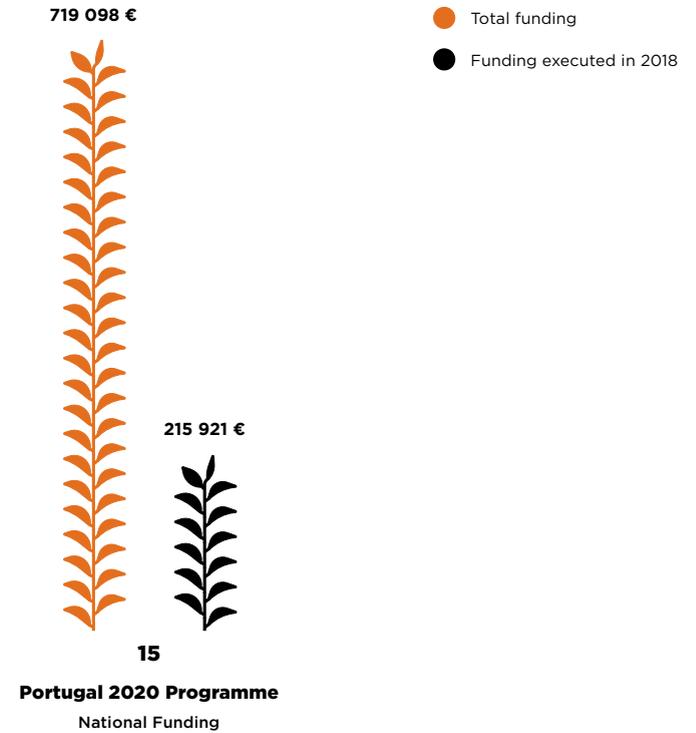
RESEARCH PROJECTS

15

Total number of projects
National Funding

719 098 €

Total funding for UMinho
National Funding
(215 921 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

1

Others
(consultancy, exhibitions,
observatories and technical reports)

6

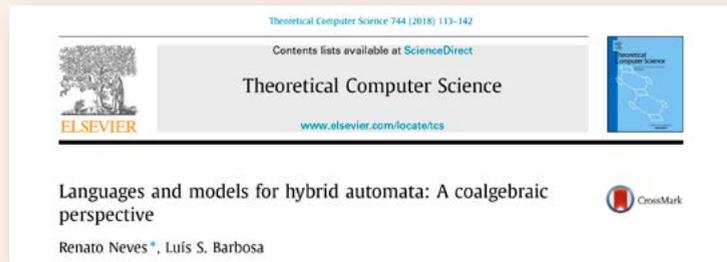
2 International
4 National

MAJOR ACHIEVEMENTS

Flagship Publications

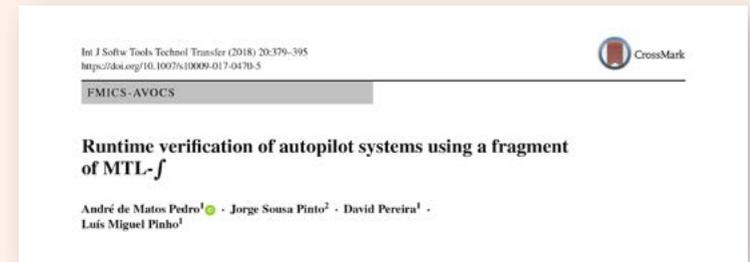
Languages and models for hybrid automata: A coalgebraic perspective

R. Neves, L.S. Barbosa, 2018.



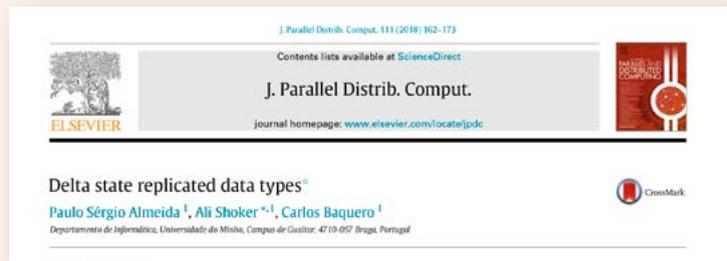
Runtime verification of autopilot systems using a fragment of MTL-f

A.M. Pedro, J.S. Pinto, D. Pereira, L.M. Pinho, 2018.



Delta state replicated data types

P.S. Almeida, A. Shoker, C. Baquero, 2018.



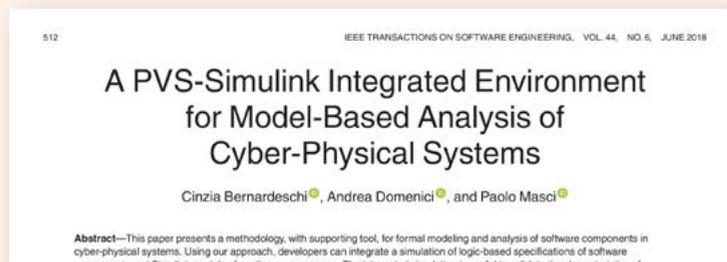
Preference rules for label ranking: Mining patterns in multi-target relations

C.R. de Sá, P. Azevedo, C. Soares, A.M. Jorge, A. Knobbe, 2018.



A PVS-Simulink Integrated Environment for Model-Based Analysis of Cyber-Physical Systems

C. Bernardeschi, A. Domenici, P. Masci, 2018.



Flagship Projects

LIGHTKONE

Lightweight Computation for Networks at the Edge



The LightKone project aims to develop a scientifically sound and industrially validated model for doing general-purpose computation on edge networks. An edge network consists of a large set of heterogeneous, loosely coupled computing nodes situated at the logical extreme of a network. The LightKone started in 2017 under the H2020 program.

CLOUDBAPLIANCE

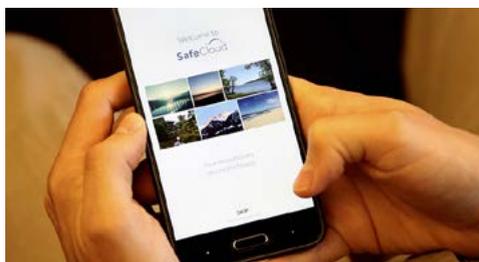
European Cloud In-Memory Database Appliance with Predictable Performance for Critical Applications



The project aims at producing a European Cloud Database Appliance for providing a Database as a Service able to match the predictable performance, robustness and trustworthiness of on premise architectures such as those based on mainframes. The project started in 2016 under the H2020 program.

SAFECLLOUD

Secure and Resilient Cloud Architecture



The project aimed at providing complete solutions that address by design the deficiencies of cloud infra-structures, namely (i) private communication, (ii) data integrity and (iii) privacy-preserving storage and processing of sensitive digital information. The project started in 2015 under the H2020 program.

Scientific Leadership

José Manuel Valença

Coordinator of the Computation and Information Sciences evaluation panel in the FCT call for PhD studentships



The evaluation panel had 10 members, and 47 of all the evaluated applications were selected for funding.

Rui Oliveira

Director of the Minho Advanced Computing Centre (MACC)



Minho Advanced Computing Centre (MACC) is a national infrastructure supporting Open Science initiatives on advanced computing, data science and visualisation. MACC offers supercomputing and data management services catering to scientific and industrial communities. It will host the EuroHPC JU supercomputer Deucalion.

Rui Oliveira

Member of the Board of Directors of the Institute for Systems and Computer Engineering, Technology and Science (INESC TEC)



INESC TEC is a research institution dedicated to scientific research and technological development structured in four thematic domains - Computer Science, Industry and Innovation, Networked Intelligent Systems, and Power and Energy.

CENTRE FOR MICROELECTRO-MECHANICAL SYSTEMS

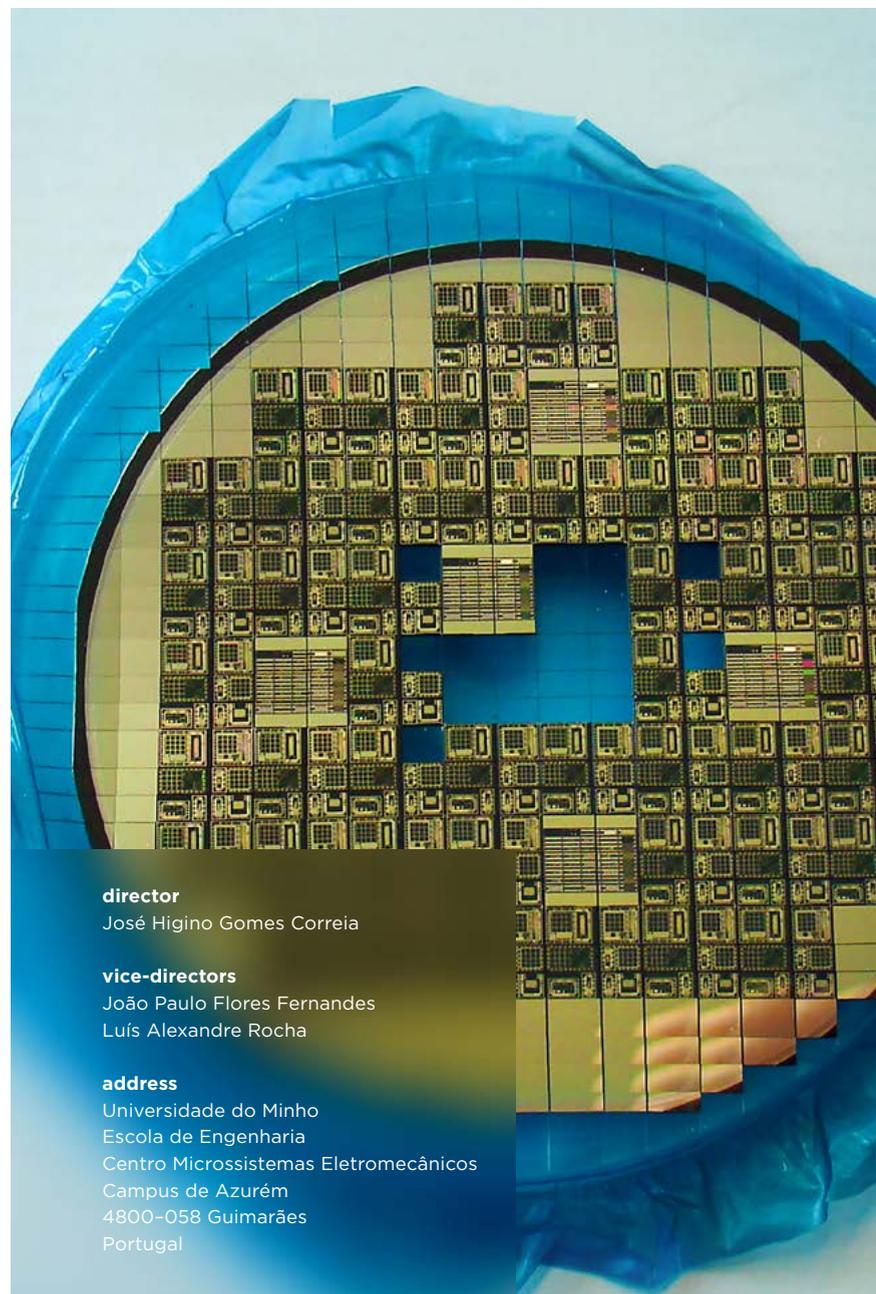


CMEMS was established in December 2013 at UMinho and supports a research team with high degree of multidisciplinary members, from different backgrounds (engineering, physics, medical) and from academic and industrial fields. It must be stated that CMEMS members include senior researchers, national and internationally distinguished collaborators, post-doctoral investigators, PhD and Master students, as well industrial partners. The focus is on modelling computation, development and micro/nano fabrication of devices and components for two major domains: industrial applications (automotive, aerospace, energy, textile) and biomedical applications (neuroengineering, microendoscopy, surgery, rehabilitation). The industrial applications are focused on microdevices and components: mechanical, optical, wireless, energy scavenging, for satellites, for navigation, and industrial coatings. The biomedical applications highlight the neuronal electrodes, lab-on-a-chip, endoscopic capsules, implantable devices, smart prostheses, surgical microinstruments, cellular solutions bioinspired and micro/nano functionalization of surfaces.

The excellence can only be achieved through international cooperation. In this way, during the period 2013-2018, several partnerships were established with European, American, and Brazilian Universities in the field of micro/nano fabrication and biomedical applications. As can be observed from CMEMS publications authors, a significant number are produced with international investigators (approximately 40%), as well as with industrial partners. Moreover, national and regional key players should also be taken into account.

The vision of the CMEMS can be stated as being that of an interdisciplinary and multidisciplinary Centre of excellence pioneering high international impact research and innovation in the development of smart microsystems and biomedical systems and maintain active exchange programs with universities, research centres and other laboratories around the world in the field of micro-nano fabrication and biomedical applications.

In the 2014 evaluation process carried out by the National Science Foundation (FCT), CMEMS was awarded with the grade of Excellent.



director

José Hígino Gomes Correia

vice-directors

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STAFF MEMBERS

PhD full members

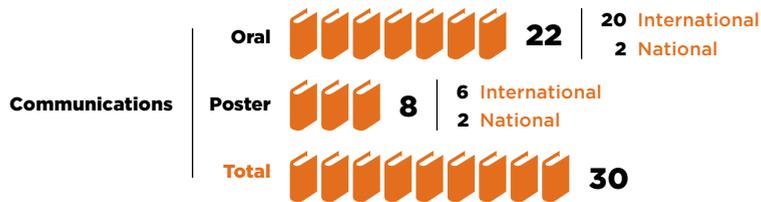


Non-PhD members



103
Total number of members

PUBLICATIONS



2 351
Number of citations

19
Open access documents
(UMinho Repositorium)

3.81
Average impact factor

THESES AND DISSERTATIONS



2
Indexed proceeding papers
(SCOPUS)

32
Non-indexed proceeding papers

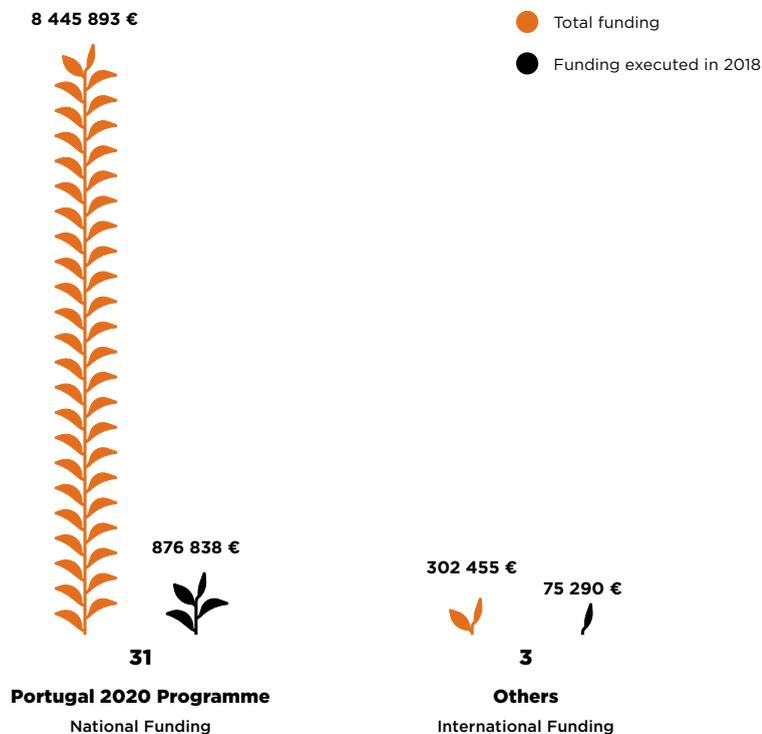
RESEARCH PROJECTS

34

Total number of projects
31 - National Funding
3 - International Funding

8 748 348 €

Total funding for UMinho
8 445 893 € - National Funding
(876 838 € - National Funding executed)
302 455 € - International Funding
(75 290 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

2

National patents

11

| Submitted

International patents

1

| Submitted

MAJOR ACHIEVEMENTS

Flagship Publications

Electroactive poly(vinylidene fluoride)-based structures for advanced applications

C. Ribeiro, C.M. Costa, D.M. Correia, J. Nunes-Pereira, et al., 2018.



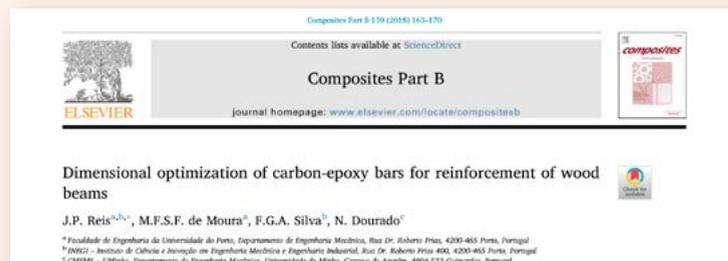
Enhancing interpretability of automatically extracted machine learning features: application to a RBM-Random Forest system on brain lesion segmentation

S. Pereira, R. Meier, R. McKinley, R. Wiest, V. Alves, et al., 2018.



Dimensional optimization of carbon-epoxy bars for reinforcement of wood beams

J.P. Reisa, M.F.S.F. de Moura, F.G.A. Silva, N. Dourado, 2018.



Highly effective clean-up of magnetic nanoparticles using microfluidic technology

V.F. Cardoso, D. Miranda, G. Botelho, G. Minas, S. Lanceros-Méndez, 2018.



On the mechanical properties of monolithic and laminated nano-ceramic resin structures obtained by laser printing

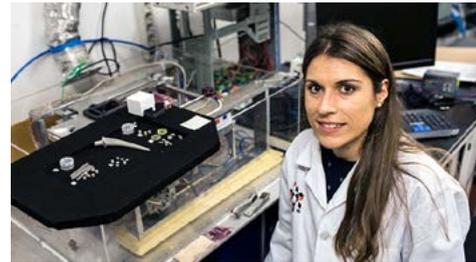
Henriques, B., Pinto, P., Silva, F.S., Fredel, M.C., Fabris, D., et al., 2018.



Flagship Projects

IMPHIB

Development of advanced Hybrid Implants



The ImpHib project fits into a logic of development of bio-inspired components where different biological inspired solutions are incorporated into human engineered components. In this project, a dental implant with a gradient of materials and properties is being developed, in order to guarantee mechanical resistance, biocompatibility, and aesthetics.

NEXTSEA

Next generation monitoring of coastal ecosystems in a scenario of global change



The project creates the foundations for the next generation coastal management and monitoring systems, supported by innovation in electronics, MEMS, materials, taxonomy, ecology, conservation and meta-genomics, applying this technology to increase the temporal and spatial frequency of variables and types of marine habitats monitored.

MICRO&NANOFABS@PT INFRASTRUCTURE

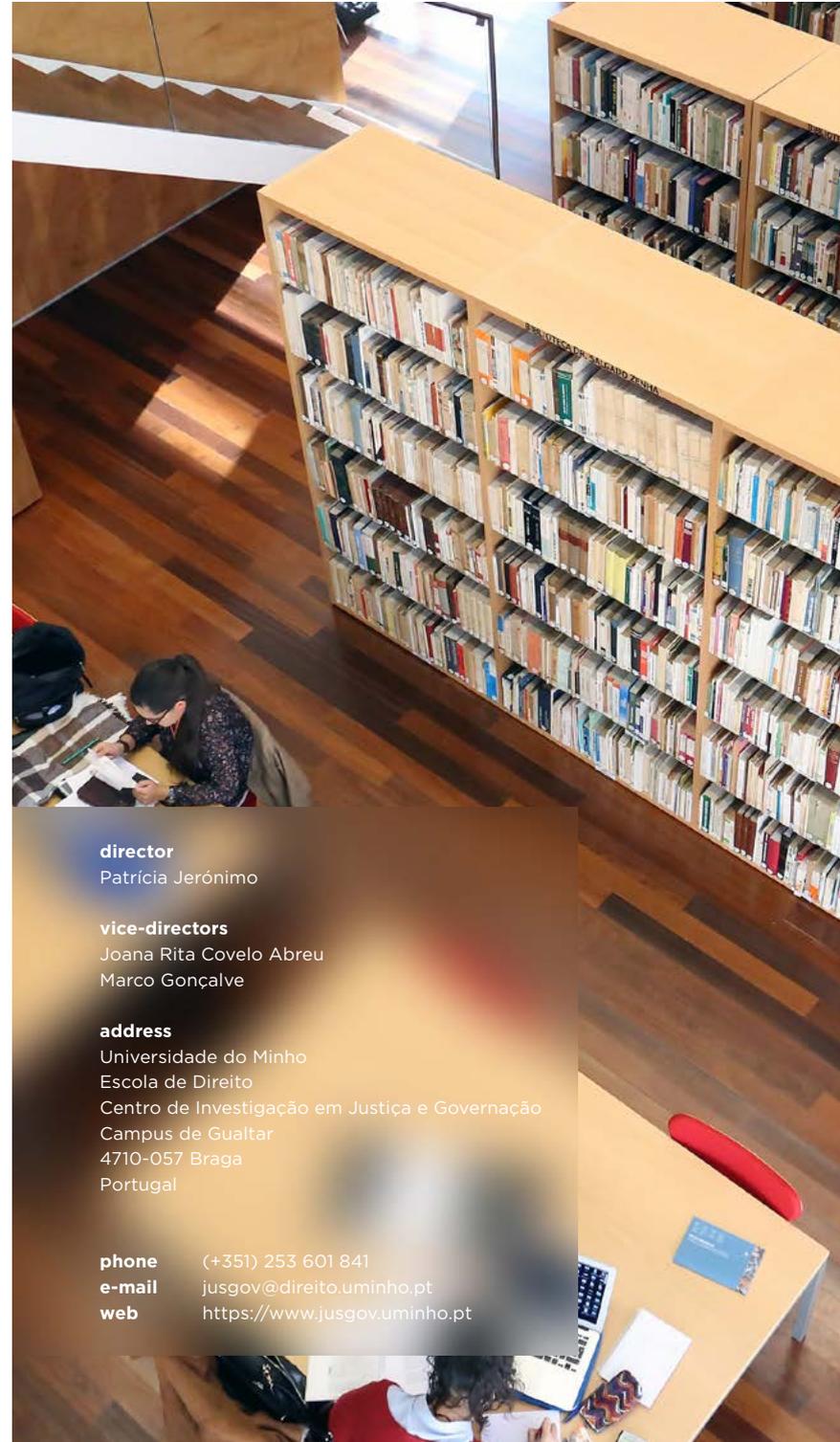


The main goals are to share access to micro-nanofabrication and design tools with the research community and to increase competitiveness in the medical, environmental, energy, automotive fields. The UMinho infrastructure consists on an Atomic Layer Deposition System, Direct Writing-Laser and a Reactive Ion Etching system.

RESEARCH CENTRE FOR JUSTICE AND GOVERNANCE



The Research Centre for Justice and Governance (JusGov) is the result of a merger of two research centres previously based at UMinho – the Interdisciplinary Research Centre for Human Rights (DH-CII) and the Centre of Studies in European Union Law (CEDU). It continues to conduct research in human rights and EU law, while widening its research spectrum to cover technological innovation and new business models, globalization and sustainable development, criminal law and criminology, court practice and innovative decision-making. It is organised in six research groups related to 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). JusGov's main area of activity is Law, but the team and the approach taken are interdisciplinary, with researchers coming also from the fields of Sociology, Psychology, Criminology, and Economics, and with frequent collaborations across disciplinary lines (e.g. with Computer Engineering and Health Sciences). The common thread underlying and providing consistency to the Centre's activities is the focus on the two key vectors of Justice and Governance, which reflect the priority given by all research groups to studies of "law in action" and the common understanding of law as an organising principle of society, both in the public and the private domains. Furthermore, the Centre's cohesion is secured by the simultaneous participation of many of its researchers in two or more research groups and the large number of joint research, dissemination and advanced training activities involving two or more research groups at a time. JusGov is dedicated to advancing research and scholarship in Law, by pursuing an innovative research programme and by delivering high-quality training for both master and doctoral students. As part of its mission, JusGov seeks to explore the role of law in meeting contemporary societal challenges such as those identified by the UN 2030 Agenda for Sustainable Development, in particular the promotion of peaceful and inclusive societies for sustainable development, the achievement of gender equality, the provision of access to justice for all and the building of effective, accountable and inclusive institutions at all levels. Drawing on its researchers' expertise and body of research, JusGov aims to provide a platform for research, discussion and dissemination of scholarly work within the field of Law, offering relevant inputs for the academic community, policymakers, industry, the media and the public (at local, national and international level).



