Short-term Training for technical staff and scientists

Solar photo-reactors using Compound Parabolic Collectors (CPC) combined or not with other conventional and advanced technologies for wastewater (urban and industrial) treatment/ disinfection and reuse in different applications (crops irrigation, industrial processes, etc.)

Location:	Spain – PSA (CIEMAT)
Date:	25th -27th of April 2023
Target group:	The course is designed for technicians, PhD-students and postdoctoral researchers from European Research Centres/ Universities and companies who want to be trained on technologies for non-conventional wastewater treatment and reuse.
Objective:	This course focuses on the application of solar advanced technologies for wastewater decontamination, disinfection and reuse. The training consists of both theoretical and practical modules.
Trainers:	Scientists and Specialists from the Solar Treatment of Water Research Unit at PSA

The training will include visits, procedures, standards and best practices theoretical and experimental 'hands-on' experience and cover the following topics:

- A review of the common problems of water (scarcity, contaminants and pathogens)
- Conventional and advanced technologies for wastewater (urban and industrial) treatment/ disinfection and reuse: overview.
- Wastewater reclamation standards for different applications
- Physico-chemical and microbiological water quality monitoring review
- Solar photocatalysis fundamentals.
- Solar reactors for photocatalysis. Theoretical and practical insights.
- Practical sessions to reinforce the theoretical work covered in the course.

This short-term training course will be developed totally in person.
Deadline for submission of application form: 5th of April 2023. Communication to selected applicants: 12th of April 2023.

Agenda

First day

09:00 - 09:15	Arrival-Registration and delivery of documentation		15 min
09:15 – 10:00	Introduction and Goals General introduction to water problems (scarcity, contaminants and pathogens) and conventional/advanced technologies for wastewater reclamation.	Dr. Isabel Oller	45 min
10:00–11:00	Visit to the outdoor and indoor facilities of the Solar Treatment Water Unit of the PSA	Dr. Isabel Oller/Dr. Inmaculada Polo	60 min
11:00- 11:30	Coffee break		30 min
11:30-13:00	Fundamentals of photocatalysis. Water analysis techniques and equipments. Physico-chemical water quality monitoring. Chemical contaminants and micro-contaminants in water. Analytical methods.	Prof. Sixto Malato/Dr. Isabel Oller	90 min
13:00 – 14:00	Lunch		60 min
14:00-15:00	*Laboratory practice* Wastewater sample analysis monitoring (pH, turbidity, Suspended solids, organic pollution parameters, ionic chromatography)	Dr. Ilaria Berruti	60 min
15:00-16:00	*Laboratory practice* Contaminant concentration determination by Ultra-Performance Liquid Chromatography with diode array detector (UPLC/DAD).	Dr. Samira Nahim	60 min
16:00	End of meeting		

Second day

09:00 - 09:15	Arrival- welcome coffee		15 min
09:15 – 10:00	Introduction to water pathogens and disinfection	Dr. Inmaculada Polo	45 min

10:00 – 11:00	Microbiological water quality monitoring by conventional methods	Dr. Samira Nahim Granados	60 min
11:00- 11:30	Coffee break		30 min
11:30- 13:00	Microbiological water quality monitoring by advanced methods. Toxicity and biodegradability monitoring.	Dr. Inmaculada Polo /Dr. Isabel Oller	90 min
13:00 – 14:00	Lunch		60 min
14:00-15:00	*Laboratory practice* Bacteria identification and quantification methods	Dr. Ilaria Berruti	60 min
15:00-16:00	*Laboratory practice* Microbial identification and quantification by qPCR methods	Dr. Maria Jesus Abeledo	60 min
16:00	End of meeting		

Third day

09:00 - 09:15	Arrival- welcome coffee		15 min
09:15 – 10:00	Solar photo-reactors for water treatment applications.	Prof. Sixto Malato	45 min
10:00-11:00	Practical experience in decontamination and disinfection by the combination of advanced oxidation/separation technologies with solar photo-reactors.	Alba Hernández/Dr. Maria Jesús Abeledo	75 min
11:00- 11:30	Coffee break		30 min
11:30- 13:00	Practical experience in decontamination and disinfection by the combination of advanced oxidation/separation technologies with solar photo-reactors.	Alba Hernández/Dr. Maria Jesús Abeledo	45 min
13:00 – 14:00	Lunch		60 min
14:00-16:00	Overview: conventional and advanced technologies for water decontamination and disinfection. Round table.	All	90 min
16:00	End of meeting		90 min

MEETING PLACE & ACCOMMODATION

Training place	Solar Treatment Water Unit. Plataforma Solar de Almería (CIEMAT)
Address Training Location:	Ctra. de Senés km. 4,5 Tabernas (04200) Almería
How to get to the Training place from the airport	A transport will be organized from Almeria downtown
Restaurant place	To be decided
Accommodation	Hotel in Almeria downtown. Hotel contact and special rates will be provided to participants.
Contacts for the Training	Dr. Isabel Oller (Isabel.oller@psa.es)/Dr . Inmaculada Polo (mpolo@psa.es)
Participation confirmation for the Training	SFERA III website: https://sfera3.sollab.eu/events/list/

Application Form for Short-term Training for technical staff and scientists

Solar photo-reactors using Compound Parabolic Collectors (CPC) combined or not with other conventional and advanced technologies for wastewater (urban and industrial) treatment/ disinfection and reuse in different applications (crops irrigation, industrial processes, etc.)

25th – 27th April 2023

CIEMAT-PSA, Crta. Senés Km 4.5, 04200 Tabernas, Almería, SPAIN

Please send the filled-out form and a brief curriculum vitae to isabel.oller@psa.es, mpolo@psa.es and ricardo.sanchez@psa.es.

First Name:	
Last Name:	
Passport/DNI number :	
Company:	
Position in Company:	
Address :	
E-Mail:	
Telephone:	
Which topic are you most interested in?	

The EU-funded research project - SFERA III - aims to boost scientific collaboration among the leading European research institutions in solar concentrating systems, offering European research and industry access to the best research and test infrastructures and creating a virtual European laboratory. Grant agreement 823802, funded under H2020-INFRAIA-2018-1.