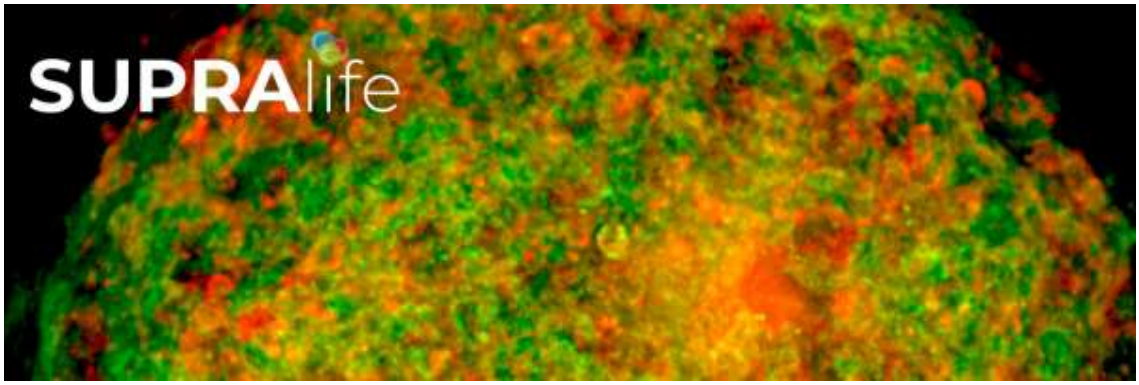


SUPRALIFE NEWSLETTER #6

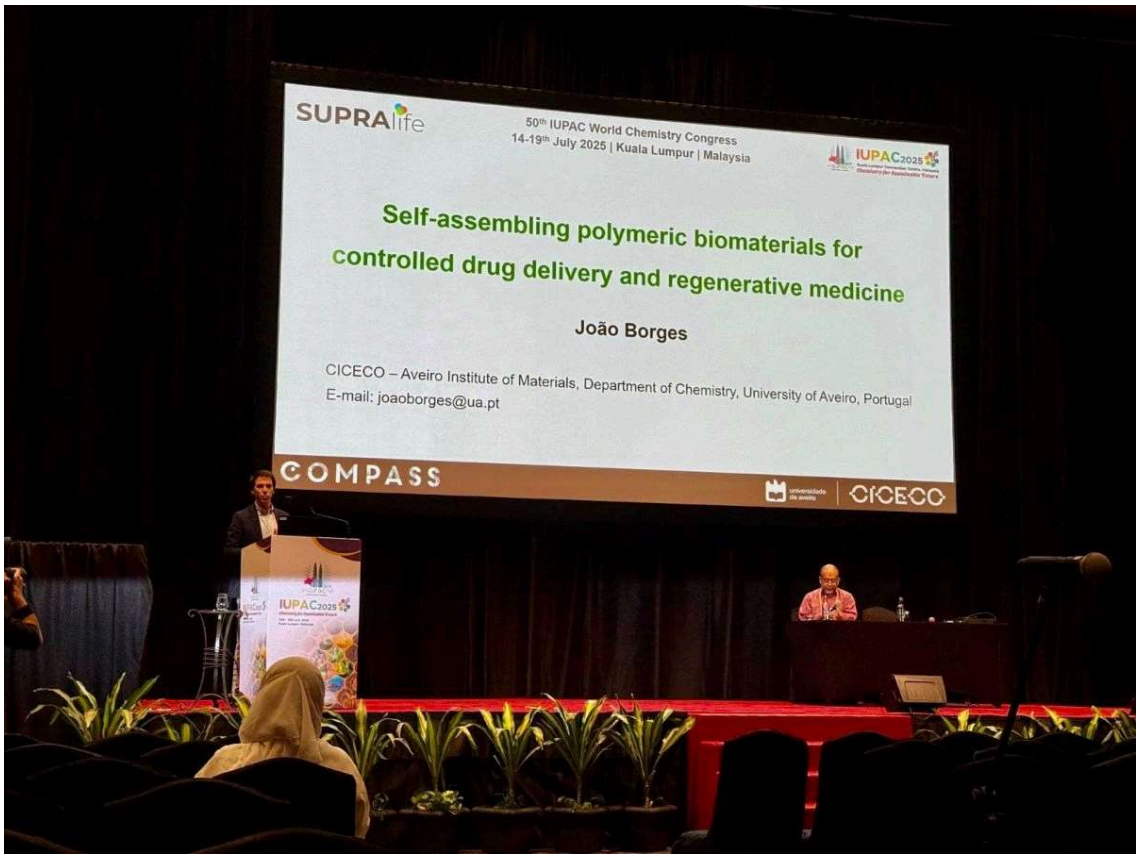
DECEMBER 2025

Dear SUPRALIFE Friends and Colleagues,

We are pleased to share the sixth issue of the SUPRALIFE's Newsletter.

