

CERENA

Centro de Recursos
Naturais e Ambiente

MAY 2026

**20 YEAR
EDITION
#5**



SCIENCE IN MOTION

YOUR MONTHLY CERENA NEWS

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A message from the President

This edition of CERENA's Science in Motion newsletter perfectly showcases our ongoing commitment to **strengthening the connection between science and society**, while simultaneously fostering internal capacity-building for our students, researchers, and staff.

April was a particularly dynamic month, marked by an intensive programme of scientific outreach. CERENA actively participated in several science fairs and visited schools, engaging younger audiences with CERENA's core research themes (environment, raw materials, and energy) and inspiring the next generation of scientists and engineers. **This outreach is central to our mission: not only to advance knowledge, but to make it accessible.**

A highlight of the month was CERENA's strong and diverse presence at Técnico Open Day. The remarkable mobilisation of our community demonstrated the vitality of our centre. Throughout a day that welcomed more than 4,000 visitors, our researchers, students, and staff delivered an engaging and inspiring experience in many scientific areas, from chemical engineering to mineral and energy resources engineering.

We were also pleased to co-host the Talent Pass consortium meeting, an important initiative that provides access to advanced training opportunities for both researchers and science managers. This programme continues to play a key role in strengthening our human capital, and we encourage all interested members of our community to explore the opportunities it still offers.

Finally, I invite you to read the interview with our Group Coordinator, João Gomes. In this conversation, he reflects on his journey within CERENA and revisits the origins of a key research line on low-carbon fuels—work that ultimately contributed to the development of CERENA-ISEL.

Leonardo Azevedo

April highlights



CRITERIA Meeting

From **7th to 10th April, 2026**, **CRITERIA** (Horizon Europe – Marie Skłodowska-Curie Actions Doctoral Networks) team members reunited for their second meeting in Lisbon at Técnico to discuss the latest project updates. The project, led by Politecnico di Torino, focuses on the recovery of critical raw materials (CRMs) from waste dumps and tailings, approached from a sustainable perspective.



The day opened up with a welcoming session by Técnico's project coordinator Leonardo Azevedo, and proceeded with talks by CERENA members João Narciso, Helga Jordão, and Amílcar Soares, as well as colleagues from partner institutions João Carvalho, António Salvador, and Alberto Godio.

April highlights

CRITERIA Meeting

13 doctoral candidates from Politecnico di Torino, Universitat Politècnica de Catalunya (UPC) (Spain), Instituto Superior Técnico (Portugal), KTH | Kungliga Tekniska högskolan (Sweden), Università della Calabria (Italy) joined the CRITERIA MScA School focusing on real-time mining concept applied to CRMs, science communication, and career development. Then, they presented their results to the supervisory board and had an interview with the Project Officer from REA. The 13 doctoral candidates carry out their research in both academia and industry across the partner countries.



April highlights

Talent Pass Consortium Meeting

CERENA was proud to be actively involved in the **Talent Pass EU Lisbon Event – Plastics in the Circular Economy**, which took place at Instituto Superior Técnico on **28 and 29 April**.



Organized within the framework of the project **Talent Pass – Fostering European Talents for Widening Circular Economy** and its consortium meeting, the event counted on the active involvement of CERENA's project implementation team – Ana C. Marques, António Aguiar, Telma Henriques, and Rosana Pinto – together with colleagues from CEGIST.

Bringing together more than 100 participants, both on-site and online, the event provided a valuable platform for researchers, managers, and innovators to exchange knowledge and discuss solutions for advancing plastics circularity and sustainability.



April highlights

CERENA Seminar

On **30th April, 2026**, CERENA hosted a seminar focused on *Converging Paths: Academia–Industry Synergies in Critical Raw Material Recovery*. This seminar series is part of the 20-year anniversary celebration of CERENA and aims to **bring academia and industry closer together**. Rui Sousa invited Engineer Nuno Faria, and both speakers highlighted how they took advantage of their professional trajectory in academia and industry to improve their projects. Rui transitioned from academia to industry, and back to academia in 2022, being now at the forefront of **b.again** project, a project from DST that aims to **recover batteries at the end of their life cycle**. Nuno, on the other hand, worked 20 years in industry until he felt the need to go back to academia and pursue a PhD. In Nuno's words, the world we live in nowadays is very different from when he first started in industry, with the collaboration between industry and academia being fundamental for scientific breakthroughs.



The relevance of scientific collaboration by João Gomes

This month, to celebrate CERENA's 20th anniversary, we talked with **João Gomes**.



