



**CERENA**

Centro de Recursos  
Naturais e Ambiente

# NEWSLETTER

DECEMBER 2025

## Science in motion: highlights from our events, labs, and people

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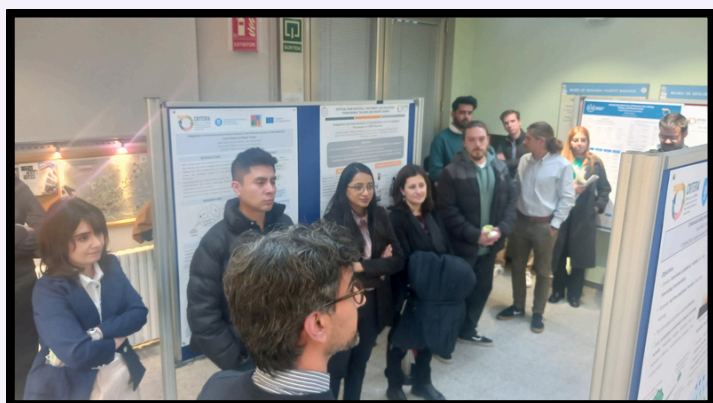
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# November Events Highlights

## CRITERIA consortium meeting

On **November 20<sup>th</sup> and 21<sup>st</sup>, 2025**, CERENA PhD Students Amir Afzali, Jakub Skiba and Waqar Ahmad went to Barcelona as part of the CRITERIA Consortium meeting. They were able to exchange ideas with colleagues from the different partner universities: Universita Della Calabria (Unical), Italy; Kungliga Tekniska Hogskolan (KTH), Sweden; Universitat Politecnica de Catalunya (UPC), Spain and Minerali Industriali SRL (MININD), Italy.






## DEQ Talk

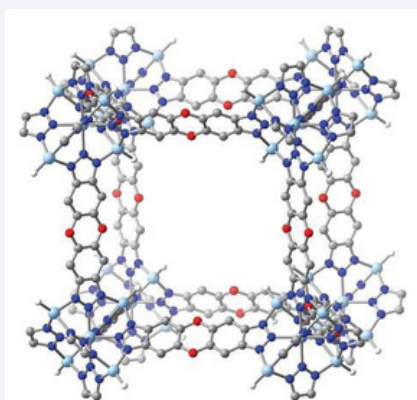
MOFs for CO<sub>2</sub> Capture

ML-1200A – Scale-up & Shipping

Green synthesis – Kg-scale



- Optimization with inexpensive chemicals
- Increase the STY from 26 Kg/m<sup>2</sup>/day to 160 Kg/m<sup>2</sup>/day
- Washing optimization

