



stayCERENA – February 2025

January in a nutshell



- January 13th | in occasion of FEUP Day CERENA-FEUP opened its labs for a public tour, explaining visitors about ongoing projects and showcasing [Geo-Resources and Geo-Environment Lab](#) experiments
- January 17th | CERENA-IST team joined in the *Forgotten Lab* of the Geoscience Museum to meet in person after the holidays. Valuable moment not just for building connections but also for our work together as a group. Looking forward to the next gathering in **March**. Thanks for all who showed up!
- January 22nd | Prof. Lurdes Dinis presented CERENA to UPTEC, the business incubator of the University of Porto, where start-ups and spin-offs created by students are born, during a meeting with [DECG](#)
- January 23rd-24th the kick-off meeting of SIMIACCI project happened in Lisbon, organized by CERENA. Know more about it in the [news](#).

- January 29th, 2025 the DEQtalk Seminar by [Beatriz Barrocas](#) about "Sunlight-Driven Multifunctional Supported Semiconductors for a Sustainable Future"
- January 30th, 2025 | the CERENA Seminar by [Sila Özkan](#) about "Transforming biomass into syngas: innovative water co-electrolysis" was a success: a full house showing interest in the topic and debate, and we counted on the presence of our ISEL member Prof. [João Gomes](#)
- [Ricardo Araújo](#) appeared on one of Portugal's most popular radio programs, RTP Antena 3's [Prova Oral](#), to share some insights from his palaeontology research.





Activities of the month of January

Our people



Abeer Mohtar– Researcher for RawMatG



Abeer Mohtar definitely doesn't look like someone who just returned from their third maternity leave. Colorful masterpieces painted by her daughters decorate her workstation on the 5th floor of the South Tower (IST), in Room 5.17 *aka* LabSop, an open space room with a nice view over Castelo de São Jorge and the Tejo.

She describes herself as ambitious and adventurous, and her colleagues know that Abeer also is the kind of sunny person who could light up any room. A bit of a polyglot, she speaks fluent Portuguese, English, French, and Arabic. In fact, her international academic journey has taken her from Lebanon to France before finally settling at CERENA six years ago, when she decided to make Portugal her home.

With a background in physics, she admits that she re-discovered the passion for academia when she shifted her research focus towards Chemical Engineering. She is deeply

committed to her role as a researcher in the Raw Materials Group, because she enjoys the feeling of contributing to innovation and loves the excitement of seeing results from her experiments. Though she still feels at a stage in her career where having a team to help with some tasks like doing data analysis would be a relief, she is grateful for the opportunity to perform both simulations and lab work.

In your view, what does a researcher do?

A: "Someone who is committed to finding solutions to societal problems that can enhance our quality of life."

What are you working on at the moment?

A: “I work with carbon capture. I develop materials and processes that are able to selectively adsorb gases, like CO₂ or other volatiles. At the moment I am involved in the SIMIACCI project to control indoor air quality of cultural heritage institutions.”

Amir Neijad, PhD in Environmental Engineering



Meet Amir, underground construction engineering graduated from Amirkabir University of Tehran and current PhD student in the Environmental Engineer programme of FEUP. Although he recently moved to Canada to work on a big project for the extension of the Montreal metro network, Amir still has both professional and emotional links to Portugal. In fact, he is currently working on his PhD project in machine learning for soil remediation under the supervision of Maria de Lurdes Dinis and Gustavo Paneiro.

Moving after 2 years spent in Portugal made Amir understand the true meaning of the untranslatable *saudade*. Even if the the project he is working in Canada meant an upgrade in terms of salary and working conditions, he admits he misses Portugal vibes, the food and especially the people. He insisted in kindly offering a place to stay to any colleague from CERENA who is visiting Montreal, so if you are planning to visit Canada, do reach out to him: he will be more than happy to catch up.

What work are you doing at the moment?

A: “I am processing satellite images data to understand what pollutants are present in the soils. The goal is to teach the algorithm how to detect polluted areas from satellite images. Tracking soil pollution is a bit trickier than doing it on water.”

What results do you expect from your work?

A: “Short term: detect which elements can be detected with which algorithm. Long term: find the source of the pollution, for remediation purposes.”

What would you like to do when you finish your PhD?

A: “I really like the academic environment, I would like to pursue a post-doc using my knowledge of soils, the skills on AI that I am learning now. I am really interested in Portuguese culture so I would like to come back to Portugal.”

New integrated members



These people are officially joining the ranks of CERENA's integrated members. Bem-vindxs! Welcome!

[Joana Lobo Antunes](#)

[Rafael Amorim Amoedo](#)

[Maria Paula Mendes](#)

[Rosana Pinto](#)

Science Story



The **Serra da Estrela Natural Park** is a treasure trove of over 900 plant species, including unique ones like carqueja, esteva, and juniper, which offer incredible health benefits, especially for diabetes. These plants hold great promise for the pharmaceutical industry. **PharmaStar** aims to harness this natural wealth to create innovative diabetes treatments. The project focuses on using these plants to develop new medicines and supplements, boosting both sustainability and the local economy. The CERENA/IST team plays a key role in the project, using remote sensing techniques to gather spatial data and process digital images. Artificial intelligence and statistical learning methods are used to map the species of interest by processing satellite images to identify areas to study and conducting multispectral drone surveys and collecting data directly from the plants. PharmaStar aims to integrate all the data collected to explore the **medicinal properties** of local plants and also enhance commercial opportunities in the Serra da Estrela region.

