PROGRAMME

International Conference, 4thAOP'TUNISIA
Advanced Oxidation Process
For Sustainable Water Management

Hammamet, October, 16 – 18, 2025

Keynote: 20 min including 5 minutes of discussion,
Oral Presentation OP: 15min including 5 minutes of discussion,
Discussion Panel : 30 min

Thursday, October 16th, 2025	
8:00 - 10:00	**Registration** ***& Poster installation***
10:00 – 10:30	***Welcome Coffee***
10:30 - 11:00	**Welcome speeches and opening** **Pr. Hakim GABTNI**, General Director of CERTE **Pr. Latifa BOUSSELMI**, Laboratory of wastewater & Environment, CERTE
	PLENARY SESSION ***Moderated by Pr. Latifa BOUSSELMI (CERTE-Tunisia)***
11:00 - 12:30	**Keynote 1** *The rules of Advanced Oxidation Processes for the degradation of micropollutants in wastewaters; Pr. Stéphanie D. Lambert, University of Liege-Belgium.* ***(AOP-5)***
	Keynote 2 *Electrochemical treatment as a driver for water circularity; Pr. Hanene Baccour Akrout, Centre for water researches and technologies, CERTE, Tunisia. (**AOP-18**)*
	Discussion Panel *What are the main obstacles to the implementation of AOP technologies to tackle current and future demands?* Pr. Stéphanie D. Lambert, University of Liege-Belgium. Pr. Hanene Baccour Akrout, CERTE Tunisia Pr. Sven Geissen, TUB Germany Pr. Mohamed Ksibi, ISBS-Sfax Tunisia
12:30 - 14:00	***Lunch***

	Session 1. *Micropollutants Degradation by AOPs* ***Moderated by Pr. Mohamed KSIBI (ISBS - Tunisia)***
14:00-15:20	***Keynote 3*** *Per- and Polyfluoroalkyl Substances (PFAS) in Water: Challenges, Innovations, and the Path Forward; Pr. Chedly Tizaoui, Swansea University, Swansea, United Kingdom (**AOP-26**)*
	OP1: *Photo-based advanced oxidation processes to pharmaceutical contaminants removal; Lobna Mansouri, Safa Laabidi, Latifa Bousselmi **(AOP-7)**.*
	OP2: *Surface-bound radicals enhancing detoxification of benzotriazole during catalytic ozonation; Siyan Fan, Sven-Uwe Geissen, Yongjun Zhang (**AOP-16**).*
	OP3: *Optimization of photocatalytic degradation of citalopram by activation of persulfate with g-C3N4 under simulated solar radiation: a design of experiments; Naima Jery, Miguel A. Jiménez López, Pedro M. Álvarez, F. Javier Rivas, Monia Guiza, **(AOP-24).***
	Discussion Panel *AOPs appear to be the most appropriate solutions for eliminating emerging pollutants, but does research fully master the degradation mechanisms and detection of by-products to ensure safe use?* *Dr. Lobna Mansouri, CERTE, Tunisia* *Dr. Naima Jery, ENIG, Tunisia* *Eng. Siyan Fan, TUB, Germany* *Dr. Saad Y. Jasim, P.Eng, International Ozone Association*
15:30- 16:00	***Coffee break & discussion with the poster authors***
	Session 2. Materials Engineering for AOP: Innovation & Challenges ***(Part 1)*** ***Moderated by Pr. Dominique BERLING (IS2M-FRANCE)***
16:00 -17:35	***Keynote 4*** *Applications of Advanced Technologies to achieve Sustainable Development - Dr. Saad Y. Jasim, P.Eng. **(AOP-14)**.*
	OP4: *A Sustainable Nanoremediation Approach For Cheese Wastewater Using Ag Doped TiO_2 -. Lobna Elleuch, Besma Sioud, Mouna Messaoud and Rached Salhi, **(AOP-6).***
	OP5*: Photocatalytic Applications of Novel Nanomaterials for Solar-Driven Pollutant Degradation; Ikbel Mallek-Zouari, Manel Othman, Wael Ben Taazayet, Brahim Dkhil, Najeh Thabet-Mliki (**ME-3).***
	OP6: *Earthworm Mucus as a Natural Stabilizer for TiO_2 Nanoparticles: A bio-inspired Approach for Improved Photocatalysis and Biofilm Control in Water Treatment, Nadra Bel-Haj Amor, Myriam Ben Said, Andrés Sauvetre, Didier Orange, Latifa Bousselmi **(SWM-2).***