IN THIS NUMBER:

The SUPRALIFE consortium was represented by João Borges from the University of Aveiro (UAVR, Portugal) at the 50th International Union of Pure and Applied Chemistry World Chemistry Congress (IUPAC 2025), the largest conference across the chemical sciences globally, held in Kuala Lumpur, Malaysia, from 14th to 19th July 2025. João Borges delivered an invited lecture focusing on the self-assembling of polymeric biomaterials for drug delivery and regenerative medicine pursued in the framework of SUPRALIFE. Under the motto 'Chemistry for a Sustainable Future', João engaged with the chemistry community globally and contributed to the discussion focusing mainly on the key role of chemistry towards enabling advanced biofunctional materials for addressing pressing challenges in healthcare. João also took the chance to promote SUPRALIFE's goals and activities across the wider chemistry community from Asia, enhancing the visibility of the project.



ESB 2025 | TORINO, ITALY | 7-11 SEPTEMBER 2025

The SUPRALIFE consortium was represented at the 34th Annual Conference of the European Society for Biomaterials (ESB 2025), held in Torino, Italy, from 7th to 11th September 2025. João Borges and João Mano (UAVR, Portugal) participated in the meeting with an oral communitation and a keynote lecture, respectively, contributing to the discussion on emerging trends and advancements in biomaterials, tissue engineering, and translational biomedical technologies. Their presence helped strengthening SUPRALIFE’s

actively with the broader scientific community and advancing research in supramolecular biomaterials for healthcare applications.

In addition, the COMPASS Research Group at CICECO-UAVR was also widely represented with several other oral and poster communications by researchers and PhD students, showcasing their latest research advances in the development of innovative biomaterials for healthcare and engaging with the biomaterials' community across Europe and beyond.

EUROPEAN RESEARCHERS' NIGHT | FÁBRICA CENTRO CIÊNCIA VIVA DE AVEIRO | AVEIRO, PORTUGAL | 26 SEPTEMBER 2025

provided a valuable opportunity to share our research with the local community and promote a closer connection between science and society at large. Throughout the day, we presented our work on supramolecular hydrogels, free-standing membranes, 3D bioprinted structures, bioinspired materials and surfaces, and superhydrophobic coatings, explaining their relevance and applications in healthcare. Visitors of all ages — from children and students to families and science enthusiasts — showed great interest and curiosity, making the exchanges both enjoyable and meaningful. We are proud to contribute to this initiative and to help foster scientific awareness and enthusiasm within the community. We look forward to participating again in the upcoming years!

HANDS-ON WORKSHOP AT THE UNIVERSITY OF AVEIRO | AVEIRO, PORTUGAL | 24-26 SEPTEMBER 2025

The hands-on workshop held at UAVR, Portugal, from 24th to 26th September 2025 provided a comprehensive and enriching experience for all participants affiliated with the SUPRALIFE consortium on the ‘multiscale processing and advanced characterization of supramolecular biomaterials/devices’. The event enabled participants to learn new chemistries, bottom-up assembling technologies and cutting-edge characterization techniques, and to engage in fruitful discussions for raising new collaborative research projects in-line with the SUPRALIFE project. Five invited tutorial lectures took place aiming to introduce fundamental concepts on the multiscale processing and advancing characterization of supramolecular biomaterials/devices, in the form of 2D multilayered thin films and free-standing membranes, 3D capsules, 3D hydrogels and bioinks, to be used as advanced bioinspired materials for drug/therapeutics delivery, tissue engineering and regenerative medicine strategies. The invited lectures were key for enabling students and

characterization prior to moving into the hands-on training activities.

