

LIGNICOAT

Sustainable coatings based on lignin resins and bio-additives with improved fire, corrosion and biological resistance

ExpandFibre Final Seminar



Dr. Michele Ponzelli (AXIA Innovation GmbH)

This project has received funding from the Bio-based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023342. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio-based Industries Consortium.

19 August 2024

The Coating Industry Challenge



The environmental impact of fossil-based coatings and volatile organic compounds (VOCs) emissions has raised concerns, and regulations were implemented to diminish their use in coatings.



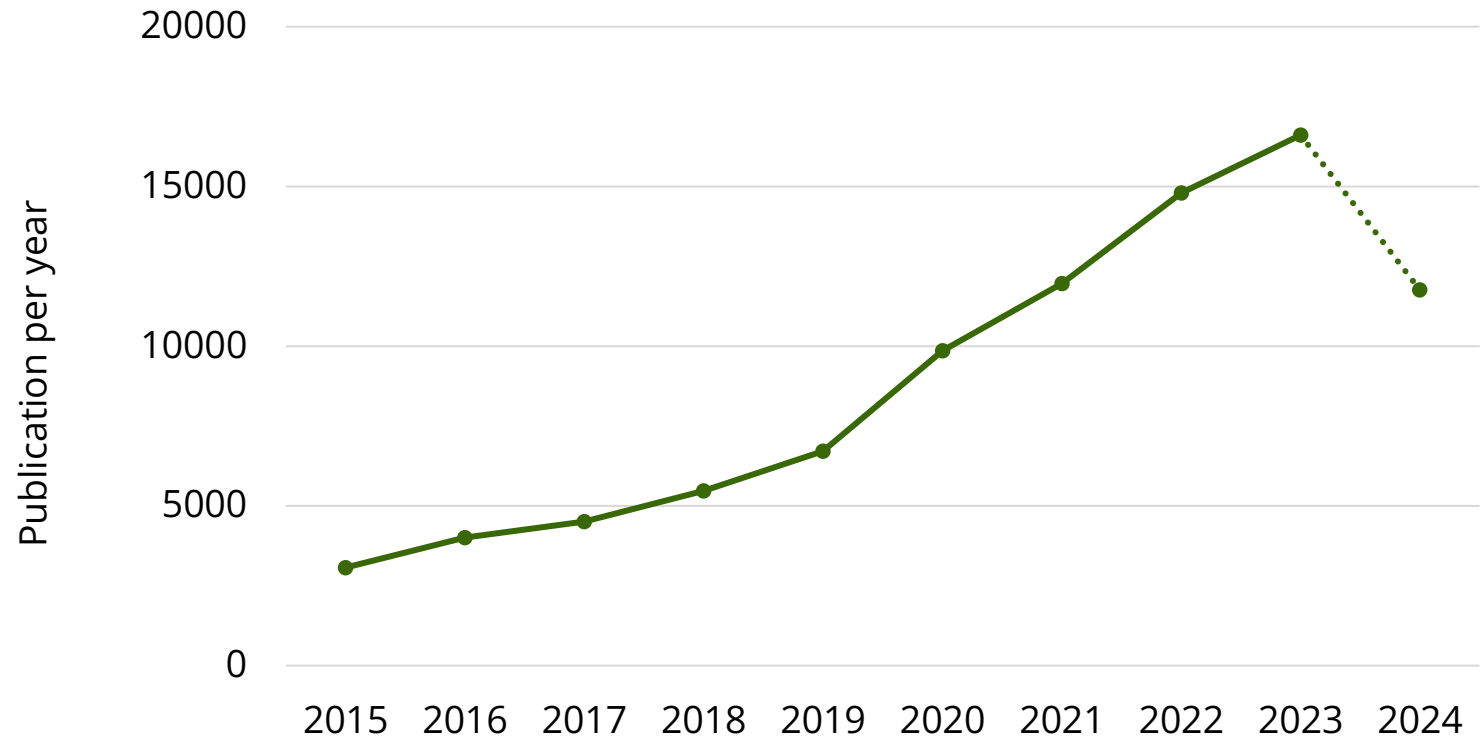
Why Lignin



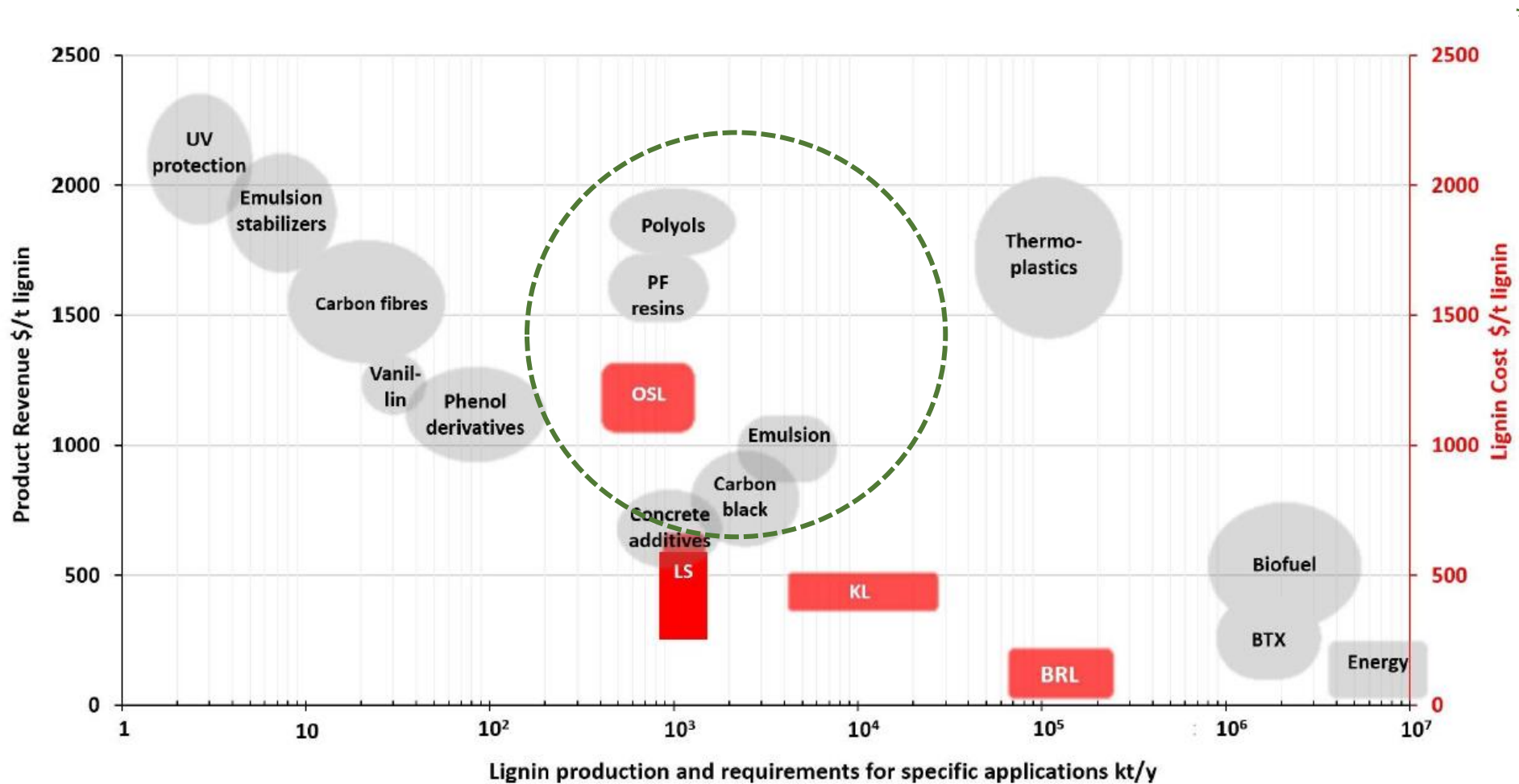
Lignin is one of the most abundant organic polymers on Earth and the most abundant natural source of aromatic compounds

and raising growing interest in the coatings industry

“Lignin-based coatings”



Lignin Market and Applications



Lignin biomass as feedstock



LIGNICOAT aims to demonstrate the technical and economic feasibility of the use of lignin as raw material to produce 3 bio-resins for wood, metal, furniture, automotive, flooring, machinery and paints industry.