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Patrícia Jerónimo

vice-directors

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STAFF MEMBERS



126
Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **31** | 3 Q1 2 Q3 26 Others

Books  **13** | 1 International
12 National

Book chapters  **37** | 14 International
23 National

Journals or collections  **5** | Editor

Communications | **Oral**  **92** | 28 International
64 National

Others
(artistic and judicial works, critical reviews, book prefaces and afterwords)  **256**

54

Number of citations

29

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **8** | 1 In cooperation with
international institutions

On-going PhD Theses  **15**

Master's Dissertations completed  **82**

2.20

Average impact factor

28

Non-indexed proceeding papers

RESEARCH PROJECTS

6

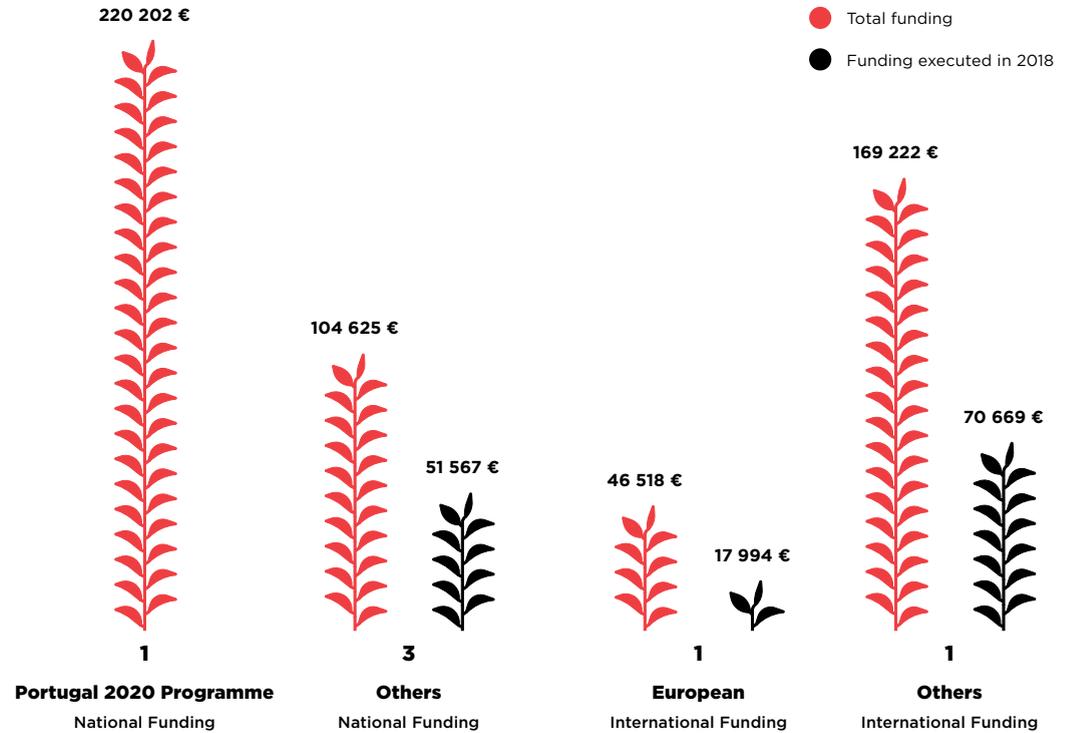
Total number of on-going projects

4 - National Funding
2 - International Funding

540 567 €

Total funding for UMinho

324 827 € - National Funding
(51 567 € - National Funding executed)
215 740 € - International Funding
(88 663 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

4

Others
(consultancy, exhibitions,
observatories and technical reports)

6

5 International
1 National

MAJOR ACHIEVEMENTS

Flagship Publications

Human Rights' Yearbook

A.S.S. Gonçalves, C. Dias, D. Coutinho, R.M. Cruz, S. Moreira, V.B. Gomes, 2018.



LAW & TECHNOLOGY E.Tec Yearbook

M.M. Carvalho, A.L.D. Pereira, A.S.S. Gonçalves, C. Vanleenhove, et al., 2018.



Lusophone Commentary on the African Charter on Human and Peoples' Rights

P. Jerónimo, R. Garrido, M.A.V. Pereira, A. Guerreiro, A.L. Sá, et al., 2018.



Flagship Projects

INCLUSIVECOURTS

Equality and cultural difference in the practice of Portuguese courts: Challenges and opportunities for an inclusive society



The project aims at a better understanding of the legal challenges raised by cultural diversity in Europe, by looking into the practice of domestic and international courts. It focuses on the way courts deal with concepts such as identity, culture, ethnicity and religion, and on the way they balance equality and respect for cultural difference in a wide range of cases.

INTEROP

EU Digital Single Market as a political calling: interoperability as the way forward



It is a two-year EC funded project (2018-2019) based on the study of the Digital Single Market as a primary public interest for the European Union and intends to test the state-of-the-art implementing administrative interoperability solutions at a later stage in order to test new forms of interoperability.

C.L.A.S.S.4EU

4 EU Training Sessions on Family Law Regulations for Cross-border Lawyers and Social Services



It is a two-year EC funded project (2018-2019) designed to deal with the difficulties arising from the regulation of cross-border family lives.

Scientific Recognition

Filipe Venade

(honorable mention) - António Dornelas Prize of the Ministry of Social Security to researcher



The António Dornelas Prize was launched in 2017 and is granted every year by the Portuguese Ministry of Labour and Social Security to innovative research studies which contribute to a reflection on and an assessment of public policies in different fields. Filipe Venade's research is on the fundamental rights of persons with disabilities.

Jean Monnet Plaque



The Jean Monnet Plaque is awarded by the Education, Audiovisual and Culture Executive Agency and serves primarily as a label signifying quality in European integration studies and represents the achievements of the Jean Monnet project developed by the Centre in this field.

Scientific Leadership

Pedro Madeira Froufe

High Council for the Judiciary (Conselho Superior da Magistratura)



The High Council for the Judiciary is a state entity empowered by the Constitution to appoint, place, transfer and promote the justices in the judicial courts' system, to exercise disciplinary action, and to safeguard the justices' institutional standing and independence.

Pedro Bacelar Vasconcelos

Head of the Parliamentary Commission for Constitutional Affairs, Rights, Liberties and Safeguards



The Standing Committee for Constitutional Affairs, Rights, Liberties and Safeguards is a specialized committee within the structure of the Portuguese Parliament with permanent jurisdiction over constitutional matters.

Nuno Pinto Oliveira

Supreme Court of Justice



The Supreme Court of Justice is the highest court of the judicial courts' system in Portugal.

LIFE AND HEALTH SCIENCES RESEARCH INSTITUTE



The Life and Health Sciences Research Institute (ICVS) was established in 2003 to develop biomedical research within the School of Medicine of UMinho. Over the last decade, ICVS has developed synergies with several partners with complementary expertise, namely the 3B's Research Group ensuring the establishment of the PT Government ICVS/3B's - Associate Laboratory, and local healthcare providers to launch the Clinical Academic Centre - Braga Association (2CA-Braga) devoted to performing clinical research.

ICVS is a multidisciplinary unit that currently brings together scientists, engineers and clinicians in a unique scientific and technological platform over 6000 m² benefiting from research expertise in different fields such as bioimaging, cell and molecular biology, deep learning and computer science, electrophysiology, epidemiology and statistics, functional MRI, medical electronics, microbiology ABSL2/3, motor and cognitive animal behaviour, oncobiology and surgical endoscopy. Scientific projects are developed under four Research Domains: Microbiology & Infection, Neurosciences, Population Health and Surgical Sciences.

ICVS develops projects in national and international consortia, providing experience and training to young researchers and welcomes foreign students and researchers, as well as developing initiatives to foster international institutional collaborations, as those recently established with the International Iberian Nanotechnology Laboratory (INL) as well as the Centro de Investigaciones Biomédicas (CINBIO).

Since its launch, ICVS has been consistently graded Excellent by the National Science Foundation (FCT) and again graded Excellent as PT Government ICVS/3B's - Associate Laboratory in 2013.

Along with its several Spin-offs, ICVS aims to contribute as a key stakeholder for the upholding of a competitive Cluster in Biomedical Science, Technology and Healthcare, steered by the School of Medicine. Aligned with this vision, ICVS aspires to boost its complete research pipeline to create scientific knowledge and value, producing Research Outputs that improve Clinical Outcomes.



director

Jorge Pedrosa

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João Carlos Sousa

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STAFF MEMBERS

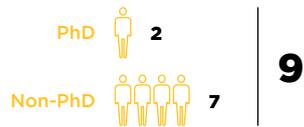
PhD full members



Non-PhD members



International members



Visiting researchers  **12**

Technical staff  **25**

310

Total number of members

PUBLICATIONS



154 Q1 71 Q2
35 Q3 5 Q4
16 Others



8 850

Number of citations



179

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS



4.80

Average impact factor

6

Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

82

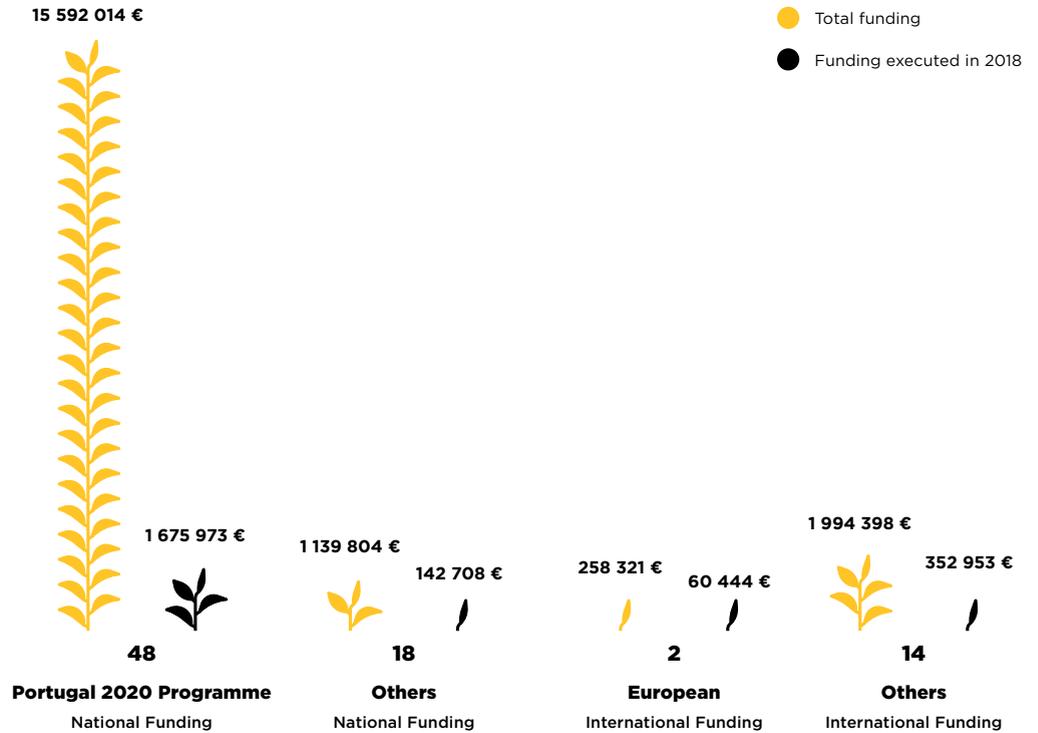
Total number of on-going projects

66 - National Funding
16 - International Funding

18 984 538 €

Total funding for UMinho

16 731 818 € - National Funding
(1 818 681 € - National Funding executed)
2 252 720 € - International Funding
(413 397 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation **1**

National patents **2** | Granted

International patents **3** | Submitted

MAJOR ACHIEVEMENTS

Flagship Publications

Lipocalin-2 regulates adult neurogenesis and contextual discriminative behaviours

A.C. Ferreira, T. Santos, B. Sampaio-Marques, A. Novais, et al., 2018.



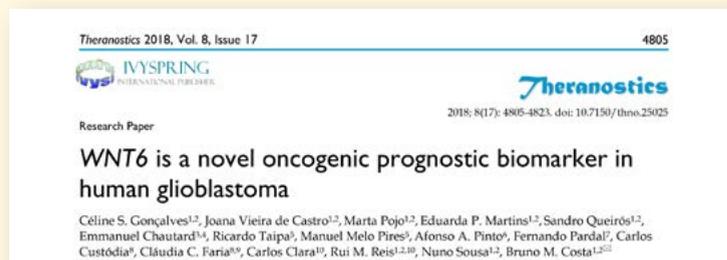
Dosage of Single Low-Dose Primaquine to Stop Malaria Transmission

M. Cruz, I.M. Sánchez, J. Diaz, F. Cuevas, M, Silva, et al., 2018



WNT6 is a novel oncogenic prognostic biomarker in human glioblastoma

C.S. Gonçalves, J.V. de Castro, M. Pojo, E.P. Martins, et al., 2018.



Flagship Projects

“LA CAIXA” FOUNDATION

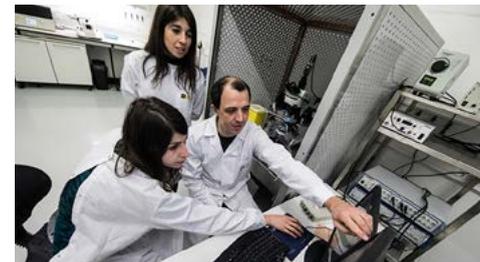
Chronic pulmonary aspergillosis is a devastating fungal infection of the lungs



Although patients with underlying lung disease are especially at risk, not all develop this infection. We will investigate whether specific defects in the immune system and genetic signatures predispose to infection. With this knowledge, we may improve diagnosis and treatment of this severe complication.

ETH ZURICH

Stress is ubiquitous in modern societies



Recent estimates show that 55% of all lost working days can be attributed to stress. Despite self-awareness from the affected individuals, the magnitude of stress-response is uncontrollable. The “Stressed brain” project uses electrophysiology recordings and optogenetics to study how is stress changing the brain and switching-off cognitive control over actions.

PERSONALIZEDNOS

New avenues for the development of personalized medical interventions for neurological, oncologic and surgical disorders



PersonalizedNOS aimed to: i. Unravel novel mechanisms to understand glial/neural function and personalize therapeutic targets of neurological disease; ii. Predict diagnostics and personalized treatment of infectious diseases in patients with hematological malignancies; iii. Develop new strategies and medical devices for personalized interventions.

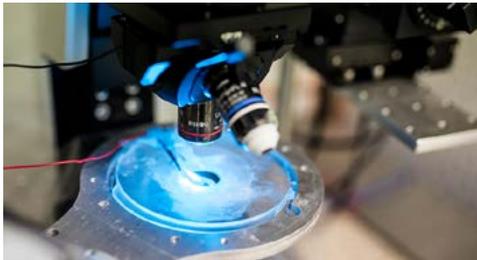
Scientific Recognition

Corino de Andrade Award 2018 for the School of Medicine of Minho University



The Prize was attributed by 'Ordem dos Médicos' (SROM) to the School of Medicine as recognition of the high-quality work carried out in undergraduate and postgraduate medical education in Portugal. SROM emphasized the innovative strategies adopted to improve health care through education, knowledge and creating value.

Melo e Castro Award 2018 from Santa Casa Neurosciences



Melo e Castro Prize was attributed by Santa Casa to a ICVS team coordinated by Nuno Sousa, for a research project aiming to help recovering people with spinal cord injuries through the improved use of an exoskeleton (structure developed to assist the mobility of paraplegic people) controlled by the activity of the central nervous system.

Scientific Leadership

Nuno Sousa

Member of the NBME Executive Board and Chair of the International Oversight Committee



The National Board of Medical Examiners (NBME) is a United States operation which sets state recognized examinations for medical students. The executive board provides guidance for the organisation, enabling it to respond to the ever-changing needs of the health care community keeping us on a path of continuous improvement.

Pedro Cunha

President of the Working Group (WG) on Hypertension and Brain - European Society of Hypertension



The President coordinates the scientific and educational joint initiatives of the experts on the field of hypertension dedicated to the study of its consequences on the brain. International multicentre joint research projects have also been structured, looking into several dimensions of blood pressure, cerebrovascular disease etc.

HEALTH SCIENCES RESEARCH UNIT: NURSING - NUCLEUS UMINHO

UICISA:E

The UMinho Nucleus of the Health Sciences Research Unit: Nursing (UICISA: E) is hosted by the School of Nursing of UMinho (ESE-UM).

The unit has been evaluated and funded by the National Science Foundation (FCT) since 2004, based at the Nursing School of Coimbra, and contributes to the mission of the ESE-UM.

The UMinho Nucleus is part of UICISA: E and its mission is to develop Research and Development (R&D) activities at an international and interdisciplinary level to respond to complex problems, in a sustainable and socially responsible way, at the level of health promotion, disease prevention and care for the sick, disabled and end-of-life person.

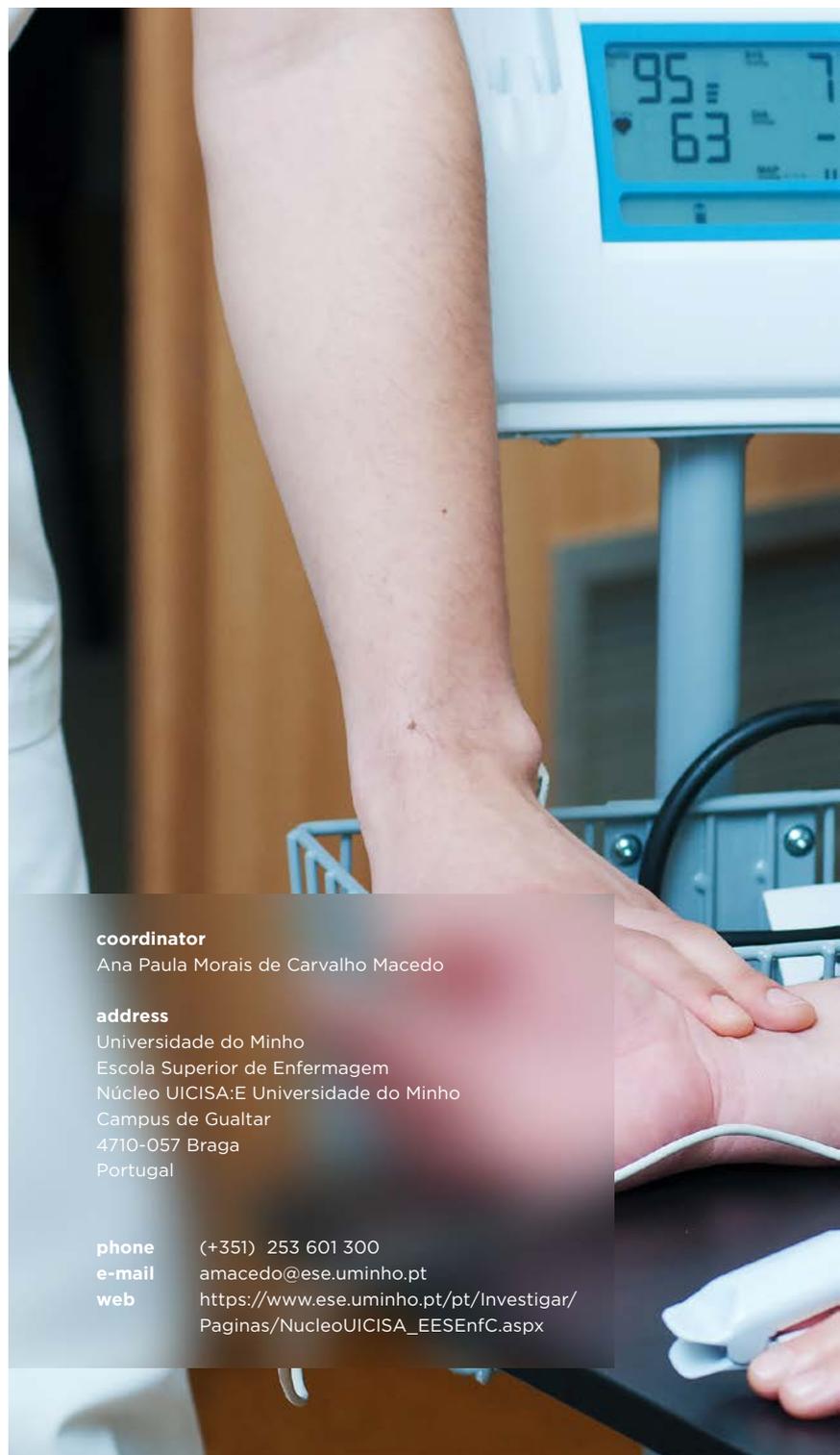
ESE-UM is a teaching and Research Unit that enjoys scientific autonomy and endeavors to translate, exchange and improve the scientific and technological knowledge produced by developing application solutions and providing community service based on the best evidence available.

Conducting research at the UICISA: E- UMinho Centre is one of its basic objectives, privileging the permanent search for excellence and innovative and differentiating solutions, as well as the search for answers to society's great challenges.

R&D activities are carried out in three research groups: Training of Health Professionals and Health Education; Well-being, Health and Disease; Health Systems and Organisations.

The UMinho Nucleus of UICISA:E maintains the recognized merit of a continuous cooperation work with about 30 international and national networks: collaboration; international protocol of advanced training; research projects in cooperation.

The R&D activities are based on three fundamental pillars: joint and solidary action of the three research groups; the structuring projects at the core of UICISA: E; sustained development is strengthened by a cross-cutting combination of specific measures and specialised resources and techniques.



coordinator

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https://www.esse.uminho.pt/pt/Investigar/Paginas/NucleoUICISA_EESEnC.aspx

STAFF MEMBERS



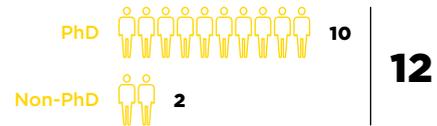
PhD full members



Non-PhD members



International members



29

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **24** | 3 Q1 | 1 Q2 | 1 Q3 | 19 Others

Books  **5** | 1 International
4 National

Book chapters  **10** | International

Communications

- Oral**  **53** | 31 International
22 National
- Poster**  **31** | 24 International
7 National
- Total**  **84**

24
Number of citations

41
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **1**

On-going PhD Theses  **1**

Master's Dissertations completed  **7**

2.79
Average impact factor

1
Non-indexed proceeding papers

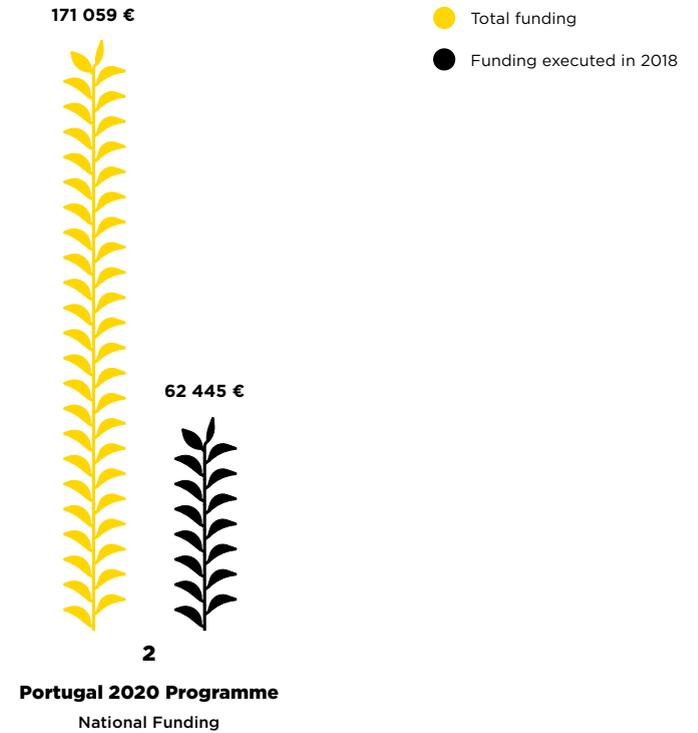
RESEARCH PROJECTS

2

Total number of on-going projects
National Funding

171 059 €

Total funding for UMinho
National Funding
(62 445 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

10

National patents

1

Submitted

Others
(consultancy, exhibitions,
observatories and technical reports)

17

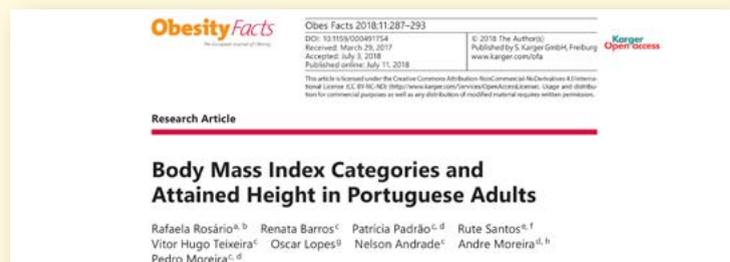
9 International
8 National

MAJOR ACHIEVEMENTS

Flagship Publications

Body Mass Index Categories and Attained Height in Portuguese Adults

R. Rosário, R. Barros, P. Padrão, R. Santos, V.H. Teixeira, O. Lopes, N. Andrade, A. Moreira, P. Moreira, 2018.



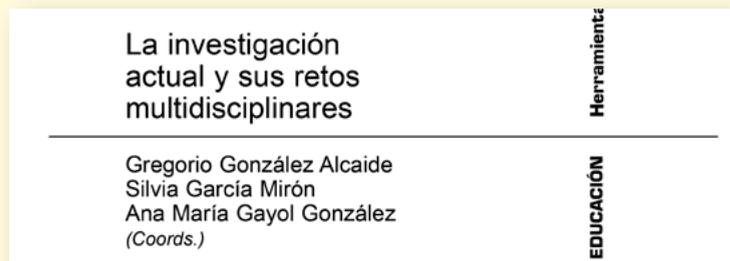
Satisfaction with the Social Support of People with Mental Illness in Recovery Process

E. Macedo, F. Gomes, A. Candeias, A. Duarte, S. Peixoto, et al., 2018.



La investigación actual y sus retos multidisciplinares

G.G. Alcaide, S.G. Mirón, A.M.G. González, 2018.



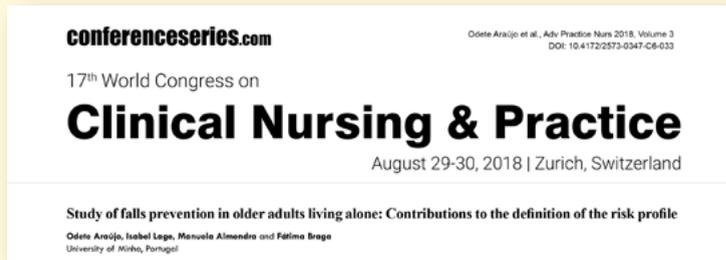
Training informal caregivers to care for older people after stroke: A quasi-experimental study

O. Araújo, I. Lage, J. Cabrita, L. Teixeira, 2018.



Study of falls prevention in older adults living alone: Contributions to the definition of the risk profile

O. Araújo, I. Lage, M. Almendra, F. Braga, 2018.



Flagship Projects

ALERTFALLS

Falls prevention in older adults living alone



ALERTFALLS Project, funded by FCT, was developed in co-promotion between the Nursing schools of UMinho and Porto; Centre for Computer Graphics (UMinho) and City Council of Braga. The main aim was to develop an App to collect data and to calculate the risk of falling in older adults living alone in community-dwelling.

