BioLaMer NEWSLETTER

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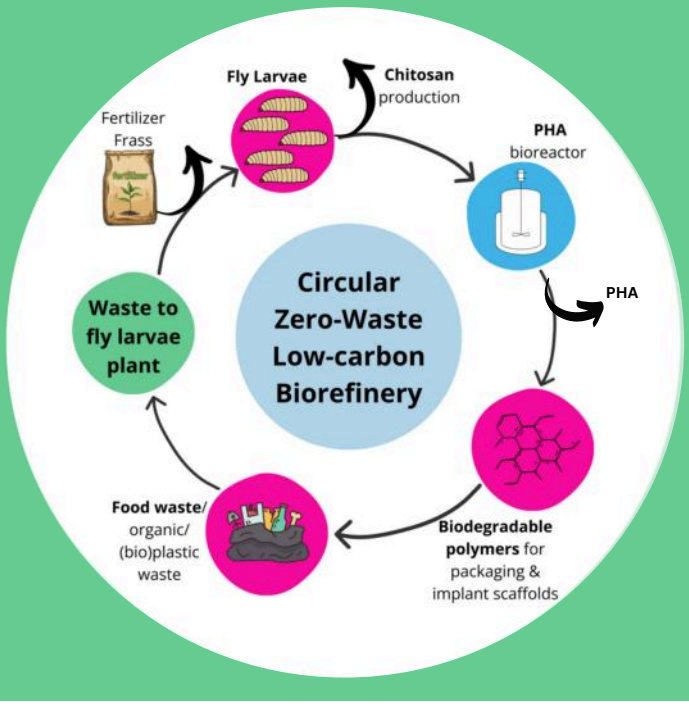


Exordium

BioLaMer is an EIC Pathfinder Open Project addressing the Food Waste and Petrochemical Plastics Challenges by Introducing a New Food Waste Value Chain.

BioLaMer welcomes you to the fourth edition of the newsletter

BioLaMer is currently entering in its third year and in this edition, we highlight our key milestones, latest updates, and the dissemination activities.

Key Progress

- Designed and developed a larvae cultivation prototype by optimizing growth parameters and establishment of food waste conversion system.
- Demonstrated extraction of chitosan from larval shells and PHBV (poly(hydroxybutyrate-co-hydroxyvalerate)) from the larval biomass derived compounds.
- Completed collection of qualitative Life Cycle Inventory data to formulate strategies to enhance the economic and environmental viability.
- Developed a hybrid AI model for supercritical CO_2 extraction for optimizing the yield of oil and to lower the environmental impact.
- Identified key barriers to bioplastic production and commercialization through systematic reviews, surveys, and workshops with stakeholders.

Spin-off Projects

Originating from **BioLaMer** work, our partner COFAC has launched two sub-projects:

- Bioplastics in the Media: News media representations of novel sustainable products in Portugal.
- Online emotional response towards Bioplastics: Insights from Sentiment Analysis on Reddit.

Business Skills Development

BioLaMer has reached a significant milestone by completing the transformative business coaching program, "**Empowering University Researchers: Design Thinking & Business Model Canvas**".

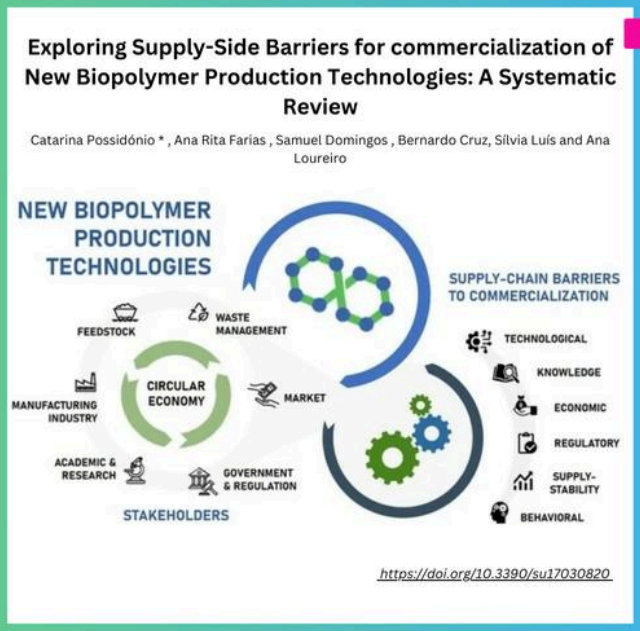
Our team members **Diana Araujo, Eniya Mariappan, Neda Tozija, Serena Righi, Sibu Padmanabhan, and Sivakumar Krishnan** gained valuable entrepreneurial skills through interactive sessions and practical exercises.