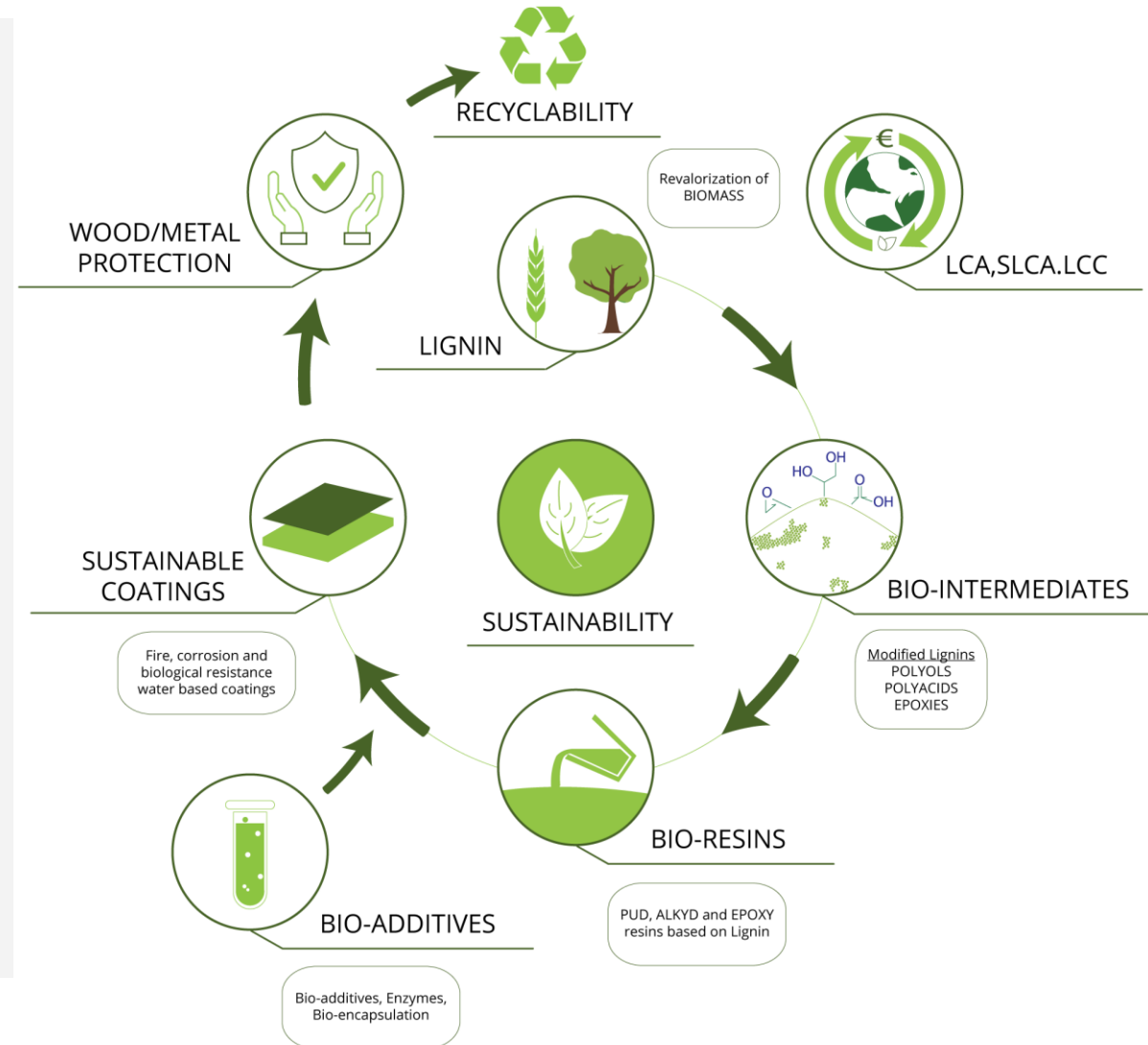


LIGNICOAT's Sustainable Solution



LIGNICOAT's solutions involve the use of lignin.

