Press Release

MULTI-STR3AM's scientific dissemination and participation in key conferences and events

The MULTI-STR3AM innovative concept, based on the use of a biorefinery cascade approach to maximize the value of all microalgae biomass fractions (ingredients), has been largely disseminated within the scientific community, boosting the exploitation of the project's results within the academic community.

Lisbon, March 31st, 2025

MULTI-STR3AM project results have led to 9 scientific publications in peer-reviewed journals, 6 of them being open access publications. Boosted by the academic partners of the project, MULTI-STR3AM has published important scientific works on microalgae cultivation:

- *Cold-adapted culturing of the microalga* Monoraphidium *sp. in thin-layer raceway pond for biomass production,* by Lakatos et al., 2023, in Algal Research – Biomass Biofuels and Bioproducts issue. (IMIC)
- *Solar bioreactors used for the industrial production of microalgae,* by Masojídek et al., 2023, in Applied Microbiology and Biotechnology (IMIC)

More specifically, regarding the control and monitoring of microalgae production:

- *Learning from fluorescence: A tool for online multiparameter monitoring of a microalgae culture*, by Brandão et al., 2023, in Computers & Chemical Engineering (iBET)
- *Photosynthetic Activity Measured In Situ in Microalgae Cultures Grown in Pilot-Scale Raceway Ponds*, by Masojídek et al., 2024, in Plants (IMIC)
- *Integration of spectroscopic techniques and machine learning for optimizing* Phaeodactylum tricornutum *cell and fucoxanthin productivity*, by Brandão et al., 2025, in Bioresource Technology (iBET)

MULTI-STR3AM has also generated the following scientific publications on microalgae biorefinery processes:

- *Bio-production of eicosapentaenoic acid from the diatiom* Nanofrustulum shiloi *via two-step high performance countercurrent chromatography*, by Bárcenas-Pérez et al., 2022, in Journal of Applied Phycology (IMIC)
- Nannochloropsis *sp. Biorefinery: Recovery of Soluble Protein by Membrane Ultrafiltration/Diafiltration*, by Ribeiro et al., 2022, in Membranes, Special issue: Circular Economy in Membrane Technology (A4F, iBET)
- Chapter *Effect of* Nannochloropsis *sp. cell disruption on microalgae lipid extraction yields*, by Lopes da Silva et al., 2023, Book: "WASTES: Solutions, Treatments and Opportunities IV" (LNEG)
- Conceptual design of an autotrophic multi-strain microalgae-2 based biorefinery: preliminary techno-economic and life cycle 3 assessments, by Lopes et al., 2023, in Fermentation, Special issue: Fermentative Production of Biofuels and Bioproducts within a Biorefinery Perspective (LNEG, A4F)

Participation in Conferences and Events

MULTI-STR3AM results have been presented in more than 25 conferences, including AlgaEurope (2022, 2023 and 2024 editions), the European Algae Industry Summit, and the International Conference on Algae Extracts. This dissemination has been carried out by both industrial and academic partners, mainly A4F, IMIC, iBET, Phycom and LNEG. The consortium has also focused on the participation in Trade Fairs (FreeFrom Food, AFRAQ2024), activities organised jointly with other EU innovative projects (like CIRCALGAE, SEAWHEAT, EnhanceMicroAlgae), and Exhibitions (Future of Protein Production, Food Ingredient Europe, European Researchers' Night) to boost dissemination and exploitation of the projects's results.

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 887227

The Bio-based Industries Joint Undertaking's project MULTI-STR3AM addresses the challenges of scale of microalgae-based products by integrating sustainable multi-strain, multi-method and multi-product microalgae biorefinery in industrial side streams. This EU-funded project is designed to help close the gap between research and industrial scale on microalgae cultivation.

The MULTI-STR3AM project is coordinated by A4F – Algae for Future (PT), and brings together the companies ForFarmers (NL), International Flavors & Fragrances (IFF, NL), Phycom (NL), UpField (NL), and the R&D institutions IMIC CAS - Centre Algatech (CZ), Instituto de Biologia Experimental e Tecnológica (iBET, PT), and Laboratório Nacional de Energia e Geologia (LNEG, PT).

More information: www.multi-str3am.com

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