

2021

CEMMPRE's Researchers in "Updated science-wide author databases of standardized citation indicators"

Elsevier have created a publicly available database of over 100,000 top-scientists that provides standardized information on citations, h-index, co-authorship adjusted hm-index, citations to papers in different authorship positions and a composite indicator. The selection is based on the top 100,000 by c-score (with and without self-citations) or a percentile rank of 2% or above.

CEMMPRE's Researchers in this database:

According to career-long:

- Brett, Christopher M.A. (Chemistry)
- Oliveira-Brett, A. M. (Chemistry)
- Ramalho, A. (Engineering)
- Loureiro, Altino (Enabling & Strategic Technologies)

According to single year impact (2020):

- Brett, Christopher M.A. (Chemistry)
- Oliveira-Brett, A. M. (Chemistry)
- Coelho, Jorge F.J. (Chemistry)
- Ramalho, A. (Engineering)
- Loureiro, Altino (Enabling & Strategic Technologies)
- Neto, Pedro (Engineering)
- Pires, J. Norberto (Engineering)
- Ferreira, J. A.M. (Engineering)
- Rodrigues, D. M. (Enabling & Strategic Technologies)
- Branco, R. (Engineering)
- Antunes, F. V. (Engineering)

For more information:

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ELSEVIER

PhD RESEARCH GRANTS

In the firsts two calls, CEMMPRE award 4 PhD research grants:

- 3D, 2D & 4D Sustainable Technologies for the production of multifunctional stents
- Biobased Lubricants with improved properties by polymeric additives
- Development of polyantimonic acid-based membranes for solid state devices
- Development of multiscale approaches to improve the control of self-adaptive coatings in low friction mechanical systems (The PhD student opted for a PhD Research Scholarships of FCT)

All correspond to interdisciplinary work in the two major research areas of CEMMPRE: Materials and Processes and Mechanics and Intelligent Manufacturing.

The scholarships are financed by the Foundation for Science and Technology (FCT) under the Collaboration Protocol for Financing the Multiannual Plan for Research Scholarships for PhD Students, signed between FCT and the R&D Unit 285, CEMMPRE.

Habilitation (*Agregação*) Exam - Professor Ana Paula Amaro

04/11/2021 and 05/11/2021

The Habilitation exam of Professor Ana Paula Amaro will be held on November 4th and 5th, hybrid mode (presential and online):

- November 4th, at 10:00 am, in the Auditorium (Department of Mechanical Engineering - Polo 2)
- November 5th, at 10:00 am, in the José Anastácio da Cunha Room (Department of Mathematic -Polo 1).
- Online (YouTube):

<https://www.uc.pt/academicos/provas>

Seminary: Mechanical Behaviour of Laminated Composite Materials

Curricular Unit: Strength of Materials



FCTUC anniversary

12/10/2021

In the celebration of the 249 years of the Faculty of Science and Technology of the UC, three honourable mentions were attributed to members of CEMMPRE.

The winners for Professors and Researchers considering the impact of the international publications were:

- Albano Augusto Cavaleiro Rodrigues de Carvalho
- Ricardo Nuno Madeira Soares Branco

The winner for Professor considering the pedagogical performance was:

- José Valdemar Bidarra Fernandes

Event video: <https://www.youtube.com/watch?v=pVpcs5QDc30&t=0s>



CEMMPRE participated in the European Researcher's Night

24/09/2021

A group of CEMMPRE Researchers participated in the European Researchers' Night, which this year had as its theme SCICLI - SCIENCE FOR CLIMATE.

With an activity entitled #Materials4Climate, to demonstrate some of CEMMPRE's activities and research areas, three experiences were presented to the public:

- Development of coatings by sputtering,
- Production of new CEMMPRE logotype by metal additive manufacturing (3D printing),
- Production of bioplastics with starch.

This was an opportunity to show the general public some of CEMMPRE's activities.