INTERCOMUNICARE

Mental illness: Community Intervention on the Way of Recovery



The project aims at the recovery of individuals with mental illness by: 1) evaluating the needs of the patients after hospital discharge; 2) developing an intervention program; 3) approaching the caregiving through a close community service and; 4) developing a Recovery Intervention Guide for People with Mental Illness.

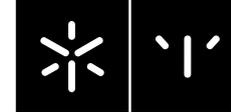
HEALTHY CHILDREN 2021

Impact of an intervention program, based on healthy lifestyles, on socioemotional skills in toddlers 12-42 months



Healthy Children aims to evaluate the impact of a program, based in health promotion, on development levels and lifestyles of children aged 12-42 months. 336 participated in this randomized trial. Data collection occurred before and after the intervention involving teachers and family. The project offers promise to improve children's development.

PSYCHOLOGY RESEARCH CENTRE



Universidade do Minho
Escola de Psicologia
CIPsi

The Psychology Research Centre (CIPsi) is the Research Unit of the School of Psychology. CIPsi's main objective is the development and dissemination of scientific knowledge in the fields of Basic Psychology and Applied Psychology, covering several specific areas: Human Cognition; Animal Learning and Behaviour; Psychological Neuroscience; Learning, Instruction and Career; Development and Psychopathology; Psychotherapy and Psychopathology; Health, Wellbeing and Performance; Victims, Offenders and Justice System.

Founded in 2003, CIPsi currently includes more than 50 junior and senior researchers, in a balanced proportion of faculty and career researchers. On average, per year, CIPsi publishes more than 150 articles in major journals in the area, receives over 2,500 citations, and captures over 4 million euros in research projects and activities of knowledge transfer.

Progressively recognized by different panels as a research centre of excellence, in the last 10 years CIPsi has occupied a prominent place at national and international level. CIPsi aims not only to consolidate the goal of developing and disseminating high quality scientific knowledge, but also to increase interaction with education and society, broadening its social responsibility. With a strong interactive dynamic between research and education, CIPsi integrates students from all academic degrees into its research teams, creating an environment that promotes a research culture. This organisational model has stimulated a large number of research scholarships awarded in competitive national and international grants, holding currently postgraduate students from over 10 countries worldwide. With a strong dynamic between research and society, CIPsi's organisational structure provides a high-quality research environment, ensures broad support for its multidisciplinary teams and embraces social responsibility by the quality of the knowledge transference into the community.



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vice-director

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STAFF MEMBERS

PhD full members



Non-PhD members



222

International members



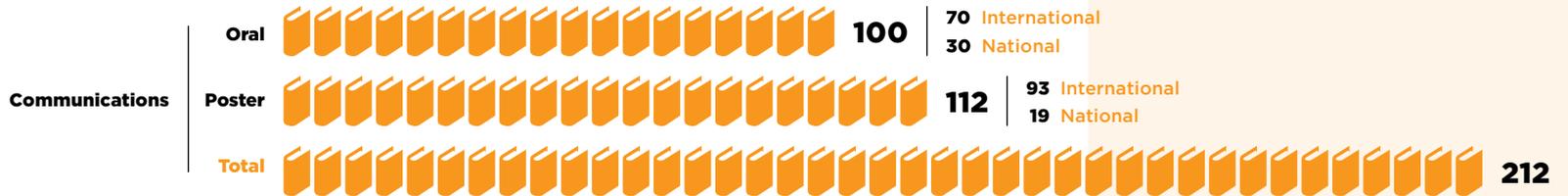
42



274

Total number of members

PUBLICATIONS



2 500
Number of citations

38
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS



2.13
Average impact factor

18
Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

26

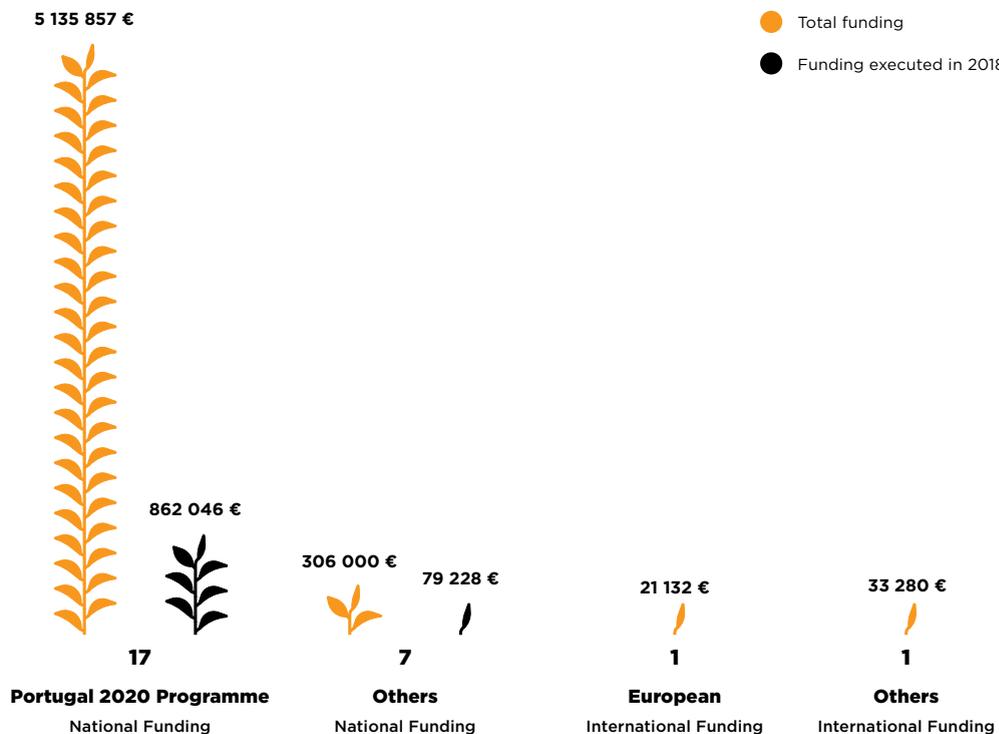
Total number of on-going projects

24 - National Funding
2 - International Funding

5 496 269 €

Total funding for UMinho

5 441 857 € - National Funding
(941 274 € - National Funding executed)
54 412 € - International Funding



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

2

MAJOR ACHIEVEMENTS

Flagship Publications

Reconceptualization innovative moments as a predictor of symptomatology improvement in treatment for depression

P. Fernández-Navarro, C. Rosa, I. Sousa, V. Moutinho, et al., 2018.



Couples' relationship affects mothers' and fathers' anxiety and depression trajectories over the transition to parenthood

B. Figueiredo, C. Canário, I. Tendais, T.M. Pinto, D.A. Kenny, et al., 2018.



Mind Wandering and Task-Focused Attention: ERP Correlates

Ó.F. Gonçalves, G. Rêgo, T. Conde, J. Leite, S. Carvalho, O.M. Lapenta, P.S. Boggio, 2018.



Flagship Projects

Transcranial Direct Current Stimulation as add-on treatment to Cognitive-Behavior Therapy in first episode Major Depression drug-naive patients



The aim of this project is to assess the potential synergistic effect of combining tDCS with CBT in terms of depressive symptoms relief, as well as to probe the mechanisms underlying the clinical change.

Neurodevelopmental correlates of implicit-explicit learning mechanisms in children with Specific Language Impairment (SLI)



This project aims to analyze the neurocognitive correlates of implicit-explicit learning mechanisms in children with SLI and to track their developmental trajectories to establish developmental (dis)continuities between SLI and Dyslexia.

Contribution of Psychological Factors in Diabetic Foot Ulcer Healing



This project aims to assess the effects of two psychological interventions on the healing of chronic wounds (e.g., diabetic foot ulcer) and on quality of life using physiological indicators of healing prognosis.

Scientific Recognition

Marília Carvalho

Basic Behavior Analysis Dissertation Award



This award is given by the Society for the Experimental Analysis of Behavior (American Psychological Association). It recognizes individuals whose recent doctoral research has significantly advanced scientific knowledge in the field of basic behavioral processes.

Óscar Gonçalves

Honorable Mention of the 2018 BIAL Clinical Medicine Award



Professor Óscar Gonçalves received the Honorable Mention with the work "Neurosciences of OCD (NoOCD): Towards a Brain Based Clinical". The main objective of NoOCD is to increase inhibitory control, working memory and cognitive flexibility while restoring emotional balance.

Iolanda Ribeiro

Educational Project created at the University of Minho received the Prémio Ler+



Professor Iolanda Ribeiro received the Prémio Ler+ by the National Reading Plan. Her researcher team created the digital platform "I am still learning" (Ainda estou a aprender) for children with learning difficulties in reading.

Scientific Leadership

Rui Abrunhosa Gonçalves

Portuguese member in European network



The network "Prevention, assessment and treatment of sex offenders" aims to Exchange good practices and develop innovation at European Union level.

João Lopes

President of the Scientific-Pedagogical Council for Teachers Continuing Training (CCPFC)



The CCPFC is responsible for the accreditation of inservice teacher training entities and inservice teacher training courses in the whole country. The CCPFC also monitors the evaluation of the inservice teachers' training system.

Paulo P. P. Machado

President of the Society for Psychotherapy Research (SPR)



SPR is an international scientific association devoted to research on psychotherapy. SPR encourages the development of research on psychotherapy as well as aiming to support and enhance both the empirical basis and applied value of psychotherapy.

CENTRE OF PLANT FUNCTIONAL BIOLOGY



The Centre of Plant Functional Biology (CBFP) is a permanent organic Research Unit of the School of Sciences of UMinho, and is located in the Gualtar University Campus in Braga, Portugal. The staff of CBFP beneficiates from the National Science Foundation (FCT) through the Pluriannual Financial Support Programme as members of the FCT Research Unit BioISI - Biosystems & Integrative Sciences Institute (rated as Excellent in the 2014 evaluation carried out by the FCT).

The Centre has two primary missions: i) promotion of scientific research in Plant Functional Biology, and ii) promotion of high standard post-graduated training activities. Specific research interests include i) Developmental Plant Biology: specifically, on floral development (study of gene regulatory pathways controlling floral development); ii) Plant Stress Biology: abiotic and biotic plant stress responses (study of genes and pathways responsible for stress tolerance); iii) Plant-microbe interactions and their contribution to increase crop productivity and forests sustainability. These scientific aims contribute towards the development of a coherent research program in the area of plant biology and biotechnology, also contributing for plant adaptive responses to the new challenges posed by climate change. The Centre maintains collaboration with other members of the Plant Functional Genomics group of BioISI research Centre (FCUL and UTAD), as well as other national and international Research Units, coordinating and participating in national and international projects (ongoing and accepted for funding). A high ratio of young researchers (post-doc, PhD and MSc students) contribute to CBFP outcomes. CBFP members actively participate on the post-graduation studies programmes of UMinho within the field of Plant Biology, namely on the Doctoral Program on Agricultural Production Chains - from fork to farm (AgriChains) and on the MSc Master Course in Plant Molecular Biology, Biotechnology and Bioentrepreneurship.

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STAFF MEMBERS

PhD full members

Internal  **4**

Non-PhD members

PhD students  9

Others  11

20

International members

PhD  1

Non-PhD  2

3

Visiting researchers  **2**

26

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **6** | 5 Q1 1 Q2

Journals or collections  **1** | Editor

Communications

Oral		9	5 International 4 National
Poster		14	5 International 9 National
Total		23	

276

Number of citations

4.93

Average impact factor

3

Indexed proceeding papers (SCOPUS)

THESES AND DISSERTATIONS

PhD Theses completed  **3**

On-going PhD Theses  **7** | 1 In cooperation with international institutions

Master's Dissertations completed  **1**

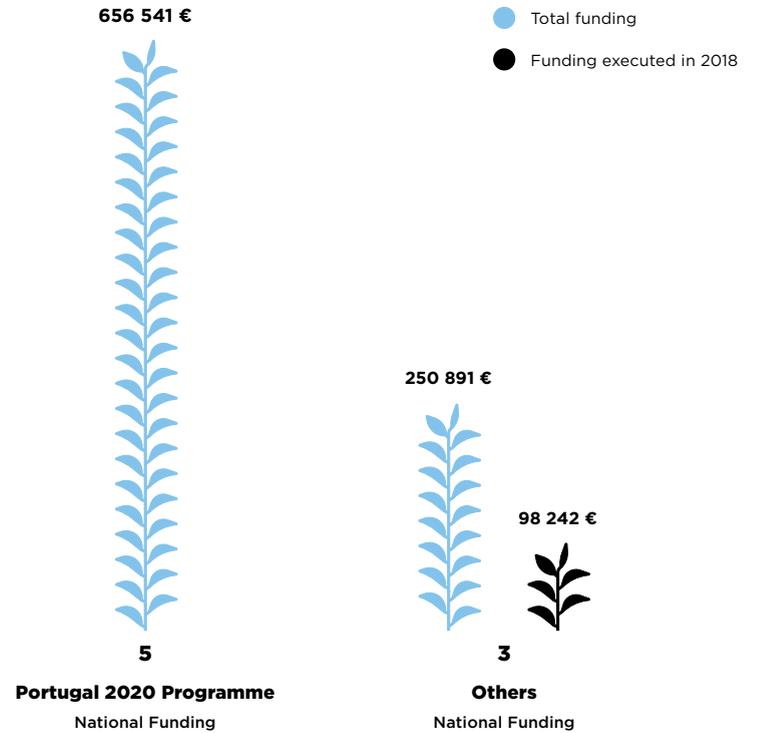
RESEARCH PROJECTS

8

Total number of on-going projects
National Funding

907 432 €

Total funding for UMinho
National Funding
(98 242 € - National Funding executed)



MAJOR ACHIEVEMENTS

Flagship Publications

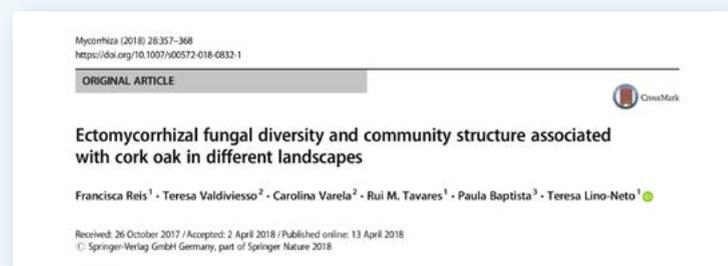
Successive Domain Rearrangements Underlie the Evolution of a Regulatory Module Controlled by a Small Interfering Peptide

J. Raimundo, R. Sobral, S. Laranjeira, M.M.R. Costa, 2018.



Ectomycorrhizal fungal diversity and community structure associated with cork oak in different landscapes

F. Reis, T. Valdivieso, C. Varella, R.M. Tavares, P. Baptista, T. Lino-Neto, 2018.



Vitis Flower Sex Specification Acts Downstream and Independently of the ABCDE Model Genes

J.L. Coito, H. Silva, M.J.N. Ramos, M. Montez, J. Cunha, et al., 2018.



Screening of worldwide cowpea collection to drought tolerant at a germination stage

M. Carvalho, M. Matos, I. Castro, E. Monteiro, E. Rosa, et al., 2018.



Endophytic and Epiphytic Phyllosphere Fungal Communities Are Shaped by Different Environmental Factors in a Mediterranean Ecosystem

T. Gomes, J.A. Pereira, J. Benhadi, T. Lino-Neto, P. Baptista, 2018.



Flagship Projects

EVOMOD

Origin and Evolutionary establishment of a transcriptional module controlling flower asymmetry



The establishment of interactions between proteins during evolution have led to the emergence of new morphologies such as flower asymmetry. The aim of this project is to find how the genes that control this trait have evolved, to understand their co-option in other species and to uncover the function of these genes in ancestral land plants.

HYBRIDOAK

Charaterisation of cork formation and reproductive biology in a cork hybrid population



Despite the importance of Cork oak in the Portuguese agroforestry system, little is known about the genetic mechanisms ruling cork formation. The aim is to use a population of hybrid trees of *Q.cerris* X *Q.suber*, to unveil molecular mechanisms involved in the periderm formation and in annual vs. biennial reproductive cycle of these species.

SUBERCONTROL

Influence of endosphere microbiome to control diseases in cork oak (*Quercus suber* L.)



Climate change may affect future cork oak productivity, but the effect will be enhanced by the presence of opportunistic endophytes (EF) that take advantage of weakened trees. The aim of this project is to identify cork oak EFs that can play an effective role on forest sustainability and study EF microbiome impact on forest health.

CENTRE OF MOLECULAR AND ENVIRONMENTAL BIOLOGY



The Centre of Molecular and Environmental Biology (CBMA) is a R&D Unit created in 2008, funded by the Portuguese Science & Technology Foundation (FCT) and hosted at the School of Sciences of UMinho. The CBMA mission is to promote high quality Research and Advanced Training in Biological Sciences towards Biosustainability, while serving the community via outreach activities. CBMA drives cutting-edge research through a problem-oriented approach leading to breakthrough innovation, new tools and strategies with impact on Environmental, Biotechnology, Health, Agri-food and Industrial sectors.

CBMA Research Groups reflect their scientific expertise towards different perspectives on biodiversity: i) SUSTAINING LIFE: Biodiversity and Functional Ecology Group with expertise in ecology, ecotoxicology, genetics, and mathematics to develop theoretical and empirical approaches to understand the role of biodiversity in ecosystems and to promote the sustainable use of natural resources under the ongoing global change. ii) BASICS OF LIFE: Cellular Responses to Environmental Stress Group combines expertise in biochemistry and molecular biology, cell physiology to uncover biomarkers and signalling processes underlying cellular events triggered by biotic and abiotic stressors. iii) INNOVATION FOR LIFE: Functional Genomics and Nanobiotechnology for Sustainable Living Group uses molecular biotechnology, applied microbiology, omics, bioinformatics and synthetic biology to re-design biological systems.

CBMA aims

Advances in scientific knowledge: Integrated and multi scale research at the community, population, organism and cellular levels to understand the impact of global change on biodiversity. By blending theoretical and experimental Biology, we aim to create models to predict the behaviour of living systems.

Resourceful team: CBMA cultivates internal synergies and stimulates a culture of creativity and distinction, where the critical spirit and proactivity are rewarded. CBMA fosters the training of a new generation of young scientists in Biological Sciences and promotes the exchange of PhD students and researchers with outstanding institutions to share knowledge and skills.

Communication and knowledge transfer: CBMA is committed to promoting scientific and technical services, research contracts, registering and licensing patents, and nesting start-ups with the involvement of students and researchers. Also, Experiment@Ciência establishes a cultural, scientific and educational agenda to generate links between academia and society.



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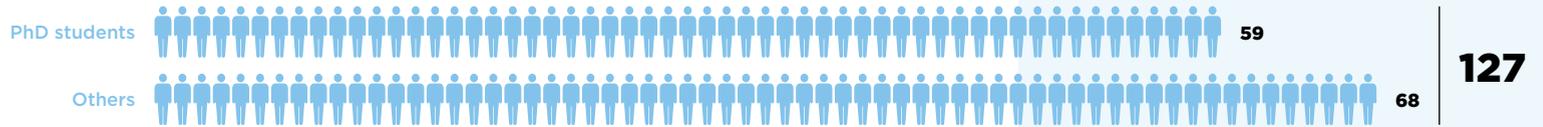


STAFF MEMBERS

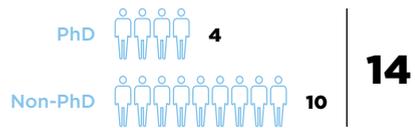
PhD full members



Non-PhD members



International members



181

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **74** | 67 Q1 | 5 Q2 | 2 Q3

Book chapters  **11** | 6 International | 5 National

Journals or collections  **27** | 23 Editor | 4 Guest editor

Communications

Oral		82	60 International 22 National
Poster		81	37 International 44 National
Total		163	

5 349

Number of citations

24

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **4** | 1 In cooperation with international institutions

On-going PhD Theses  **59** | 9 In cooperation with international institutions

Master's Dissertations completed  **62**

4.16

Average impact factor

12

Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

48

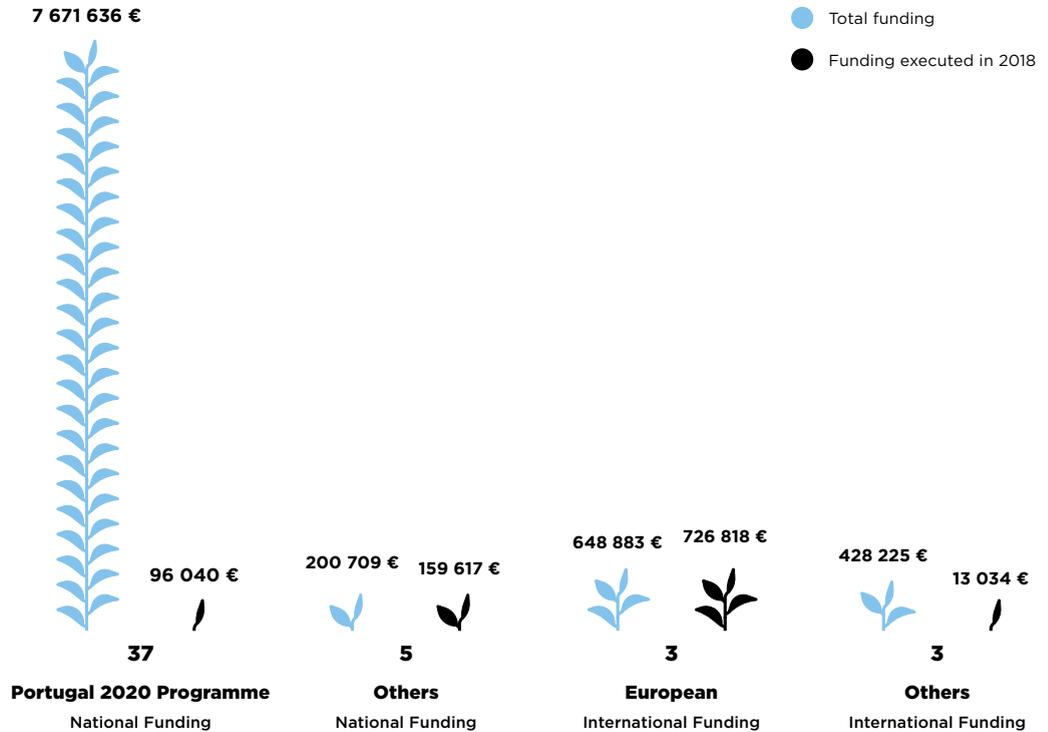
Total number of on-going projects

42 - National Funding
6 - International Funding

8 949 453 €

Total funding for UMinho

7 872 345 € - National Funding
(255 657 € - National Funding executed)
1 077 108 € - International Funding
(739 852 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation **8**

Spin-offs and Start-ups with UMinho label **1**

National patents **1** | Submitted

Others (consultancy, exhibitions, observatories and technical reports) **1** | International

MAJOR ACHIEVEMENTS

Flagship Publications

Social norm complexity and past reputations in the evolution of cooperation

F.P. Santos, F.C. Santos, J.M. Pacheco, 2018.



Conditions promoting effective very high gravity sugarcane juice fermentation

B. Monteiro, P. Ferraz, M. Barroca, S.H. da Cruz, T. Collins, C. Lucas, 2018.



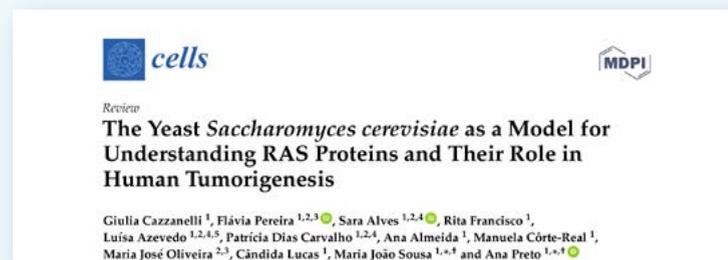
Fish and mussels: Importance of fish for freshwater mussel conservation

V. Modesto, M. Ilarri, A.T. Souza, M. Lopes-Lima, K. Douda, M. Clavero, R. Sousa, 2018.



The Yeast *Saccharomyces cerevisiae* as a Model for Understanding RAS Proteins and Their Role in Human Tumorigenesis

G. Cazzanelli, F. Pereira, S. Alves, R. Francisco, L. Azevedo, et al., 2018.



Why We Need Sustainable Networks Bridging Countries, Disciplines, Cultures and Generations for Aquatic Biomonitoring 2.0: A Perspective Derived From the DNAqua-Net COST Action

F.O. Costa, et al. Advances in Ecological Research, 2018.



Flagship Projects

CLIMALERT

Climate Alert Smart System for Sustainable Water and Agriculture



The CLIMALERT project (climalert.eu) develops innovative tools (web and apps) to provide weather and climate information in a format that users find easy to understand and incorporate into decision-making. The major goal is to reduce the risks and vulnerabilities due to extreme climate events for agriculture and water management.

ECOAGRIFOOD

Innovative green products and processes to promote agri-food bioeconomy



The project aims at leveraging the agriculture and food bioeconomy of the region North-PT through the development, production and use of innovative green products and processes.

YEASTDOC

Yeast Biotechnology Doctoral Training Programme



Yeast Biotechnology Doctoral Programme is a joint doctoral training Programme made up of 15 partners from 8 European countries. Twelve PhD students will receive training through YEASTDOC that will prepare them for careers as research scientists and leaders in the public or private biotechnology sectors.