João Gomes, based at ISEL, is the current coordinator of the Energy Group. João did his PhD at Técnico Lisboa, under the supervision of João Bordado, being part of the catalysis group at **IBB** (Institute of Biotechnology and Bioengineering).

When the opportunity to join CERENA arose, together with João Bordado and Ramôa Ribeiro, João embraced it with open arms. In this change of research center, João got the chance to be closer to Chemical and Mining Engineering, taking advantage of the multidisciplinary nature of CERENA.

In the words of João, as any fusion process occurs, we must ***“let go of our individual work mindset to embrace a collaborative mindset”***. In this sense, the effort taken by Maria João Pereira when the 2013 fusions occurred was key to giving rise to the cohesive center we have today. From ISEL's (Instituto Superior de Engenharia de Lisboa) point of view, being part of CERENA was a fundamental step in securing PhD students.

The relevance of scientific collaboration by João Gomes

João considers CERENA a challenging center, **encouraging researchers to publish and to take advantage of each other's skills.** João highlights **CLEAN FOREST**, a project that aimed to find alternatives for forest waste while generating energy. This project, which ended up having a very positive evaluation, took advantage of Rui Galhano's expertise in the liquefaction of residues, resulting in one patent and interest in the industry (both national and international).



These results sum up João's advice perfectly - ***"take advantage of each other's works, as collaboration gives rise to more interesting results and no-one can work alone."***





Community news

CERENA researchers visit schools with outreach activities

As part of the “Cientificamente Provável” partnership between FCT and research centers, two CERENA researchers visited schools in the Lisbon area to bring activities to students.

On **13th April 2026**, Amélia Dionísio visited Escola Ferreira de Castro, in Sintra, where she explained the effects of fire on natural stone to sixth-grade students. The students engaged in a practical activity that made them engineers for one hour. Amélia also explained the importance of natural minerals for everyday life to eighth-grade students. The students discovered unusual applications of minerals in everyday items and shared this knowledge with their peers.



On **16th April 2026**, Gustavo Paneiro visited Escola Secundária de Odivelas, where he presented DER (Department of Energy and Mineral Resources)’s formative offer how the bachelor’s and master’s students are integrated in CERENA’s research. Additionally, Gustavo conducted a practical activity to help students understand the relevance of mineral resources to their daily lives, thereby highlighting the importance of Mineral Resources Engineers’ work.



Community news

CERENA researchers visit schools with outreach activities

Additionally, on **23rd April 2026**, João Narciso, Alexandre Frazão and Vasco Miranda took part in Liceu Camões Science Fair. They explained their research at CERENA, engaging high school students in science and technology courses.



CERENA Researchers talked to País Positivo

A ATUAL CONTRIBUIÇÃO DO CERENA NAS AGÊNCIAS PRR E NOS PROJETOS P2030

JOÃO FORTUNATO, JOSÉ MARIA PIRES, DIAGO NARCISO, ANA CLARA MARQUES, RUI GALHANO LANTOS, JOANA NEIVA CORREIA, GUSTAVO PANEIRO, CARLA FERNANDES, SILVIA RIBEIRO, HENRIQUE A. MATOS

CERENA - Centro de Recursos Naturais e Ambientais e Laboratório de Recursos Hídricos e Qualidade Ambiental (LQHA) é um instituto de investigação científica que atua na área de Recursos Hídricos e Qualidade Ambiental, com o objetivo de promover a sustentabilidade dos recursos hídricos, através de projetos de investigação científica e de transferência de tecnologia para a sociedade.

CERENA atua em áreas de investigação científica, desenvolvimento tecnológico e transferência de tecnologia para a sociedade. O instituto tem como missão promover a sustentabilidade dos recursos hídricos, através de projetos de investigação científica e de transferência de tecnologia para a sociedade. O instituto tem como missão promover a sustentabilidade dos recursos hídricos, através de projetos de investigação científica e de transferência de tecnologia para a sociedade.

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This month, CERENA researchers Ana Clara Marques, Rui Galhano, José Pires, João Fortunato, Henrique Matos, Diogo Narciso, Gustavo Paneiro, and Joana Neiva Correia talked with Caderno País Positivo to explain how CERENA's projects are contributing to achieve *Recover Portugal Agenda*.

Ana Luís de Sousa gave interview about climate change

Ana Luís de Sousa gave an interview to Cidades pelo Clima about the impacts of climate change on the electric network. The full interview, in Portuguese, can be watched here.



Community news

Técnico Open Day.