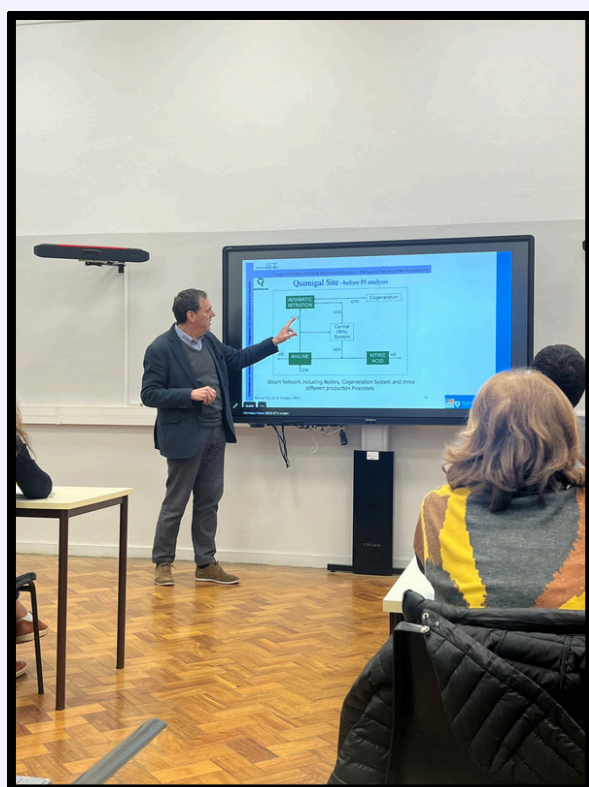




# November Events Highlights

## CERENA Seminar

On **November 27<sup>th</sup>, 2025**, CERENA hosted a seminar focused on Process Heating Integration in Industry. This seminar was hosted by Professor Henrique Matos, Full Professor at IST and CERENA researcher, who invited Engineer Mário Jorge Pinho, former director of Bondalti. Unfortunately, due to health reasons, Engineer Mário could not be present. Professor Henrique talked about the importance of the strong connection between academy and industry by showcasing two studies that culminated in the industrial processes' optimization.



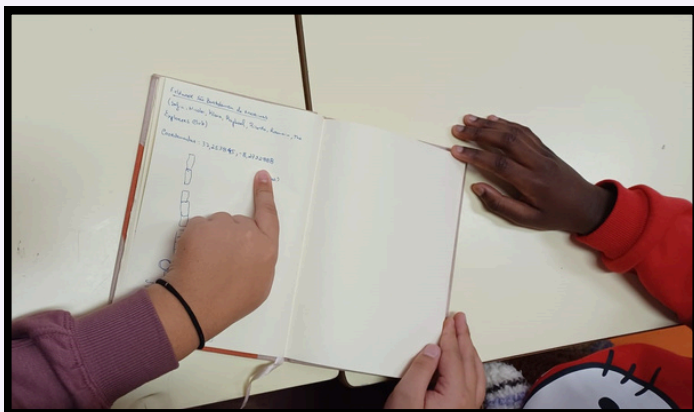
We thank our sponsor, NORLEQ, for sponsoring this seminar series.



# November Events Highlights

## Science and Engineering Week

On the **24<sup>th</sup> to 28<sup>th</sup> of November 2025**, it was celebrated the Science and Engineering Week. CERENA's researchers Miguel Vitoriano Teixeira, João Narciso, Leonardo Azevedo, Ricardo Araújo, Sofia Patrocínio and Sofia Aparício visited primary schools in the Lisbon area to talk about their research. The students were very curious and participant in this activity.





## Portuguese Science Podcast *90 segundos de ciência* gets an award

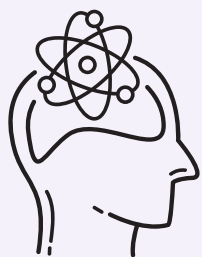
The Portuguese podcast 90 segundos de ciência (90 seconds of science) was distinguished with the Award Ciência Viva Media 2025. Dating back to 2016, this podcast interviews Portuguese scientists in a concise (90 seconds) manner. It airs daily at Antena 1 and can be listened online ([here](#)). Over the years, CERENA researchers have participated in different episodes. Here is a list to remember:

- Professor Amílcar Soares; 6<sup>th</sup> May 2017 ([here](#))
- Professor José Manuel Marques; 1<sup>st</sup> June 2018 ([here](#))
- Professor Amélia Dionísio; 18<sup>th</sup> June 2018 ([here](#))
- Dr. Susana Vilanova; 21<sup>st</sup> June 2018 ([here](#))
- Professor Gustavo Paneiro; 19<sup>th</sup> September 2018 ([here](#))
- Professor João Carlos Bordado; 4<sup>th</sup> October 2018 ([here](#))
- Dr. Pedro Pina; 17<sup>th</sup> April 2020 ([here](#))
- Professor Rui Galhano dos Santos; 22<sup>nd</sup> October 2021 ([here](#))
- Professor Leonardo Azevedo; 13<sup>th</sup> May 2020 ([here](#))
- Professor Cristina Vila; 29<sup>th</sup> October 2020 ([here](#))
- Professor Maria João Pereira; 21<sup>st</sup> December 2020 ([here](#))
- Dr. Sandra Heleno; 1<sup>st</sup> January 2021 ([here](#))
- Professor Margarida Mateus; 18<sup>th</sup> May 2022 ([here](#))
- Professor Moisés Pinto; 25<sup>th</sup> July 2022 ([here](#))
- Professor Martin PrechtI; 25<sup>th</sup> November 2022 ([here](#))
- Professor Manuel Ribeiro; 17<sup>th</sup> May 2023 ([here](#))
- Professor Ana Clara Marques; 15<sup>th</sup> March 2024 ([here](#))

Congratulations to the team and don't forget to listen to keep on top of the latest scientific research in Portugal!