Scientific Recognition

Pedro Gomes

2018 European Citizen's Award Natura winner: School of Nature



The School of Nature project, funded by PO SEUR won the Nature 2000 awards, in the Citizen's Award category, recognizing the work carried out on Environmental Education and Communication in Science resulting from the collaboration between CBMA and the Municipality of Viana do Castelo.

Scientific Leadership

Portugal Delegate and Member of the Scientific Committee, International Barcode of Life (iBOL)



iBOL is a worldwide research consortium established in 2008 that aims to implement a universal system for species identification based on DNA barcodes. iBOL's current research programme (BIOSCAN) involves 32 countries and aims to use DNA barcodes to speed species discovery, to probe species interactions and to track species dynamics at a global scale.

CENTRE OF EARTH SCIENCES



Instituto de Ciências da Terra
Institute of Earth Sciences

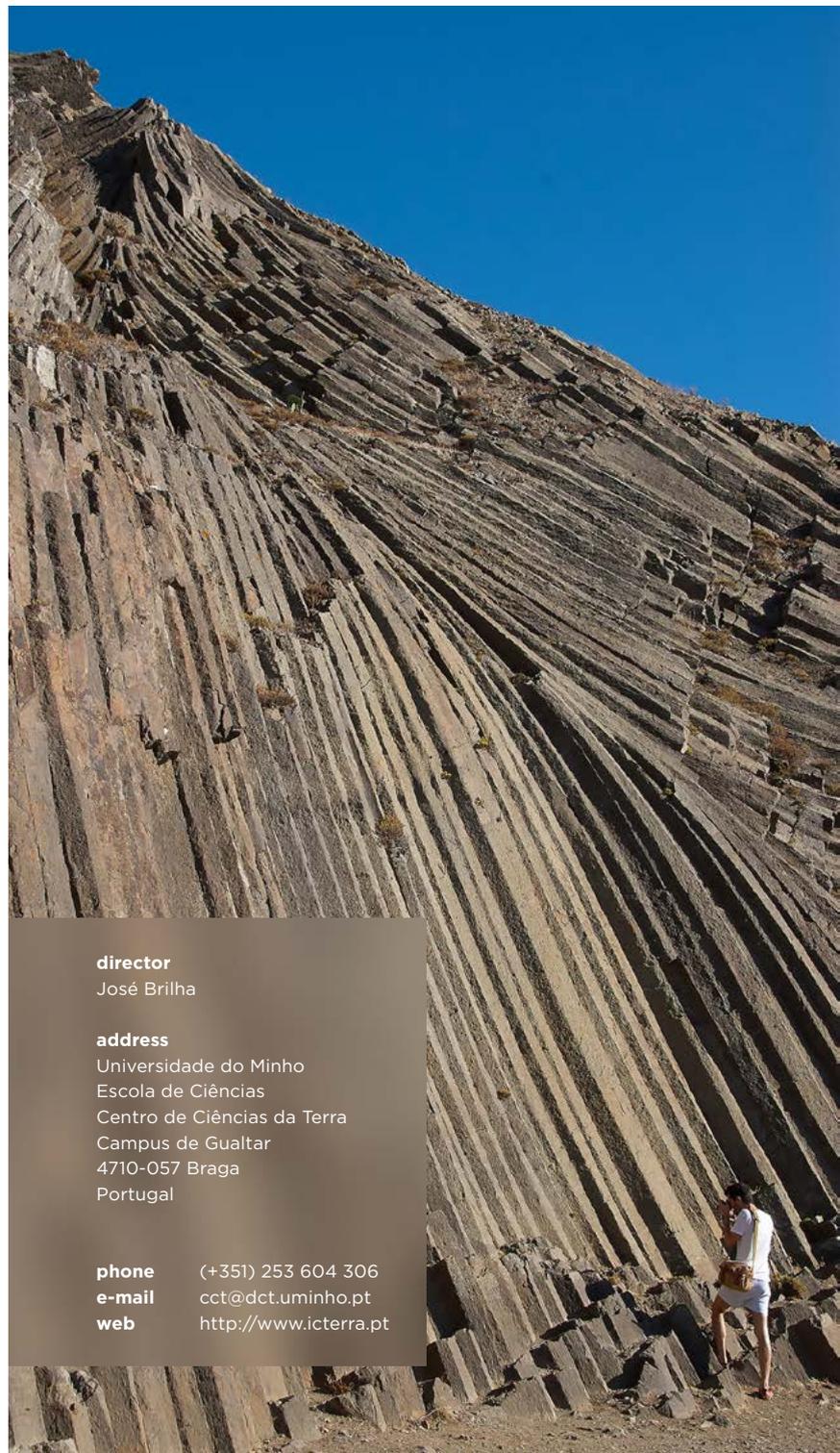
The Institute of Earth Sciences (ICT) is a Research Unit established in 2014 with poles in three Portuguese universities: Minho, Évora and Porto. ICT is the largest inter-institutional research structure in Portugal dedicated to geosciences. In the 2014 evaluation carried out by the National Science Foundation (FCT), ICT was awarded with the grade of Excellent. The Centre of Earth Sciences (CCT) is a research sub-unit of the School of Sciences and is the pole of this Institute at UMinho.

The main ICT aims are:

1. To contribute for the development of scientific research and national scientific policies in the earth sciences domain;
2. To cooperate with other institutions through scientific exchanges and to publicise the results obtained by the research and by the technological development;
3. To develop training of young researchers at the post-graduation level;
4. To promote scientific and technological literacy to students and general public.

There are six ICT research groups dedicated to the following topics:

- Atmospheric Sciences, Water and Climate involving the aerial and superficial cycles of the planetary fluids, aerosols including dust and pollens, water resources quality;
- Energy, namely the solar resource, its forecast and use for heat and electricity generation and energy storage (energy sustainability, decarbonisation, and reduction of greenhouse gases);
- Georesources and Geomaterials, with focus on deposits of rare elements, industrial minerals and ornamental rocks; characterization of materials in the scope of geoarchaeological and architectural and civil engineering purposes and of soils for forensic uses;
- Geoconservation and Geoscience Education with emphasis on geological heritage and its use for science and society in general, including UNESCO Global Geoparks and World Heritage, and also on the development of the geoscientific literacy and awareness for the importance of geosciences in a sustainable planet;
- Environmental Monitoring and Remediation for Sustainability with focus on water, sediments, soils, ecosystems and vulnerable coastal zones considered under the perspectives of environmental monitoring, conservation and rehabilitation;
- Lithosphere Dynamics comprising structural mapping, stratigraphy, geochemistry and geochronology, combined with seismic, geoelectric, magnetic, gravimetric and high-precision down hole temperature studies to infer the complex structure of the lithosphere.



director

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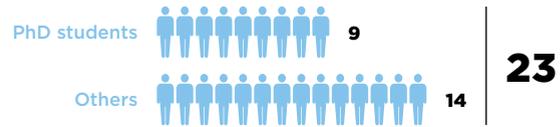


STAFF MEMBERS

PhD full members



Non-PhD members



International members



41

Total number of members

PUBLICATIONS



2 581
Total citations

15

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS



2.83

Average impact factor

RESEARCH PROJECTS

2

Total number of projects
National Funding

169 813 €

Total funding for UMinho
National Funding
(20 521 € - National Funding executed)

169 813 €



20 521 €



2

Portugal 2020 Programme
National Funding

- Total funding
- Funding executed in 2018

SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

5

**Spin-offs and Start-ups
with UMinho label**

2

International patents

1

| Granted

Others
(consultancy, exhibitions,
observatories and technical reports)

6

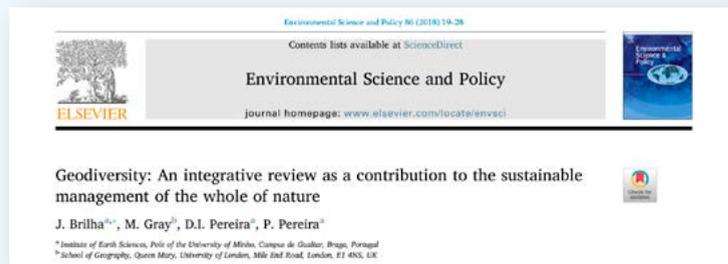
| 5 International
1 National

MAJOR ACHIEVEMENTS

Flagship Publications

Geodiversity: An integrative review as a contribution to the sustainable management of the whole of nature

J. Brilha, M. Gray, D.I. Pereira, P. Pereira, 2018.



Mineralogical controls on mobility of rare earth elements in acid mine drainage environments

T.O. Soyol-Erdene, T. Valente, J.A. Grande, M.L. de la Torre, 2018.



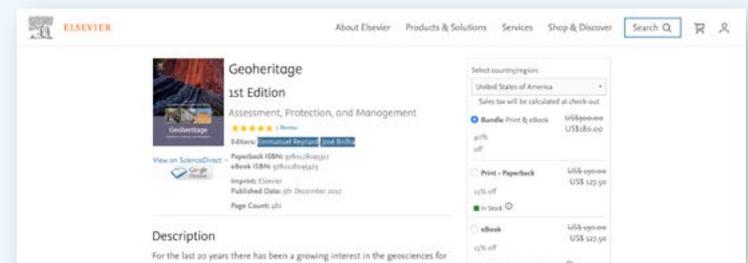
Potential toxic elements in stream sediments, soils and waters in an abandoned radium mine (central Portugal)

I.M.H.R. Antunes, A.M.R. Neiva, M.T.D. Albuquerque, et al., 2018.



Geoheritage Assessment, Protection, and Management

E. Reynard, J. Brilha, 2018.



Flagship Projects

NANO-MINENV

Minerals of Environmental Relevance in Acid Mine Drainage Contaminated Systems: Properties and Reactivity at the Nanoscale



The project focuses on one of the world's most serious environmental problems, known as acid mine drainage, which is a process associated with the exploitation of metals. The general idea is the characterization of the natural nanoparticles that result from this process, since they contribute to mobilization of toxic elements.

TERRAMATER

Innovative Measures of Preventive Recovery in Burned Areas



"Terramater" is an INTERREG-POCTEP project with Portuguese and Spanish partners, whose objective is to recover burned areas, reducing soil losses by erosion and increasing resistance to new episodes of fire through the development and application of organomineral fertilizers that increase resistance to forest fire.

Scientific Leadership

Paula Marinho

Fellow Member and European Chair of the Society of Environmental Geochemistry and Health



This is an invitation-only membership level and shows that Paula Reis has been very active within SEGH, or within the field which SEGH represents. The Society provides a forum for scientists from various disciplines to work together in understanding the interaction between the geochemical environment and the health of plants, animals, and humans.

José Brilha

Deputy Chair of the Geoheritage Specialist Group of the World Commission on Protected Areas of the International Union of Conservation of Nature



The Geoheritage Specialist Group under the World Commission on Protected Areas of the International Union of Conservation of Nature (IUCN) provides specialist advice on all aspects of geodiversity in relation to protected areas and their management. IUCN is the global authority on the status of the natural world and the measures needed to safeguard it.

CENTRE OF PHYSICS



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. CFUM was founded in 1994 and recognized and funded by the National Science Foundation (FCT) since 2004 in the framework of Plurianual or Strategic projects. Since 2014, CFUM is part of the Centre of Physics of Minho and Porto Universities (CF-UM-UP). In the 2014 evaluation carried out by FCT, CF-UM-UP was awarded with the grade of Very Good.

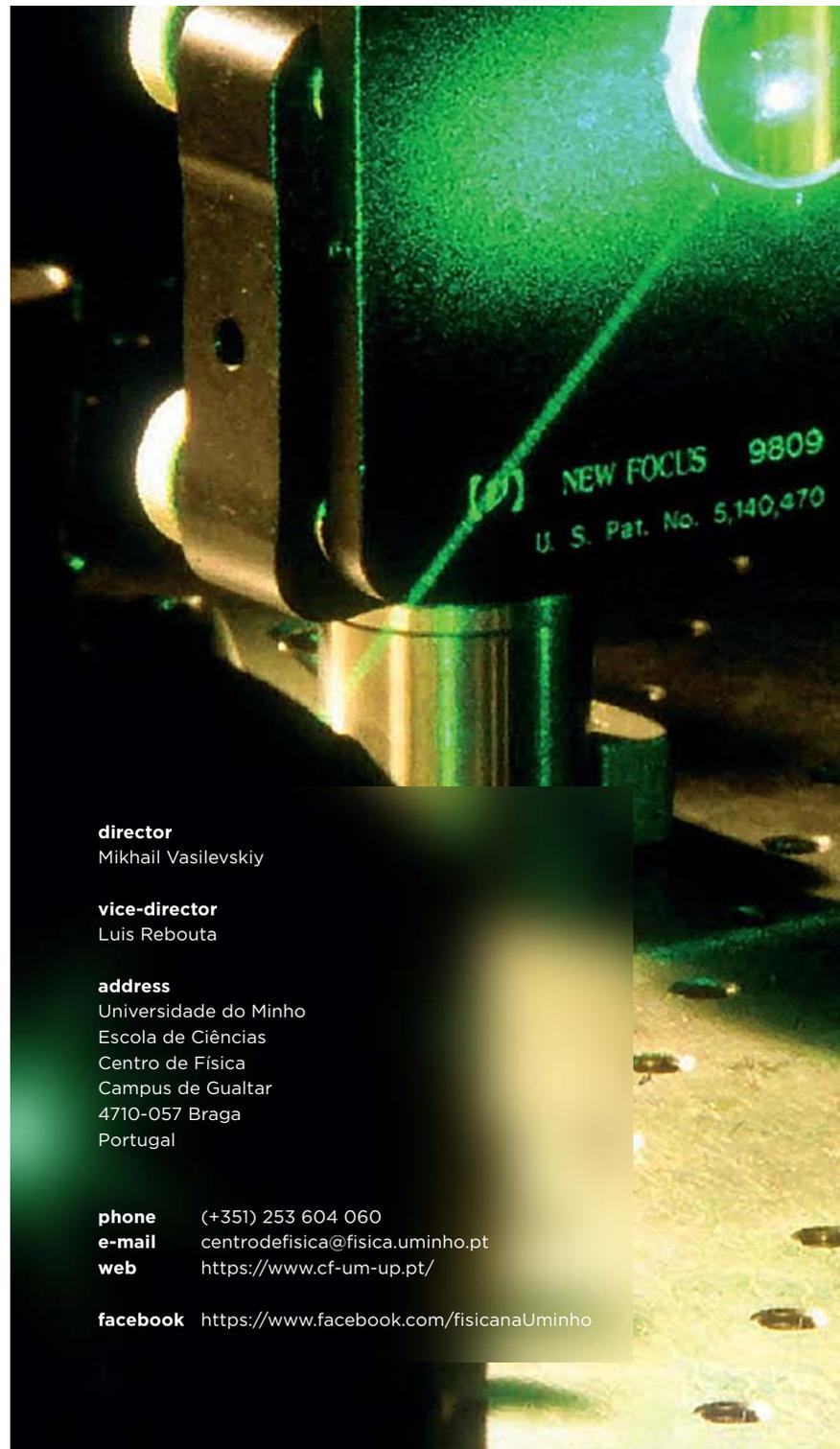
In 2018, CFUM included 51 effective members (teaching staff of the UMinho's School of Sciences meeting selection criteria of minimum scientific production and full-time researchers with contracts), and 21 Post-Docs supported by research fellowships. Also linked to the Centre have been some 13 collaborators with PhD (mostly university teaching staff) and 60 PhD students (some of them shared with other research Centres), as well as a number of research students without PhD. CFUM is strongly involved in interdisciplinary R&D activities and the team includes Physicists, Materials Scientists, Applied Mathematicians, and specialists in Optics and Optometry.

The research is carried out in the fields of Condensed Matter and Materials Physics (both theoretical and experimental), Materials Fabrication and Applications, Optics, Advanced Computations, Biophysics, Optometry and Vision Sciences, with approximately 10-15% of theoretical research and modelling and the remainder representing experimental R&D activities. Experimental facilities are organized in 30 research laboratories and include setups and equipment for thin film growth and characterization, optical spectroscopy in different spectral regions, with time resolved and Raman scattering techniques, dielectric electrical and thermal properties of materials, and optometry and colour vision.

The strategic research Lines are:

- (i) Assessment and enhancing visual performance.
- (ii) Physics of quantum materials and bionanostructures.
- (iii) Functional and smart materials and surfaces for advanced applications.

Development of the Centre is envisaged through further strengthening of research themes within these lines, where international recognition has been achieved.



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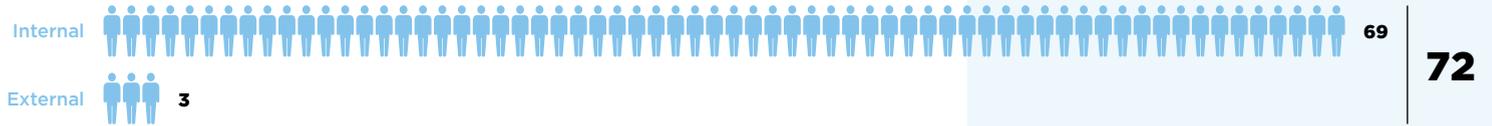
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STAFF MEMBERS

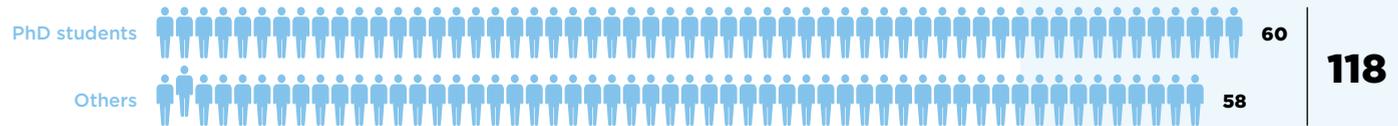
PhD full members



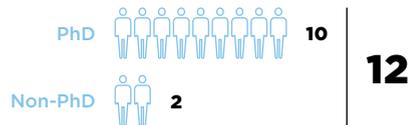
PhD associated members 13



Non-PhD members



International members



Visiting researchers 2



Technical staff 8



213

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **155** | 109 Q1 26 Q2 6 Q3 14 Others

Books  **1** | International

Book chapters  **11** | 9 International 2 National

Journals or collections  **25** | 22 Editor 3 Guest editor

Communications

- Oral**  **47** | 32 International 15 National
- Poster**  **150** | 100 International 50 National
- Total**  **197**

11 109
Total citations

68
Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **7** | 1 In cooperation with international institutions

On-going PhD Theses  **53** | 16 In cooperation with international institutions

Master's Dissertations completed  **44**

3.34
Average impact factor

7
Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

55

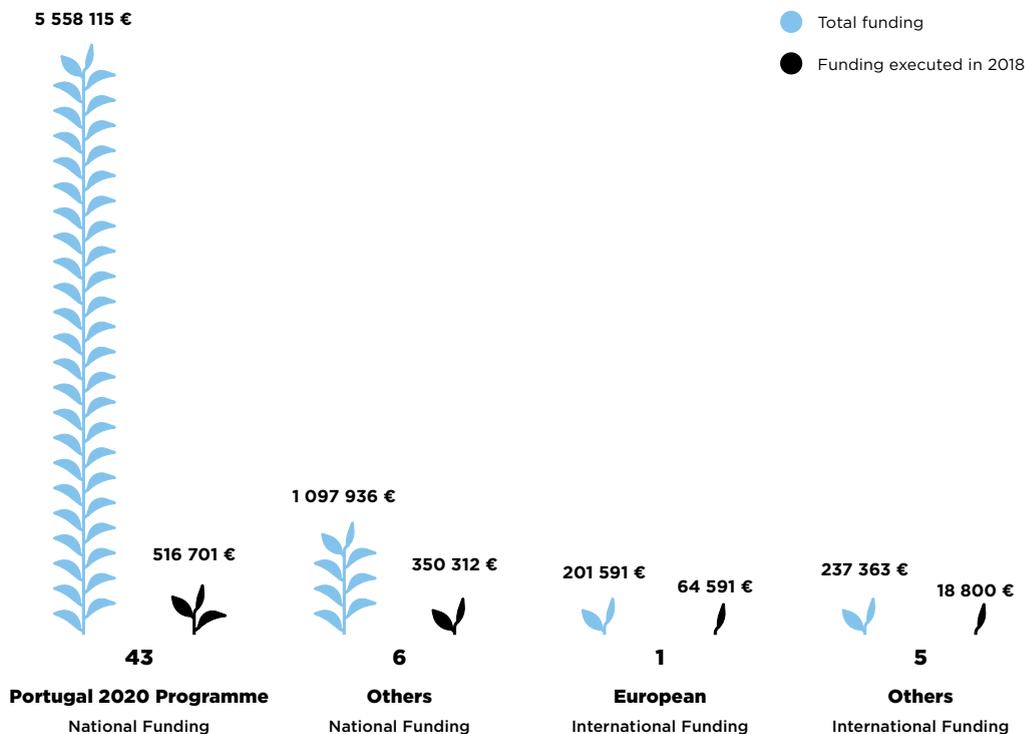
Total number of on-going projects

49 - National Funding
6 - International Funding

7 095 005 €

Total funding for UMinho

6 656 051 € - National Funding
(867 013 € - National Funding executed)
438 954 € - International Funding
(83 391 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings organisation

17

International patents

6

4 Submitted
2 Granted

National patents

1

1 Submitted

Spin-offs and Start-ups with UMinho label

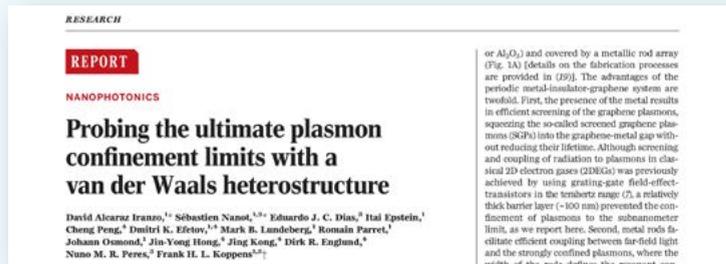
1

MAJOR ACHIEVEMENTS

Flagship Publications

Probing the ultimate plasmon confinement limits with a van der Waals heterostructure

D.A. Iranzo, S. Nanot, E.J.C. Dias, I. Epstein, C. Peng, et al., 2018.



Electroactive poly(vinylidene fluoride)-based structures for advanced applications

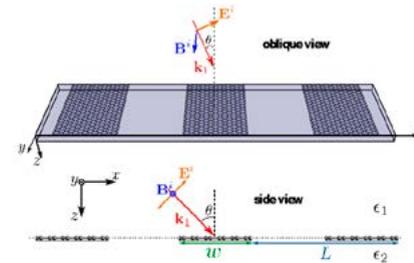
C. Ribeiro, C.M. Costa, D.M. Correia, J. Nunes-Pereira, et al., 2018.



Flagship Projects

GRAPHENECORE2

Graphene-based revolutions in ICT and beyond



The Graphene Flagship core 2 is the third phase of the project "Graphene-based revolutions in ICT and beyond". The current phase involves 150 academic and industrial research groups in 23 countries. UMinho is present in the work package "Photonics and Optoelectronics" through the research conducted in the Centre of Physics.

ON-SURF

Mobilizing Technological Skills in Surface Engineering

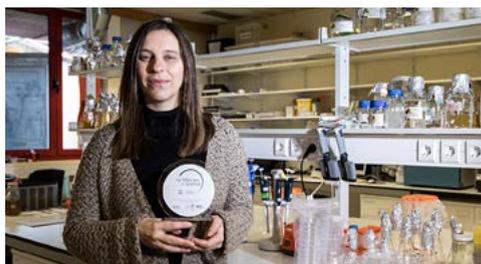


On-Surf is a mobilization project joining companies and SI&I entities along a priority axis of Internationalization and Innovation agenda - Surface Engineering. It seeks to develop and apply surface modification processes for advanced and innovative solutions in sectors such as Automotive, Aeronautics, Molds and Tools, Health and Electronics.

Scientific Recognition

Margarida Fernandes

Distinguished with the L'Oreal Portugal Medal of Honor for Women in Science



Margarida Fernandes, a Post-Doctorate researcher affiliated to the Centres of Physics and Biological Engineering, was distinguished with the L'Oreal Portugal Medal of Honor for Women in Science (awarded in January 2018). She also received a grant to develop new materials that would enable regeneration of bone tissues.

José Manuel Meijome

UMinho Scientific Merit Award 2018



José Manuel Meijome, Coordinator of the Strategic Research Line of Optometry and Vision Science and of the CEORLab-UMinho laboratory at the Centre of Physics, was distinguished with the UMinho Scientific Merit Award 2018 for his nationally and internationally recognized research in the field of clinical Optometry.

Scientific Leadership

Senen Lanceros-Mendes

Director of the Basque Centre for Materials, Applications and Nanostructures (BCM), Spain



Since 2018, S. Lanceros-Mendez is the Director of the Basque Centre on Materials, Applications and Nanostructures, a research centre included in the Basque Excellence Research Centres network. Its mission is to generate knowledge on the new generation of multifunctional materials, turning this knowledge into solutions for the benefit of society.

CENTRE OF MATHEMATICS



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). CMAT has belonged to the National Scientific and Technological System of Research Units since 1991. In the 2014 evaluation carried out by the National Science Foundation (FCT), CMAT was awarded with the grade of Good.