Técnico Open Day, the biggest showcase of science and engineering conducted at Técnico Lisboa, took place on **18th April 2026**.

CERENA participated with three stands in the Science Fair, three stands for small children, and six visits to our laboratories.

In the Science Fair, Abeer Mohtar and Miguel Teixeira engaged participants with the “Climate Tic Tac” game, a game that aims to alert citizens to the adverse effects of the increasing levels of CO₂.



Bruno Camilo and Sofia Patrocínio explained how paleontologists think, showcasing fossils.





Community news

Técnico Open Day.

António Aguiar, Ivo Paulo, João Lourenço, Marta Lourenço, Luciana Silva, Tânia Frade, Raquel Pereira, Alda Pereira, Lucas Marcelino, and Rafaela Marques showcased projects related to the valorization of biomass and polymer production, engaging younger visitors in the production of slime.



Amélia Dionísio, alongside Mining and Energy Resources Engineering students, organized a ludic activity for children to understand the importance of stones and minerals.





Community news

Técnico Open Day.

As far as visits go, the participants got the chance to visit the Geosciences Museum with Amélia Dionísio and Mining and Energy Resources Engineering students (Gonçalo Carvalho, Amabel André, Ivan Kolesnikov, Bruna Fradique, Miguel Santos, Pedro Bernardo, Carlos Alberto, Amanda Amado, Carlos Ross, Rui Santos e Paulo Krasnonozhenko). Gustavo Paneiro, Helga Jordão, Roberta Lobarinhas, João Senra, João Narciso, and Alexandre Frazão dynamized activities in the Geolab, while Silvia Carvalho engaged visitors in the potentialities of the Multiscale Imaging Laboratory to discover hidden treasures.





Community news

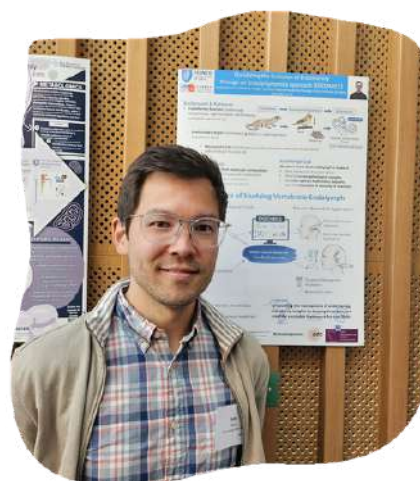
Telma Henriques does Talent Pass Training



As part of **Talent Pass** Project, Telma Henriques went to Padua (Italy) from **13 to 17th April 2026**. Telma did a training in Project Management and Pre-Award, taking advantage of the European network to connect with colleagues and exchange ideas.

Andre Ohara takes part in metabolomics course

Andre Ohara, who will be working with Ricardo Araújo, completed an intensive course focused on the cutting-edge field of metabolomics. This was a fundamental experience for the launch of his MSCA Fellowship at Técnico Lisboa this June.



The program offered a deep dive into standardized workflows, covering everything from experimental design to complex data acquisition techniques like LC-MS and MS imaging.

Beyond the technical training, the course served as a fantastic hub connecting with a diverse group of scientists and other MSCA fellows.



Community news

Rui Galhano visits Universities in Brazil

In April, Rui Galhano visited Universidade Federal do Rio de Janeiro and Universidade Federal de Sergipe, in Aracaju, where he presented his work focused on the innovation on bio-oils and biomass applications.



PhD Defenses



On **10th March 2026**, Roberta Lobarinhas defended her PhD, entitled *Assessment of the vulnerability of natural stones to high temperatures*. Roberta was supervised by Amélia Dionísio and Gustavo Paneiro. **Congratulations Roberta!**

Upcoming defenses

- **Shahmir Noshervani**, 8 May 2026, Amphitheater PA-3 (Mathematics Building), 14h - *From Capture to Storage: How Carbon Dioxide Impurities Impact the Value Chain*
- **Ana Filipa Duarte**, 26 May, 14h - *Geostatistical Tools for Smarter Ocean Sampling and Modelling*



Pre Award



EXPRESSION OF INTEREST - Eoi

Researchers interested in applying to calls for competitive funding are requested to **complete the Expression of Interest (Eoi) online form provided by CERENA Pre-Award Office**. The submission of the Eoi enables the Pre-Award Office to anticipate upcoming applications, ensure adequate planning, and activate the necessary support actions. **The collected data supports mandatory annual reporting and informs the distribution of the CERENA annual funds.**

Applications for funding



In April, CERENA researchers' engagement in international programmes led to the submission of 7 collaborative Horizon Europe proposals. These submissions have the potential to secure over €2.5 million in funding and demonstrate CERENA's researchers' continued commitment and strategic engagement in achieving competitive funding through international partnerships.