Tribute to Professor Norberto Pires

08/10/2021

On October 8th, the Department of Mechanical Engineering (DEM) promotes a Tribute to Professor Norberto Pires with the unveiling of a commemorative plaque, next to the robotics laboratory he built in DEM saying — “Em memória do Professor Doutor Norberto Pires, pelo pioneirismo na investigação e no ensino da robótica, com o respeito e a amizade de toda a comunidade do DEM”. This symbolic event will take place in the Main Auditorium of DEM at 2:30 pm with interventions by:

- Vice-Rector, Professor Luís Simões da Silva
- Director of FCTUC, Professor Paulo Oliveira
- Coordinator of CEMMPRE, Professor Albano Cavaleiro
- Director of DEM, Professor Amílcar Ramalho
- Doctor Germano Veiga (INESC-TEC), one of the first PhD students of Professor Norberto Pires

Due to the constraints of current times, people interested in participating should register at <https://bit.ly/HomenagemNorbertoDEM>.



International Microorganism Day marked with the digital exhibition Pet Microorganisms

17/09/2021

In order to mark the 5th edition of the International Microorganism Day, celebrated on September 17, 2021, the digital exhibition PET MICROORGANISMS (<https://exploratorio.wixsite.com/microrganismos>) will be inaugurated, a joint organization between the Faculty of Science and Technology, the Faculty of Pharmacy, and the Faculty of Medicine of the University of Coimbra, Vasco da Gama University School, and Exploratório Centro Ciência Viva de Coimbra.

“At a time when there is a microorganism marking the daily life of our society, we wanted to dedicate the International Microorganism Day to the microorganisms that are the daily lives of researchers in microbiology and that make up their world. Microorganisms are unseen but they are everywhere, and each of us carries more than 100 million of them. We know very little about microorganisms, but we know that we can learn a lot from them, in order to face future challenges in terms of public health, environmental protection, and agri-food production.”

In this digital exhibition, you can contemplate photographs of microorganisms in a Petri dish and listen to the researchers' testimony about each chosen microorganism. You can visit the exhibition wherever you are and see isolated microorganisms from all over the world.



PhD Exam - David Andrade

6th September 2021 at 10:00

The PhD exam of David Andrade will be held on September 6th, at 10:00 am, online.

Thesis Title: "Analysis of the thermo-mechanical conditions in friction stir based technologies"

Supervisors: Prof. Dulce Rodrigues and Prof. Carlos Leitão

To attend: <https://www.uc.pt/academicos/provas> (YouTube)



Habilitation (*Agregação*) Exam - Professor Fernando Antunes

The Habilitation exam of Professor Fernando Antunes will be held on July 20th and 21st, at 9h am (Online).

Seminary: Fatigue crack growth in metallic materials

To attend: <https://www.uc.pt/academicos/provas> (YouTube)



Habilitation (*Agregação*) Exam - Professor Ana Paula Piedade

14/07/2021 and 15/07/2021

The Habilitation exam of Professor Ana Paula Piedade will be held on July 14th at 14h30 and 15th, at 15h00 (Online).

Seminary: Functional polymeric coatings

Curricular Unit: Additive Manufacturing

To attend:

https://www.youtube.com/watch?v=f_iQq7BaUDI (YouTube)



Mohammad Safeea, of CEMMPRE, received the “Best National PhD Thesis Award” by the Portuguese Robotics Society

"Safe Collaborative Robotic Manipulators" was the title of the thesis that focused on the development of robotic systems that share the operating space with humans in a safe way. The thesis focused on two aspects of human robot interaction, including safety (avoiding collisions between humans and robots) and collaboration (focusing on the hand-guiding functionality of collaborative robots). The PhD thesis in Mechanical Engineering was supervised by Professors Pedro Neto (CEMMPRE - FCTUC), and Richard Bearee (ENSAM ParisTech).



According to the Portuguese Robotics Society, the main objectives of the "Best National PhD Thesis in Robotics" award are "to foster innovation and rigour in research, as well as to promote the scientific dissemination of relevant quality work".