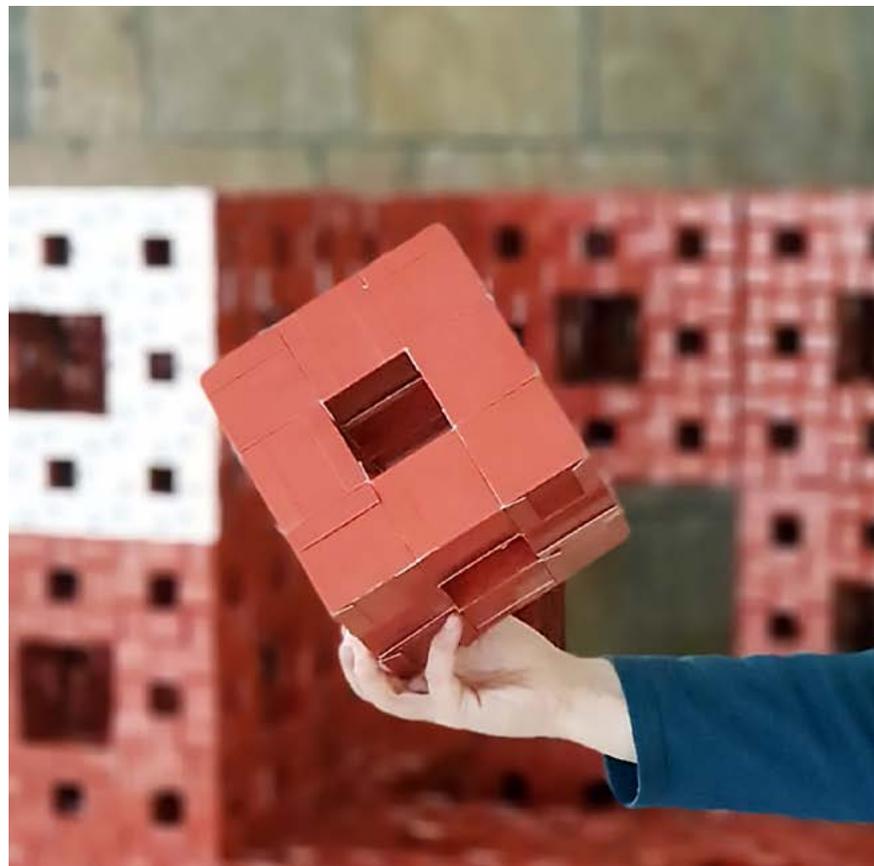
The Partnership with UTAD started in 2015 and is unique in the context of Portuguese Mathematics Centres. In addition to the strengthening and territorial densification of the scientific national system, it puts CMAT in a competitive position, being the only Math Unit to the north of Porto.

CMAT has 47 integrated members, 12 PhD students and 16 collaborators. The Unit is structured in 4 research groups: Algebra, Logic and Computation; Analysis and Applications; Geometry, Topology and Applications; Statistics, Applied Probability and Operational Research.

CMAT aims to develop and promote its scientific activity both in fundamental and applied Mathematics, seeks to stimulate the application of Mathematics in other disciplines and to contribute to regional and national development. CMAT has solid national and international collaborations with Math Centres in prestigious institutions (e.g. CNRS, Berkeley, Oxford and Sorbonne Univs.) and with several Research Units mainly in the areas of Computer Science, Physics, Engineering, Health and Environment Sciences, strengthening the transfer of knowledge with services and industry and the interaction with the society.

CMAT is strongly committed to implementing several strategies with a view to increasing its overall performance. CMAT intends to reinforce national and international collaborations, disseminate ongoing research and interact with a wider international community, increase the impact of its research, and enlarge advanced training of students. Concretely, CMAT intends to support long-term visits, host prestigious conferences, increase the participation in international events and committees and award initiation, PhD and postdoc grants.

CMAT is also strongly involved in outreach activities oriented to young students, school teachers and the public in general.

**director**

Lisa Santos

vice-director

Ana Jacinta Soares

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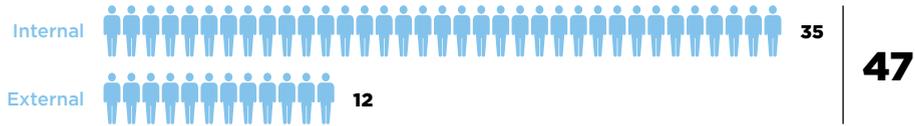
web

<http://www.cmat.uminho.pt>



STAFF MEMBERS

PhD full members



Non-PhD members



International members



105

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **55** | **20** Q1 **13** Q2 **18** Q3
8 Q4 **9** Others

Books  **3** | **2** International
1 National

Journals or collections  **1** | **Editor**

Communications | **Oral**  **61** | **41** International
20 National

769

Total citations

30

Open access documents
(UMinho Repositorium)

THESES AND DISSERTATIONS

PhD Theses completed  **1** | **In cooperation with international institutions**

On-going PhD Theses  **13** | **1** **In cooperation with international institutions**

Master's Dissertations completed  **7**

1.47

Average impact factor

15

Indexed proceeding papers
(SCOPUS)

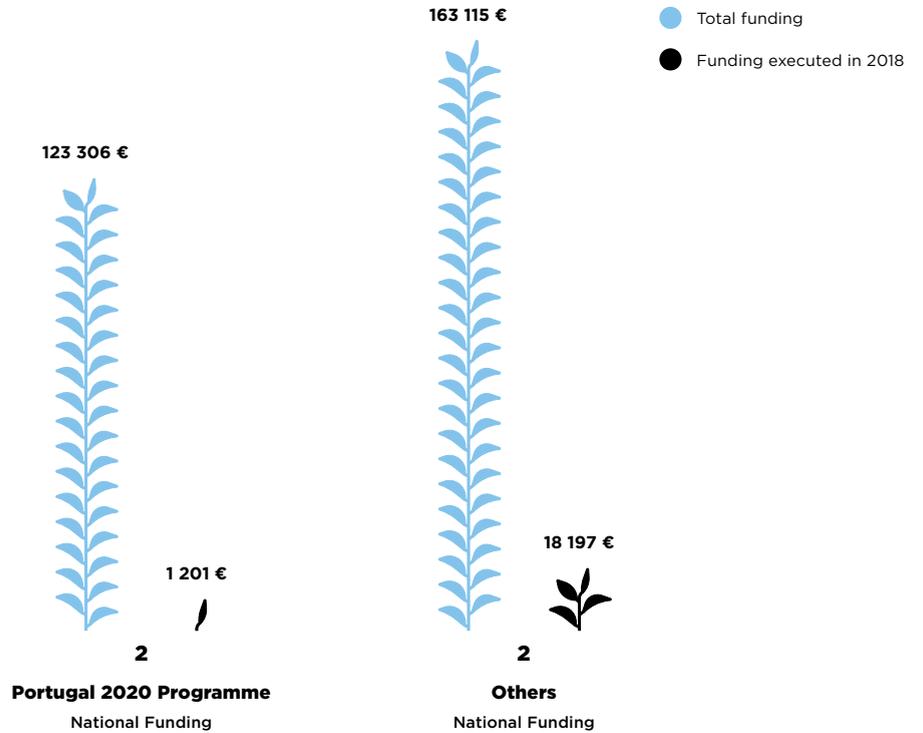
RESEARCH PROJECTS

4

Total number of projects
National Funding

286 421 €

Total funding for UMinho
National Funding
(19 398 € - National Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

International meetings
organisation

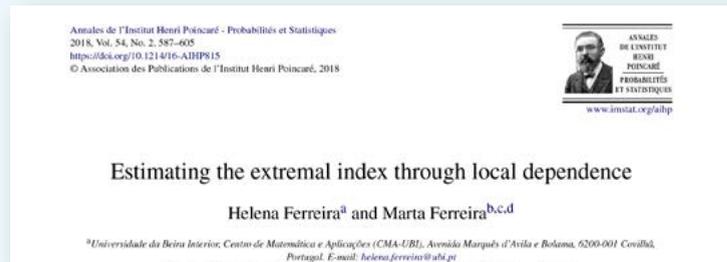
5

MAJOR ACHIEVEMENTS

Flagship Publications

Estimating the extremal index through local dependence

H. Ferreira, M. Ferreira, 2018.



On the periodic orbits, shadowing and strong transitivity of continuous flows

M. Bessa, M.J. Torres, P. Varandas, 2018.



Flagship Projects

COST ACTION EUTYPES CA15123



The action involves 28 European countries, gathering logicians and computer scientists working on type theory and its applications in computer science and mathematics, e.g. programming languages and proof formalization. CMAT is in the management committee, organizing its annual meeting and the TYPES18 conference.

NEUROFIELD

Analysis and numerical simulation of deterministic and stochastic neural field equations with applications to robotics



In collaboration with Pedro Lima (IST), CMAT develops and analyze rigorously dynamic field models that integrates fundamental principles of neural information processing. As part of control architectures, the models are used to endow autonomous robots with human-like cognitive capacities like planning, decision making and learning.

Scientific Recognition

Neuroscience research prize “Santa Casa da Misericórdia 2018”



Wolfram Erlhagen (member of a multidisciplinary research team from the School of Medicine) was awarded with the project “Thertact-Exo: A brain controlled exoskeleton for spinal cord regeneration” The goal is to develop, implement and test an innovative approach to the control of an exoskeleton with EEG measurements.

CENTRE OF CHEMISTRY



CENTRO DE QUÍMICA
UNIVERSIDADE DO MINHO

The Centre of Chemistry of UMinho (CQ-UM) is a Research Unit committed to creating 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 27 integrated researchers (25 permanent staff and 2 post-doc integrated researchers) and around 30 collaborators (including PhD students) in collaboration with external R&D institutions, are organized into three lines of research: Applied Biomolecular Chemistry (ABC, 8 researchers), Heterocycles for Societal Challenges (HSC, 8 researchers) and Sustainable Chemistry: New Methods and Materials (SC, 11 researchers). ABC researchers are actively involved in a variety of projects that are linked by the use of biomolecules as targets or as tools for novel applications in drug-delivery systems, bioimaging, antimicrobial/antiproliferative agents and agrochemicals. HSC researchers have expertise in synthetic organic chemistry, especially N- and S-based heterocycles and carbohydrate mimics, tailored to meet the societal needs in terms of new drug candidates (viral and bacterial infections, cancer, diabetes or Alzheimer) or new materials (biomedical and optoelectronic applications). SC research is focused on the development and application of materials for electrochemical cells, optical/electronic devices, films/coatings, zeolites, rehabilitation of contaminated water, biomass valorisation and new analytical methods.

In the 2014 evaluation by National Science Foundation (FCT) CQ-UM was ranked as Good. The recent admission of junior researchers, contracted under the FCT program and by financed R&D projects, will introduce a new dynamism to expand and renew research capacity, increase and diversify funding, enhance postgraduate and postdoctoral training, consolidate interdisciplinary thematic areas of research, where Chemistry has an evident and profound importance.



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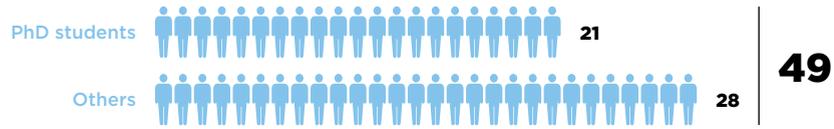


STAFF MEMBERS

PhD full members



Non-PhD members



International members



82

Total number of members

PUBLICATIONS

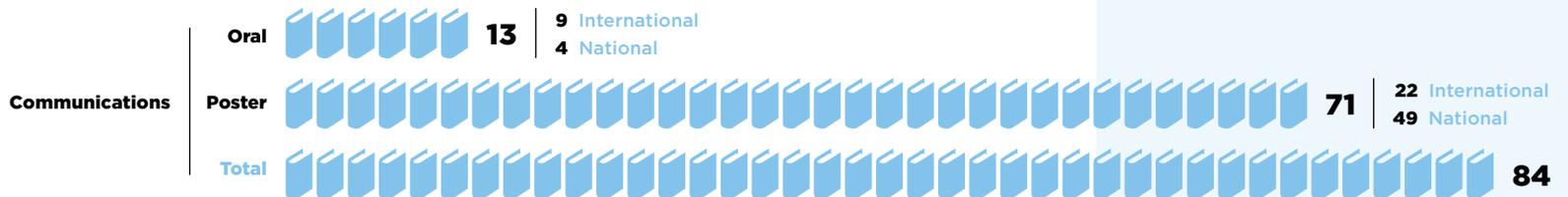


2 450
Total citations



28

Open access documents
(UMinho Repositorium)



4.26

Average impact factor

THESES AND DISSERTATIONS



4

Indexed proceeding papers
(SCOPUS)

2

Non-indexed proceeding papers

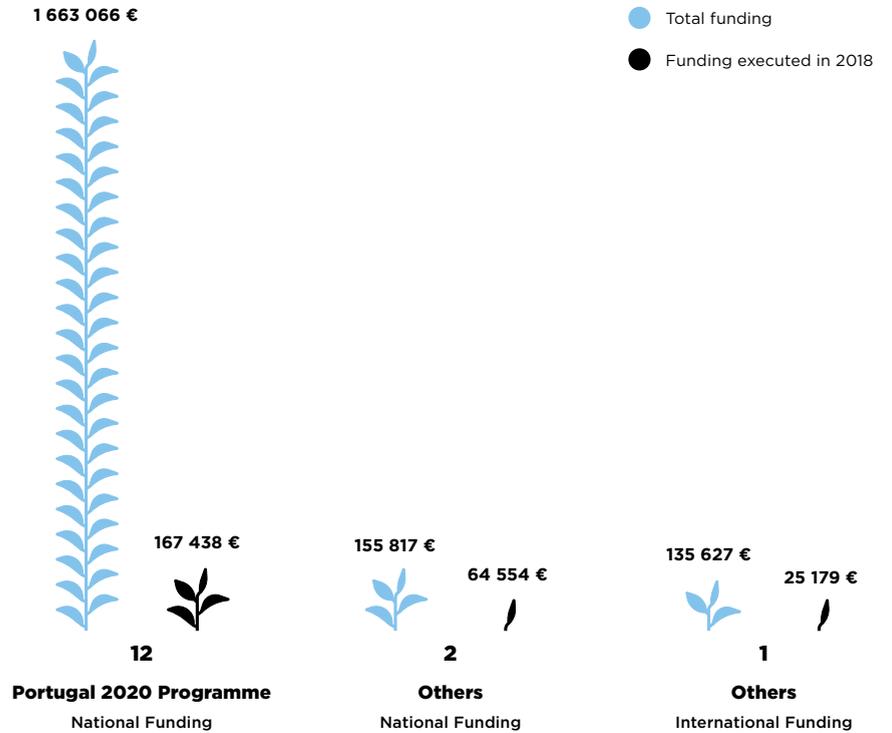
RESEARCH PROJECTS

15

Total number of projects
 14 - National Funding
 1 - International Funding

1 954 510 €

Total funding for UMinho
 1 818 883 € - National Funding
 (231 992 € - National Funding executed)
 135 627 € - International Funding
 (25 179 € - International Funding executed)



SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

National patents **2** | Submitted

International patents **1** | Submitted

MAJOR ACHIEVEMENTS

Flagship Publications

Silk Fibroin Separators: A Step Toward Lithium-Ion Batteries with Enhanced Sustainability

R.F.P. Pereira, R. Brito-Pereira, R. Gonçalves, M.P. Silva, et al., 2018.



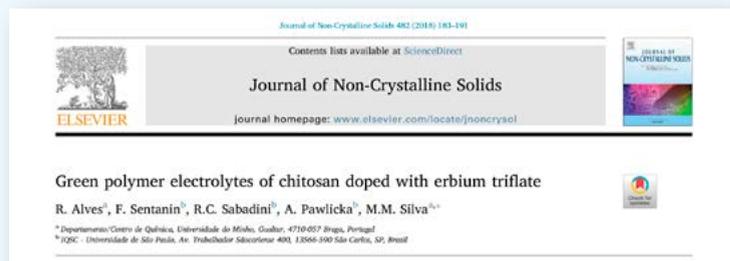
Terpyridine derivatives functionalized with (hetero)aromatic groups and the corresponding Ru complexes: Synthesis and characterization as SHG chromophores

S.S.M. Fernandes, M. Belsley, C. Ciarrocchi, M. Licchelli, et al., 2018.



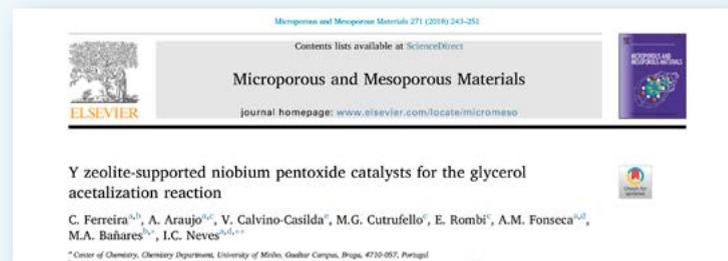
Green polymer electrolytes of chitosan doped with erbium triflate

R. Alves, F. Sentanin, R.C. Sabadini, A. Pawlicka, M.M. Silva, 2018.



Y zeolite-supported niobium pentoxide catalysts for the glycerol acetalization reaction

C. Ferreira, A. Araujo, V. Calvino-Casilda, M.G. Cutrufello, et al., 2018.



Protein folding and quinary interactions: creating cellular organisation through functional disorder

S. Ribeiro, S. Ebbinghaus, J.C. Marcos, 2018.



Theoretical and experimental studies of aryl-bithiophene based push-pull π -conjugated heterocyclic systems bearing cyanoacetic or rhodanine-3-acetic acid acceptors for SHG nonlinear optical applications

S.S.M. Fernandes, C. Herbivo, J. Aires-de-Sousa, A. Comel, et al., 2018.



Flagship Projects

RES2VALHUM

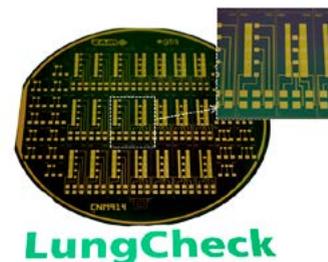
Valorization of organic waste: production of humic substances



Res2ValHUM led by UMinho, with the participation of partners from Galicia and Northern Portugal, was financed by the Interreg V-A Program. The Project aims to promote composting of organic waste, contributing to reducing the amount of waste deposited in the landfill and the valorization of the compost produced.

LUNGCHECK

Multiplex point-of-care device for lung disease biomarkers in sputum



LUNGCHECK focuses on the development of an in-vitro point-of-care bioanalytical device with rapid response and ability to detect multiple disease biomarkers in sputum. The project intends to employ state-of-the-art technologies to fabricate the key elements of the device, including microfabrication processes and printing technologies.

LABORATORY FOR INSTRUMENTATION AND EXPERIMENTAL PARTICLE PHYSICS

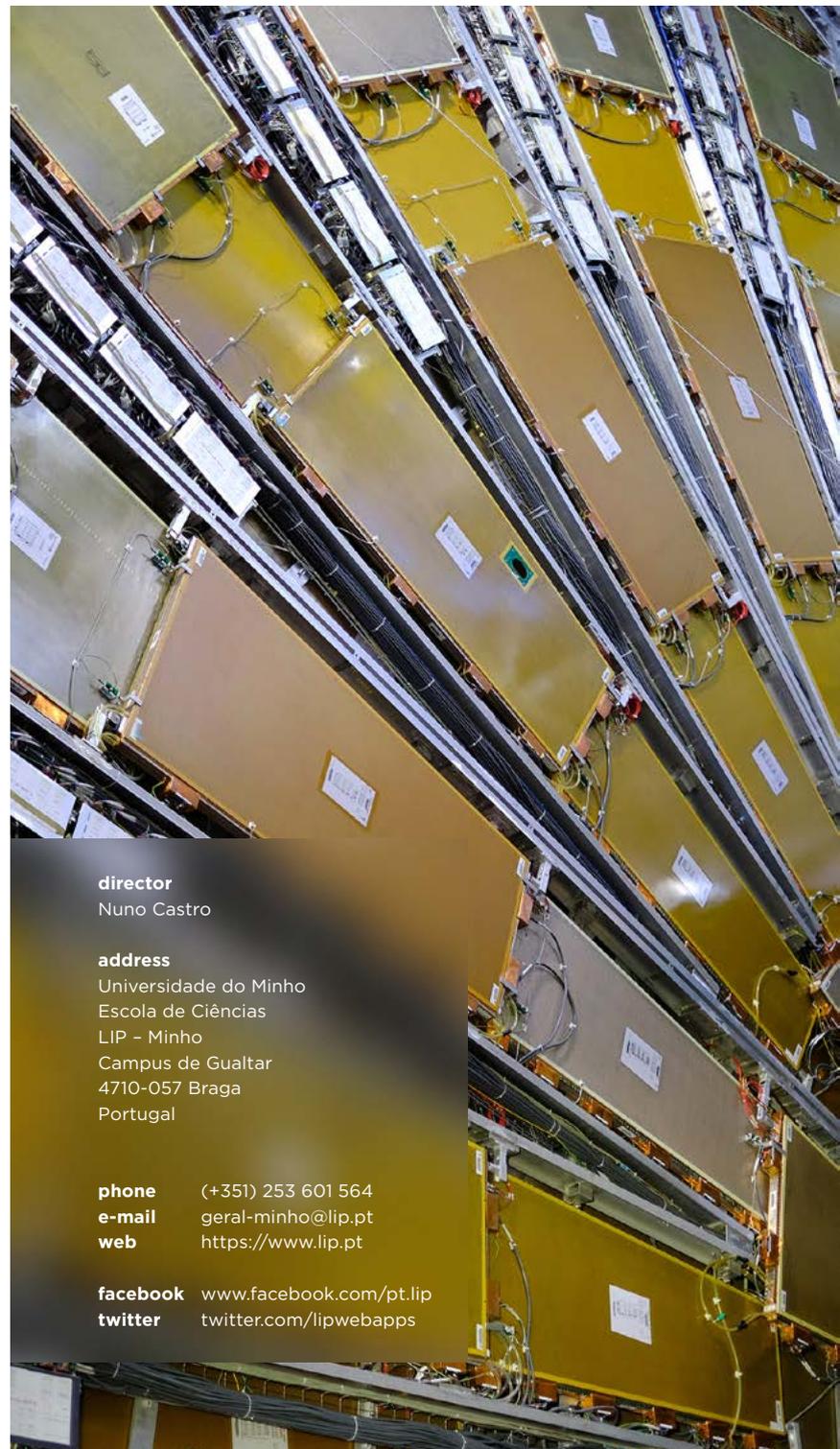


LIP is the reference laboratory for experimental particle physics and associated technologies in Portugal. It was founded in 1986 to exploit the unique opportunities created by the country's accession to CERN, the European Particle Physics Laboratory, the first international scientific organisation Portugal became a member of. 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, particularly in domains of healthcare, space exploration and information technologies, and the engagement of society with science.

The laboratory is nation-wide, with nodes in Braga, Coimbra and Lisbon, working in close collaboration with the local universities. The associates of LIP are the Foundation for Science and Technology, FCT), the Universities of Minho, Coimbra and Lisbon, Instituto Superior Técnico, the Faculty of Science of the University of Lisbon and the Electrical and Electronics Business Association. LIP has been a "Laboratório Associado" of FCT since 2001. LIP was rated "Very good" in 2014, in the context of FCT's evaluation of the Research Units in Portugal. At national level, LIP has close to 200 members, including over 80 PhD researchers and 70 graduate students. LIP is the Portuguese reference partner of CERN, and also a partner of the European Space Agency, the GSI research centre in Germany, SNOLAB in Canada, the Pierre Auger Observatory in Argentina and the Sanford Underground Research Facility in the USA.

The node of LIP at UMinho was created in 2010, with the signature of a collaboration agreement between LIP and UMinho. Today it has about 30 members, including researchers, students and technicians. LIP's activities at UMinho are organized in four lines: particle physics with accelerators, with the participation in the ATLAS experiment at CERN's Large Hadron Collider (LHC) and phenomenology studies related to precision measurements of the top quark and Higgs boson, as well as to searches for new physics; astroparticle physics, with the participation in the Pierre Auger Observatory for the study of the highest energy cosmic rays; advanced computing, with the participation in some of the largest R&D projects in this field and delivering services to the scientific community at large; and outreach to undergraduate students, schools and the general public.

Our vision for the future is to make sure that LIP will be present in the next great scientific discoveries of humankind, and lead science and innovation in Portugal in close connection with the academic and business communities.



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Nuno Castro

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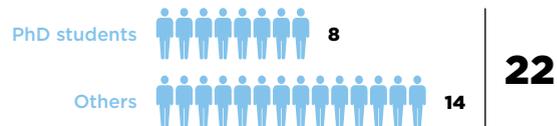


STAFF MEMBERS

PhD full members



Non-PhD members



International members



33

Total number of members

PUBLICATIONS

Indexed papers (SCOPUS)  **121** | 118 Q1 2 Q2 1 Q3

Journals or collections  **1** | Editor

Communications

Oral		10	7 International 3 National
Poster		11	5 International 6 National
Total		21	

7 773
Total citations

104
Open access documents
(UMinho Repositorium)

5.06
Average impact factor

THESES AND DISSERTATIONS

On-going PhD Theses  **6** | 2 In cooperation with international institutions

Master's Dissertations completed  **1**

2
Indexed proceeding papers
(SCOPUS)

RESEARCH PROJECTS

7

Total number of on-going projects

- 5 - National Funding
- 2 - International Funding

271 321 €

Total funding for UMinho

- 236 321 € - National Funding
- 35 000 € - International Funding

236 321 €



5

Portugal 2020 Programme
National Funding

● Total funding

● Funding executed in 2018

35 000 €



2

European
International Funding

SCIENTIFIC DISSEMINATION AND KNOWLEDGE TRANSFER

**International meetings
organisation**

2

Others
(consultancy, exhibitions,
observatories and technical reports)

1

National

Flagship Projects

BIGDATAHEP

Understanding Big Data in High Energy Physics: finding a needle in many haystacks



The goal of BigDataHEP is the development of advanced techniques to be used to analyse the data collected by the experiments of the Large Hadron Collider and by detectors searching for dark matter interactions. Furthermore, the techniques developed in the project will be transferred to the electronics industry to address quality control challenges.