This project is supported by the "la Caixa" Foundation's Promote Program, in collaboration with BPI and the Foundation for Science and Technology (FCT).



Graphical idealization of the PharmaStar project. CERENA team focused on mapping specific areas of the park.

Dates to diary



- February 27th 2025 | CERENA Seminar by Teresa Nogueira **“Total Plastic Recycling: Contribution to a Circular Economy”**

- May 8th-10th 2025 | CERENA Annual Meeting '25 at [INATEL Foz do Arelho](#) → save the dates and stay tuned.

Publications



Kerber L, Müller RT, de Simão-Oliveira D, Pretto FA, Martinelli AG, Michelotti IM, Benoit J, Fonseca PH, David R, Fernandez V, Angielczyk KD, Araújo R. [Synchrotron X-ray micro-computed tomography enhances our knowledge of the skull anatomy of a Late Triassic ecteniniid cynodont with hypercanines](#). *Anat Rec (Hoboken)*. 2025 Jan 13. doi: 10.1002/ar.25616. Epub ahead of print. PMID: 39801379.

Fernandes, S. M., Barrocas, B. T., Vale, M., Oliveira, M. C., Al Mohtar, A., & Marques, A. C. (2024). [MICROSCAFS® for minocycline elimination from water and real wastewater: Porosity and TiO₂ nanoparticles effect](#). *Chemical Engineering Journal*, 158771.

Health and Wellbeing

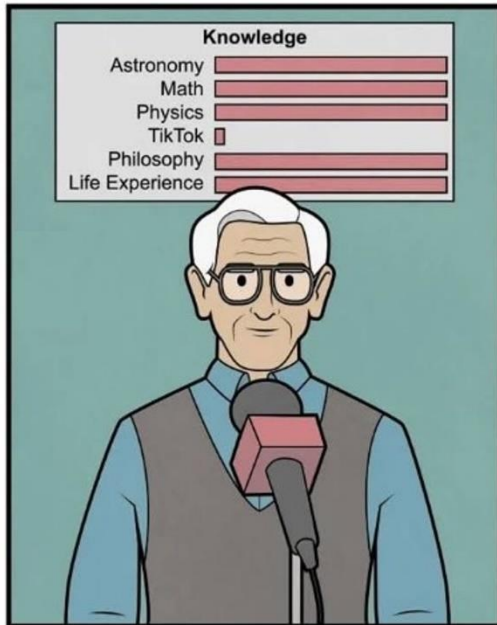


Research shows that professors in Portugal experience high stress and burnout, often struggling with poor sleep and insomnia ([de Sousa, 2019](#)). Sleep is essential for a strong **immune system**, and getting less than 6 hours regularly weakens immunity, increasing vulnerability to illness. To maintain immune health, aim for 7 to 9 hours of sleep. Practicing good **sleep hygiene**, such as a consistent routine, reducing light and noise, and taking short naps, can improve sleep quality and overall health.

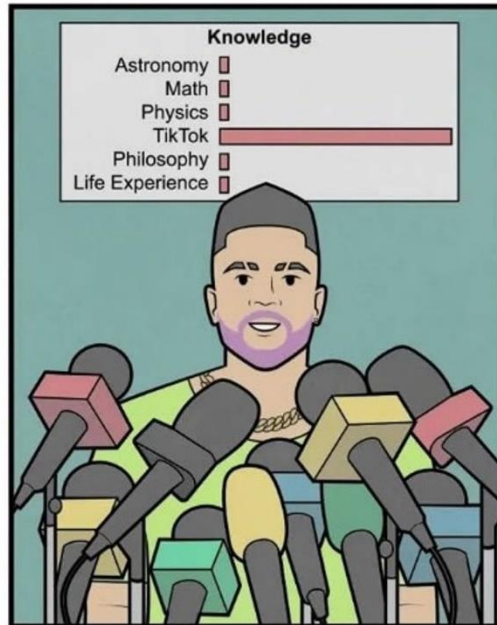
Know more about [sleep and immune system](#), [sleeping habits in academia](#) and [workplace wellbeing](#).

Food for Thoughts

YES,



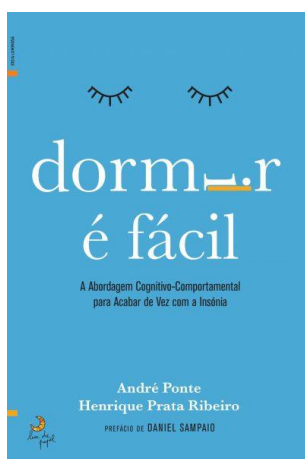
BUT



© _yes_but



Cultural Tips



“*Dormir é Fácil*” (“*Sleeping is easy*”), by André Ponte and Henrique Prata Ribeiro, specialists in the field of sleep, aims to debunk myths and prejudices surrounding sleep and presents an innovative plan to finally end insomnia, without resorting to medication.

Quote of the month