Videos:

- [Collision avoidance system](#)
- [Collision avoidance system \(other\)](#)
- [Collision avoidance system in Automotive industry](#)
- [Developed hand-guiding functionality](#)
- [Hand-guiding in a programming by demonstration application](#)

CEMMPRE Meeting - 2021

When: 16th July, 2021(Friday) Where: FCTUC- Central Building

Programme:

09:30-10:00 - Welcome & CEMMPRE presentation

10:00-10:40- Presentation by groups: Mechanical and Intelligent Manufacturing | Materials and Processes

11:00-13:00 - Presentation by areas: Intelligent Manufacturing | Design & Testing | Surface and Interface Engineering | Bioengineering | Nanomaterials and Nanotechnology | Advanced Sensor Systems

14:00-15:30 - Poster Session

15:30-16:30 - Thematic Meetings (Parallel sessions): Mechanical | Materials | Processes

16:30-17:00 - Wrap up Meeting

CALL FOR EXPRESSIONS OF INTEREST: Marie Skłodowska-Curie Actions(MSCA-PF)

Are you planning to apply to a Marie Curie Postdoctoral Fellowship (MSCA-PF)?

A MSCA-PF can be a great boost to your career if you are looking for a prestigious Fellowship that allows you to pursue your own independent research (learn more [here](#)). Applicants should hold a doctoral degree, not have more than 8 years of full-time equivalent in research, be based in EU member States or Associated Countries and cannot have lived in Portugal for more than 12 months in the last 3 years.

MarieCurie@UC

At the University of Coimbra we are committed to providing you with individualized support for the success of your application. Our R&D units offer help in writing the non-technical sections of your application, a wide range of re-location services once you become a Fellow and competitive conditions to maximize the transfer of knowledge and impact of your research. Know more [here](#).

Join MarieCurie@UC

We invite applications in:

- Intelligent Manufacturing
- Design & Testing
- Surface and Interface Engineering
- Bioengineering
- Nanomaterials and Nanotechnology
- Advanced Sensor Systems

Interested applicants in any of our research topics are encouraged to send us (cemmpre@uc.pt) their CV/cover letter until July 30. The deadline for submission is 12th of October 2021. Contact us for more information.

PhD Exam - Diogo Albano Cavaleiro Ventura de Carvalho

26th May 2021 at 14:30

The PhD exam of Diogo Cavaleiro 's, in Materials engineering, will be held on 26th May 2021, at 14:30, University of Minho and online stream.

Thesis Title: The importance of Ag content for optimizing the machining performance of Ti-Si-(Ag)-N coatings

Supervisors: Prof. Sandra Maria Fernandes Carvalho and Dr. Filipe Fernandes

More information: [here](#)



Consortium invests 2.1 million euros to build the Automatic Warehouse of the Future

CEMMPRE integrates a consortium to build the automated warehouse of the future, under the PSA Supplier Club Initiative.

Led by the company RARI SA, the consortium also includes the University of Coimbra, University of Porto, and the companies Globaltronic, 4iTec Lusitânia SA, NOS Comunicações and NOS Technology.

In total, the consortium involves more than 50 Researchers.

More information: [here](#)



Demo of our robotic-based Additive Manufacturing system and related digital-twin

First public demo of our robotic-based WAAM (Wire Arc Additive Manufacturing) system and related digital-twin. With this system we can perform any AM (Additive Manufacturing) task, simulate the printing process, follow it from a digital-twin and fully control the printing process. Stay tuned - I'll post the public record of the demo.

Soon will be showing the LMD version which is controlled by the same software and related infrastructure.

More information: [here](#)



PhD RESEARCH GRANTS

Application Deadline: 24-04-2021 (19h00 GMT)

The Centre for Mechanical Engineering, Materials and Processes (CEMMPRE) is opening a call for awarding 4 PhD research grants, in the area of Mechanical Engineering or similar scientific areas, under the FCT Research Grants Regulation (RBI) and the Statute of the Research Fellow (EBI).

The scholarships will be financed by the Foundation for Science and Technology (FCT) under the Collaboration Protocol for Financing the Multiannual Plan for Research Scholarships for PhD Students, signed between FCT and the R&D Unit 285, CEMMPRE.

