



SUstainable nanoPaRticles Enabled antiMicrobial surfaceE coatings

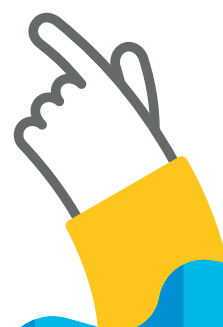
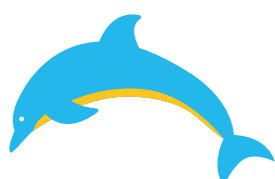


Summer with SUPREME: travelling through coatings, collaboration and innovation!



Summer is here: time for holidays, conferences, overheated laptops and the annual question of whether your out-of-office reply sounds too enthusiastic. But while many of us are getting ready to travel, **SUPREME** is also on the move: from laboratories to industrial applications, from technical testing to new collaborations, and from project results to wider conversations on circular and sustainable coatings.

In this edition, we take you through the latest technical progress, introduce SUPREME's role in the Circular, Sustainable and Biobased Coating Cluster, share where you can meet us next, and offer a summer reading list for anyone who wants to bring a little antimicrobial nanocoating science to the beach!



MOVING TOWARDS VALIDATION AND INDUSTRIAL UPTAKE



Figure 1 – Elena Merli, Chemical Research and Technology at NTT

As SUPREME enters its final project phase, activities are increasingly focused on validating the developed antimicrobial nanocoatings under realistic application conditions and preparing them for future industrial uptake.

Since the last General Assembly meeting in Athens, significant efforts have been dedicated to producing a new generation of coating samples that will undergo further antimicrobial evaluation within the project. In parallel, the consortium has continued refining application methods for the various target surfaces addressed by SUPREME, ensuring that the developed solutions can be applied effectively while maintaining their performance.

An important milestone has been the optimisation of laboratory-scale application procedures and the assessment of how these processes could be adapted for future industrial implementation. This work helps bridge the gap between research and real-world deployment, supporting the project's ambition to deliver sustainable antimicrobial nanocoatings that are both effective and scalable.

The newly produced samples have now been prepared for further testing and evaluation according to relevant European industrial standards, bringing SUPREME one step closer to demonstrating its technologies in practical applications.



SUPREME AT SICT 2026: DRIVING INNOVATION, REGULATION AND MARKET UPTAKE IN ANTIMICROBIAL NANOCOATINGS



On May 7, SUPREME travelled to Prague to take part in the Surfaces, Interfaces and Coatings Technologies (SICT) 2026 Conference, where it joined forces with fellow Horizon Europe projects RELIANCE, NOVA, MIRIA and NANOBLOC for a dedicated hybrid workshop on antimicrobial nanocoatings

The event brought together researchers, industry representatives and other stakeholders to discuss a question that is becoming increasingly important across Europe: *how can promising antimicrobial materials successfully move from laboratory innovation to real-world application?*

SUPREME contributed throughout the programme. **Dr. Büşra Erol (KU Leuven)** presented recent results on the antibacterial performance of nanoparticle-based coatings on textiles, while **Dr. Jan Van Impe**, supported by **Dr. Monika Polanska (KU Leuven)**, chaired discussions on the challenges of scaling antimicrobial coatings from laboratory development to industrial implementation.



Left: Dr. Büşra Erol presenting;

Right: SUPREME team (Dr. Büşra Erol, Dr. Jan Van Impe and Dr. Monika Polanska (KU Leuven)).

Across the different sessions, participants explored topics ranging from material design and antimicrobial performance to durability, safety, standardisation and regulatory compliance. A common conclusion emerged: scientific advances alone are not enough. Achieving real impact requires stronger alignment between research, industry needs and regulatory frameworks.

The workshop concluded with an interactive roundtable discussion focused on research, regulation and sustainability. The insights gathered will contribute to the development of a joint **Position Paper on Safe and Sustainable Antimicrobial Nanocoatings**, providing recommendations for future research, innovation and policy actions in Europe.

For SUPREME, the event was an excellent opportunity to exchange knowledge, strengthen collaborations with sister projects and help shape the future of antimicrobial surface technologies that are innovative, safe, sustainable and ready for practical deployment.



Group Photo



STRONGER TOGETHER: SUPREME IN THE CIRCULAR, SUSTAINABLE AND BIOBASED COATING CLUSTER



SUPREME Is part of the

Circular

Sustainable

Biobased

Coating Cluster



Collaboration remains a key ingredient for maximising impact in SUPREME. Last year, the project joined the Circular, Sustainable and Biobased Coating Cluster (CSBC), a European initiative bringing together Horizon Europe projects working towards the next generation of sustainable coating technologies.

The Cluster provides a platform for knowledge exchange, networking and joint activities among projects addressing challenges related to material innovation, circularity, sustainability and Safe and Sustainable-by-Design (SSbD) approaches. Alongside SUPREME, the Cluster currently includes projects such as BIOSUSHY, BLUECOAT and BIO4COAT, creating opportunities to share experiences and build synergies across different stages of development.



Zhenyu Jason Zhang, Professor
of Soft Matter Engineering in
University of Birmingham

According to Professor Zhenyu Jason Zhang (University of Birmingham), SUPREME's participation comes at an important moment in the project:

"Although the SSbD framework was not yet implemented by the European Commission when SUPREME was funded, we anticipated many of its principles and embedded Safe-by-Design and Sustainable-by-Design thinking throughout the project. The Cluster not only increases SUPREME's visibility at European level but also creates new opportunities to extend the project's impact."

One of the key strengths of the Cluster lies in bringing together projects that face similar challenges while working on different coating technologies and application areas. By exchanging knowledge, lessons learned and best practices, projects can accelerate progress and avoid reinventing solutions already explored elsewhere.