# Important Information for CERENA Members – FCT outputs



**FCT annual report is coming up**, so we need your contribution! Please fill out the forms available in the restricted area of [CERENA's website](#) regarding Awards, Conferences, Highlights, Outreach/Science Communication Activities and MSc/PhD Thesis completed until **January 12<sup>th</sup> 2026**.



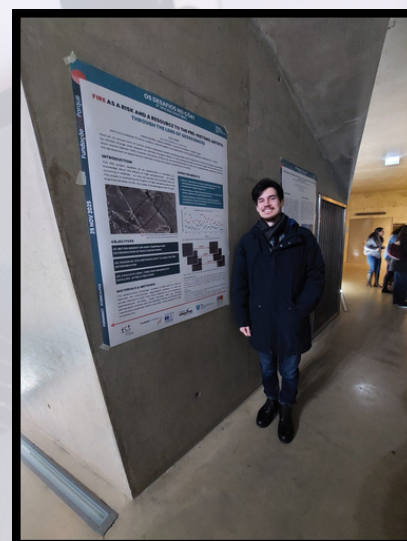
## Key Dates & Events – December Highlights

- **11<sup>th</sup> and 12<sup>th</sup> December** – SIMIACCI Consortium Meeting, Paris
- **18<sup>th</sup> December** – CERENA Seminar, 12:30, IST (Central Building) – Room C13 / FEUP – Room F405.  
Title: Applied research, the golden triangle: research, funding and industrial partnership  
Speakers: [Maria Teresa Carvalho](#) (IST) / Susana Ângelo (Project Management Coordinator in the Compliance and Innovation Department at Sociedade Ponto Verde) / Diana Tomázio (Head of Innovation at Valorsul)

## News about CERENA's community

### João Senra takes part in Third Doctoral Workshop by FCT

On the **25<sup>th</sup> of November 2025**, CERENA's PhD Student [João Senra](#) took part in the Third Doctoral Workshop, in Vale do Côa as part of Week of Science and Technology organized by Fundação para a Ciência e Tecnologia (FCT). Congratulations to João for presenting his PhD work in this multidisciplinary environment!





# News about CERENA's community

## Professor Maria João Pereira went to Escola Secundária do Restelo

On the **26<sup>th</sup> of November 2025**, CERENA's Professor Maria João Pereira went to a Secondary School in the Lisbon area (Escola Secundária do Restelo) as part of the Scientific Culture Day. Professor Maria João talked about the intersection between science and economy to Science and Business students, focusing on the relevance of essential minerals in our technological developed world.