	OP7: *Innovative material synthesis for photocatalytic treatment of contaminated water; Ounis Dekhil Sarra, Aboussaoud Wael, Guiza Monia.* ***(AOP-1).***
	OP8: *Contaminants of Emerging Concern removal from urban wastewater effluents by solar photo-Fenton process using Fe3+-NTA complex at neutral pH; Amal MEJRI Paula Soriano Molina, Sara Miralles Cuevas, José Antonio Sanchez Perez.* ***(AOP-22).***

Friday, October 17th, 2025	
	Session 3. Enhanced Bioremediation for SWM ***Moderated by Pr. Sven Geissen (TUB,- Germany)***
9:00 - 10:50	**Keynote 5** *Acoustic Stimulation as a Tool to Enhance Bioremediation: Evidence, Mechanisms, and Perspectives; Pr. Abdelwaheb Chatti, Faculty of Sciences of Bizerte, Tunisia* ***(SWM-20).***
	Keynote 6 *Bio-augmentation of constructed wetlands: exploring the potential of Trichoderma for the removal of emerging organic pollutants and the reuse in agriculture, Andrés Sauvetre, François Lestremau, Didier Orange, Nadra Bel-Haj-Amor, Nassim Ait-Mouheb, Magali Gerino, Myriam Ben Said, Latifa Bousselmi, Serge Chiron* ***(SWM-4)****.*
	OP9: *Living Ecohydrological Systems: How Biodiversity Enhance Constructed Wetlands for Sustainable Water Reuse; Didier ORANGE, Myriam BEN SAID, Andrés SAUVETRE, Nadra BEL-HAJ-AMOR, Latifa BOUSSELMI, Magali GERINO (****SWM-3)****.*
	OP10: *Physiological traits of Indigenous polyphosphates accumulating bacteria: Investigation and potentialities to promote Nature-based approaches for P removal - Imen Daly, Salah Jellali, Myriam Ben Said, (****SWM-14****)*
	Discussion Panel *In order to adapt to climate change, the application of nature-based solutions (NbS) is increasing. What are the RDI trends for enhancing the role of NBSs in sustainable water management?* *Pr. Abdelwaheb Chatti, Faculty of Sciences of Bizerte, Tunisia* *Pr. Didier Orange, HSM IRD, France* *Dr. Andrès Sauvetre, IMT IRD, France* *Dr. Imen Daly, CERTE, Tunisia*
10:50 - 11:15	***Coffee break & discussion with the poster authors***
	Session 2. Materials Engineering for AOP: Innovation & Challenges (Part 2) ***Moderated by Pr. Monia GUIZA (ENIG-Tunisia)***
	Keynote 7 *Innovative Electrode Design: Leveraging Deep-UV Microstructuring of Semiconductor Oxides for Advanced Pollutant Degradation; Pr. Dominique Berling, Institute of Materials Science of Mulhouse, France,* ***(ME-5).***