Under the expert guidance of **Giancarlo La Peitra**, and his innovative teaching methodologies, the team has acquired the skills to translate innovative research into sustainable business solutions, propelling the project's innovation forward.

Latest Publication

BioLaMer Project has recently published a research review article in the "**Sustainability**" journal, titled "Exploring Supply-Side Barriers for Commercialization of New Biopolymer Production Technologies: A Systematic Review".

This review explores the critical challenges hindering the production and commercialization of sustainable biopolymers, and the obstacles in the adoption of these biopolymer technologies to mitigate the impact of traditional plastics.



BioLaMer Comic

To enhance public engagement, BioLaMer has developed a visually engaging comic illustrating the project's impact. This storytelling approach effectively conveys the problems that the project mitigates in an enjoyable format.

The comic is available at this link; https://biolamer.eu/biolamer-comic/

Project Showcase

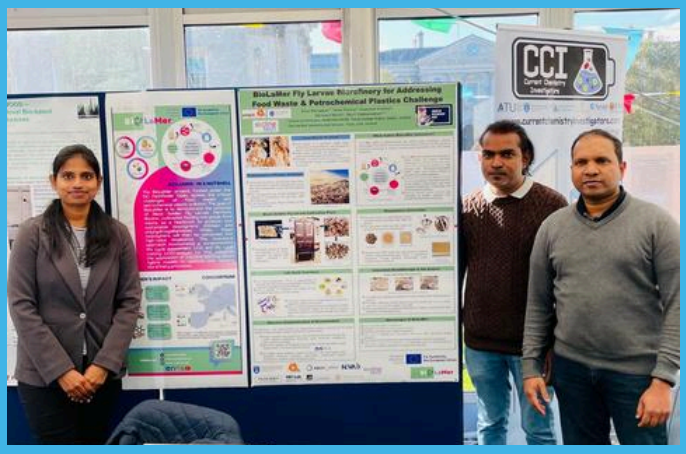
BioLaMer project partners participated in the **"NOVA Science & Innovation Day 2024"** on 3rd December 2024. This event brought together great minds in scientific research and innovation, providing an excellent platform for knowledge exchange.

Our team members, **Bruno Costa Marreiros, Monica Carvalheira,** and **Mariana Matos** showcased the latest advancements from the project. Through engaging presentations and interactive discussions, they highlighted the project's impact on sustainable research.

Public Outreach

BioLaMer partners, SocLineTech and AMBER at Trinity College Dublin, together took part in **European Researcher's Night 2024**, held on 27th September near Front Square at Trinity College Dublin, Ireland.

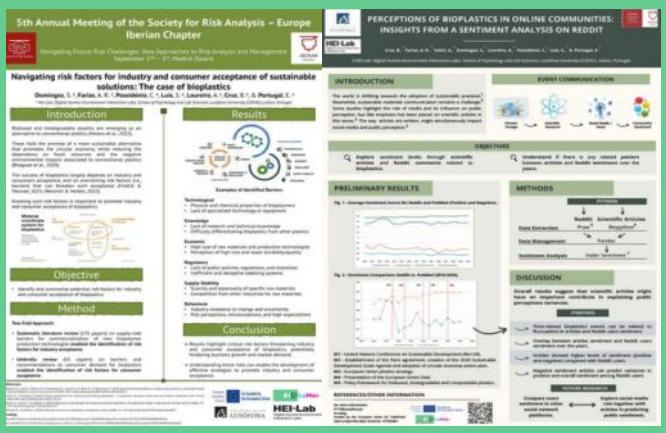
BioLaMer team members **Eniya Mariappan, Sivakumar Krishnan** and **Sibu Padmanabhan,** displayed informative posters, and a creative cartoon illustrating BioLaMer's Vision.