Collaboration in the ATLAS experiment

(CERN/FIS-PAR/0008/2017)



The aim of this project is to support the Portuguese participation in the ATLAS Collaboration at CERN. The LIP-Minho team has a key role in the top quark measurements, searches for new physics phenomena associated to the top quark and in the ATLAS forward detector. Currently three PhD Theses are being developed in this scope.

Portuguese participation in the Pierre Auger Observatory

(CERN/FIS-PAR/0023/2017)



The aim of this project is to support the Portuguese participation in the Auger Observatory. The LIP-Minho team is involved in the data analysis collected to better understand the cosmic rays with extreme energies, as well as on the upgrade of the detectors, contributing to the direct measurement of muons in air showers.

Scientific Recognition

Ana Peixoto

ATLAS (CERN) PhD Grant



Every year, the ATLAS Collaboration awards the ATLAS PhD grant to three PhD students. This year, among the winners is Ana Peixoto, PhD student at LIP-Minho and the University of Minho under the MAP-Fis Doctoral program. The theme of her Thesis is the search for new phenomena associated to the top quark and this prize supports a one year stay at CERN.

Scientific Leadership

Nuno Castro

Coordinator of the Particle Physics Division of the Portuguese Physics Society



The Particle Physics Division of the Portuguese Physics Society (SPF) aims at fostering the visibility and dissemination of new results in high energy physics, as well as promoting contact between SPF members interested in particle physics. Nuno Castro is one of the coordinators of this division of SPF.



collaborative
laboratories

Collaborative Laboratories (CoLab) 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 organisations, namely higher education institutions (through their Research Units), technological interface centres and other intermediate or interface institutions. They also have as a main goal the creation of skilled and scientific jobs in Portugal, both directly and indirectly, by implementing research and innovation agendas geared at creating economic and social value.

CoLabs must meet the challenge of enhancing the density of knowledge-based activities in the country by fostering the consolidation of collaborative practices between scientific, technological or higher education institutions and the social and economic fabric, namely businesses, the hospital and health care system, cultural institutions, and social organisations.

In 2017, the Portuguese Government, through the Foundation for Science and Technology (FCT) launched the INTERFACE initiative to support these novel institutions. Accordingly, Colabs are approved by FCT are granted jointly by ANI (Innovation Agency) and FCT, but should develop a strategy to become financially sustainable after the first five years.

In 2018, a first Colab of UMinho started its operation - DTx, founded on May 2018 with the clear purpose of leading the digital transformation in the organisations, processes and competences in Portugal, directly involving their associates to that purpose. Also in 2018, 15 new Colabs were approved by FCT, in a wide range of areas and spread almost in all the country. UMinho has a participation in 5 of them:

1. ProChild - the CoLab against poverty and social exclusion;
2. CoLab4Food - the Colab for the Innovation in the food industry;
3. CECOLAB - the Colab for circular economy;
4. ProBiorefinery - the Colab for the research and innovation in Biorefineries;
5. B2E - the the Colab for the blue bioeconomy.

UMinho is the host institution for DTx and ProChild, assuring the scientific coordination of CoLab4Food.

DIGITAL TRANSFORMATION COLLABORATIVE LABORATORY



About DTx

The Digital Transformation Collaborative Laboratory (DTx-CoLab) is a non-profit, private association, officially founded on the May 10, 2018. The launch event took place on May 30, 2018, with the presence of the Portuguese Prime Minister and the German Chancellor, Angela Merkel.



DTx is a large-scale partnership for applied research in different areas of digital transformation and has 18 members: 3 universities - Universidade do Minho (**UMinho**), Universidade de Évora (**UEvora**) and Universidade Católica Portuguesa (**UCatólica**); 1 international laboratory - International Nanotechnology Laboratory (**INL**); 1 engineering and innovation centre - Centro de Engenharia e Desenvolvimento de Produto (**CEiiA**); and 13 companies - Accenture Technology Solutions (**Accenture**); Bosch Car Multimédia Portugal (**Bosch**); Cachapuz / Bilanciai Group (**Cachapuz**); Celoplás, Plastics Industry (**Celoplás**); EbankIT Omnichannel Innovation (**EbankIT**); Embraer Portugal (**Embraer**); IKEA Industry Portugal (**IKEA**); Neadvance Machine Vision (**Neadvance**); NOS Inovação (**NOS**); Primavera, Business Software Solutions (**Primavera**); Simoldes Plásticos (**Simoldes**); Tecidos Plastificados e Outros Revestimentos para a Indústria Automóvel (**TMG**); WeDo Technologies (**WeDo**); and 2 affiliated members - Centro de Computação Gráfica (**CCG**) and Pólo de Inovação em Engenharia de Polímeros (**PIEP**).

The DTx activities are carried out at its three sites: at UMinho, headquartered at Azurém Campus (Guimarães), and in Matosinhos and Évora.

Mission and vision

The DTx mission is to develop innovative solutions for digital transformation, fostered by knowledge and creativity, and to meet the needs of its associates and society by creating economic and social value, including qualified employment.

The vision behind the activity of this CoLab is to become a reference partner for its associates and a European player in the field of innovation in digital transformation, through knowledge, expertise, quality and passion for the development of cyberphysical systems and other solutions.

Some figures

In 2018, DTx developed its first initiatives: it launched 4 prospective projects (projects in key areas, involving all the partners under an open innovation approach), 12 specific projects (to meet the objectives of a group of partners, under intellectual property protection) and submitted several applications to national and European programmes with different partnerships.

The recruitment of a high-skilled workforce took place as planned, reaching 50 staff members in 2020.

web www.dtx-colab.pt



Strategy

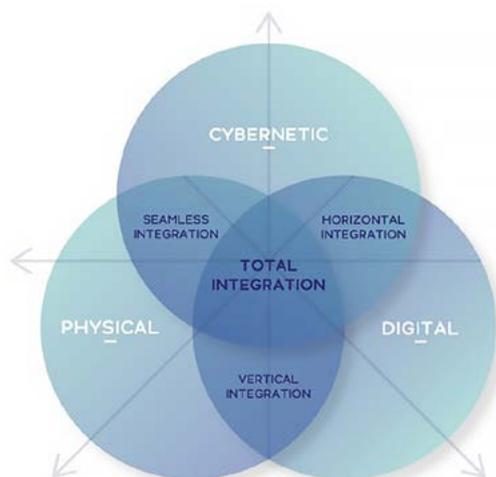
DTx works on the intersection of physical, digital and cybernetic domains to create the next generation of advanced cyber-physical systems that are capable of blurring the boundaries between the real and the virtual world, as schematically presented in the figure.

Vertical integration (digital axis) is the intersection between the physical and digital fields, representing the interconnection of material things with the internet, and requires the smart articulation and the scanning of business units.

Horizontal integration (cybernetic axis) is the intersection between the digital and the cybernetic fields, representing the systems interconnection in value chains. The horizontal integration between the organisations is important for creating added value, enriching the product life cycle with an efficient information system, financial management and logistics.

Horizontal and vertical integration allows data sharing in real time, higher productivity in the allocation of resources, more functional business units and accurate planning.

The seamless integration (physical axis) is the intersection between the cybernetic and the physical domains, representing the interconnection of the virtual twins (digital twins) with material things.



Main R&D activities

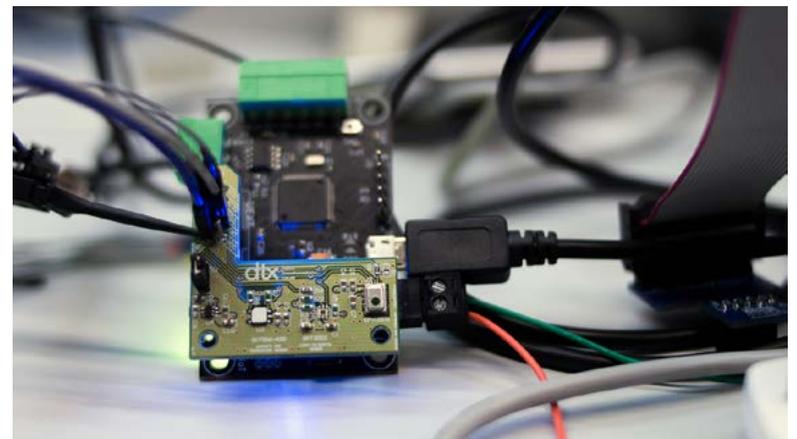
New holistic approaches to cyber-physical systems (CPS) to create, study and implement new methods for the conception and development of CPS that are capable of integrating transdisciplinary perspectives (engineering of systems thinking), combined with creative thinking (design thinking), complexity and multidisciplinary knowledge, in the promotion of open innovation and its sustainability in the creation of products, services and interfaces in cyber-physical technologies.

New methods of assessing the creation of value, involving multidimensional approaches (economic, environmental, social ...) to assess the value for the different stakeholders involved in the production and use of cyber-physical systems.

Assessing the economic, social and legal impacts arising from the digital transformation processes in the industrial and organisational fields.

Digital ecology efficiency, including the assessment of the behaviours and organisational cultures enabled by CPS, distinguishing individual, organisational and inter-organisational levels.

Promoting the cooperation between academy and industry through the research applied to processes of digital transformation of industry and society.





www.ace



The UMinho's mission is to create, spread and apply knowledge, with free thinking and pluralism as its core values. Our goals are to promote higher education and to contribute to shaping a model of society based on humanistic principles, in which knowledge, creativity and innovation contribute towards growth, sustainable development, well-being and solidarity.

Interaction with society and the valorisation and transfer of knowledge, the so-called third mission, is today central to the activity of universities and the promotion of social, cultural and economic development. This is carried out by exchanging and enhancing scientific and technological knowledge through the development of suitable solutions, community service projects and continuous training and development support, on the basis of reciprocal enhancement and the promotion of entrepreneurship.

Since its foundation, UMinho has developed its holdings in private law entities - the interface institutions (or participating entities) -, which typically take the form of private non-profit associations, cooperatives of limited liability public interest or foundations. The scope of activity of these interface institutions 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 2018, UMinho interface institutions were involved in more than 200 research projects, including more than 160 researchers and technical staff, which together totalled more than 14 million euros.

UMinho's participation in those entities is distinguished by the scope of its activities and also by the depth of its links with UMinho's organic units, namely with respect to the number of projects and their size, as well as the number of researchers who participate in them. The importance of strategic affiliates for the fulfilment of UMinho's mission is reflected in the holding of significant percentages in the entities' equity funds, and in the active participation in their governing bodies, namely at the management level.

Innovation and the economic valuing of knowledge, in the form of partnerships with municipalities and governmental agencies, business associations and enterprises, promoting a culture of entrepreneurship, are hallmarks of the UMinho. In fact, UMinho is recognized to be in a core place in the national research ecosystem, with the largest number of interactions with technological interface institutions.

As part of its policy of valorisation of knowledge, UMinho encourages the formation and growth of knowledge-based enterprises that aim to value the knowledge resulting from its scientific and technological research activities: UMinho Spin-offs. The UMinho Spin-off label represents the translation of knowledge generated within the University of Minho, through the exercise of an economic activity with high growth potential. It is granted primarily to projects linked to research units aimed at creating innovative enterprises able to value knowledge generated in the course of research, development and innovation activities conducted by the academic community.



CENTRE FOR COMPUTER GRAPHICS



Centro de Computação Gráfica

Investigação & Desenvolvimento Tecnológico
Research & Technological Development

CCG/ZGDV - Centre for Computer Graphics association (CCG) was founded in 1993 as a private and non-profit organization, and was established at the University of Minho in 2001.

CCG is qualified by the National Scientific and Technological System and is recognized by the Portuguese Government as a Technological Interface Centre for the digital economy, counting on the support of 2 Associate Constituents: University of Minho and FEHST S.A., as well as 21 members from the business and associative sector.

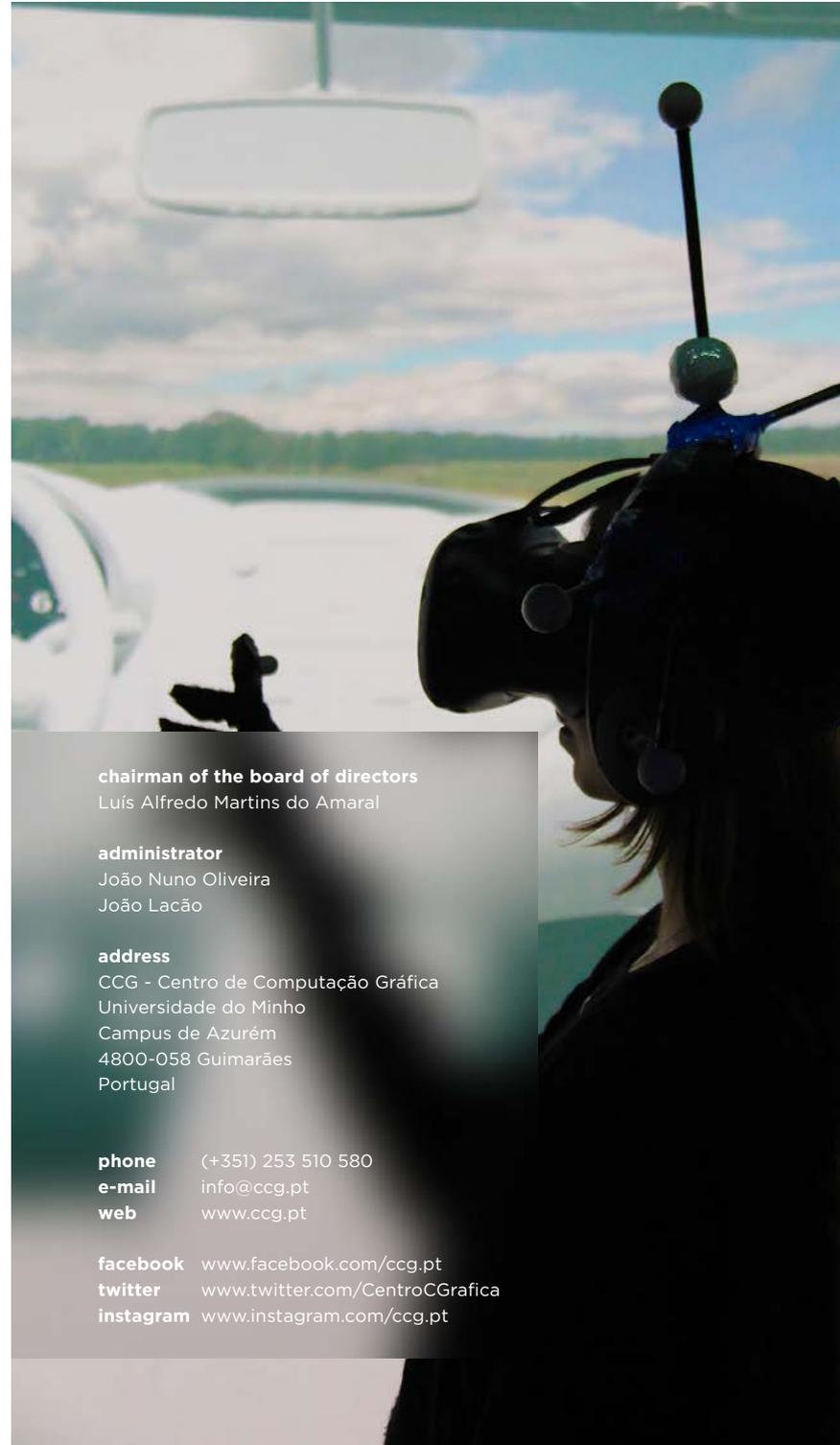
The strategic objectives of CCG are:

1. To promote “innovation” in the organisations and collaborate in its “endogenization”;
2. To adapt new “technologies” to the needs of organisations and their businesses;
3. To boost the competitiveness of companies, collaborating in the development of new products and services.

CCG’s intervention favours the “Demand Pull” approach, by focusing on R&D projects that address market demand. It has a proactive stance, identifying research challenges that can foster innovation and increase the competitiveness of end users (companies and entities). Additionally, it defines innovation goals and the lines of fundamental research that support state-of-art technologies.

CCG is organized into four Departments named as “Domains of Applied Research”, corresponding to operational units, each with its own multidisciplinary structure. Each unit is specialized in the scientific field in which it operates and in the value proposition of the technologies it develops. CCG’s Domains of Applied Research have several projects in their corresponding areas, collaborating closely with the ALGORITMI Centre of University of Minho, namely with the engageLab, SEMAG, IDS, EHF and Ubicomp Groups.

CCG acts on a national and international level, autonomously or collaboratively, positioning itself as an interface between the sources of knowledge (Universities) and the economy (Companies), based on strategic partnerships - via projects and services - with the transfer of knowledge and technology at its core.



chairman of the board of directors

Luís Alfredo Martins do Amaral

administrator

João Nuno Oliveira
João Lação

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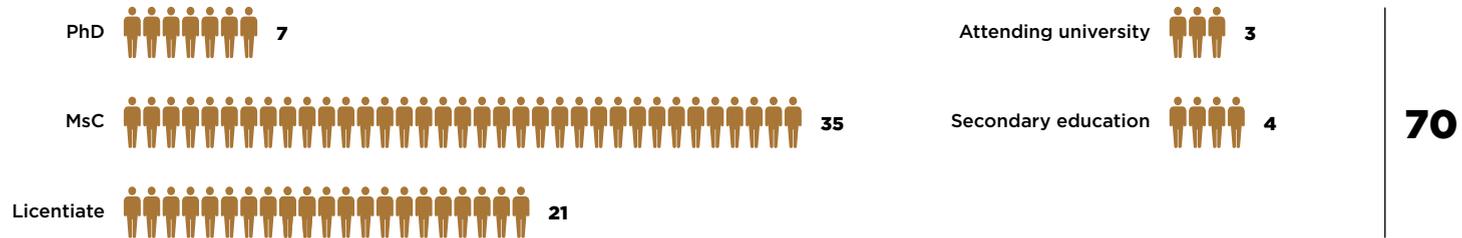
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HUMAN RESOURCES



DEPARTMENTS (D) / AREAS OF INTERVENTION (A)

R&D+i Department - CVIG: Computer Vision, Interaction and Graphics

CVIG's department develops R&D+i activities on the following areas: Pattern detection, recognition and tracking • Artificial intelligence • Electronic surveillance • Medical Image Analysis • Industrial Applications (metrology, defect detection, etc.) • REMote assistance and remote collaboration with mixed/augmented reality. • Virtual assistants (avatars) • Extended Reality (Augmented/Mixed/Virtual) • Visual analytics • Gamification.

R&D+i Department - EPMQ: IT Engineering Process Maturity and Quality

EPMQ's department develops R&D+i activities on the following areas: • Information Systems Engineering • Software Process • Prototyping and Producing Software and Services • Project Management of Information Systems • Software Systems Architectures • Cloud Computing • Edge Computing • Fog Computing • Internet of Things (IoT) • Blockchain • Service-Oriented Architecture • Data Architecture • SQL and NoSQL databases • Data Warehousing • Big Data • Open Data • Decision Support Systems • BusinessAnalytics • Data Mining • Artificial Intelligence • Machine Learning.

R&D+i Department - PIU: Perception, Interaction and Usability

PIU's department develops R&D+i activities on the following areas: • Human factors and road safety • Usability • Human-computer interaction • Visual perception and auditory perception • Intermodal processes (visual, audio, haptic, proprioception) • Virtual reality and immersive systems • Binaural sound and auralization models • Biological movement • Serious games • Market services.

R&D+i Department - UMC: Urban and Mobile Computing

UMC's department develops R&D+i activities on the following areas: • Data collection and merging • E-Ticketing • Urban intelligence • Sensor systems and network • Sustainable and intelligent mobility • Mobile and vehicle network communications • Smart parking • Public displays • Behavioral fingerprinting • Cooperative ITS • Real-time location systems (RTLS) - indoors & outdoors • Place learning • Knowledge discovery in geographical data.

Infrastructures Department

CCG's Infrastructures Department focus on administration and management of essential operational elements to effectively, efficiently, and proactively use technology, information, and data. These elements include the computers, servers, networking, data, storage, physical and virtual facilities as well as software, processes, policies, security, mobile and virtual functionality, and cloud-based services that make up the IT infrastructure.

Marketing and Communication Department

CCG's Marketing and Communication Department focus on the planning, implementation, coordination and monitoring of strategic actions, which promotes the image and the institutional notoriety. The main activities include MKT and Communication Plan; institutional channels and social media networks; branding and design; online and offline contents; press office; events; reporting and clipping of the communication portfolio.

Internationalization Department

Its main mission is to support implementation of the CCG's international strategy, promoting activities such as: RProject applications in International Consortiums (H2020,...); participation and interaction in international networks of R&D centres (GraphicsMedia.Net,...); participation in the activities of ETPs supported by the EC (NESSI, NEM,...); monitoring tenders and service opportunities outside Portugal; contributions to international standardization boards (ISO,...).

Administrative & Financial Department

CCG's Administrative and Financial Department includes the following areas: accounting, treasury management, and planning, management control, human resources management, project financial management, administrative and financial support for applications to project funding, insurance management, banks, leasing and renting and support for the organisation of events.

RESEARCH PROJECTS

18

Total number of on-going projects

3 512 070 €

Total funding



KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

International meetings organisation

1

MAJOR ACHIEVEMENTS

Flagship Projects

5G-MOBIX

5G for cooperative & connected automated MOBility on X-border corridors



The project aims to validate 5G technologies for CCAM use-cases, in seven different European and Asian trial sites, including a Portugal-Spain Corridor connecting the cities of Porto and Vigo: covers the complete value chain including car manufactures, telecom companies, public administrations and research institutions.

CHIC

Cooperative Holistic view on Internet and Content



The project aims to develop new processes, products and services in the audiovisual and multimedia sectors. The CCG is involved in the development of algorithms and tools that allow defining the narrative in immersive content and in the investigation of spatial reference techniques to highlight points of interest in 360 environments.

HERITAGECARE

Monitoring and preventive conservation of the historical and cultural heritage



The project aims to implement an integrated and sustainable methodology for the preventive conservation and maintenance of the historical and cultural heritage built in Portugal, Spain, and France. The CCG contributes to the development of mobile applications, immersive reality tools and the development of a system information.

Prizes, Awards, Nominations

Healthy Ageing Tomorrow: Hackathon



The Hackathon was dedicated to the theme of active aging. CCG's team won this prize with the "Dona Fátima" project: a personal assistant who supports the senior citizen in order to promote autonomy and mitigate isolation scenarios. This project was selected taking into account the technical quality, viability, creativity, innovation, and execution.

Governance

Portuguese Delegate Expert at ISO TC22 SC39 - Ergonomics in Road Vehicles



By Indication of the IPQ, CCG is the Portuguese member in the subcommittee of Ergonomics in Road Vehicles for the International Standardization Organisation (ISO). CCG contributes with its know-how to the definition of international standards applicable to everyday life regarding automotive ergonomics and autonomous driving.

CENTRE FOR INNOVATION IN POLYMER ENGINEERING



PIEP is a private non-profit R&D organisation providing consultancy in materials, product development, processing technologies and testing for the polymer industry and related sectors worldwide.

Established in 2001 by the leading national plastic companies, UMinho and national government through IAPMEI, PIEP has a wide range of associated members. Based in Guimarães and strategically located in UMinho Campus, close to Polymer Engineering Department (DEP), PIEP employs over 30 people with relevant academic and R&D experience background in a wide range of materials and engineering domains.

Its 3,0002 meter state-of-the-art facilities (6.5 million Euros investment from private and public sector) provides capabilities for polymer characterisation and testing, thermoplastic and thermoset materials development and processing and advanced computational modelling tools for product and process design and engineering.

Commitment to industry: PIEP, in cooperation with the academic staff from DEP, provides R&D with up to date scientific knowledge, ensuring the best and innovative problem-solving approaches to industry's innovation challenges and needs.

Our mission: To be a Polymer Engineering Innovation Centre, with a national and international scope that efficiently formalizes the link between the industry and the University, capable of responding, on time, to R&D companies' needs, supporting industrial innovation activities and convert ideas into products.

Our Vision: To be a reference partner in applied R&D+I for the polymers and composites industry at the national and international level, promoting the materialisation of new ideas and concepts that serve as a basis for sustainable economic development and industrial competitiveness.

Relevant skills/experience: With its core knowledge based on materials - engineering - processing technologies - testing, PIEP is actively engaged to develop new projects and services, bringing together a set of integrated capabilities to serve the fundamental purpose of its existence: to support national and international industry in the fields of materials, engineering, technologies and tests applied to polymers, composites, products, and systems.



president of administration board

João Cortez

assistant managing director

Carlos Jorge Marques Ribeiro

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HUMAN RESOURCES



30

DEPARTMENTS (D) / AREAS OF INTERVENTION (A)

Testing Technical Area	The testing area and services ensure the quality of materials, products, and processes of the plastic industry. Combining different analysis techniques, PIEP can identify unknown materials, verify specification compliance, prepare technical datasheets, and determine the causes of failures for materials and products.
Engineering Technical Area	The engineering area supports companies in developing innovative products and processes. Using over 80 years of accumulated experience from several experienced people based on design and virtual simulation knowledge and competences, experimental testing, and advanced computational tools, engineering technical area can participate in all phases of the research and development process, converting ideas into successful products.
Injection Moulding Technical Area	The injection moulding area is based on a strong academic & industrial innovation activity, which contributes to strengthening the competitiveness of the plastics & mould industry and foster an R&D culture by providing the professional experience, process computing simulation, physical infrastructure, and technical information.
Extrusion Technical Area	The extrusion area is composed of a scientific-technological team that is based on a group of talented people with expertise in chemistry, polymer, and materials engineering, and that establishes solid support for the industry in the development of new high-performance thermoplastic based-materials using extrusion compounding.
Composites Technical Area	The composites area is based on several installed capabilities and specialised Human Resources with a strong focus for R&D projects and the production of composites parts and products. The existing manufacturing processes (vacuum infusion, filament winding, resin transfer moulding, pre-preg (OOA), forming) are the support to all the developed activity, that is focused on aeronautics, aerospace, and defense, naval and civil construction sectors.
Circular Economy Technical Area	The circular economy area works in partnership with companies to promote a change in the way they design products, think the manufacturing processes, and apply recycling methodologies, being capable also to transform waste into quality secondary raw materials. PIEP is committed to the transition of plastics to a circular economy, with expertise in Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) to evaluate different aspects of sustainability (from CO ₂ emissions and material use to health and economic feasibility).

