



# CHALLENGES AND APPLICATIONS IN MICROALGAL BIOTECHNOLOGY



17<sup>th</sup>-21<sup>st</sup> of February 2020  
INECOL, Xalapa, Mexico

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

**FUNDED BY ISAP** (*International Society for Applied Phycology*)

## GENERAL OBJECTIVES:

To provide current information about the most acute challenges and the applications with a wider impact of the microalgal biotechnology, starting from basic knowledge and ending with knowledge related to massive cultivation and integration of bioprocesses within microalgae-based biorefineries.

## TARGETED PARTICIPANTS

The training course is aimed at disseminating current information about microalgal biotechnology among young students from both, graduate and postgraduate Programs, as well as entrepreneurs interested in commercial applications such as biomass and pigment production within a biorefinery at pilot plant level. The participants are expected to come from Mexico and other Latin American countries seeking theoretical and practical information in this relevant topic.

## PROFILE OF LECTURES

All invited lectures have a very high profile with extensive experience in each of the topics they will participate. Furthermore, most of them speak Spanish, facilitating the comprehension for a Latin American audience.

## EXPERIMENTAL WORK

The training course has been designed for including experimental work, ranging from inoculum preparation, cultivation of *Arthrospira maxima* in two different types of bioreactors (Flat plate 180 L reactors) and raceways (2,000 L), harvesting of biomass and extraction and purification of phycocyanin using membrane technology.

## ORGANIZING COMMITTEE

Chair - Prof. Eugenia J. Olguín

Budget Administrator - Dr. Gloria Sánchez

Diffusion and logistic aspects - Mr. Erik González, Ms. Nancy Mancilla



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<b>MONDAY</b>			
<b>Basic knowledge and tools for the cultivation of algae</b>			
<b>Lecturer</b>	<b>Country</b>	<b>Title of lectures</b>	<b>Time</b>
Dr. Giuseppe Torzillo	Italy	Photosynthesis: basic principles to optimize growth of microalgae culture outdoors	2 hours
Dr. Gabriel Ación	Spain	Last improvements on the design of microalgae reactors	2 hours
Dr. Guillermo Quijano	México	Kinetic characterization of microalgal cultures	1 hours
Experimental work		Preparation of inoculum for raceways in flat plate bioreactors (180 L)	2 hours
<b>TUESDAY</b>			
<b>Biotechnology applications/soil</b>			
Dr. Roberto De Philippis	Italy	Exploitation of cyanobacteria for soil rehabilitation	2 hours
<b>Biotechnology applications/water</b>			
Dr. Eugenia J. Olguín	México	Dual purpose systems for the production of microalgae and treatment of wastewater	2 hours
Dr. Germán Buitrón	México	Microalgal-bacterial aggregates for wastewater treatment	1 hour
Dr. Roberto De Philippis	Italy	Heavy metal bio-removal with exopolysaccharide-producing cyanobacteria	2 hours
<b>WEDNESDAY</b>			
<b>Biotechnology applications/product recovery</b>			
Dr. Eugenia J. Olguín	México	Microalgae-based biorefineries using agro-industrial wastewater and aquatic plants	2 hours
Dr. Luis Fernández Linares	México	Various types of microalgae cultures and bioproducts	2 hours
Experimental work		Cultivation of <i>A. maxima</i> in raceways (2,000 L) Kinetic characterization of cultures	3 hours
<b>THURSDAY</b>			
<b>Workshop "High value products from microalgae"</b>			
<p><b>Workshop with Membranology Ltd and Swansea University (U.K.)</b>            Organized jointly by Dr. Roberto Lovitt and Dr. Eugenia J. Olguín            Invited speakers            Dr. Giuseppe Torzillo- Italy            Dr. Roberto de Philippis-Italy            Dr. Claudio Fuentes-Grunewald- U.K.            Dr. Roberto Parra- México            Dr. Leopoldo Rodríguez- México</p> <p>Experimental work: Harvest of biomass. Extraction and purification of phycocyanin from <i>A. maxima</i> cultures using membrane technology.</p>			



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FRIDAY			
Dr. Hugo Moreira Soares	Brazil	Trends and Tendencies in Bioprocess Engineering Applied to the Environment	2 hours
<b>Round Table - The Future of Microalgae Biotechnology</b> Chair- Dr. Eugenia J. Olguín Dr. Germán Buitrón Dr. Roberto de Philippis Dr. Guillermo Quijano Dr. Giuseppe Torzillo			

## REGISTRATION:

1) Fill in the registration form (*online*):

<http://bit.ly/course-solabiaa-isap-2020>

2) Select your corresponding fee and make your payment via electronic transfer:

Category	Fee (US Dollar)	Fee (MXN Peso)
<b>Student</b>	\$ 131.00	\$ 2,500
<b>Academic</b>	\$ 158.00	\$ 3,000
<b>Industrial/Company</b>	\$ 262.00	\$ 5,000

ACCOUNT HOLDER / TITULAR	INSTITUTO DE ECOLOGIA, A. C.
BANK / BANCO	BBVA BANCOMER, S. A.
ACCOUNT NUMBER / No. CUENTA	0444103661
CLABE	012840004441036612
SWIFT	BCMRXMMPYM
BRANCH OFFICE / SUCURSAL	7714 GOBIERNO VERACRUZ
CITY / PLAZA	XALAPA, VERACRUZ, MEXICO

**IMPORTANT:** Deadline for payment is **January 30<sup>th</sup>, 2020**.

For any additional information, please contact the organizing committee:  
[curso.solabiaa@gmail.com](mailto:curso.solabiaa@gmail.com).