More information: [Eracareers](#)

The topics proposed for the doctoral plans are the following:

1. Design and characterisation of additive manufactured metallic auxetic materials ([details](#))
2. Development of multiscale approaches to improve the control of self-adaptive coatings in low friction mechanical systems ([details](#))
3. Development of polyantimonic acid-based membranes for solid state devices ([details](#))
4. High-speed processing of hybrid-manufactured parts ([details](#))
5. Intelligent additive manufacturing of metal powder ([details](#))
6. Linking Fatigue Crack Growth to Microstructure ([details](#))
7. Machinability assessment of aerospace titanium alloys using coated and textured ceramic tools supported by advanced simulations ([details](#))
8. Sustainable Lubricating Interfaces towards a more energy-efficient Maritime Transportation ([details](#))

All correspond to interdisciplinary work in the two major research areas of CEMMPRE: Materials and Processes and Mechanics and Intelligent Manufacturing.

The candidate must select four of these themes and indicate the order of preference in the motivation letter. The motivation letter must be written in English and must clarify the reasons for the selection of each of the four themes, as well as how the candidate's professional experience can contribute to achieving his goals.

After selection, candidates must prepare a work plan, with the help of the respective guidance team, to be submitted to the respective doctoral programs.

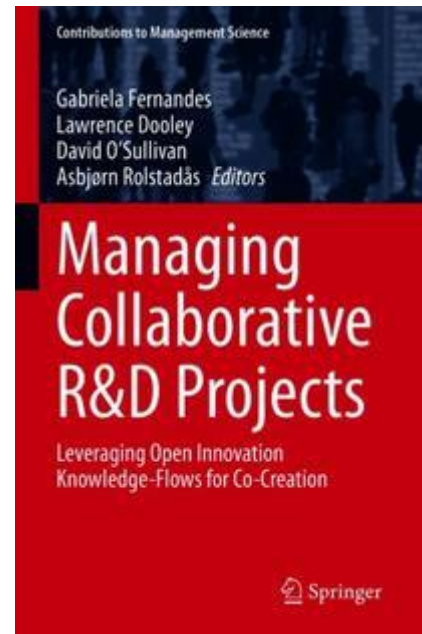


MANAGING COLLABORATIVE R&D PROJECTS: Leveraging Open Innovation Knowledge-Flows

We are happy to share the new book on [MANAGING COLLABORATIVE R&D PROJECTS](#): Leveraging Open Innovation Knowledge-Flows for Co-Creation edited by Gabriela Fernandes (CEMMPRE Researcher), Lawrence Dooley, David O'Sullivan and Asbjørn Rolstadås.

Collaboration among industry, universities and research institutes plays a vital role in stimulating open innovation, which in turn leads to new products, processes, services and business models. This book brings together a number of real-life examples of how to govern and manage open innovation collaboration projects more effectively, and provides timely insights that project consortia, governance boards and funding agencies can directly apply to implement and monitor projects and achieve greater impacts. All papers were written by recognized leading authorities with extensive experience in governance and management, and reveal how to capitalize on the potential of open innovation.

This book shares multidisciplinary research perspectives on the potential benefits and challenges of collaboration, project management, and open innovation, as well as the management of complex organizational cultures and governance models.



Webinar "For intelligent injection molding"

15/03/2021 - 17:00

Intelligent manufacturing involves not only redesigning products, but also reconfiguring and properly instrumenting production systems.

Participate in this webinar promoted by the *Mobilizador* [TOOLING4G](#) project, in an active and fruitful collaboration with the *Mobilizador* [ON-SURF](#) project.

Information and registration at <https://www.centimfe.com/comunicacao.html>



International Women's Day

08/03/2021

COMPETE 2020 has talked to Teresa Vieira about her career.

Complete interview: [here](#)



CEMMPRE participated in XVI ENCONTRO NACIONAL DE ESTUDANTES DE ENGENHARIA BIOMÉDICA (ENEED)

04/03/2020 - 07/03/2020

CEMMPRE presented its facilities and examples of recent projects carried out in areas applied to health, namely, materials, coatings, tribology, and biomechanics (simulation and experimental) at the XVI ENEEB.

Information about XVI ENEEB: <http://eneeb.aneeb.pt/>

CEMMPRE Video for XVI ENEEB: <https://vimeo.com/524333085>



ARISE AL - Advanced Production and Intelligent Systems Associated Laboratory

24/02/2021

ARISE AL was awarded the title of Associate Laboratory for a period of ten years.

