

ODAK_{TR} Seminar Series

Water-Energy-Food nexus in industrial and urban wastewater recovery

Dr. Isabel Oller

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Live Seminar Time and Date: 12:00-13:00 (Turkish time / GMT + 3)
Friday, Feb. 26, 2021

Recorded Seminar: Link distributed to registered participants after the live seminar is complete.

Register at: [Link](#)

Registration for live seminar closes at 10:00, Thursday, 25 Feb. 2021: To receive the link to the live seminar you must register by 10:00, Thursday, 25 Feb. 2021.

Abstract: The webinar 'Water-Energy-Food nexus in industrial and urban wastewater recovery' will be focused on the links and sustainability of different tertiary treatment technologies for wastewater treatment and recovery for food applications and energy saving. Elimination of contaminants of emerging concern and inactivation of pathogens to fulfil nowadays European and National regulations will be considered and experimental procedures to be followed for their monitoring and evaluation will be explained in detail. The presence of contaminants of emerging concern and pathogens is one of the major threatens and challenges to be overcome by treatment technologies for a safe reuse of wastewater in different applications, even more in those related with food production and agriculture. Along the webinar, the following contents will be discussed: i) a brief description of the climate change effects and the importance on the actions to be taken against it; ii) detail explanation on the experimental protocols to be followed for the correct evaluation of contaminants elimination and pathogens inactivation; iii) introduction on solar photoreactors for wastewater treatment applications, iv) some actual case studies (industrial and urban wastewater treatment).



Short Bio: Isabel Oller holds a PhD in Chemical Engineering from the University of Almería (2008). She is Head of the Solar Treatment of Water Unit at the Plataforma Solar de Almería (CIEMAT). She has more than 15 years of experience in the field of industrial and urban wastewater treatment, disinfection and reuse by using advanced oxidation processes (with and without solar energy) and their combination with physic-chemical pre-treatment systems, advanced biological treatments, membrane systems and other conventional technologies. She has developed this activity under her participation in more than 20 R+D national and European Projects. She is co-author of 129 publications in SCI Journals and more than 150 contributions to different International Congresses and Symposiums. H-index: 40.

About ODAK_{TR}: ODAK_{TR} is a national CST initiative led by METU-GÜNAM with objectives to

1. Support Turkey's energy transition through the development and commercialization of CST technologies;
2. Catalyze domestic CST economic activity by supporting growth in markets, industrial capacities, and industrial activities;
3. Strengthen Turkey's CST Research and Innovation (R&I) capacities, including by creating globally competitive CST research opportunities at Turkish universities.

One of ODAK_{TR}'s main strategies to achieve these objectives is through harmonization of national activities with EU CST initiatives by strengthening and exploiting synergies created by METU-GÜNAM's role as Turkey's National Node for the CST European Research Infrastructure Consortium (ERIC) EU-SOLARIS, and participation in 5 EU H2020 projects: 1. SolarTwins; 2. HORIZON-STE; 3. SFERA-III; 4. INSHIP; and 5. GeoSmart.

About the ODAK_{TR} Seminar Series: Through the ODAK_{TR} Seminar Series, leading CST experts from METU-GUNAM's strategic CST partners CIEMAT-PSA (Spain) and DLR (Germany) and other CST experts will give seminars targeting the Turkish CST community and tailored to support realization of ODAK_{TR}'s objectives. The ODAK_{TR} Seminar Series is being executed within the framework of the H2020 Project SolarTwins. The current ODAK_{TR} Seminar Series schedule is as follows, with all seminars from 12:00-13:00 Turkish time:

| Date | Speaker, Institution | Seminar Title | Recorded Seminar Links |
|--------------|---|---|------------------------|
| 18 Dec. 2020 | Prof. Dr. Eduardo Zarza, CIEMAT-PSA, Spain | An Introduction to Concentrating Solar Thermal (CST) Technologies and Applications | Not Recorded |
| 08 Jan. 2021 | Dr. Yelda Erden-Topal, UPM & CIEMAT, Spain, and METU TEKPOL, Turkey | CST in Turkey: Current State and National Strategies to Exploit Opportunities | Link |
| 15 Jan. 2021 | Dr. Florian Wiesinger, DLR - Institute of Solar Research, Germany | Quality Assessment and Accelerated Aging Experiments of Optical Components for CSP Plants | Link |
| 22 Jan. 2021 | PhDc. Gkiokchan Moumin, DLR - Institute of Future Fuels, Germany | Calcination of Cement Raw Meal in a Solar Rotary Kiln and Heat Transfer Challenges | Link |
| 5 Feb. 2021 | Dr. Inmaculada Polo, CIEMAT-PSA, Spain | Antibiotic Resistant Bacteria: occurrence and removal from urban wastewater | Link |
| 12 Feb. 2021 | Dr. Reiner Buck, DLR - Institute of Solar Research, Germany | Solar Particle Technology for Dispatchable Power and Heat Generation | Link |
| 19 Feb. 2021 | Marcel Bial, ESTELA- The European Solar Thermal Electricity Association | First learnings from a multifold stakeholders position review regarding the deployment of CSP in Europe | Link |
| 26 Feb. 2021 | Dr. Isabel Oller, CIEMAT-PSA, Spain | Water-Energy-Food nexus in industrial and urban wastewater recovery | To Be Completed |

About the H2020 SolarTwins Project: The aim of the SolarTwins project is to step-up the scientific excellence of the promising CST Research Division ODAK of METU-GÜNAM (Coordinator) in collaboration with the internationally leading CST institutions CIEMAT-PSA (Spain) and DLR (Germany). SolarTwins includes 4-weeks of CST summer schools at METU taught by leading experts from CIEMAT-PSA and DLR, and METU graduate students co-advised by experts from CIEMAT-PSA and DLR. An expected impact is the establishment of competitively-funded METU-CIEMAT and METU-DLR Joint Research Lines.

About the National (Spain R&D) Project NAVIA: The general objective of the NAVIA project is the development of novel photocatalysts and new technologies based on solar advanced oxidation processes operated in continuous flow mode for urban wastewater reclamation. In this collaborative project, CIEMAT-PSA, CIESOL-University of Almeria and Universitat politècnica de València are involved. The expected impact of NAVIA is to obtain treated effluents with solar-based technologies at pre-industrial scale, operating the system by a developed decision-making tool for proper operation control, ensuring its final safe reuse in crops' irrigation.



About the ENI CBC MED Project AQUACYCLE: Its main objective is set to bring an eco-innovative wastewater treatment technology that will consist of anaerobic digestion, constructed wetlands and solar treatment for the cost-effective treatment of urban wastewater with minimal costs of operation and maximum environmental benefits. Three local action and investment plans (demonstration plants) will be established in Tunisia, Lebanon and Spain targeting a combined reuse potential of 900,000 m³ of treated effluent, being this action the higher expected impact of this project. CIEMAT-PSA (Spain) is partner of this project jointly with another six institutions from five countries (Greece, Spain, Malta, Lebanon, and Tunisia).



About METU-GÜNAM's CST Research Division ODAK: ODAK includes a diverse set of academics and researchers who are actively contributing to METU-GÜNAM's National and European CST activities:

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EU Projects and Activities Showcased by ODAKTR



ODAKTR Organizing Institutions



Funding Agencies Supporting Projects Showcased by ODAKTR



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