This event attracted a diverse audience from students, young scientists to the general public. Some of the BioLaMer's innovative products and concepts were exhibited and explained in simple terms to the non-scientific audience highlighting the project's role in driving sustainability and the role of co-creation.

BioLaMer partner, NOVAID also participated in European Researcher's Night at the Museu Nacional de Historia Natural e da Ciencia in Lisbon, Portugal.

Our team of researchers **Diana Araujo** and **Monica Carvalheira** captivated the audience by showcasing sample displays, hands-on materials including polyhydroxyalkanoates (PHA) materials developed within the project.



Poster Presentation

BioLaMer project partner COFAC participated in the **5th Annual Conference of the Society for Risk Analysis - Iberian Chapter**, held on 1st - 2nd September 2024, in Madrid.

Representing BioLaMer, **Samuel Domingos** and **Bernardo Cruz** presented the project's innovative research on bioplastics, emphasizing its role in supporting sustainability and circular economy.

Samuel's presentation, "Navigation Risk Factors for Industry and Consumer Acceptance of Sustainable Solutions: The Case of Bioplastics", highlighted the challenges faced by industries when transitioning to bioplastics and their commercialization.

Bernardo's poster titled "Perception of Bioplastics in Online Communities: Insights from a Sentiment Analysis on Reddit", explored consumer perceptions on bioplastic products through online discussions.

Oral Presentation

BioLaMer team researchers, **Roshanak Agharafeie** and **Monesh Thirugnanasambandam** from NOVAID FCT, had participated at the 14th European Symposium on Biochemical Engineering Sciences, held from 21st -23rd October, 2024 at Copenhagen, Denmark.

Roshanak delivered an engaging oral presentation titled, "**Deep Hybrid Modelling of a Supercritical CO_2 Extraction Process**", focusing on enhancing model-by-model complexity reduction by combining datasets from real experiments.

Monesh presented a talk on title '**A Physics-Informed Neural Network (PINN) framework for bioreactor hybrid modelling**' focusing on PINN modelling simulation of PHA production of pure culture and dynamic metabolic network of PHA production from VFA by mixed microbial culture.

Awards / Accolades

Roshanak Agharafeie, the BioLaMer partner from NOVAID FCT was honoured with the **Best Scientific Poster Award** at **MagIC Research Center Data Research Meetup**, held on 27th September, 2024.

In this event, she showcased the research poster on "Deep Hybrid Modelling of a Supercritical CO_2 Extraction Process".

BioLaMer Partners


Dr Sibu Padmanabhan – Project Coordinator
Prof. Michael Morris – Co-Investigator
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Prof Serena Righi – Associate Professor
ALMA MATER STUDIORUM- UNIVERSITA DI BOLOGNA- UNIBO, Italy

Dr Jorge Santos - CEO
AquaInSilico LDA, Lisbon, Portugal

Dr Ana Rita Farias
HEI-Lab Digital Human-Environment Interaction Lab, COFAC, Lusofona University, Lisbon, Portugal


Prof Rui Oliveira - Associate Professor
Prof Maria Reis - Full Professor
NOVAID FCT, Lisbon, Portugal

Thank You

See you in the next edition of our newsletter

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https://biolamer.eu/

Ms Neda Tozija – Co founder
TransfoLAB BCN (Centre for trash investigation), Barcelona, Spain

Ms Nisha Thomas - Director
Soclinetech Solutions & Services, Cork, Ireland

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