During the laboratory sessions, organized in small groups, participants had the opportunity to apply the newly acquired knowledge, gaining practical experience in the preparation and physicochemical, mechanical and biological characterization of supramolecular multilayered biomaterials, with varied sizes and geometries, employing a wide range of bottom-up nano- and microfabrication techniques. These included the preparation and characterization of multilayered thin films and thicker and robust free-standing multilayered membranes by resorting to the layer-by-layer (LbL) assembly technology, as well as particles/capsules via LbL assembly, host-guest interactions, metal-ion coordination and interfacial complexation. The participants also learned about the preparation of protein-derived nanofibrillar membranes, hydrogels, bioinks and their rheological characterization, as well as *in vitro* cell culture. Throughout each hands-on activity, participants were given the opportunity to actively participate and conduct the experiments themselves, thereby gaining practical experience and a deeper understanding of the processing and physicochemical, mechanical and biological characterization of biomaterials, denoting different sizes and geometries, by resorting to a plethora of bottom-up nano- and microtechnologies. Participants emphasized the inspirational nature of the lectures and the valuable learning experiences and exchanges at the intersection of various scientific areas, reuniting concepts of supramolecular chemistry, polymer chemistry, self-assembly, bioengineering, biomaterials and cell biology.





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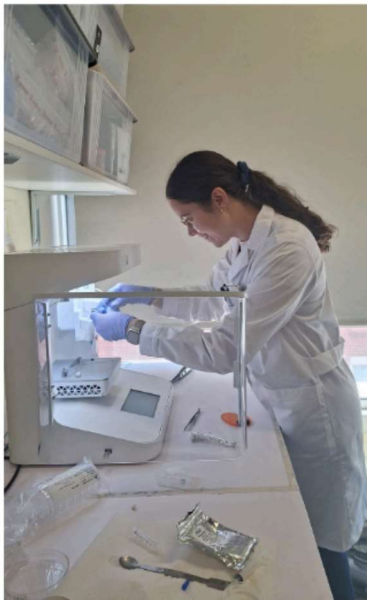
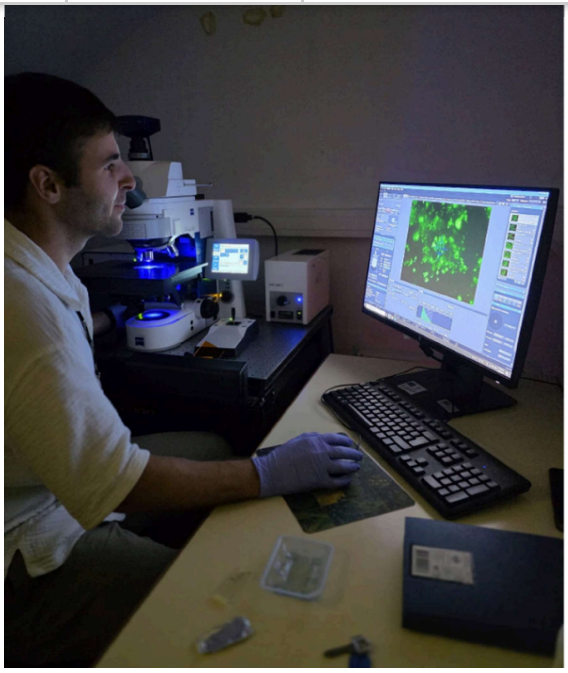




Following the five invited lectures and hands-on workshops, three external invited lecturers showcased cutting-edge advances in supramolecular biomaterials. Carmen Freire (CICECO-UAVR, Portugal) highlighted the potential of biobased nanofibers, such as protein amyloid fibrils and nanocellulose, for creating strong, versatile functional materials. Helena Azevedo (i3S-University of Porto, Portugal) presented molecular self-assembly strategies, by combining hyaluronan and peptides, to develop biomaterials that mimic the native extracellular matrix, with applications in 3D cell culture, biosensing, controlled drug delivery, and tissue engineering. Concluding the series, Eva Blasco (Heidelberg University, Germany) discussed the design of (bio)materials for high-resolution 3D/4D printing, emphasizing adaptive microstructures based on stimuli-responsive materials and the critical role of macromolecular design in both the printability and final performance of the printed materials.

Overall, the hands-on workshop at UAVR successfully achieved its objectives by promoting the exchange of knowledge and best practices, and delivering high-level scientific training. It strengthened the research excellence, technological capacity, and critical thinking of students and researchers affiliated with the SUPRALIFE consortium, reinforcing the commitment to advancing supramolecular and biomaterials chemistry knowledge for healthcare applications.

