

Newsletter
September, 2019

Special Issue



ENHANCE MICROALGAE

High-added value industrial
opportunities for microalgae in the
Atlantic Area



ENHANCE
MICROALGAE



Interreg
Atlantic Area
European Regional Development Fund



EUROPEAN UNION



Workshop at Swansea University Microalgae culture and downstream processing at pilot scale

On **September 12th 2019** the [EnhanceMicroAlgae](#) team at [Swansea University](#) offered a successful workshop on *Microalgae cultivation and downstream processing* to a total of 32 attendees from across European countries, including: France, Spain, Ireland, Italy, Portugal, and the UK.



The audience comprised of students, consultants, and delegates from research institutions as well as SME's in the area of microalgae production, aquaculture, wastewater treatment, and biotechnology. Dr. María José Chapela Garrido, EnhanceMicroAlgae project coordinator from [ANFACO-CECOPESCA](#) kicked off the workshop by introducing the audience to the EnhanceMicroAlgae project partners and objectives.



Dr. María José Chapela-Garrido

The attendees toured the facilities within the Department of Biosciences and experienced first-hand how to handle and cultivate microalgae at both the laboratory and pilot plant scales. Colleagues from the Interreg NWE [ALG_AD](#) project – whose aim is to create value from waste by integrating algal and anaerobic

digestion technologies – at Swansea University were present to help host the event and assist with the delivery of the workshop materials and demonstrate during practical sessions.



Attendees were expertly guided through the major concepts and general laboratory protocols involved during microalgal cultivation, including: strain maintenance and inoculation, media preparation, culture scale-up (to flasks, jars, and bags), monitoring and quantifying cell growth, biomass harvesting, and extraction methods for value-added compounds (e.g. solvent extraction, sonication, bead milling).



One of the workshop's highlights was Swansea University's pilot scale cultivation plant, where Dr. Claudio Fuentes-Grunewald displayed their brand-new serpentine 1,000 L Phyco-Flow™ photobioreactor (<http://www.variconagua.com/>) coupled with a micro-filtration unit (<https://membranology.com/>) where a number of successful microalgal culture trials have already been carried out.



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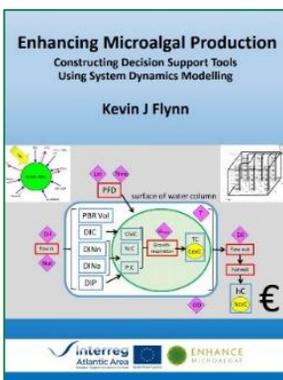


Dr. Claudio Fuentes-Grunewald



Phyco-Flow™ photobioreactor

Attendees to the workshop also had the opportunity to meet Prof. Kevin Flynn - author of the EnhanceMicroAlgae Decision Support Tool (DST) book - and learn in a practical session how to run various microalgae models and carry out simulations of algal growth under various cultivation and harvesting conditions. The DST runs on a free open platform (<https://www.powersim.com/>), which can be downloaded from the EMA [DST page](#) along with a copy of the latest version of the book.

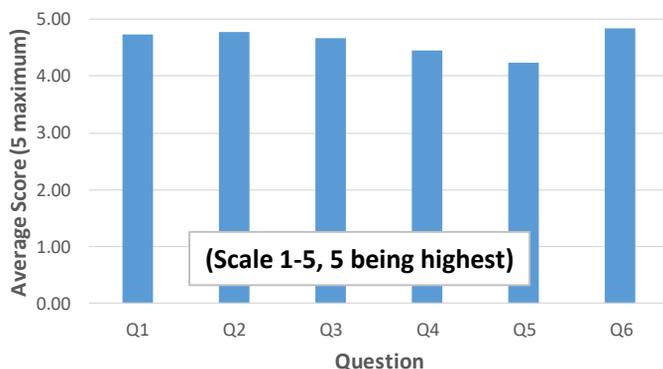


Prof. Kevin Flynn

All participants were asked for their feedback through the following questions, which received positive responses :

- **Q1** Did the *EnhanceMicroAlgae* workshop fulfill your expectations?
- **Q2** Usefulness of Culture scale-up training
- **Q3** Usefulness of Harvesting training
- **Q4** Usefulness of Post-harvest stages training
- **Q5** Usefulness of DST training
- **Q6** How likely are you to recommend colleagues to attend a similar event with EMA in the future?

Satisfaction survey for EMA workshop at Swansea



"This was an excellent learning opportunity for me as I am new to the industry. The content was appropriate and information was very useful. Also it provided an excellent networking opportunity, thank you"

"Thank you for such an interesting workshop ... it was very professional and instructive"

"A pleasure to meet your network and to discover your research, thank you for sharing and I'm looking forward to read your publications at the end of enhance microalgae project!"

Thank you all for your participation and positive feedback!

Future Conferences & workshops

- [AlgaEurope](#) | 03-05 December, 2019 | Paris, France
- [28th European Biomass Conference & Exhibition – Transition to a Bioeconomy](#) | 27-30 April, 2020 | Marseille, France
- [10th European Algae Industry Summit](#) | 29-30 April, 2020 | Reykjavik, Iceland
- [10th International Conference on Algal Biomass, Biofuels and Bioproducts](#) | 14-17 June, 2020 | Pittsburgh, USA
- [International Conference on Algal Biotechnology](#) | 22-23 June, 2020 | Venice, Italy
- [Spirulina Workshop](#) | 13-14 November 2019 | Montpellier, France | European Algae Biomass Association, EABA
- [Algal biotechnology techniques and opportunities for the sustainable bioeconomy](#) | 13-13 November 2019 | Stuttgart, Germany | Fraunhofer Institute for Interfacial Engineering and Biotechnology.
- [3rd. Lisbon Microalgae Biotechnology Advanced Course](#) | 17-22 November 2019 | Póvoa de Santa Iria, Portugal | Algae 4 Future.

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