6

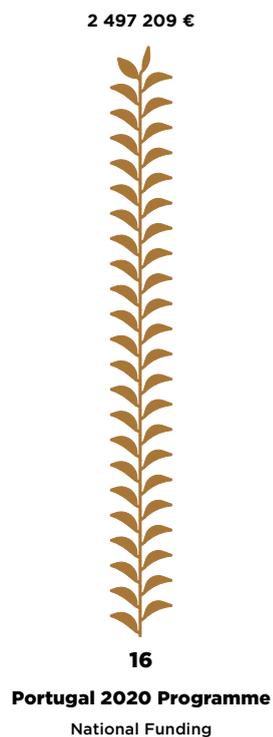
RESEARCH PROJECTS

16

Total number of on-going projects

2 497 209 €

Total funding



KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

International meetings organisation

4

National patents

1

Granted

MAJOR ACHIEVEMENTS

Scientific Recognition

VALORNATURE

Centre of Excellence in sustainable materials



The project aims to increase the level of cooperation in R&D between the different actors in the region, through the creation of an Innovation Ecosystem, which involves carrying out joint R&D activities and promoting technology transfer processes, in order to increase the scientific production capacity in the region.

MOBFOOD

Mobilizing scientific and technological knowledge in response to the challenges of the agri-food market



The project meets the challenges related to the promotion of a more competitive national food industry. It includes the promotion of new growth strategies based on the strengthening of technological capacity, R&D&I oriented to obtain new products, services and technologies, working along the entire value chain.

Governance

Member of the Fiscal Council of AED Portugal (substitute PEMAS)



As member of the AED's Fiscal Council, PIEP is part of a corporate body independent from the Cluster management and external auditors. The main responsibility is to supervise Management activities and analyze the Cluster's financial statements, reporting their findings to the associates.

CENTRE FOR WASTE VALORISATION



CVR is a private, non-profit association, created in 2002, whose founding members are: Minho Industrial Association, Portuguese Foundry Association, TecMinho and UMinho. UMinho is the main shareholder of CVR within its 83 associates with 56% of the share. CVR has associates from several different fields of activity, namely: waste managers, public entities, institutions of the scientific and technological national system and companies from the foundry, metalworking, ceramics, paper and agri-food industries. CVR is a technological interface that bonds Knowledge and Market through applied research and technological development in fields related to waste incorporation in civil construction, recovery of metals from waste, biological treatment processes, waste-to-energy processes, material recovery from animal by-products, biofuels production and life cycle assessment. CVR has its own headquarters (2000m² of laboratorial area) located in the Campus of Azurém of UMinho. CVR has organised, since 2011, the International Conference “Wastes: Solutions, Treatments and Opportunities” which in its 4th Edition gathered 218 participants from 22 countries. The 4th Edition of the conference took place in September 2017, in Porto. CVR has developed its business in the area of technology transfer and applied research at a local, regional and international level, throughout the participation in several projects and partnerships around the globe. CVR is honoured to be founding member of the Clusters SMART WASTE PORTUGAL and CENTROHABITAT. The Centre obtained recognition of Public Utility by Dispatch N. 9161/2017, of October 18, 2017, signed by the Portuguese Minister of the Presidency and of the Administrative Modernization and recognition as Interface Centre by Dispatch N. 10252/2017, of November 24, 2017, signed by the Portuguese Minister of the Economy.



chairman

Maria Cândida Lobo Guerra Vilarinho

executive director

Jorge Manuel Marques Granja de Araújo

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HUMAN RESOURCES

PhD  2

University degree  6

Technical staff  4

MsC  9

Bachelor degree  1

22

DEPARTMENTS (D) / AREAS OF INTERVENTION (A)

D1 - LCR Waste Characterization Laboratory

The LCR is an internationally accredited laboratory according to NP EN ISO/ IEC 17025 and has a highly qualified team, with technical quality and adequate academic and professional training in order to provide waste, sludge, soil, effluent or water characterization services to its customers.

D2 - LEG-LAR Laboratory of Gaseous Emissions and Noise Assessment

The LEG-LAR is an internationally accredited laboratory according to NP EN ISO/IEC 17025 and has a highly qualified team with technical quality and adequate academic and professional training in order to provide value-added services to its customers. In order to improve air quality, LEG-LAR - Laboratory of Gaseous Emissions and Noise Assessment provides services in the characterization of gaseous effluents in fixed industrial sources from all types of industry (ceramics, metallurgical, textile, automotive industry and workshops, among others), in view of the legislation in force (DL 78/2004). The service provided offers the guarantee of technical and human means with quality, using the appropriate and properly calibrated equipment, as well as portuguese and European reference standards.

D3 - LMG Materials and Geotechnical Laboratory

The LMG provides services for the characterization of civil construction materials, geotechnical studies and geotechnic-related activities. For this it has a specialized technical team with extensive experience in the construction business.

D4 - IDT Research and Technology Development Department

The IDT - Research and Technology Development Department promotes and implements research and development projects, exploring potential in the development of innovative methodologies for valuing waste and evaluating its potential for transferability. For each specific situation, specific waste management options are assessed from an environmental, technical and economic point of view in order to always respect the principle that wastes are resources. The wide dissemination of the results obtained, through the publication of scientific articles in national/international arbitration journals and the creation of scientific quality debate spaces, in the format of workshops and/or conferences, should enable the transfer of knowledge between all potential users with corporate and environmental responsibility from the various sectors of activity.

It should be noted that several of the innovative solutions and options developed in the scope of the CVR research and development area have led to the design, design and construction of prototypes, pilot facilities and equipment for validation of technological solutions and proposed treatment operational cycles, also allowing the definition and execution of layout projects of facilities for the implementation of technologies developed at the industrial scale.

D5 - DCA Commercial and Administrative Department

The Commercial and Administrative Department coordinates the administrative, financial and commercial activities of CVR. Aligns the commercial and trading guidelines with the management of proposals.

D6 - DGP Project Management Department

The Project Management Department monitors and controls the administrative and financial execution of financed projects in the various areas of activity of the CVR, ensuring the achievement of the defined objectives.

D7 - DI Image Department

The Image Department establishes, together with the Executive Board, the communication policy of the CVR, ensuring the increase in the visibility of the institutional image of the Centre.

7

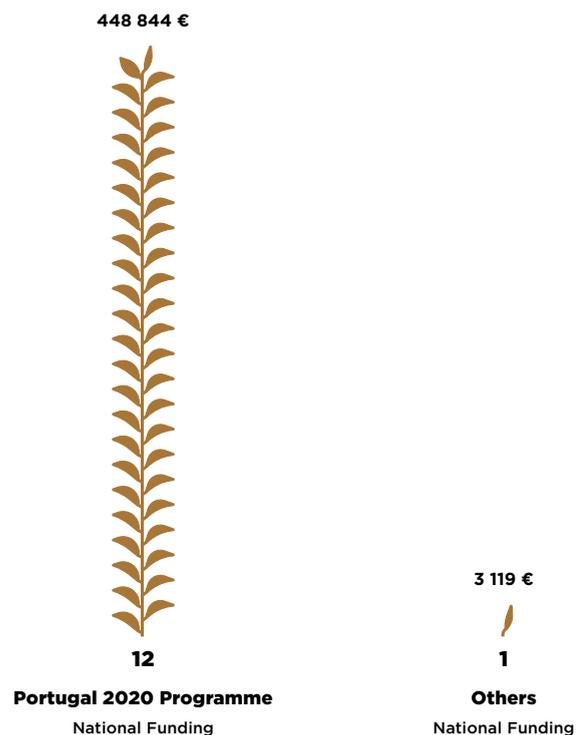
RESEARCH PROJECTS

13

Total number of on-going projects

451 963 €

Total funding



KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

International meetings
organisation

1

MAJOR ACHIEVEMENTS

Flagship Projects

ECOPROLIVE

Ecofriendly PROcessing System for the full exploitation of the OLIVE health potential in products of added value



Ecoprolive focuses on the development of an innovative processing for the full exploitation of high valuable constituents in the olive into novel products that are healthy and greener. The proposed innovative process is very different from the current approaches of olive oil industrial production, following a "zero waste" approach.

MOVBIO

Mobilization of pruning biomass for energetic valorization



The project aims at the energetic valorization of biomass resulting from pruning activities on the Portuguese-Spanish border and which is not currently used in a systematic way. Specifically, it focusses on the theoretical and experimental analysis of the possibilities of valuing the pruning biomass for energy production, especially in industries of the tertiary sector.

FIBRENAMICS GREEN

Platform for the development of innovative waste-based products



The project is a platform for the development of innovative products based on industrial waste, promoting its upcycling in various areas through the incorporation of design and engineering. The activities aim to create a technological product development network.

Prizes, Awards, Nominations

Fibrenamics Green Special Mention at the European Enterprise Promotion Awards 2018



The Fibrenamics Green project was awarded a Special Mention at the European Enterprise Promotion Awards 2018, in the Supporting the Development of Green Markets and Resource Efficiency Category, rewarding those who promote entrepreneurship and small business at the national, regional and local level.

Governance

Member of the Board of Directors of AEdoAve - Agência de Energia do Ave (Energy Agency of the Ave Region).



The agency's purpose is to contribute to energy efficiency, the rational use of energy and the use of endogenous, renewable and non-polluting natural resources. The Agency contributes to sustainable development, allowing solutions with less environmental impact, introducing concepts of energy and environmental efficiency.

CLINIC ACADEMIC CENTRE - BRAGA, ASSOCIATION



The Clinic Academic Centre - Braga, Association (2CA-Braga), is a non-profit partnership, between UMinho, through the School of Medicine (EM) and the Life and Health Sciences Research Institute (ICVS) and the José de Mello Saúde Group, represented by Hospitals of Braga and CUF-Porto.

The proximity and complementarity of partners allows an integration of the different services, skills and researchers, promoting to the 2CA-Braga an ideal environment to development clinical and translation research activities. The partner Hospital of Braga supports the 2CA-Braga in services as Imaging, Pharmacy, Clinical Pathology, Pathologic Anatomy and Nuclear Medicine. On the other hand, the EM/ICVS supports the research team in statistical analysis, methodologies and data management, as well as information and technology services.

The 2CA-BRAGA has a unique and privileged position for combining clinical research with clinical practice, maximizing the development of innovative biomaterials, diagnostic strategies, regenerative approaches and therapeutic products.

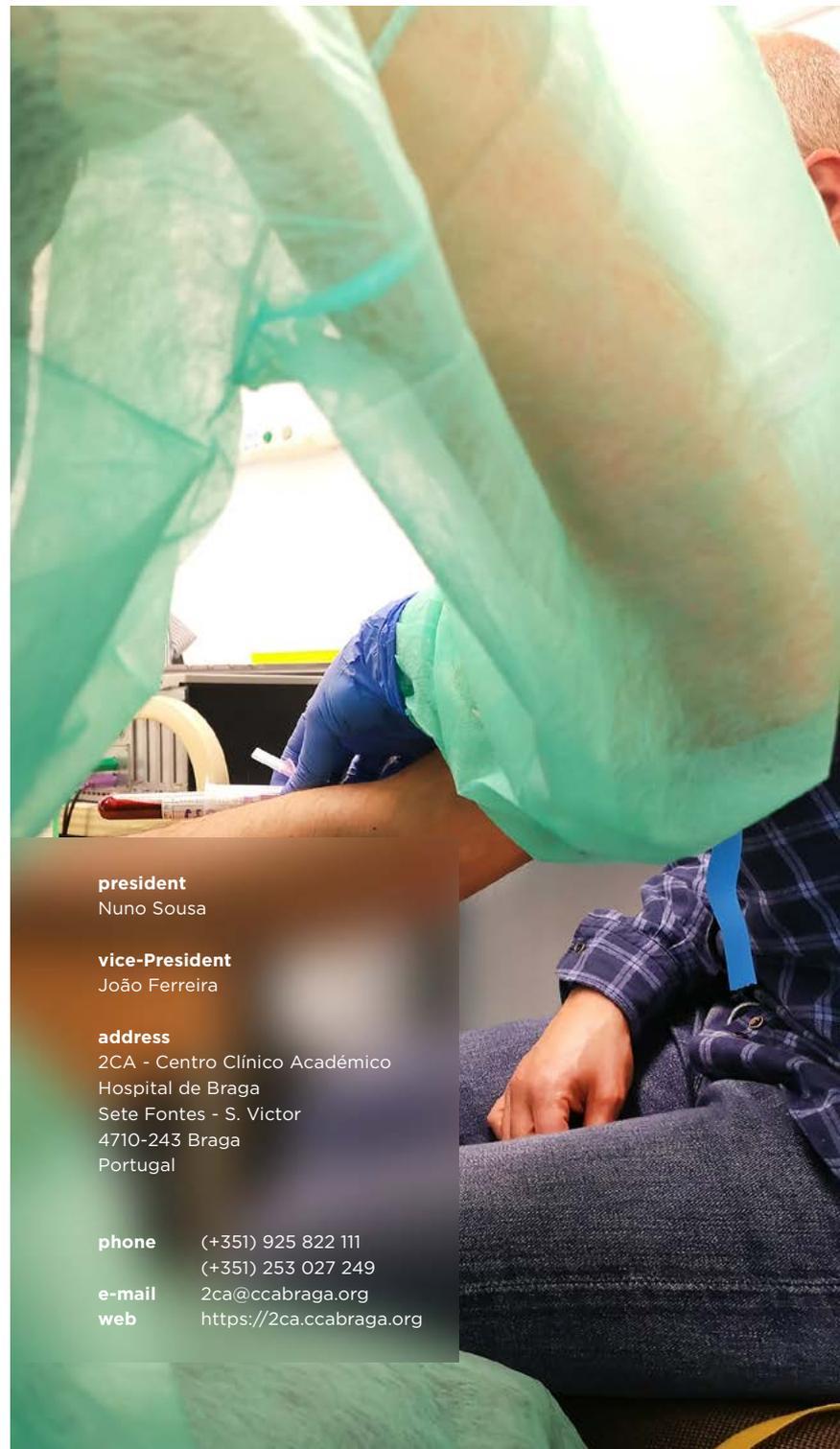
The 2CA-Braga mission is focused on clinical research, clinical care, education and training of research teams with the following objectives:

1. Implementation of an independent structure which develops a clinical and translational research of excellence;
2. Creation of a structure that enables joint participation in projects/studies and development of innovative solutions;
3. Promoting the development of clinic research in Portugal, in city of Braga and the Minho region.

The 2CA-Braga has adequate infrastructure in terms of functionality and adjustment to the activity of providing health care and the procedures associated with the different projects in Commercial or Investigator-Driven Studies.

The infrastructure has dedicated areas for the management of the Clinical Research Unit, areas to support the participants in clinical studies and technical areas, specifically:

1. Management area (Provisioning Room; Equipment's Room; Collection and Processing Sample Room; Archive Room and Coordination Room);
2. Supporting area for the participants (Reception and Waiting Room and Refectory);
3. Technical areas (Medical Offices; Day Hospital Room; Nurse Room and Pharmacist Room).



president
Nuno Sousa

vice-President
João Ferreira

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HUMAN RESOURCES

Medical Executive Director, PhD  1

Clinical Research Manager  1

Financial Coordinator  1

Clinical Study Coordinators  5

Clinical Study Nurses  2

Clinical Study Assistant  1

Clinical Study Pharmacist  2

Clinical Study Psychologist, PhD  1

Imaging Technician  1

15

RESEARCH PROJECTS

120

Total number of on-going projects

2 455 432 €

Total funding

1 160 746 €



1

Portugal 2020 Programme
National Funding

167 786 €



1

European
International Funding

1 126 900 €



118

International and National
International Clinical Trials
(Pharmaceutical Industry)

LANDSCAPE LABORATORY



The Landscape Laboratory is located at the Creixomil meadow, in a sensitive area of high landscape value. The creation of the Guimarães Landscape Laboratory aimed to strengthen the component of environmental education and awareness, particularly directed at research and development.

The institution acts on a multidisciplinary basis, bringing together different areas of research and development - Nature and Biodiversity, Landscape and Territory, Water Resources, Urban Environment and Circular Economy - which, with separate languages, seek to add value to the scientific projects and interventions made in this territory.

Guimarães Landscape Laboratory looks to address challenges posed by civil society by reflecting on them and finding innovative solutions, contributing to the improvement of the populations' quality of life.

For this purpose, the Landscape Laboratory also sought to bind together the local authority's territory management experience and the knowledge provided by universities, through a strong coordination with UMinho and also the University of Trás-os-Montes and Alto Douro.

This is an innovative concept that aims to reinforce the importance for municipalities of investing in research, development and innovation, creating solutions that can make our cities increasingly adapted to the demands of the future, putting knowledge and research at the service of sustainability and environment.

Since 2014, several projects have been developed with a common focus - sustainable development. The protection and preservation of biodiversity and natural heritage and also the improvement of water resources and urban environment and the promotion of circular economy are the main challenges facing the Landscape Laboratory.

Recognizing the importance of citizen engagement and commitment, the Landscape Laboratory also takes on Environmental Education as one of its strongest pillars, namely through a municipal environmental education program and awareness-raising activities.



president

Alice Sofia de Freitas Soares Ferreira Fernandes

vice-presidents

Paulo Jorge de Sousa Cruz
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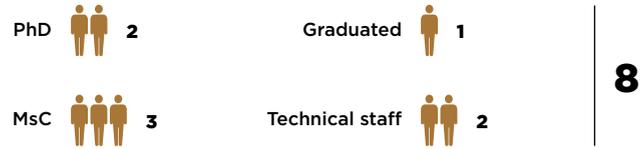
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HUMAN RESOURCES



DEPARTMENTS (D) / AREAS OF INTERVENTION (A)

R&D / Nature and Biodiversity	Protection and promotion of biodiversity and natural heritage. Assess and mitigate the impacts of anthropogenic activities on ecosystems.
R&D / Water Resources	Management of water resources, by monitoring and characterization of water lines, finding solutions to improve quality of the rivers and ecological restoration.
R&D / Landscape and Territory	Integration of the landscape in the territorial policies and in the daily life of the communities through territorial identity, community participation, territorial planning and management policies.
R&D / Urban Environment and Circular Economy	Development of innovative solutions to answer to the main challenges of the urban environment, such as climate change and urban waste. Promotion of the waste valorization through circular economy projects.
Education for Sustainability	Promotion of environmental education activities that seek to underline the importance of preserving nature and its resources and also the development of sustainable communities. Development of a municipal environmental education program dedicated to promote active environmental citizenship.

5

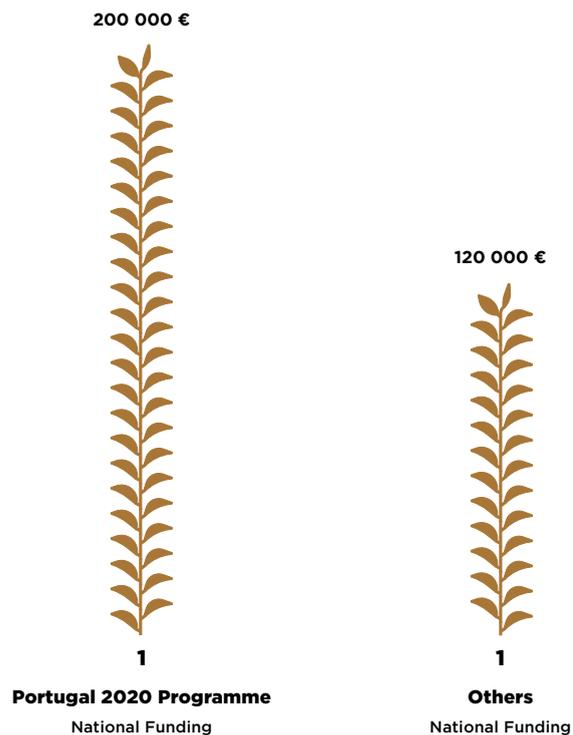
RESEARCH PROJECTS

2

Total number of on-going projects

320 000 €

Total funding



KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

International meetings
organisation

2

MAJOR ACHIEVEMENTS

Flagship Projects

RISKAQUASOIL

Atlantic Soil and Water Risk Management Plan



RiskAquaSoil is an Interreg Atlantic project which aims to develop a comprehensive management plan for risks in soil and in water to improve the resilience of the Atlantic rural areas. Through transnational cooperation, the Project partners will fight the adverse effects of climate change, especially on agricultural lands.

P2GREEN

Protection and Promotion of Biodiversity



Acknowledging the importance of biodiversity and its ecosystem services and that nearly 200 species covered by the Habitats Directive are related to urban ecosystems, Guimarães has implemented a Biodiversity Protection and Promotion Plan, distinguished by the European URBACT program as an example of good practice.

AQUABIOSCAPE

Characterization and Monitoring of Water Courses



Multidisciplinary project focussing on the monitoring of water quality, interpretation of landscape and assessing the ecological quality of urban water lines. Recognizing the hydromorphological disturbances, this project aims to develop a unique and effective methodology, integrating R&D and Education for Sustainability.

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.

TecMinho has a team of 26 collaborators working in 3 main fields:

1. 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.
2. 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.
3. 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.

TecMinho's Intervention Strategy:

- Promotion of innovation and development of new technologies / products / processes and their transfer to businesses;
- Promotion of Continuous Training activities (including e-learning), as well as organisational development and transnational mobility of human resources;
- Support to the creation of enterprises, with emphasis on academic spin-offs.



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HUMAN RESOURCES



26

DEPARTMENTS (D) / AREAS OF INTERVENTION (A)

Technology Transfer
Commercialization of Science and Technology

Implementation of R&D and innovation projects involving researchers and companies to develop new products, processes and services. Commercialization of Science and Technology Support researchers and companies in the commercial exploitation of results of R&D activities carrying out technological audits to companies to identify innovation needs and opportunities.

Technology Transfer
Protection of Industrial Property

Supporting researchers and companies in defining strategies to protect R&D results and obtaining this protection through different types of industrial property.

Entrepreneurship

Support technology-based and intensive knowledge companies (start-ups and spin-offs) in the pre-launch and start-up phases.

Training
Continuous Training

Training for middle and upper management of companies, public administration and other entities in several areas of knowledge including design and implementation of training actions tailored to the needs of organisations; Individualized training to support problem solving and organisational and/or personal decision making and studies and research in education/training.

Training
Organisational & Professional Development

Support companies in processes of organisational change, combining technical and behavioural dimensions, in areas such as strategic, operational, human resources and information systems management; support students, recent graduates and professionals in the career management process.

Training
e-Learning

Support trainers, professors and companies in the design and implementation of online courses and e-learning solutions. Development of applications, pedagogies and technologies in e-learning, b-learning and m-learning. Development of innovative educational studies and projects using new and emerging technologies.

6

RESEARCH PROJECTS

37

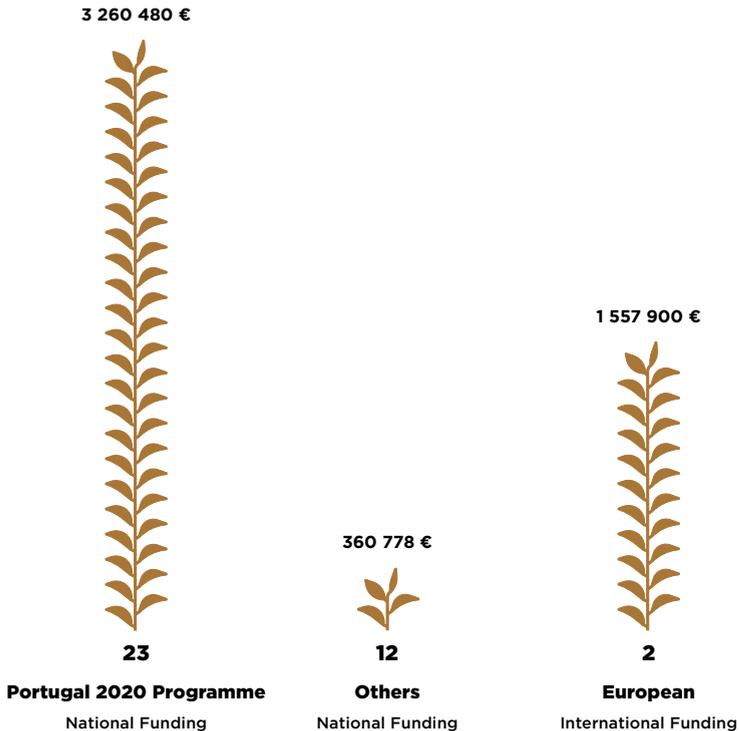
Total number of on-going projects

35 - National Funding

2 - International Funding

5 179 158 €

Total funding



KNOWLEDGE TRANSFER AND INTERACTION WITH SOCIETY

International meetings
organisation

4

National patents

28

24 Submitted
4 Granted

International patents

4

2 Submitted
2 Granted

Spin-offs and Start-ups
with UMinho label

8

4 Spin-offs
4 Start-ups

MAJOR ACHIEVEMENTS

Scientific Recognition

NOBEL

Mobilising the European nano-biomedical ecosystem



The Healthtech TAB is a high-level EC-powered service that operates within the framework of NOBEL, a joint effort to accelerate HealthTech development and provides the HealthTech community, both from industry and academia, with the right tools to bring their innovations to patients.

