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European Union

GA101059867



UNIVERSITY OF NOVI SAD  
FACULTY OF  
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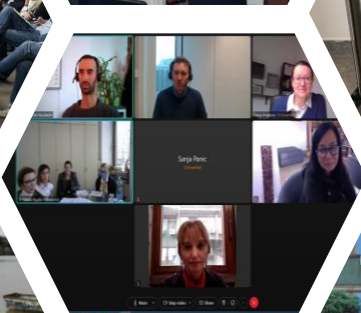
## Newsletter no. 2

### At the end of 40 TwINSol-CECs months

Dear Reader,

On behalf of the TwINSol-CECs consortium, we are delighted to present this final TwINSol-CECs Newsletter – a concluding dissemination milestone of the project, but by no means the end of the TwINSol-CECs story.

The role that Faculty of Technology Novi Sad (TFNS) has assumed as an important regional actor in the field of CECs will continue to grow well beyond the project's lifetime, and in this issue, we back at some of our most interesting activities and achievements in the second reporting period, from November 2023 to the end of November 2025.



First of all, we would like to express our sincere gratitude to all partners, stakeholders, project team members, and collaborators who have contributed to the success of the TwINSol-CEC project.

The joint efforts, expertise, and dedication of our consortium have been essential in advancing knowledge and building capacities in the field of contaminants of emerging concern, while strengthening international cooperation and scientific excellence.

We are grateful to our colleagues from partner institutions, Institute of Environmental Assessment and Water Research - CSIC, Barcelona, Spain, and NOVA University of Lisbon, Portugal, led by Dr. Marinella Farre and Prof. João Crespo, whose support and engagement have been vital in achieving the main project's objectives.

Moreover, we acknowledge the engagement of Dr. Dubravka Vejnović, Independent Ethics Advisor, from whom we learned a lot about GDPR and other issues important for the successful implementation of Horizon Europe project.

We are also deeply thankful to the broader network of colleagues, advisors, and supporters who have provided valuable insights, shared experiences, and encouraged our mission along the way.

Above all, we recognize the dedication and hard work of every project team member. Their creativity, persistence, and collaboration have driven the progress of TwINSol-CEC, turning challenges into opportunities and laying the foundation for future research and innovation. Finally, this project demonstrates the possibilities of what can be achieved with joint effort, knowledge, cooperation aiming towards zero-pollution and toxic free environment.

At the capacity level, TwINSol-CECs has clearly improved TFNS's ability to design, submit and implement international research projects. A rich programme of trainings, peer-learning activities and direct proposal-writing experience has significantly strengthened both academic and administrative competences. This is evidenced by the number and diversity of project applications prepared during the project and by TFNS's growing attractiveness as a partner in Horizon Europe, MSCA, COST and other international and national schemes. The project has fulfilled its role as a catalyst for change, creating a solid foundation for TFNS's long-term integration into the European Research Area as a competitive and visible actor in environmental research and innovation.

The establishment of an institutional framework for the Research Management and Administration Unit (RMAU), including new regulations and a dedicated administrative position, represents a particularly important structural achievement which will support sustained performance beyond the project lifetime.

The coordinated research implemented in WP4 has produced new, baseline knowledge on the occurrence of CECs in Serbian environmental matrices and has demonstrated the potential of innovative, often low-cost water-treatment solutions. These results, together with 4 associated PhD theses, publications and a technical solution, have strengthened TFNS's expertise and profile in an area that is directly relevant to European environmental and health policies.

The involvement of young researchers has been another notable success. Through their participation in sampling campaigns, laboratory work, data analysis, summer schools, workshops and international events, early-stage researchers have gained substantive scientific skills, experience in international collaboration and crucial transversal competences. This directly supports the long-term sustainability of the capacities created during TwINSol-CECs and contributes to building a new generation of experts in CECs and environmental protection at TFNS.



Scientific dissemination was carried out through open-access publications in peer-reviewed journals, conference abstracts and proceedings, as well as invited and contributed talks and posters at international and national events.

The project organized several international workshops, a final international conference and two summer schools, significantly enhancing TFNS's international visibility and networking.

Structured stakeholder engagement was achieved through the "Club of TwINSol-CECs Interest", which provided a forum for regular dialogue with water-related institutions, authorities, industry, NGOs and schools, and was supported by a targeted questionnaire on needs and priorities.