SUPRALIFE FINAL INTERNATIONAL CONFERENCE AT THE UNIVERSITY OF AVEIRO | AVEIRO, PORTUGAL | 29 SEPTEMBER - 03 OCTOBER 2025

UAVR proudly hosted the SUPRALIFE Final International Conference in Aveiro, Portugal, from 29 September to 3 October 2025.

This event featured an excellent scientific program, including fifteen plenary lectures delivered by distinguished scientists from seven European countries, and USA: Samuel Stupp (Northwestern University, USA), E.W. “Bert” Meijer (Eindhoven University of Technology, The Netherlands), Patricia Dankers (Eindhoven University of Technology, The Netherlands), João Mano (University of Aveiro, Portugal), Cecília Roque (FCT-NOVA, Portugal), Colin Bonduelle (University of Bordeaux, France), Marcy Zenobi-Wong (ETH Zurich, Switzerland), Matthew Webber (University of Notre Dame, USA), Carlijn Bouten (Eindhoven University of Technology, The Netherlands), Christoph Weder (University of Fribourg, Switzerland), Tina Vermonden (Utrecht University, The Netherlands), Job Boekhoven (Technical University of Munich, Germany), Luisa De Cola (University of Milano, Italy), Alberto Saiani (University of Manchester, United Kingdom), and Ian Hamley (University of Reading, United Kingdom).

Awards were given for the three best oral communications and the three best poster presentations at the SUPRALIFE Final International Conference. The recipients of the oral communication awards were: Stefan Mommer (ETH Zurich, Switzerland), first place; Sanne van de Looij (Utrecht University, The Netherlands), second place; and Elena Spezzani (University of Parma, Italy), third place.

The Netherlands), first place; Mariana Carreira (University of Aveiro, Portugal), second place; and Lorenzo Fumagalli (Politecnico di Milano, Italy), third place.

The best oral communication awards were sponsored by Metatissue (1st prize), Soquímica (2nd prize), and ThermoFisher Scientific & Alfagene (3rd prize). The best poster awards were sponsored by the Royal Society of Chemistry's journals, namely by the Journal of Materials Chemistry B (1st prize), Biomaterials Science (2nd prize), and Materials Advances (3rd prize).

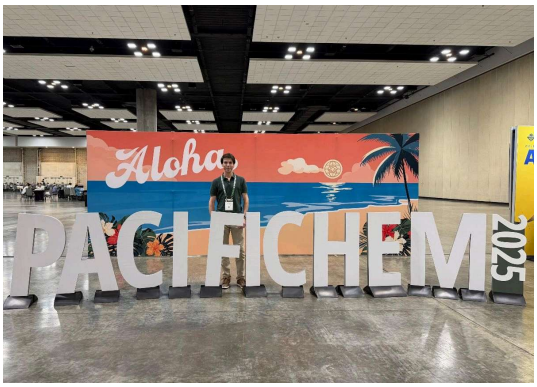
A participant survey confirmed the strong success of the SUPRALIFE Final International Conference, with attendees highlighting the clarity of its objectives, the excellent scientific program, and the benefits gained in knowledge, skills, and networking. The Final International Conference marked the final training and networking event of the SUPRALIFE project, bringing together researchers from across Europe and beyond. Featuring plenary lectures, oral presentations, and poster sessions on supramolecular chemistry, biomaterials, tissue engineering, and regenerative medicine, the event promoted scientific exchange and launched new scientific collaborations. It strengthened partnerships within and outside the consortium, enhanced the international visibility, and supported the development of young scientists. Overall, the conference showcased SUPRALIFE's scientific achievements and laid the foundations for continued innovation in supramolecular biomaterials field.

More information about the SUPRALIFE Final International Conference and the SUPRALIFE project can be found here: https://www.supralife.eu/finalconference; https://www.supralife.eu.

PACIFICHEM 2025 | HONOLULU, HAWAII | 15-20 DECEMBER 2025

The SUPRALIFE consortium was represented by João Borges (UAVR, Portugal) at the

from across the world. João delivered an invited lecture focusing on biofunctional supramolecular multicomponent biomaterials for controlled drug/therapeutics delivery and regenerative medicine and engaged with the Pacific Basin chemists and chemistry community at large on the latest advancements on the development of self-assembled biofunctional materials for healthcare. It was also an opportunity to exchange knowledge and expertise, disseminate the SUPRALIFE's goals and activities, and engage in fruitful scientific collaborations.