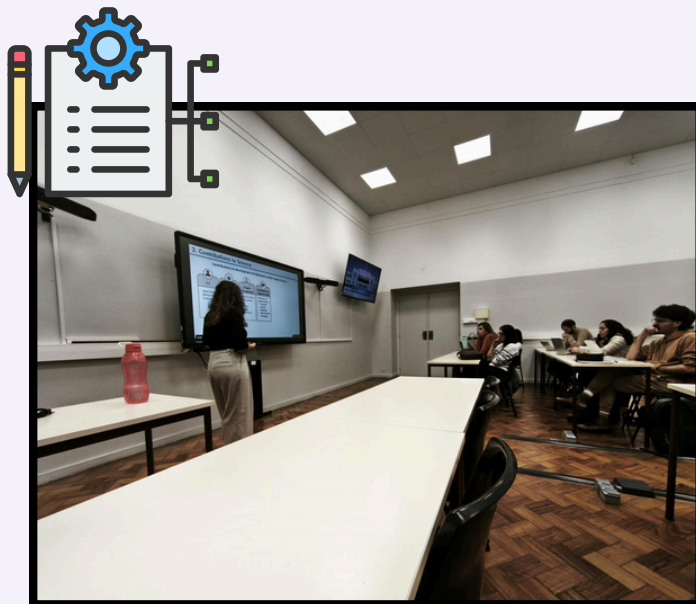


# Pre-Award

## FCT Narrative CV Workshop

On the **6<sup>th</sup> and 11<sup>th</sup> of November 2025**, a joint venture between CERENA and CEGIST organized a workshop on **Crafting Narrative CVs tailored to the Fundação para a Ciência e Tecnologia (FCT) format**.

The participants got the chance to learn how to craft impactful narratives while aligning their professional experience with FCT's criteria. On the second day of the workshop, the participants received feedback on their CVs, which will be a valuable tool for future applications!



# Pre-Award

## A tool worth checking - Pre-Award SharePoint

Do you know where you can get the latest information about open calls for projects? SharePoint is the place to go!

Tap in the images below to find more information about currently open calls funded by the European Commission. Don't forget to check the annual calendar to be up-to-date on other opportunities.



### Cluster 5

**Pillar 2 | Clusters 2026-2027**

**Pillar 2 - Clusters 2026-2027**

Horizon Europe is organised into three pillars - 1) Excellent Science, 2) Global Challenges and European Industrial Competitiveness, and 3) Innovative Europe. There is also a fourth component, on widening participation and strengthening the European Research Area, which cuts across the entire programme.

**Pillar 1**  
Excellent Science

- European Research Council (ERC)
- Marie Skłodowska-Curie Actions (MSCA)
- Research Infrastructures

**Pillar 2**  
Global Challenges & European Industrial Competitiveness

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

**EU Missions**

**Pillar 3**  
Innovative Europe

- European Innovation Council
- European Innovation Ecosystems
- European Institute of Innovation and Technology

**Widening Participation & Strengthening the European Research Area**

- Widening Participation and Spreading Excellence
- Reforming and Enhancing the European Research and Innovation System

### Missions

**Pillar 2 | EU Missions 2026-2027**

**Pillar 2 - EU Missions**

Horizon Europe is organised into three pillars - 1) Excellent Science, 2) Global Challenges and European Industrial Competitiveness, and 3) Innovative Europe. There is also a fourth component, on widening participation and strengthening the European Research Area, which cuts across the entire programme.

**EU MISSIONS**  
ADAPTATION TO CLIMATE CHANGE

**Adaptation to climate change**

Aiming to guide at least 150 communities through understanding climate risks, developing pathways for preparation, and implementing innovative solutions by 2030.

**EU MISSIONS**  
CANCER

**Cancer**

Improving the lives of more than 3 million people by 2030 through prevention, cure and for those affected by cancer including their families, to live longer and better.

**EU MISSIONS**  
CLIMATE-NEUTRAL & SMART CITIES

**Climate-neutral and smart cities**

Deliver 100 climate-neutral and smart cities by 2030 and ensure that these cities act as experimentation and innovation hubs to enable all European cities to follow suit by 2050.

# Annual Calendar

2025											
January	February	March	April	May	June	July	August	September	October	November	December
16- Mission Cities	4- Renewable Energies, Batteries (CL5) 5- MSCA-SE 11-Missions Cities			13-EIC Pathfinder OPEN							
				24- MSCA-CIOFUND				4- Mobility (CL5), Agrofood, Environment, and communities (CL6), Mission Cities 10- MSCA-PF e ERA-Talents 16- Batteries, Energy, Carbon Capture (CCUS), (CL5), HERITAGE, Transformations (CL2), Land, Ocean, Water (CL6) 17- Biodiversity, Circular Bioeconomy, Zero Pollution (CL6); EIC Transition 18- Tools, EnviroHealth (1st stag), Disease, Care, Ind (CL1), Circular Biobased Europe, Mission Cancer, Mission Oceans 23- Materials, Twin-Transition (Energy and Manufacturing) (CL4) 24- Climate Action (CL5); Green Deal, Governance (CL6); Mission Climate Action, Mission soil			
									1- Mission Soils 8- MSCA-SE 24- Hop-on 29- EIC Pathfinder Challenges		
										12- Border Management, Security R&I (CL3) 13- Space e Digital (CL4) 25- MSCA-DN	
14- ERC-CoG							28-ERC-ADV		ERC-STG?	ERC-SYN?	
22- La Caixa Social Research 29- La Caixa Promove									La Caixa Junior Leader – Incoming and Retaining ?		
	20- La Caixa Health Impulse									La Caixa Health Research?	
22- FCT/UT Austin, FCT/CMU, FCT/MIT										CEEIND?	
	25-PeX										