To systematically capture stakeholder perspectives, needs and expectations, Questionnaire for Identifying Priority Research and Innovation Areas in the Removal of Contaminants of Emerging Concern was developed and distributed to Club participants and other interested parties. Details on the gathered answers are summarized in the Rerpot available at the project website; these are valuable sources for future research perspectives.

TwINSol-CECs has also engaged in communication and clustering with European projects and thematic initiatives addressing environmental contaminants and sustainability, primarily Horizon Europe twinning projects TwinSubDyn (GA 101059546), PFASTwin (GA 101059534), SPECTRA (GA 101158453), and SMartWaterTwin (GA 101060110).



## Open access articles acknowledging TwINSol-CECs

- 1 V. Vasić, D. Kukić, M. Šciban, N. Đurišić -Mladenović, N. Velić, B. Pajin, J. Crespo, M. Farre and Z. Šereš, Lignocellulose-Based Biosorbents for the Removal of Contaminants of Emerging Concern (CECs) from Water: A Review, *Water* 2023, 15, 1853. <https://doi.org/10.3390/w15101853>
- 2 A. Adamović, M. Petronijević, S. Panić, D. Cvetković, I. Antić, Z. Petrović, N. Đurišić-Mladenović, Biochar and hydrochar as adsorbents for the removal of contaminants of emerging concern from wastewater, *Advanced Technologies* 2023,12 (1), 57-74. DOI: 10.5937/savteh2301057A <https://scindeks-clanci.ceon.rs/data/pdf/2406-2979/2023/2406-29792301057A.pdf>
- 3 D. Rakić, I. Antić, J. Živančev, M. Buljovčić, Z. Šereš & N. Đurišić Mladenović, Solid-Phase Extraction as Promising Sample Preparation Method for Compounds of Emerging Concerns Analysis, *Analecta Technica Szegedinensia* 2023, 17 (4), 16-24. Vol. 17, No. 42023DOI: <https://doi.org/10.14232/analecta.2023.4.16-24>
- 4 N. Đurišić-Mladenović, J. Živančev, I. Antić, D. Rakić, M. Buljovčić, B. Pajin, M. Llorca, M. Farre, Occurrence of Contaminants of Emerging Concern in Different Water Samples from the Lower Part of the Danube River Middle Basin – A Review. *Environmental Pollution*, 363, 125128. <https://doi.org/10.1016/j.envpol.2024.125128>
- 5 S. Panić, N. Đurišić-Mladenović, M. Petronijević, I. Stijepović, M. Milanović, G. Kozma, A. Kukovec, Valorization of Waste Biomass Towards Biochar Production – Characterization and Perspectives for Sustainable Applications In Serbia. *Environmental Technology and Innovation* 2025, 37, 104043. <https://doi.org/10.1016/j.eti.2025.104043>
- 6 J. Šurlan, C.F. Galinha, N. Maravić, C. Brazinha, I. Antić, J. Živančev, N. Đurišić-Mladenović, Z. Šereš, J. G. Crespo, Pharmaceuticals, pesticides, and PFAS at surface water occurrence levels - impact of compound specific physicochemical properties on nanofiltration and reverse osmosis processes, *Membranes* 2025, 15(12), 358, <https://doi.org/10.3390/membranes15120358>
- 7 S. Panić, N. Vasiljević, M. Petronijević, I. Antić, J. Živančev, N. Đurišić-Mladenović, Hook-and-destroy Strategy for Efficient Activation of Persulfate by B-Doped Pyrochar for the Removal of Contaminants of Emerging Concerns from Wastewater, *Toxic* (2025) (accepted Nov 27, 2025; in press).

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www.twinsol-cecs.com  
twinsol-cecs@uns.ac.rs

## Club of TwINSol-CECs Interest – Bridging Science and Practice

Within the TwINSol-CECs project, the *Club of Interest* has been established as a platform bringing together researchers, industry representatives, institutions, and other stakeholders interested in the challenges of contaminants of emerging concern in water and their effective remediation. The Club aims to provide space for knowledge exchange, dialogue, and idea-sharing, while strengthening cooperation between the academic and non-academic sectors.