"All five projects share the challenge of developing coating solutions that combine sustainability with outstanding technical performance," explains Professor Zhang. "Some projects are just starting, while others are reaching their final stages. Sharing knowledge and know-how, where confidentiality allows, helps everyone move forward more effectively."

SUPREME also participated in the first Cluster workshop held on 14 April 2026, where representatives from the participating projects discussed future collaboration opportunities and explored common priorities for sustainable coatings research and innovation.

Looking ahead, the ambition extends beyond individual projects. As Professor Zhang highlights:

"The vision is to create a strong coatings community built around the idea that future coatings should be sustainable by default. It brings together expertise from materials science, surface engineering, microbiology, toxicity assessment and life-cycle analysis under a common umbrella."

By contributing to the Cluster, SUPREME is helping shape a wider European ecosystem dedicated to developing coating solutions that are not only high-performing, but also safe, sustainable and ready for real-world implementation.



SUPREME IS ON THE ROAD THIS SUMMER – JOIN US!



The summer conference season is in full swing, and SUPREME partners will be sharing project developments, exchanging knowledge and connecting with the wider scientific community at several international events.

What? 	Who? 	Where? 	When? 
<u>ACAC 2026</u>	NKUA	Athens, Greece	24/26.06.2026
<u>Nanotechnology Conference 2026</u>	NKUA	Thessaloniki, Greece	7/10.07.2026
<u>Next-Generation Antimicrobial Nano-coatings for High-Traffic Surfaces</u>	All	Ghent, Belgium	26/27.08.2026
<u>EUROTOX 2026</u>	WUR	Vienna, Austria	13/16.09.2026
<u>RETASTE 2026</u>	PCN	Rethymno, Greece	16/18.09.2026



If you are attending any of these events, feel free to stop by and say hello!



26–27 August 2026

KU Leuven, Ghent Campus & Online

Next-Generation Antimicrobial Nano-coatings for High-Traffic Surfaces

» Results from EU-funded projects from HORIZON-CL4-2021-RESILIENCE-01-20



Triple A COAT



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UK Research and Innovation

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Schweizerische Eidgenossenschaft
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Confederaziun svizra

Federal Department of Economic Affairs,
Education and Research EABR
State Secretariat for Education,
Research and Innovation SERI

Swiss Confederation

JOIN US IN GHENT THIS AUGUST!

One of the major milestones still ahead for **SUPREME** in 2026 is the joint **workshop “Next-Generation Antimicrobial Nano-coatings for High-Traffic Surfaces”**, organised together with our sister project **TRIPLE-A-COAT**.

Taking place on **26–27 August 2026** in **Ghent, Belgium**, the two-day event will bring together researchers, industry representatives, policymakers and innovation stakeholders to explore the latest developments in antimicrobial coating technologies and discuss the challenges associated with their validation, regulation, market uptake and real-world implementation.

The programme will feature contributions from several Horizon Europe projects active in this field, including **SUPREME**, **TRIPLE-A-COAT**, **NOVA** and **STOP**, creating a unique opportunity to exchange experiences across different technologies, application sectors and stages of development.

Participants will have the opportunity to engage in thematic discussions covering topics such as antimicrobial performance and durability, safety and sustainability assessment, regulatory considerations, industrial implementation and future innovation pathways. The workshop will also include networking opportunities designed to strengthen collaboration between research organisations, industry and policy actors.



Ghent, Belgium & Online



26–27 August 2026



Registration is free of charge and is open:

Register here!

We look forward to welcoming many members of the SUPREME community this summer!

For more information, visit our [website](#)



OUR SUMMER READING LIST



Whether you're heading to the beach, the mountains or simply enjoying a quieter summer schedule, here are a few SUPREME-inspired recommendations for your reading (and watching!) list.



SUPREME Publications

Effect of Nanoceria Suspension Addition on the Physicochemical and Mechanical Properties of Hybrid Organic-Inorganic Hydroxyapatite Composite Scaffolds

Nanomaterials (2024)

<https://doi.org/10.3390/nano14131102>

A Discretized Overlap Resolution Algorithm (DORA) for Resolving Spatial Overlaps in Individual-Based Models of Microbes

PLOS Computational Biology (2025)

<https://doi.org/10.1371/journal.pcbi.1012974>

The effects of TiO₂ particles on the physico-chemical properties of polyester coatings

Results in Surfaces and Interfaces (2025)

<https://doi.org/10.1016/j.rsurfi.2025.100683>

Carbon Dots-TiO₂ Decorated with Ag Nanoparticles for Efficient Photocatalytic and Antiviral Applications

Materials (2026)

<https://www.mdpi.com/1996-1944/19/10/2084>



Summer Learning Corner

SUPREME was also among the projects contributing to the **13th Venice Training School 2025**, dedicated to Safe-and-Sustainable-by-Design (SSbD) strategies for advanced materials.

If you missed the event, all lectures, recordings and training materials are freely available! If you missed the event, all lectures, recordings and training materials are freely available:



Video lectures and recordings

<https://www.youtube.com/playlist?list=PLDBSs2loZJ3-Gsp2TPpukc9OvOijlGCB5>



Training materials and resources

<https://zenodo.org/records/17305647>

A perfect opportunity to explore the latest thinking around sustainability, safety assessment and advanced materials innovation throughout the summer!

STAY CONNECTED!

As SUPREME moves through its final year, we look forward to sharing more milestones, results and impact stories with you.

To stay up to date with our latest developments, events and achievements, follow us on **LinkedIn** and visit our **website** for news and project updates.

Let's continue driving sustainable antimicrobial innovation together!

CONSORTIUM



#supreme-coating



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