



“CHALLENGES AND APPLICATIONS IN MICROALGAL BIOTECHNOLOGY”

February 17th -21st 2020 // INECOL, Xalapa, México

**TRAINING COURSE ORGANIZED BY SOLABIAA AND INECOL
(Sociedad Latinoamericana de Biotecnología Ambiental y Algal)**

FUNDED BY ISAP (International Society for Applied Phycology)

1) Background information

SOLABIAA and INECOL presented a proposal to the call issued by ISAP in relation to the organization of Training Courses in 2019. The main objective was to benefit the Latin American Region with a course involving large experienced lectures from Europe and México. When choosing the dates for the course to be held, the purpose was to include a one-day Workshop together with lecturers from the U.K. taking advantage of a previous joint project together with Membranology Ltd. and the University of Swansea at the U.K. The result was to include an interesting full day Workshop entitled “High value products from microalgae” including 8 lectures and experimental work. Such workshop was funded by the Newton Fund and the grant holder was Prof. Robert Lovitt from Membranology Ltd.

2) Programme (Annex 1)

The course included the participation of 13 professors from different institutions of Mexico, Italy, UK and Brazil, with a total of 18 lectures and one roundtable. Four sessions of experimental work were also carried out.

The programme was designed considering that the audience included persons of very different levels of knowledge in the field. Thus, the first lectures were dealing with general aspects of microalgae, photosynthesis and kinetics of growth. In subsequent



days, very diverse applications of microalgae were presented and extensively discussed. Such applications are very relevant and hot topics at the current moment in the field of applied phycology.

The Workshop entitled “High value products from microalgae” included lectures explaining the objectives and results of the joint project INECOL-Membranology-University of Swansea. Also, it included a very useful presentation related to the Algae-UK network, which provides opportunity for further interactions among the audience and other researchers in the U.K.

3) Short biography of Lecturers (*Annex 2*)

The professors invited to lecture are experts in different areas of the applied phycology such as microalgae taxonomy, photosynthesis, algal culture, kinetics of growth, wastewater treatment using microalgae, high-value products from microalgae, microalgae-based biorefineries and soil and heavy metal recovery with microalgae.

The course was very successful due to such a good number of very well-known experts in the field with a large experience for making very didactic presentations.

4) List of Participants (*Annex 3*)

The course had a high demand resulting in twenty-nine attendees from various countries: México, Colombia, Cuba, India, The Netherlands and Chile). They included undergraduate and postgraduate students, professionals from industry and researchers. It should be highlighted that some of the attendees came from various countries of the Latin American Region but also from Europe and India, an indication that the Programme was very attractive and included well known researchers as lecturers. Two researchers from México, two from Cuba and one from Colombia are considered as an important contribution to capacity building in the region in this field. Participants from the industry is also a good sign of academia-industry collaboration.



5) Experimental work (*Annex 4*)

The experimental work included sessions about basic (isolation, identification of microalgae, etc.) and advanced topics (harvesting and concentration of biomass from raceways through membrane technology). The later work was linked to the workshop “High value products from microalgae” carried out jointly with Membranology Ltd and the University of Swansea. Actually, the attendees learned how to extract and purify phycocyanin with a special equipment using membranes of different sizes.

6) Round Table

During the last day of the course, a round table entitled “The future of Microalgae Biotechnology” was held. Prof. Roberto DePhilippis was the Chair and he gave at the beginning relevant information about ISAP. Later, he put forward very challenging questions and the audience had a very lively participation. There is the intention that the Professors that participated at the Round Table will write an article based on this discussion. It is expected to be published in the journal of SOLABIAA which is entitled Journal of Environmental and Algae Biotechnology (RELBAA in Spanish).

7) Production of *e-Book*

Another important product which could be derived from the training course is the publication of an e.book compiling the presentations of the various lecturers. They all agreed but need a time to produce a version without any figure or data that could be against the author’s rights or the journals privileges. It is expected that such product could take at least 6 months to be produced since it requires an international number and the contributions from the authors. Dr. Eugenia J. Olgúin has put forward the idea and she is willing to serve as Editor in Chief.



8) Final Remarks

The Course was a relevant activity serving not only the Latin American Region but also other countries. It reached all expected levels: undergraduate and postgraduate students, researchers and professionals from industry. The selected topics and lecturers were highly appreciated by the audience as they expressed at the closing ceremony chaired by the Director General of the Institute of Ecology.

9) Acknowledgements

The Organizing Committee acknowledges very much the financial support provided by ISAP

Dr. Eugenia J. Olguín
Chair

Dr. Gloria Sánchez-Galván
M.S. Nancy Ramos Mancilla
Ing. Erik González-Portela



Group Image