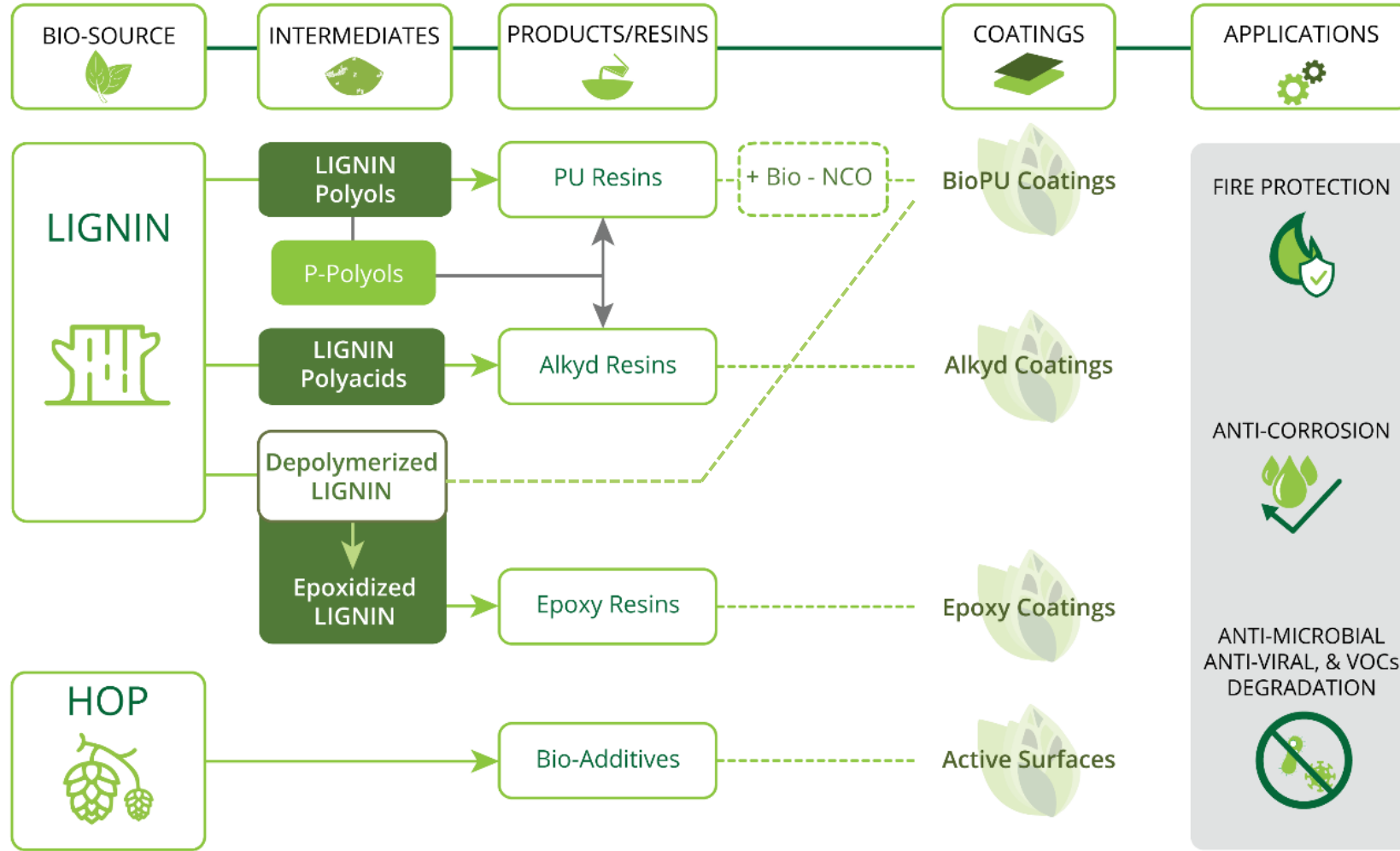
Lignin provides a sustainable alternative compared to traditional fossil-based raw materials, as it is obtained from agricultural, forestry, pulp, and paper industry wastes.