Disseminations

EUROPEAN EC	
MSCA Postdoctoral Fellowships 2026	DEADLINE 09.09
Deadline: September 9, 2026, 16h00 (Lisbon time)	
Funding: € 399.05 million (overall indicative budget)	
Duration: up to a maximum of 24 months	
Links: EU Funding & Tenders Portal - HORIZON-MSCA-2026-PF-01-01	
<p>Main eligibility conditions Applicants must:</p> <ul style="list-style-type: none"> • be postdoctoral researchers at the date of the call deadline - hold a doctoral degree or have successfully defended their doctoral thesis (successful defence must be unconditional and supporting documentation may be requested); • have a maximum of 8 years full-time equivalent experience in research, from the date of award of the doctoral degree (extensions/exceptions may apply); • comply with the mobility rule - not have resided or carried out their main activity (e.g. work, studies) in the country of the beneficiary/host organisation for more than 12 months in the 36 months immediately before the call deadline. <p>Note: Researchers who, at the date of the call deadline have refugee status under the Geneva Convention, or benefit from the EU temporary protection are exempt from the mobility rule.</p> <p>Detailed eligibility conditions, as well as additional information on the MSCA-PF call, can be found in official sources provided by the European Commission, such as the call description on the EU Funding & Tenders Portal and the Horizon Europe Work programme 2026-2027.</p>	
Pre-Award Office support: Proposal reviewing/development and basic support, depending on the Pre-Award Office internal schedule.	



Latest in the press

1. Sareen, S.; Juhola, S.; Czarnecka, A.; Kekkonen, A.; Martinovska Stojcheska, A.; Slavec, A.; Uchanska-Bieniusiewicz, A.; Rønningstad, C.; Martin, C.; Tamašauskaitė-Janickė, G.; Rocha, H.B.; Kunnas, J.; Vasconcelos, M.L.; Riechers, M.; Prechtl, M.H.G.; Piotrkowska, M.; Alkan, N.; Kalkan, N.; Esenbuga, N.; Pineda-Martos, R.; Bernardo, S.; Milliken, S.; Okkiran, Ş.; Burakgazi, S.G.; Von Wirth, T.; Güngör, T.A.; Kiss, V.; **The prefigurative politics of enactable sustainability transformations in the present**, Norsk Geografisk Tidsskrift, 1 January 2026
2. Li, Y.; Wang, Y.; Wang, N.; Paneiro, G.A.; Ren, Y.; Cui, Y.; Shi, X.; Li, T.; **Zonal failure mechanisms and monitoring-control methods of surrounding rock in gradient offset roadways**, International Journal of Mining Science and Technology, 1 January 2026
3. Attaei, M.; Vieira, M.; Pederneiras, C.M.; Coimbra, F.C.; Bastos, D.; Veiga, R.; **CO2 Capture in Construction Materials: Review of Uptake Approaches and Energy Considerations**, Energy Engineering: Journal of the Association of Energy Engineering, Volume 123, Issue 4, 1 January 2026
4. Vassallo, S.; Esteves, A.; Assis, S.; Rodrigues, Z.; Márquez-Grant, N.; Malcherek, A.; Pereira, M.; Chowdhury, M.; Alves Cardoso, F.; **A Smile From the Past: Exploring a Fixed Bone Dental Bridge From Eighteenth/Nineteenth Century Porto (Portugal)**, International Journal of Osteoarchaeology, 1 January 2026
5. Prechtl, M.H.G.; Alegria, E.C.B.A.; Rocha, H.B.; Justino, E.; Gomes, J.F.; Puna, J.F.; **Correction: Boundaries for a global resilient energy transition, Green Chemistry**, Volume 28, Issue 6, 9 February 2026
6. Wang, N.; Paneiro, G.A.; Li, Y.; Liu, Y.; **Mechanisms of stress distribution influenced by numerical model size and goaf parameters in multi-coal seam mining**, Scientific Reports, Volume 16, Issue 1, Article 11137, 26 February 2026
7. Pinto, M.M.; Silvério, V.; Pereira, M.F.C.; Duarte, S.O.D.; Monteiro, G.A.; Cardoso, R.; **Insights into the Precipitation of Biocement Minerals Using Microfluidic Devices and SEM Images**, Minerals, Volume 16, Issue 3, Article 253, 1 March 2026
8. Moreno, F.; Pinto, M.C.; Neves, O.; Neto, R.; **Topsoil Geochemistry and Land-Use-Related Metal(loid) Risks on Maio Island, Cape Verde**, Geosciences (Switzerland), Volume 16, Issue 3, Article 109, 1 March 2026
9. Canero, F.M.; Mendes, M.P.; Rodriguez-Galiano, V.; **Mapping soil heavy metals in a geologically complex Mediterranean forested area: an interpretable machine learning approach**, Remote Sensing Applications: Society and Environment, Volume 42, Article 102028, 1 April 2026
10. Taborda, T.M.; Pires, J.C.M.; Badenes, S.M.; Lemos, F.; **Constructing and validating a new model for the light distribution inside an outdoor tubular photobioreactor for the production of photosynthetic microorganisms**, Algal Research, Volume 95, Article 104669, 1 April 2026