11:15 - 12:35	**OP11**: *Clay-Based Hybrid Composites as Efficient Catalysts for Dye Removal via Advanced Oxidation Processes (AOPs): Synthesis, Mechanistic Insights, and Environmental Applications; Taissire Ben Amor, Malak Kahloul, Hajer Chemingui, Bénédicte Lebeau* ***(ME-6).***
	OP12: *Electrochemical sensing of caffeic acid on natural biomass-pyrrole-functionalized magnetic biochar (PFMB) as promising SPE material, Imen Abidli, Mohamed Bououdina, Latifa Latrous, Adel Megriche, (**AOP-10).***
	OP13: Electrochemical Oxidation of DEUREX® E 0920 M Microplastics Alone and in the Presence of Paracetamol: Mechanistic Insights on Platinum and Stainless-Steel Electrodes, *Firas Chenneoui, Sameh Jallouli and Mohamed Ksibi **(AOP-27).***
	Discussion Panel *What opportunities do innovative catalysts and electrodes development offer for improving the performances of AOPs?* *Pr. Dominique Berling, Institute of Materials Science of Mulhouse, France* *Dr. Latifa Latrous, Faculty of Science of Tunis, Tunisia* *Dr. Taissire Ben Amor, CERTE, Tunisia* *Eng. Firas Chenneoui, ISBS-Sfax Tunisia*
12:40 - 14:00	***Lunch***
14:00-15:00	**POSTER SESSION** *A jury will evaluate the poster session, judging both the scientific content and presentation of each poster. Key criteria include innovation & research quality as well as the poster presentation to jury considering clarity and logical organization. For each topic, a certificate will be awarded for the best poster.* ***Topic 1: Advanced Oxidation Process & Topic 3: Case study of AOP*** ▪ ***AOP-9** Persulfate-Activated Oxidation of Textile Dye Using Functionalized Biochar. Asma abdedayem and Aziza Hadj Ltaief* ▪ ***AOP-11** Plasmachemical treatment of olive mill wastewater by gliding arc discharge in humid air ; Nouha Ben Hafaidh, Houyem Askri, Nizar Bellakhal.* ▪ ***AOP-13** Abamectin removal from water by an advanced oxidation process coupling photocatalysis and adsorption using TiO_2 supported activated carbon. Wael Aboussaoud, Takoua Bouabidi, Monia Guiza.* ▪ ***AOP-17** Advanced Oxidation Processes for degradation of Endosulfane Sulfate in Aqueous Solution. Ikbel Haddadi, Olfa Ben Said, Wided Bellazreg, Nadia Nassraoui, Abdennacer Boulila, Mongi Bouaicha.* ▪ ***AOP-20** Enhanced Photocatalytic Degradation of Organic Water Pollutants Using MoO_3/S-C_3N_4/N,S-GQDs Heterojunction Nanocomposites Enhanced Photocatalytic Degradation of Organic Water Pollutants Using MoO_3/S-C_3N_4/N,S-GQDs Heterojunction Nanocomposites. Alma Mejri, Sarra Arfaoui, Abdelmoneim Mars.* ▪ ***AOP-21** Dark blue azo dye degradation by heterogeneous calaysis of Fenton Reaction: experimental and DFT study. Ghazza Masmoudi, Sahar Mazgar, Hatem Dhaouadi.*

- ***AOP-23*** *Visible-Light-Driven Photodegradation of Textile Dye Using Functionalized Calcium Phosphate Nanocomposites. Sonia Jebri, Walid Mabrouk, Hamza Elfil, Monia Hichri.*

Topic 2: Materials and Engineering in AOPs

- ***ME-1*** *Valorization of Spent Coffee Grounds through Optimized Hydrothermal Carbonization. Dadi Sihem, Nouri Hanen, Silvia Román, Guiza Monia*
- ***ME-2*** *The synergistic effect of the Ag-NPs/TiO_2 -NTs nanocomposite for photocatalysis. Chaima Ben Messoud, Kawther Ben Mabrouk, Mohamed Aziz Hajjaji, Aymen Amin Assadi, Anouar Hajjaji.*
- ***ME-8*** *Decoration of Ti/TiO_2 Nanotubes with PbS Nanoparticles elaborated by pulsed laser for photocatalysis. Raed Malki, Kawther Ben Mabrouk, Ameni Rebhi, Mohamed Aziz Hajjaji, Aymen Amin Assadi, My Ali El Khakani, Anouar Hajjaji.*
- ***ME-9*** *Surface functionality and electrochemical investigations of a graphitic electrode. Mrad Mouna, Akrout Hanene.*
- ***ME-10*** *Laser-Enhanced Carbon Electrode with Li-Doped CeO_2 Quantum Dots for Ultrasensitive Electrocatalytic Detection of Carbofuran and Methyl Parathion in environmental samples. Alma Mejri, Adnen Midouni, Ahmed Hichem Hamzaoui, Abdelmoneim Mars.*
- ***ME-11*** *Comparative Adsorption of Rhodamine B on Few-Layer and Laser-Induced Graphene: AI-Enhanced Thermodynamic Modeling for Process Optimization. Ridha Lafi, Jalila Chékir, Sherif Keshk, H. Elhosiny Ali, Amira Zaoua, walid mabrouk.*