## Our Publications

1. Kerber, L., Müller, R.T., de Simão-Oliveira, D., Pretto, F.A., Martinelli, A.G., Michelotti, I.M., Benoit, J., Fonseca, P.H., David, R., Fernandez, V., Angielczyk, K.D., Araújo, R. (2025). [Synchrotron X-ray micro-computed tomography enhances our knowledge of the skull anatomy of a Late Triassic ecteniniid cynodont with hypercanines](#), Anatomical Record (Hoboken) 2025 Nov, 308(11):2877-2895
2. Romero-Gómez, M.I., Flores-Colen, I., Hooper, F., Cardoso, R., Pereira, M.F.C., Bravo, M., Mendes, M.P. (2025) [Testing the durability of hydraulic lime-based renders against extreme weather: Experimental aging tests for compound events in a changing climate](#), Journal of Building Engineering, Volume 113, 1 November 2025, 114106
3. Gadol, O., Katz, O., Kanari, M., Makovsky, Y. (2025) [Millennial-scale phased submarine retrogressive collapse of the owl slide complex](#), Geomorphology, Volume 488, 1 November 2025, 109973
4. Ostapiuk, M., Bieniaś, J., Loureiro, M.V., Marques, A.C. (2025) [The Effect of Self-healing on the Corrosion Resistance of a Mg Alloy Promoted by Isocyanate Microcapsules of Polyurethane/Polyurea Shell](#), Journal of Materials Engineering and Performance, Volume 34, pages 25954-25963, (2025)
5. Bordonhos, M., Neves, M.I.S., Marandi, A., Nouar, F., Jorge, M., Gomes, J.R.B., Serre, C., Pinto, M.L. (2025) [Spanning the molecular to industrial scale of the adsorption-based separation of CO<sub>2</sub>/CH<sub>4</sub> by MIL-160\(Al\)](#), Chemical Engineering Journal, Volume 524, 15 November 2025, 169276

# New Members

CERENA is pleased to welcome new members who have recently joined our team:

## Tuğçe Demir

Tuğçe completed her Ph.D. in Environmental Engineering in 2024 and her Master's degree in 2017, both at Bolu Abant İzzet Baysal University, Türkiye. She is now a **postdoctoral researcher** with CERENA at Instituto Superior Técnico, Lisbon. Her MSc focused on atmospheric pollutants, while her Ph.D. emphasized environmental technologies, particularly deep-dewatering systems for waste-activated sludge and their impact on air quality. Her future research interests include biomass valorization for resource recovery and energy production.

## Bruno Camilo

Bruno **holds a Master's degree in Palaeobiology** from the University of Opole (2019) and has over 25 years of research experience in Vertebrate Palaeobiology, mainly focusing on the Late Jurassic period. He is Director of the Centre for Palaeobiology and Palaeoecology at the Natural History Society, managing one of Europe's most important Upper Jurassic fossil collections. Bruno is a founding member of the UNESCO Global Geopark Oeste and co-coordinator of SIGAP, the first GIS applied to Palaeontology in the Iberian Peninsula.

## Sofia Patrocínio

Sofia earned her **MSc in Paleontology** from Universidade Nova de Lisboa in 2024, where she described a new species of Docodont from Greenland. She is currently a researcher at CERENA, Instituto Superior Técnico.