What Sets LIGNICOAT Apart



Given the possibility of obtaining polymers and many products from lignin, it can be used as a building block for producing bio-resins for coatings.

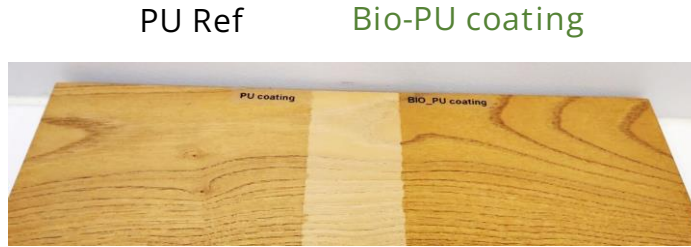


Anticipated Benefits



1. PU coating on wood based on lignin polyols

Ref Lignin-based FR Wood biocoatings



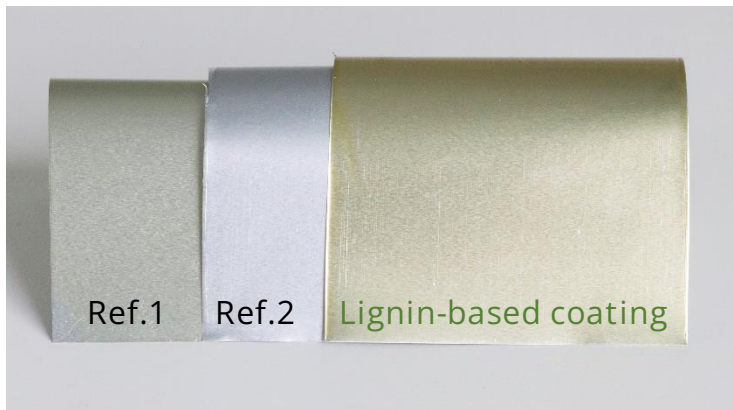
2. Alkyd resins on metal based on lignin polyacids

Alkyd modified with lignin

Lignin-based coating Alkyd paint Ref Bio-Alkyd paint



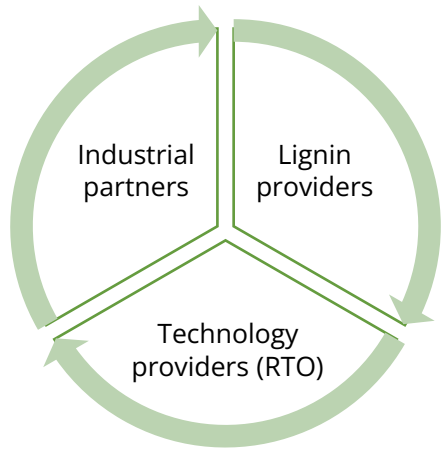
3. Formulated epoxy lacquer for coil coating on aluminum



- ✓ LIGNICOAT solution is poised to reduce carbon emissions by 20-50% to fossil-based market references.
- ✓ The bio-based content of LIGNICOAT biocoatings ranges between 10% and 50%.

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Impact Beyond the Coating Industry



A new cross-sector interconnection



New bio-based chemicals (lignin polyols, epoxies, and polyacids) and resins (PUD, alkyd, epoxy).