Topic 4: Sustainable water management

- ***SWM-6*** *Green Antimicrobial Approach Using Aloe vera Extracts for Sustainable Wastewater Treatment ; Chkir dit Jlizi Asma. Ben Said Myriam, DALI Imen, Trabelsi Dhekra, Bousselmi Latifa.*
- ***SWM-7*** *Advanced monitoring groundwater quantity and quality using HRMS sensors: Strengths and limitations. Hanen Jarray, Thuraya Mellah, Lobna Mansouri, Hanene Akrout.*
- ***SWM-10*** *Circularity of Non Conventional Water, action plan? Latifa Bousselmi, Hela Hassairi, Thuraya Mellah, Dalanda Hamdi, Mahmoud Benltifa, Oussama Hsini, Chekib Ben Mustapha, Ahmed Ghrabi.*
- ***SWM-12*** *Advancing participative local water management in mining area and scientific informed advocary. Hela Hassairi, Thouraya Mellah, Sihem Benabdellah, Sonia Abdelhak, Ahmed Ghrabi, Latifa Bousselmi.*
- ***SWM-13*** *Nature-Based Greywater Treatment in Urban Areas: First Performance of a Living Green Wall in Tunisia. Molka Cherni, Hela Hassairi, Ahmed Ghrabi, Fabio Masi, Latifa Bousselmi.*
- ***SWM-17*** *Assessment of Wastewater treatment using microalgae cultivation in photobioreactor. Hanen Smii, Leila El-Bassi, Hanene Akrout.*
- ***SWM-21*** *Assessment of Water Control Policies in Tunisia: Wadi El Bey Case Study. Mohamed hidoussi, Mellah thouraya, Hanene Jarray, Maher Gassab, Hanene Akrout.*
- ***SWM-22*** *Life Cycle Assessment of Conventional vs. Eco-Responsible Hygiene Products in Hotels: Comparative Environmental Determinant Profiles. Hana Sammeri, Sabrine Saadellaoui, Sana Mahfoudh, Lamia Bouziri.*
- ***SWM-23*** *The hidden risks associated with the reuse of irrigation water. Amal ayari, Sarra Hechmi, Mohammed Naceur Khelil, Haykel Sallemi, Sarra Bachtouli, Ammar Mlayah*
- ***SWM-24*** *Groundwater quality assessment for irrigation uses in the Nabeul-Hammamet region, Tunisia: Insights from the AGREEMed project, Hanen Jarray, Khaoula Masmoudi, Thouraya Mellah, Lobna Mansouri, Latifa Bousselmi, Hanene Akrout*

Session 4. Circularity for Sustainable Water Management

Moderated by Pr. Salah Jellali, (SQU, Oman)