## Manuel Campos

Manuel completed his B.Sc. in Mechanical Engineering at Instituto Superior Técnico (2021-2025) and is pursuing an **MSc in Aerospace Engineering** at the same institution. His research at CERENA focuses on extending 2D Bayesian convolutional neural networks to 3D models for geological domain characterization, supporting automated mineral resource modeling under uncertainty.

## Victor Carvalho

Victor holds **MSc in Paleontology** and Scientific Illustration, specializing in Paleoart. His recent research has focused on microfossils and paleoenvironmental reconstruction through palynological analysis.

## Naveed Akram

Dr. Naveed Akram joins CERENA as a **researcher** in the EU-funded project [MINOTAUR](#). He holds a **PhD in Geophysics** from the University of Science and Technology of China. His work focuses on AI-driven geophysical and geological modeling for subsurface monitoring and resource exploration, contributing to innovative solutions in robotics, digital twins, and artificial intelligence for sustainable mining.



# New Members

## Catarina Gonçalves

Catarina graduated in **Chemical Engineering** at IST and completed a Master's in Chemistry (2013–2019). Her interest in **biomedical sciences** led her to a **PhD at Gulbenkian Institute for Molecular Medicine**, where she tested a new antibody-drug conjugate for Triple Negative Breast Cancer. Passionate about science communication and outreach, Catarina now works at **CERENA's Communication Office**, where she is excited to explore these areas further.

## Tiago Reis

Tiago joins CERENA as our new **administrative staff member**. He holds an academic background in **Environmental Engineering and Geography**, complemented by experience in teaching. Passionate about science and collaboration, Tiago sees this role as an opportunity to grow, acquire new skills, and contribute to CERENA's mission.

## Visiting Researchers and Students at CERENA

- **Cheng Zhang** – PhD student in Control Science and Engineering (China University of Petroleum – Beijing), working on seismic processing and microseismic source location.
- **Weiyang Liu** – PhD student in Geological Resources and Engineering (China University of Petroleum – Beijing), researching AI applications for structural interpretation.
- **Xiaodong Guo** – PhD student in Mining Engineering (CUMTB), with research interests in synchrotron radiation, coal nanopores, and gas adsorption.
- **Xiaoming Shi** – PhD student in Mining Engineering at the China University of Mining and Technology (Beijing). He will join CERENA as a visiting PhD student, contributing to research on sustainable mining and energy recovery.
- **Zhang Xin** – Visiting researcher at CERENA (IST), with a PhD in Mining Engineering from CUMTB. His work focuses on coal wall failure mechanisms and stability control for safer, more efficient mining.

## What's Coming Next – January Preview

- **22<sup>nd</sup> January** – CERENA PhD Day, IST (Mining Building) – Room 3.23
- **29<sup>th</sup> January** – CERENA Seminar, 12:30, IST (Central Building) – Room C13 / FEUP – Room F405  
Title: *To be confirm*  
Speakers: **Moisés Pinto** (IST) / Ângela Nunes (SECIL)



## A message from PhD representatives about CERENA's PhD Day

We are pleased to announce the upcoming PhD CERENA Day, taking place on **22 January 2026** at the IST - Mining Department. This event aims to bring together CERENA's PhD students and young researchers in an engaging and collaborative atmosphere. Starting around 11:00, the day will include poster presentations and 3-minute pitches, providing a platform for participants to share their work, exchange ideas, and connect across research areas.

For this 1<sup>st</sup> edition, we will also be inviting companies from a variety of sectors, giving students the opportunity to showcase their research not only to their peers but also to industry representatives. This interaction will help strengthen the link between CERENA and external partners while highlighting the relevance and impact of the work developed within our community.

We encourage all PhD students and young researchers to join us and make the most of this event.

Registration is now open—don't miss it!

Miguel Gomes and Bárbara Fonseca





## **Season's Greetings from CERENA**

**Wishing you and your families joy, peace, and good health during this festive season. May the New Year bring inspiration, collaboration, and success to all.**



# NEWSLETTER



## CERENA

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UNIVERSIDADE DO PORTO

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Thank you for reading. Stay tuned  
for more updates in our next  
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