Coating formulations >25% bio-based



1 new bio-based value chain



New job opportunities

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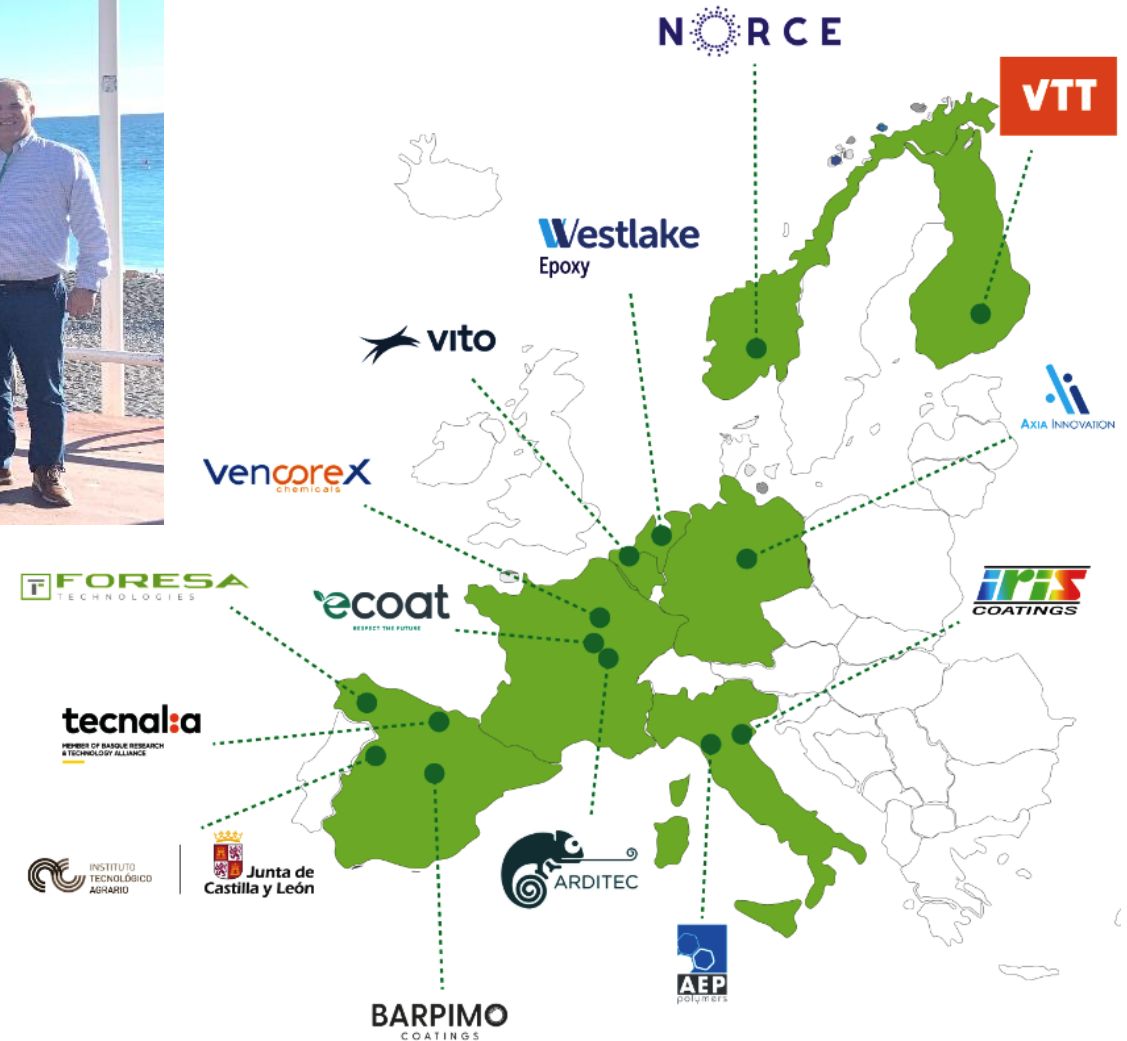


Meet our Team



14 Partners from 8 countries

- 9 Industrials
- 4 RTOs
- 1 Non-profit



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Learn more about LIGNICOAT



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@LIGNICOAT BBI Project



@LIGNICOATH2020Project



Thank you

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