Prizes, Awards, Nominations

TecMinho's IdeaLab

Business Ideas Laboratory was honored with an honorable mention at the European Enterprise Promotion Awards national results presentation session



The European Enterprise Promotion Awards identify and recognise the most successful promoters of enterprise and entrepreneurship around Europe, showcase best entrepreneurship policies and practices, raise awareness of the added value of entrepreneurship and encourage and inspire potential entrepreneurs.

U.NORTE INOVA



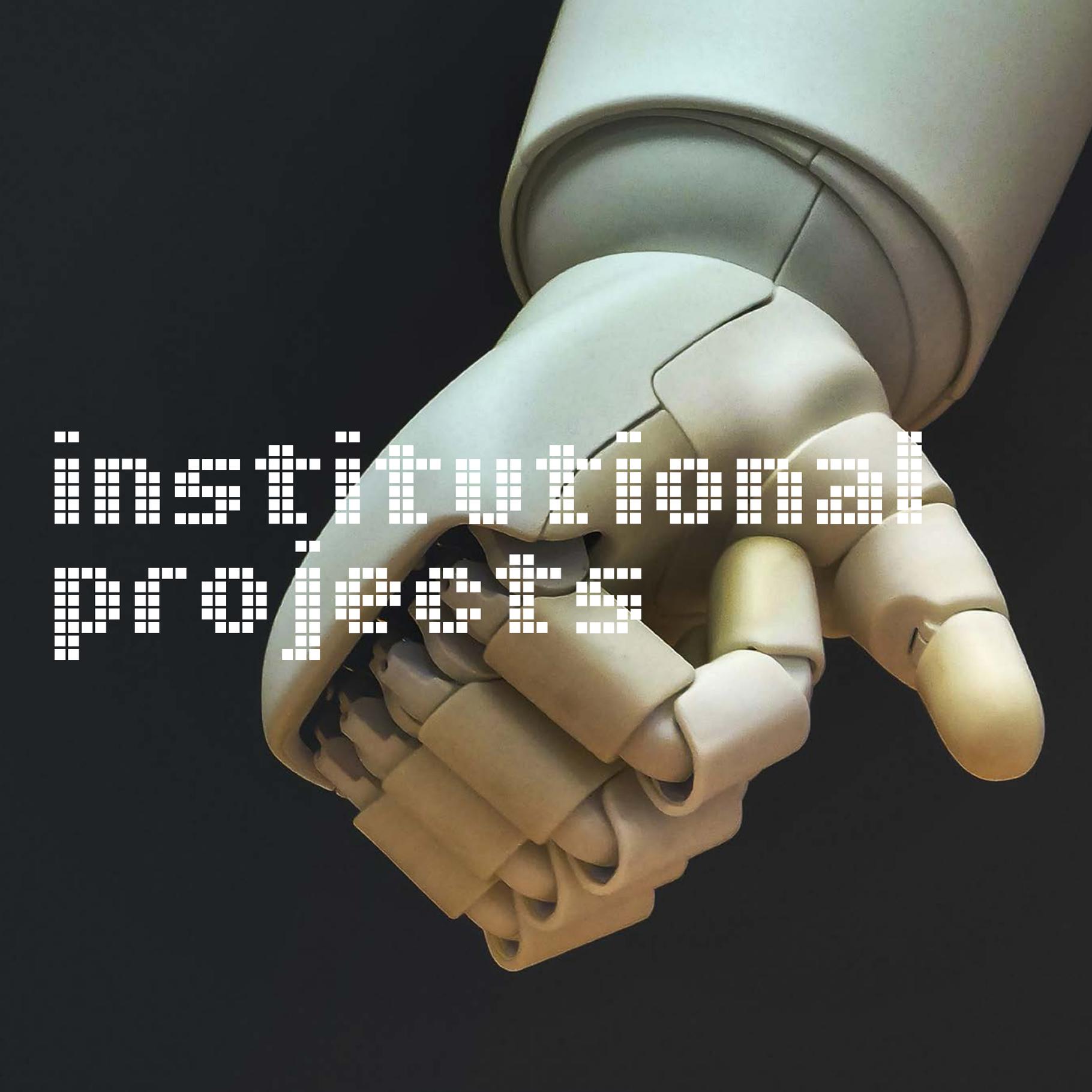
The project aims to support national companies in the systematic and sustained development of their innovation activities and to identify critical factors for the innovation process and acceleration of value creation, establishing a bridge for the R&D + i activities that have promoted in U.PORTO, UMinho / TecMinho and UTAD.

MINHO EXPORT

Project Minho Empower to Internationalization



Project with the mission of training micro, small and medium-sized companies in Minho and supporting the mobilization of efforts in the definition of internationalization strategies and approaches to foreign markets, reinforcing Minho's territorial competitiveness.

A close-up photograph of a white, articulated robotic hand. The hand is positioned with the index finger pointing towards the right. The background is a solid, dark color. Overlaid on the hand is a white, pixelated text graphic. The text is arranged in two lines: the top line reads "institutional" and the bottom line reads "protection". The font is a blocky, digital style where each character is composed of a grid of small squares.

institutional
protection



Ever since its origin, the University of Minho has assumed a particular and central role as a regional development driver, promoting tremendous interaction with society and companies. The European University Association (EUA) has referred to UMinho as being a European case study as far as its Research and Innovation Ecosystem is concerned, highlighting its model for interaction with the economy and with companies. In this respect we can state that this specific engagement has contributed, essentially, to the following dimensions:

- Innovation transfer to companies, based on science and technology, helping them overcome global challenges by introducing new knowledge, new competences, new technologies and, therefore, innovative solutions for both products and processes;
- Qualification and requalification/reorientation of the human resources of the regional ecosystem;
- Adaptation of technological infra-structures and productivity capacity and new equipment and technologies for the industrialization of products and processes;
- Definition of new intellectual property protection strategies through the international protection of intellectual assets;
- Promotion of new public policies or adaptation of existent public policies in order to organize both public and private stakeholders onto a sustainable and efficient path towards the internationalization of products and processes.

In this context, the institutional partnerships assume a particularly important role in developing projects that are inter and intra-disciplinary challenges for both the University and the external entities involved, proving their relevant contribution for the development of the region and the country.

For 2018, three institutional projects could be mentioned and are detailed in the following sections:

- UMinho/Bosch partnership – encompassing multiple areas for mutual collaboration: research and development and innovation projects; joint doctoral programmes; joint Laboratories; suppliers club initiative...
- Minho Advanced Computing Centre (MACC) – an institutional project for supercomputing in partnership with the Portuguese Foundation for Science and Technology (FCT); with a strong link with Texas Advanced Computing Centre (TACC); operating with the support of the companies REN and NOS; in collaboration with Barcelona Supercomputing Centre (BSC); with a collaboration agreement with Brazilain (LNCC, INPE and COPE) and Japanese (Rieken) supercomputing centres...
- QuantaLab – a partnership for quantum materials and quantum computing with International Nanotechnology Laboratory (INL). INESC TEC and Centre for Engineering and Development (CEiiA) also became members; member of the IBM Q Hub network; developing pioneer work with Bial and EDP...

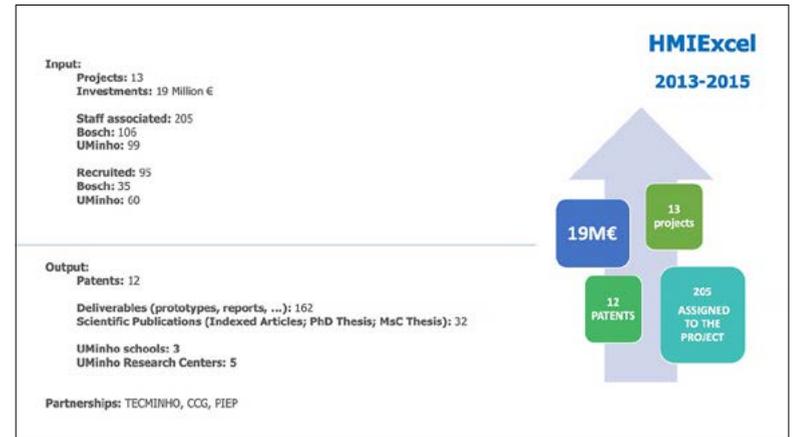
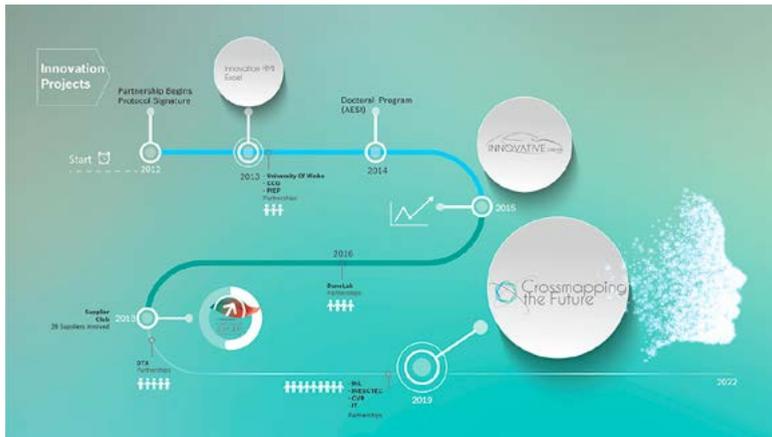
UMINHO/BOSCH PARTNERSHIP

In the context of the aforementioned institutional projects, a particular University/Company partnership has been evolving and is now a flagship achievement for UMinho in its interaction with companies, nationally and internationally recognized in the areas of research, development and innovation – the UMinho/Bosch Car Multimedia partnership. Through the years, this partnership has shown a tremendous impact on both institutions – UMinho and Bosch – and consequently on the region and the country.

In fact, in 2012, UMinho and Bosch Car Multimedia started a global partnership of research, technological development and innovation, with financial support from the European Union, which has already been considered a model of excellence in Europe.

The first phase was HMIExcel (Human Machine Interface Excellence), a research program around advanced multimedia solutions for automobiles in the man-machine relationship. With a total investment of 19 million euros and more than 150 highly qualified researchers and engineers from UMinho, all the proposed objectives were achieved, giving rise to the first patent applications of Bosch Car Multimedia Portugal.

As a result of this intense interaction, in 2014 an innovative Doctoral Program has emerged - the doctoral program in **Advanced Engineering Systems for Industry (AESI)**, promoted by UMinho in cooperation with Bosch Car Multimedia Portugal and co-funded by the Portuguese Government under the PD-F Program from the Portuguese Foundation for Science and Technology (FCT). It is specially targeted at preparing PhD students for an advanced engineering career in industry. The AESI doctoral program is devoted to training PhD students to work in industry with the role of leading innovation and technological development in advanced engineering systems for industrial organisations.



Following the success achieved with the HMIExcel Program, the R&D partnership between the University of Minho and Bosch Car Multimedia Portugal advanced in 2015 with a new program, called INNOVATIVE Car HMI, which involved 30 scientific research projects, around 300 qualified people from the University (both affiliated and new recruitment), and a global investment of 55 million euros.

The main objective of the INNOVATIVE Car HMI Program was to provide global solutions for instrumentation, information and entertainment on future car dashboards that would be incorporated into the world of connectivity and autonomous driving, according to the Driving Convenience vision. In fact, Innovative Car HMI has been divided into two projects – InnovCar and iFactory.



- **InnovCar** aimed to generate knowledge and technology in Portugal that would translate into worldwide innovations in the automotive solutions of the future, enhancing the path to “zero vision”. Thus, the work carried out contributed to the design and development of new products and technologies, such as: - vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P) communications systems; - sensors and detection systems; - HMI systems; - HUD; - embedded software and applications for smart vehicles; - Noise cancellation systems and noise-free mechanical components; - 100% plastic chassis, as well as for the design and development of tools and processes to support the development, production and quality control of these new products and technologies. The INNOVCAR project has aimed to be at the forefront of autonomous driving with research in 13 different areas, focusing on smart car development able to capture information about the surrounding world to make driving safer, more convenient and more comfortable through cameras, sensors and cutting edge technology.

- **iFactory** has generated scientific and technological advances that have translated into a set of processes, systems and tools that give a high level of flexibility and quality, combined with competitive costs, to the main operations related to the different phases of industrialization projects at Bosch factories. iFACTORY has positioned itself at the forefront of industry 4.0 and laid the foundation for new manufacturing concepts. The teams deploy into 15 research projects to develop improved methods within product manufacturing processes. In fact, iFactory research programme involves 15 subprojects where advanced manufacturing processes and systems were developed: modelling, simulation and forecasting methods and tools; new packaging solutions; novel techniques for the welding process; manufacturing management strategies, etc.

This partnership UMinho/Bosch is also relevant as far as some of the Interface Units of the University are concerned - in fact, the Centre for Computer Graphics (CCG), the Innovation Centre for Innovation in Polymer Engineering (PIEP) and TecMinho - our private non-profit association for intellectual property management and entrepreneurship promotion - have all played important roles in the aforementioned research and innovation projects:

CCG - Centre for Computer Graphics

The Centre for Computer Graphics holds specialized scientific and technical knowledge in fields such as computer graphics; virtual reality and augmented visualization; development and management of information systems and technologies; perception, interaction and usability; urban and mobile computing. Additionally, CCG has a dedicated laboratory infrastructure equipped for usability, ergonomics and perception studies, including highprecision 3D user perception analysis systems, motion capture systems and visual activity monitors. With this type of scientific incidence, the HMIExcel project CCG contributed with scientific and technical expertise in the areas of human factors and / or human machine interface, focused on the design of driver-centric interfaces and the development of test or validation protocols for these interfaces. These specific tasks involved assembly and configuration of a testbed based on a driving simulator. With these developments, CCG has contributed to improving the process of developing new products based on innovative concepts of interaction.

In the Innovative Car HMI program, CCG has been a strategic partner in various fields such as the development and validation of human machine interface concepts, human resource training in software development process management, specification and infrastructure development for big data, and an industrialization project management processes and location systems for autonomous industrial vehicles.



PIEP - Centre for Innovation in Polymer Engineering

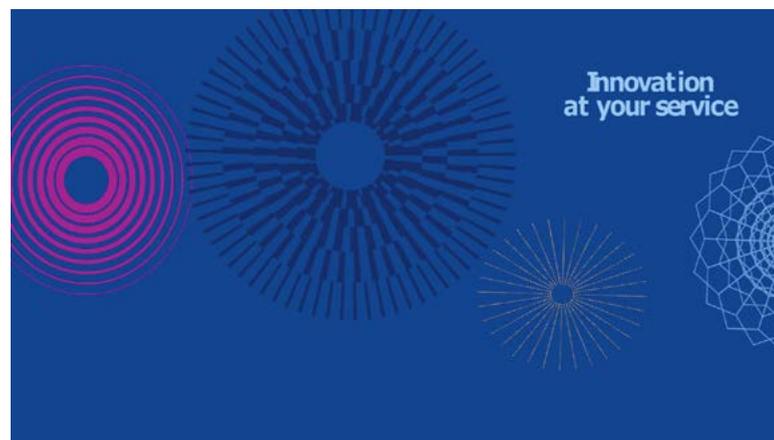
The numerous success stories that constitute PIEP's R&D portfolio are the result of the work developed in close articulation with the relevant industrial actors, affirming the institution's vocation to "Convert Ideas into Products". As a private R&D entity focused on the development of products and technologies in the field of polymer engineering, PIEP meets unique conditions in the national and international context. The installed technological capacity, combined with the human resources with high experience in industrial innovation projects, as well as the strong connection with the scientific environment, allows PIEP to position itself as a strategic partner in finding solutions to innovation and development challenges. PIEP's participation in the HMIEXCEL project was focused on the development and characterization of materials, product engineering and manufacturing technologies, reaching a good level of development maturity of a new car radio chassis. Under the Innovative Car HMI program, PIEP has continued to affirm this comprehensive strategic partnership, with cross-cutting contributions to the various development programs and their field of expertise, notably in terms of product development, associated materials and their functionality, as well as the adequacy of the technologies and manufacturing processes inherent in the various innovative systems to be developed.



TecMinho

Created in 1990 as an interface unit of UMinho, TecMinho is the entity responsible for protecting the industrial property of UMinho and enhancing the knowledge produced there. Since its inception, TecMinho has been working extensively to link the University to the business fabric in technology and innovation, particularly with a view to enhancing the knowledge produced in academia, increasing the competitiveness of companies and enhancing human resource competences in the region. In the HMIExcel project, TecMinho provided specialized technical assistance to the management of innovation and industrial property generated within the project, while providing specialized assistance to the business and industrial fabric in its areas of excellence: innovation support, industrial property and technology transfer. As part of the HMIEXCEL project, TecMinho evaluated the potential to protect the results and led the process of writing and submitting 15 new patent applications.

In the new Innovative Car HMI program, TecMinho has once again become a strategic partner, with key contributions in terms of innovation management, the protection of industrially protected results and the enhancement of project results, ensuring the effective transfer of industrial property rights held by UMinho and other interfaces for the corresponding exploitation by Bosch Car Multimedia.



Done Lab

Along with the life cycle of the INNOVATIVE Car HMI Program, DONE Lab was inaugurated on 28 November 2016 - a unique laboratory in Portugal for the advanced manufacturing of high precision 3D printing products and tools.

This partnership between UMinho and Bosch Car Multimedia encompasses three main areas: digital manufacturing; engineering design; and research and innovation. Such diversified fields of expertise enabled DONE Lab to become a supporter for industrial advancements and competitiveness in terms of organisation and productivity, accelerating the launch of new solutions for products, systems and tools.

Being a source of critical knowledge, innovation and excellence, DONE Lab potentiates a growth not only for research and development for science and industrial applications, but also for technology transfer and specialized training.



Bosch Suppliers Club

In 2018, Bosch Supplier Club partnership programme was structured to create an efficient, stable and sustainable Portuguese supply chain. The Programme is planned to establish long-term relationships between Bosch and a growing set of national suppliers, involving UMinho and other partners of the National Research & Innovation System in supporting supplier competences for continuous improvement and excellence necessary to the high standards required by Bosch in terms of quality, ethics and sustainability.

The Programme is structured in a set of programmatic actions aimed at training suppliers in the following strategic domains: research, development and innovation; human potential; productive capacity; industrial property and qualified entrepreneurship.

UMinho/BOSCH Partnership - Crossmapping the future

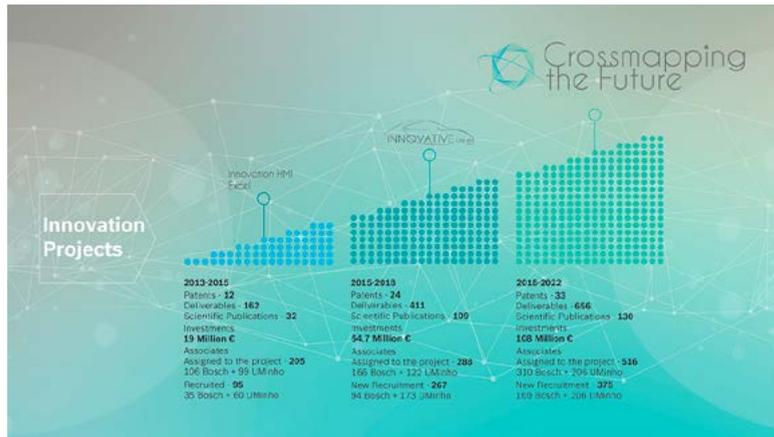
Bosch Car Multimedia Portugal, S.A. aims at reinforcing its position as a driver of knowledge and technology “made in Portugal” for the future of mobility.

The future is autonomous driving, a technology revolution that is underway promising to radically change mobility and quality of life worldwide. The goal of autonomous driving requires enabling cars with an increasing capacity of understanding and responding to its own state, the state of its occupants and its surroundings, automatically adjusting driving and information to different contexts.

The 3rd Phase of cooperation UMinho/Bosch has already started with 3 new submitted research and innovation projects: Sensible Car; Easy Ride and Factory of Future.

These 3 innovation projects, with a total proposed investment of around € 100M will probably generate 33 new patents, more than 650 deliverables and 130 technical and scientific publications.

These projects will also reinforce the R&D capacity of project partners, increasing youth employment through the hiring of more than 450 new associates for both Bosch and UMinho, fully dedicated to R&D activities. Moreover, more than 500 associates at Bosch and UMinho will be involved in this 3rd phase of UMinho/Bosch partnership. This is a start for Crossmapping the future of this partnership UMinho/Bosch Car Multimedia.



QUANTALAB

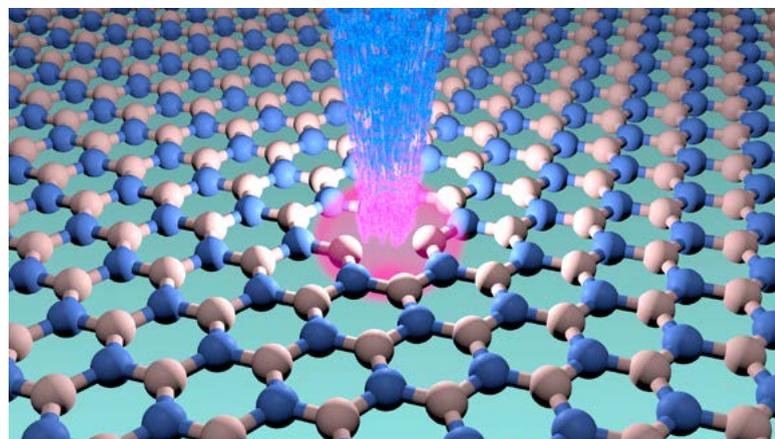
QuantaLab was founded in 2016 by UMinho and INL (International Nanotechnology Laboratory). In 2018, INESC TEC and CEiiA (Centre for Engineering and Development) also became members in the context of the creation of the first IBM QHub in Iberian Peninsula.

Its objective is the development of collaborative research in quantum science and technologies, namely in quantum materials and quantum computing.

QuantaLab has a large number of partnerships with international reference groups in this emerging area and, as IBM Q Hub, is a member of this network with access to the cutting edge technology of large quantum computers, i.e., more than 20 qubits.

Since its institutionalisation, QuantLab has fostered the work of more than 100 students and researchers in this scientific domain, organised 15 courses and workshops and produced 30 scientific publications.

QuantaLab has also developed pioneer work in introducing these technologies to some major Portuguese companies, namely Bial and EDP.



MINHO ADVANCED COMPUTING CENTRE

MACC (Minho Advanced Computing Centre) is a partnership between FCT (Portuguese Science and Technology Foundation) and UMinho, established in 2017, with the following objectives:

- i. to reinforce traditional High Performance Computing research areas and enable the emergence of new research domains heavily dependent on High Performance Computing and High Throughput Computing for digital modelling and data science;
- ii. to promote and accelerate the structuring and coordination of the national scientific and technological critical mass in advanced computing as a means to attract new scientific and economic activity;
- iii. to foster the creation of economic activity in the domains of data intelligence and other advanced computing areas through scientific driven spin-offs and the attraction of research laboratories from reference international ICT companies.

MACC started with a strong link with TACC (Texas Advanced Computing Centre), namely in making available MACC's first machine, BOB (with 800 nodes, 1 Pflops of computing performance and 1,5 Pbytes of storage capacity), already operating with the support of the companies REN and NOS.

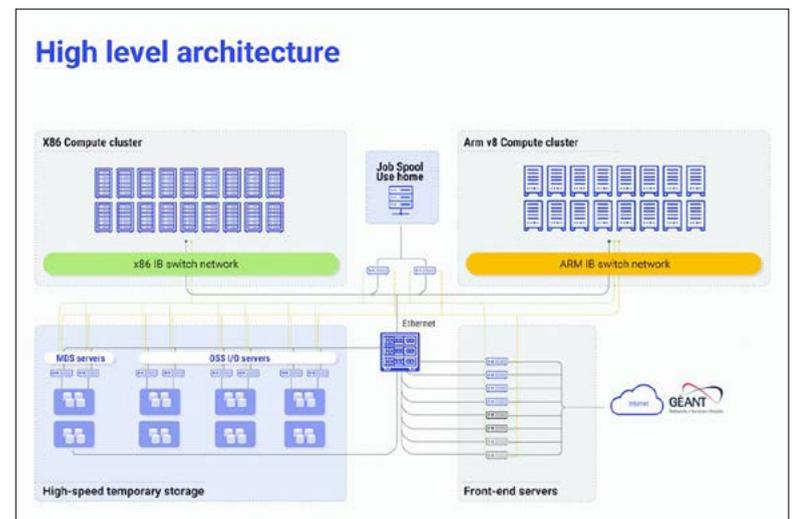


As the result of a successful application to the European Programme EuroHPC, in collaboration with BSC (Barcelona Supercomputing Centre), by 2020 MACC will install a new machine, Deucalion, with the latest generation hybrid architecture, a computing performance of 10 Pflops and 10 Pbytes of storage capacity. This supercomputing will be a reference machine in Europe, including in its minimized environmental impact.

The first MACC visualisation Centre is installed at the Braga UMinho Campus. Other units of this type will be installed in the country in order to adequately serve the Portuguese scientific community.

Besides TACC and BSC, MACC also has a collaboration agreement with the Brazilian (LNCC, INPE and COPE) and Japanese (Riken) supercomputing centres.

The MACC infrastructure is integrated in the INCoDE.2030 (*Portuguese Initiative for the Development of Digital Competences*), in the specific context of the *National Strategy for Advanced Computing*, promoting the Portuguese participation in various European consortia for development and use advanced computing, namely the *Iberian Network of Advanced Computing - RICA* and the *European High performance Computing - EuroHPC*.



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