The first meeting of the Club of Interest was held on 27 April 2023 at the Faculty of Technology, University of Novi Sad, where the project goals were presented and discussions focused on research priorities and the importance of collaboration with industry.

The second meeting, organized on 26 September 2024, again at the Faculty of Technology in Novi Sad, gathered an even wider range of participants. It highlighted ongoing project activities, presented recent scientific achievements, and fostered dialogue on practical applications of advanced water treatment technologies.

The third meeting, held on 26 September 2025, marked a significant milestone by presenting the first results of experiments including real-life water samples, alongside final project activities and concluding remarks. This event not only showcased the practical relevance of the project's scientific outcomes but also underlined its contribution to sustainable water management strategies.

Through these activities, the Club of Interest has become a vital communication channel of the TwINSol-CECs project, ensuring that scientific results are transferred into practice and that stakeholders' perspectives are integrated into future solutions.



## At the end of 40 TwINSol-CECs months

A series of short retrospective views from TwINSol-CECs researchers on topics of interest to the project was prepared and published on the LinkedIn social platform. In total, eight articles were published in English with the aim of enhancing the project's outreach, visibility, and stakeholder engagement by communicating key scientific insights in an accessible format. These posts present project-relevant research topics for a broader audience, strengthening the project's presence within the international environmental science and membrane technology communities. By presenting intricate subjects in a clear and understandable way, the series sought to engage a wider readership. Each publication was authored by a project member, providing an opportunity to showcase individual expertise and project roles, with particular emphasis on TFNS researchers.

Translations of these texts were compiled into an electronic collection, which was distributed to participants of the previous Meetings of the Club of TwINSol-CECs Interest and made available on the project website. The purpose of this collection was to draw attention to the problem of contaminants of emerging concern and to clearly explain the importance of the project's research and the regional stakeholder-engagement activities.

The open public forum titled "Water Remembers Everything – Including Your Medicines, Creams and Hygiene Products" was held on 14 November 2025 at TFNS. The event brought together citizens, students, representatives of institutions, and media interested in the growing issue of micropollutants in aquatic environments. Panelists were Prof. Nataša Đurišić Mladenović and Dragana Lukić. Nikola Maravić moderated the discussion and quiz, which included the present audience. The interesting title sparked the media interest, and two media appearances of TwINSol-CECs researchers occurred for announcing the Forum and explaining the challenges imposed by CECs presence in water.

Inspired by the TWINSOLCEC project name, this brief overview highlights key activities represented by each letter of the project title.

**T** - TRAINING – Over the three-year duration of the project, a significant number of training sessions were organized at TFNS, as well as at partner institutions. These trainings were highly valuable for the project team, who had the opportunity to learn from experts both from Serbia and abroad.

**W** - WORKSHOP – The three TwINSol-CECs Workshops fostered scientific exchange, showcased cutting-edge research, and promoted expert collaboration in environmental protection.

**I** - INNOVATION – New equipment introduced innovative tools and techniques, boosting the functionality of research laboratories.

**N** - NETWORKING – Intensive international networking connected TFNS with research institutions from Barcelona (IDAEA-CSIC) and Lisbon (NOVA University), fostering partnerships for joint research.

**S** - SUMMER SCHOOL – Two summer schools enabled participants from Serbia and the region to improve skills and knowledge through lectures and lab training at the Faculty of Technology.

**O** - OPTIMIZATION – Continuous optimization of methodologies and workflows improved research outcomes by enhancing analytical protocols for more accurate and reliable data on CECs.

**L** - LOGISTICS – The project team not only advanced scientifically but also developed strong organizational skills by planning and managing various events, workshops, and conferences.

**C** - CONFERENCE – Project team members had the opportunity to present their research through oral and poster presentations at numerous international conferences. In addition, three conferences were organized within the scope of the project itself.

**E** - EXPOSURE – The project ensured broad exposure of its scientific results through publications and presentations, boosting visibility and engagement in the global environmental research community.

**C** - COOPERATION – The project significantly enhanced cooperation at the international level, as well as among various research teams within TFNS. This improved synergy not only strengthened ongoing research but also laid a solid foundation for future joint projects.

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**Editors in Chief:** Zita Šereš **Text:** Nataša Đurišić-Mladenović, Biljana Pajin, Nikola Maravić. **Design:** Dragana Lukić.