SHORT-TERM ON-SITE TRAINING ACTIVITIES AT THE UNIVERSITY OF AVEIRO | 2025

The SUPRALIFE consortium welcomed two new PhD students to UAVR (Portugal) for short-term on-site training activities, further expanding the project's ongoing exchange activities. Esmee de Korver from the Eindhoven University of Technology (TU/e, The Netherlands) and Tianyu Huang from the University of Bordeaux (UBx, France) joined UAVR to learn about the preparation and advanced characterization of LbL-driven supramolecular multilayered thin films by resorting to natural and synthetic supramolecular polymers, and dynamic stimuli-responsive supramolecular hydrogels by resorting to boronic acid chemistry. Bram Bakker from the TU/e also returned to UAVR to continue his work on the developmnent of dynamic, hybrid supramolecular hydrogels by resorting to natural proteins and synthetic supramolecular polymers.

These research training stays represented an important step in deepening the scientific ties between TU/e, UBx and UAVR. By welcoming TU/e and UBx's PhD students into UAVR's laboratories, the consortium continues to expand its collaborative network, promote the exchange of knowledge, and create the foundations to explore future joint research initiatives. Such mobility actions have been essential to sustaining SUPRALIFE's long-term vision of building a strong, interconnected community dedicated to advancing supramolecular biomaterials for biomedical and healthcare innovation.

STAFF EXCHANGES/VISITS AT THE UNIVERSITY OF AVEIRO, EINDHOVEN UNIVERSITY OF TECHNOLOGY AND UNIVERSITY OF BORDEAUX | 2025

Colin Bonduelle (UBx/Bordeaux INP/CNRS, France) and Ghislaine Vantomme (TU/e, The Netherlands) carried out a staff exchange at UAVR (Portugal). Both visits aimed to exchange knowledge and expertise, discuss ongoing research projects and activities in-between UAVR-UBx/Bordeaux INP/CNRS and UAVR-TU/e, as well as new ideas to pursue new joint scientific research projects, contributing to the long-term sustainability of SUPRALIFE. Colin visited UAVR on the occasion of the SUPRALIFE Final International Conference in which he delivered a plenary lecture and engaged with the SUPRALIFE's

'Jornadas do CICECO' and delivering an invited talk at UAVR. The visits included a series of meetings with the SUPRALIFE's staff, researchers, and students affiliated with UAVR.

João Borges carried out a staff exchange/visit at TU/e (The Netherlands), as well as at UBx/Bordeaux INP/CNRS (France). The visits to both institutions aimed to discuss ongoing research projects, and exchange on new applications to joint research projects. João had one-on-one in-person meetings with staff scientists, as well as with several PhD students and postdoctoral researchers. Following the individual meetings, he delivered an invited lecture in both institutions focusing on the work developed on bioinstructive supramolecular multicomponent biomaterials for controlled drug delivery and regenerative medicine. The lectures were very well received by the attendees and stimulated fruitful discussions.

All the staff visits/exchanges provided an excellent opportunity to reflect on the SUPRALIFE project's progress, exchange best practices, and engage in strategic discussions pertaining to future joint activities in-between UAVR-UBx/Bordeaux INP/CNRS and UAVR-TU/e.

REFLECTING ON THE SUPRALIFE-RSC PARTNERSHIP | JOURNAL OF MATERIALS CHEMISTRY BLOG | ROYAL SOCIETY OF CHEMISTRY | 2025

The Royal Society of Chemistry (RSC) recently interviewed João Borges (UAVR, Portugal) in a news article, highlighting the successful collaboration established throughout the SUPRALIFE project timeframe. The piece reflects on how this partnership strengthened the project's scientific and training activities, including the three Schools and the Final International Conference, where RSC support helped to promote scientific exchange, capacity building, and raise the visibility of the SUPRALIFE project and its goals. The article also emphasizes the valuable opportunities provided to early-career scientists through RSC-sponsored poster prizes, mentoring sessions, and free one-year RSC memberships. In addition, it presents the themed collection launched in Journal of Materials Chemistry B on "Bioinspired Functional Supramolecular Systems", which showcases cutting-edge advances arising from the SUPRALIFE network and its collaborators. The full article is available at: Reflecting on the SupraLife RSC partnership – Journal of Materials Chemistry Blog

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Wishing our SUPRALIFE community a joyful holiday season and a SUPRA-happy, healthy, and prosperous 2026.

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