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BIORING

High-performance Biocoatings

Innovation in bio-based coatings

Dear Bioring project readers,

Following our previous newsletter issue, we are delighted to share with you the latest updates on the BIORING project, developing renewable formulations for UV-curable high-performing biocoatings.

In this issue you will find:

- BIORING solutions: coating formulations, oligomers, end-cappers, cross-linking agents
- Opportunity for cooperation and further development
- Bio-based solutions for automotive - *Interview with our partner Maier*
- A new economy thanks to safe and bio-based coatings? - *Interview with our partner Temas Solutions*

«BIORING building blocks are ready! We are now working until Autumn 2026 ***to scale up*** *the production,* ***optimize*** *the coating formulation, and* ***develop RtoB & BtoB cooperation opportunities****» say our Coordinators Nicole Doelker and Manuel López Granados (Spanish National Research Council).*

BIORING solutions

A portfolio of bio-based monomers and oligomers rethinking the chemistry of UV-curable polyurethane systems, to produce new polymers, coatings, adhesives, and sealants in the transport, furniture, wood, construction, and industry sectors.
These building blocks allow the formulation of a new generation of UV-curable polyurethane bio-based coatings, **applicable as a drop-in**

solution to a variety of substrates, including plastic, wood, and metals.

We developed five solutions, detailed in our factsheet, constituting the basis of our coatings:



High purity and sulfur-free lignin oligomers polyols

From FSC certified woody biomass residues or other lignin-rich side streams, characterized by low molecular weight and a thermoplastic behaviour, soluble in polar solvents for polyurethanes, lignin-phenolic resins (LPF), and feed for crackers (FCC), drop-in for (m)ethanol as marine fuel.

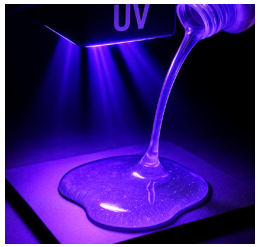


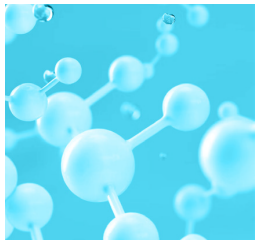
Photo-reactive end-capper: cyclic acrylate monomers

Derived from bio-based commodities, presents a liquid phase catalytic oxidation at mild temperatures using solvents, oxidants, and reactants. Its multifunctional photoreactive platform molecules can be used in polymer applications.



Photo-reactive end-capper: short-chain alkyl diols

Derived from bio-based commodities, offers catalytic dehydration and hydrogenation. Its multifunctional photoreactive platform molecules can be used in polymer applications.



Crosslinking: unsaturated resins and diluents

An ad hoc catalytic reaction for multifunctional bio-based photo-crosslinkers. It is applicable to peroxide and radiation curing products in coatings, inks, adhesives, and resins.



Bio-based UV curing coating formulations

High biobased content, solvent-less (VOCs free target), and adaptable viscosity coatings, with reduced energy consumption and better environmental footprint.

Download our factsheet here

Interested in BIORING solutions?
Cooperate with our partners!

The BIORING chemical platform and prototypes are now available at lab level and being prepared for industrial scale supply. We are looking for:

- Material and chemical research to use our chemical platform in polymer applications
- Commodity chemical manufacturers to upscale our building blocks
- Specialty compounds producers to upscale our UV curable polymer coatings
- Coating manufacturers to deploy our UV curable polymer coatings
- Bioeconomy investors to give added value to bio-based content and sustainability

Are you interested? Ask information or book a meeting with one of our partners here: info@bioring.eu



Together with our sister project Super Bark, we are promoting dialogue with research, industry and policy stakeholders to address the needs of the value chain and build future collaborations. We joined the Pitch Perfect in November, **stay tuned for next opportunities**.

Are bio-based coatings good for automotive?



There are several hurdles that bio-based coatings must overcome to compete with fossil-based state-of-the-art, in the first place **costs, market recognition and acceptance**.

Trying to **balance cost and market attractiveness** is the reason why some coatings formulations labelled as “bio” actually present on the market are not so much bio-based: they include some bio-based raw materials, but most of the “bio” or “sustainable” approach is in the processing technologies applied (e.g. use of renewable energy) or by counting an increased percentage of water (e.g. switching entirely to water-based products). It’s a tricky topic, and research is still ongoing, thus what really “sustainable” or “bio-based” mean is still to clarify, and it does not involve only aspects linked to the preparation of a chemical.

Read the interview on the most relevant parameters & requirements for bio-coatings in automotive with Jorge Ruiz Fernández de Bobadilla from MAIER Technology Centre, a BIORING partner.

Read the full interview here

Europe at the forefront: SSbD, bio-based coatings for a new economy



How to implement Safe and Sustainable by Design approaches of innovative products or processes? Is there another layer of complexity when dealing with bio-products?

We need to **map the life cycle**: both understanding the stages a material or product goes through from its initial concept to its End of Life, and who the stakeholders are in each of the stages. We also need to **identify the impacts** along the life cycle in terms of safety, sustainability, and recyclability parameters, and what are the hotspots, in order to set priority levels on the data needed for the assessment.
Engaging with stakeholders since the early stages of innovation is essential, to face the challenge of missing data: adopting an iterative process to collect and evaluate available data while the project progresses, until the most accurate and reliable assessment is achieved.

We discussed this and much more, like how many years and resources the shift to an almost complete bioeconomy will take, and if Europe will then still be at the forefront, with Cyrille Durand from Temas Solutions, a BIORING partner.

[Read the full interview here]

Thank you for showing your interest in the BIORING project. Please, pass on this email to those who you think would like to join this growing community. We are looking forward to the journey ahead.

Subscribe here!

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You are receiving this email because we think you and/or your organization might be interested in the topics addressed by the BIORING project. This is the first of a series of up to four informative emails sent during the 3 years BIORING's lifespan, to update and promote collaborations.

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