Latest in the press

11. Nascimento, T.; Ramos-Andrés, M.; Lourenço, M.C.; Marques, A.C.; **Depolymerized lignin as an enabler for superior lignin-acrylonitrile copolymers for sustainable wet-spun fibers**, Green Chemistry, 15 April 2026
12. Gomes, I.L.R.; Castro Oliveira, M.; Martins, C.F.; Estrela, M.A.; Fernandes, L.; Marcon, L.; Matos, P.N.; **Retrofit of cogeneration engines to use natural gas and hydrogen blends: Application of an optimization methodology to support decision-making**, International Journal of Hydrogen Energy, Volume 230, Article 154821, 30 April 2026
13. Guo, X.; Zhao, Y.; Wang, C.; Li, Y.; Khlyupin, A.; Gerke, K.M.; Jordão, H.; **CO₂ adsorption-driven fractal evolution of anthracite nanopores observed by synchrotron radiation small angle X-ray scattering**, Chemical Engineering Journal, Volume 535, Article 175392, 1 May 2026
14. Amorim, A.S.; Filipe, R.M.; Rojas-Mayorga, C.K.; Mendoza-Castillo, D.I.; Bonilla-Petriciolet, A.; Matos, H.A.; **Performance assessment and modelling of CO₂ capture via temperature swing adsorption using biowaste-based materials**, Chemical Engineering Science, Volume 327, Article 123637, 1 June 2026
15. Soares Dias, A.P.; Casquilho, M.; Fonseca, F.G.; Pereira, M.F.; Rijo, B.; **Mono Multi-model kinetic fingerprinting of Arundo donax pyrolysis**, Energy, Volume 354, Article 141073, 1 July 2026
16. Guo, X.; Zhao, Y.; Wang, C.; Zhu, S.; Yang, H.; Jiang, H.; Ke, Y.; Jordão, H.; **Revealing the distribution characteristics of open and closed pores in coal reservoirs: a contrast matching SANS study**, Geoenergy Science and Engineering, Volume 262, Article 214469, 1 July 2026
17. Gutierrez Cisneros, C.; Polania Melo, D.; Bloemen, V.; Pires, J.; Pinto, M.; Mignon, A.; **Microscale hemoglobin assay for time-resolved kinetic analysis of nitric oxide release from electrospun hydrogels**, Analytica Chimica Acta, Volume 1406, Article 345487, 8 July 2026



Upcoming

08/05

**Workshop Geo-resources and
Geo-environment CERENA
laboratories**
FEUP

08/05

**PhD Defense Shahmir
Noshervani**
Lisbon, Técnico, Room PA-3
(Mathematics Building)

14&15/05

CERENA Annual Meeting
Foz do Arelho

26/05

PhD Defense Ana Filipa Duarte
Lisbon, Técnico

28/05

**CERENA Seminar hosted by
Professor António Fiúza**
IST C13 | FEUP F405

6 - 8/10

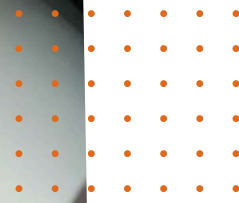
**4th Edge Conference on
Seismic Inversion**
Lisbon



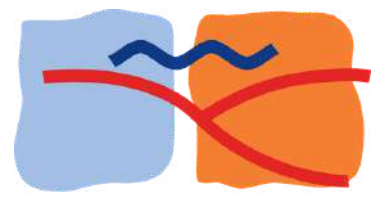
Do you want to share anything with the community in the next newsletter? Fill in the communication form at [CERENA's website](#).



MAY 2026



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



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