The ARISE AL is an association of the R&D Units:

- CDRSP – Centre for Rapid and Sustainable Product Development of the Polytechnic Institute of Leiria,
- CEMMPRE - Centre for Mechanical Engineering, Materials and Processes, of University of Coimbra,
- ISISE – Institute for Sustainability and Innovation in Structural Engineering of University of Minho and University of Coimbra,
- ISR-UC – Institute of Systems and Robotic of University of Coimbra, and
- SYSTEC - Research Centre for Systems and Technologies of Porto University,

to undertake scientific, and technical research of excellence, and innovation activities targeting the areas of Advanced Productions Systems, Construction, Robotics, Materials, Energy, Management, and Information Technologies, built on solid scientific foundations, in order to support the renovation and the reindustrialization of national production system, within a decarbonization framework to ensure the environmental, and socio-economic sustainability.

Clearly, the ARISE AL brings together 270 PhD researchers organized in the Thematic Lines:

- 1 – New Materials and Components
- 2 – Advanced production systems and processes
- 3 – Sustainable Energy Systems
- 4 – Intelligent Systems and Robotics
- 5 – Digital Ecosystem, Sustainability, Risk and Management

an unique interdisciplinary framework that articulates fundamental and applied sciences and technologies from Computation, Material, Management and



Information Technologies Sciences, with key very diverse branches of Engineering - Civil, Electrotechnical, and Mechanical – yielding the proper synergetic context essential to address most of the challenges arising in the core objectives of the AL.

Habilitation (Agregação) Exam - Professor Pedro Neto

09/02/2021 and 10/02/2021

The Habilitation exam of Professor Pedro Neto will be held on February 9th and 10th, at 10:00 am Online

Seminary: Human-robot interaction/collaboration

To attend: <https://www.uc.pt/academicos/provas> (YouTube)



SAFEFORMING project: results dissemination webinar

10 February 2021 – 14h00

This FEDER co-financed project enabled the companies and research units to work during 3 years in the development of a methodology for predicting the occurrence of edge cracking in stamped parts for the automotive industry, in particular, components produced from thick sheets of high-strength steels.

Register at

<https://safeformingproject.wordpress.com/>

to attend the webinar.



Coatings Journal – 2020 Travel Award

The prominent researcher, Fábio Ferreira, was announced as the winner of the highly prestigious 2020 Travel Award on January 20, in the International Coatings Journal.

This award as the objective of recognizing the extraordinary achievements of Fábio Ferreira in the surface engineering area, particularly, the development of low friction and hard coatings to improve energy-efficiency and lifetime of internal combustion engine components.



Online Workshop “Raw Materials, a key factor on the support of European Green Deal”, University of Coimbra, January 25, 2021

On the afternoon of 25th January of 2021 occurred the first online workshop entitled “Raw materials, a key factor on the support of European Green Deal” as part of the project REVIVING of the ERAMIN2 Program and financed by each Call Funding Agencies. This workshop organized by the Environmental Microbiology Group - CEMMPRE, was a success and counted 102 participants from different countries of Europe. The opening session had the contribution of Albano Cavaleiro (CEMMPRE, University of Coimbra) and Cláudia Cavadas (Vice Rector, University of Coimbra), and was followed by three technical sessions coordinated by different institutions: FCTUC – Microbiotechnologies (with Paula V. Morais and Rita Branco), CNRS – Biogeochemistry (with Jean Martins and Lorenzo Spadini) and NIRDBS – Bio application (with Alina Butu and Steliana Rodino). The event ended with a Round Table: Questions and Answers in raw material, chaired by Luís Martins (Cluster Portugal Mineral Resources as chair) with the participation of Manuel Pacheco (Beral Tin&Wolfram, Panasqueira mine, Portugal) and Davris Panagiotis (MYTILINEOS, Greece).

The objective of the workshop was to discuss the role of alternative methods based on microorganisms to obtain raw materials in a context of zero waste and reuse policy. More specifically, the event was focused on the thematic of using mining wastes as a secondary source of raw materials and allowed the discussion about the significance of Circular Economy concept in the organization of the economy. This workshop was an open door for the new era of scientific discussion online and ended with the general contentment of all of the participants and with the promise of further events like this one.