15:00-16:20	**Keynote 8** *Turning Wastewater into Clean Energy: The Future of Green Hydrogen; Pr. Radhouane Chtourou, Research and Technology Center of Energy, CRTEn Tunisia* ***(SWM-19)****.*
	OP14: *Investigations on Lead removal from aqueous solutions using olive mill wastes derived biochars; Leila El-Bassi, Salah Jellali, Hanene Akrout, Charalampos Doulgeris, Mejdi Jeguirim (****SWM-16).***
	OP15: *Recycling Refinery Effluents for Sustainable Soap Wastewater Treatment: a novel approach to achieve circular economy concept, Linda Jammeli, Djilali Tassalit, Ouassila Benhabiles, Leila Merabti, Zahia Tigrine, Mounir Mellal, Nadia Chekir, Lobna Mansouri, Latifa Bousselmi, Imen Khouni (****SWM-1)****.*
	OP16: *Conversion of Olive Pruning Stems into High-Performance Activated Carbon for Zinc and Pharmaceutical Pollutant Removal from Aqueous Media. Thouraya Bohli, Ismaeel Ahmed Nagim, Hayet Jdaida, Abdelmottaleb Ouederni.* ***(SWM-9).***
	OP17: *Olive Mill WasteWater as a Reaction Medium in the Hydrothermal processing of Oleic Industry Wastes, Basma Khiari, Zahra Sayouri, Souhir Abdelmoumen, Ahmed Bourafa, Mariem Belhachemi,* ***(ME-7)****.*
16:20-16:50	***Coffee break & discussion with the poster authors***
	Session 5. Prevention, Recovery and Reuse for SWM ***Moderated by Pr. Didier Orange (HSM IRD-France)***
16:50-18:10	**Keynote 9** *Recent developments on biochars use for nutrients recovery from wastewater; Prof. Salah JELLALI, Sultan Qaboos University (SQU), Oman.* ***(ME-4).***
	OP18: *Reforming Governance for Non-Conventional Water Integration in Tunisia: Insights from Social Learning and Participatory Innovation. Thuraya Mellah, Latifa Bousselmi, Hanene Akrout, Lobna Mansouri, Khaoula Masmoudi (****SWM-15).***
	OP19: *REUSE water optimization in Occitanie : biofilm control in the chain of constructed wetlands and drip-irrigation devices, Magali Gerino, Nassim Ait-Mouheb, Claire Albasi, Marion Alliet, Nadra Bel-Haj-Amor, Myriam Ben Said, Sophie Canovas, Siriane Cazaux, Dan-Tam Costa, Alexandre Moral, Jean-Louis Druilhe, Paul Duru, Philippe Gallet, Christophe Jourdan, Rahim Kacimi, Alexandre Lacou, Antoine Lecerf, François Liron, Bertrand Montfort, Edoardo Parisi, Julien Petit, Francois Thielbolt, Andrés Sauvetre, Didier Orange* ***(SWM-5).***
	OP20: *Pollution Prevention through Life Cycle Assessment of Greywater: Eco-Responsible vs. Conventional Hygiene Products in Hotels" Lamia Bouziri, Sana Mahfoudh, Sabrine Saadellaoui, Hana Sammeri, Latifa Bousselmi, (****SWM-18)****.*
	OP21: *Treatment and reuse of slaughterhouse wastewater using anodic oxidation and coagulation-flocculation: Performance and environmental impact assessment, Masmoudi Jabri K, Saadellaoui S, Hakimi R, Rais B, Akrout H, Bousselmi L.* ***(AOP-4)***
18:10-18:30	**Poster Awards**
21h00-22h30	**"Artistic reception"**

Saturday, October 18h, 2025	
09:00 - 10:30	**SIDE EVENT 1:** **Sustainable wastewater treatment in textile sector: AOP benefits** *This side event features a dynamic roundtable discussion bringing together leading academic researchers, key industry stakeholders and technical center. This session aims to foster collaborations and exchange experiences and visions from different actors; researchers, socio-economic actors, industrials and decision makers in textile sector, focusing on results achieved in* ***PNRI project (Electrotex)*** *and the outlined targets in* ***'Matrix' Interreg Next Med project.***
09:00 - 09:45	***Panel 1*** *In the context of current climate change and water scarcity, the first panel will offer a brainstorming on what solutions are currently being offered by research and innovation for the textile sector, and what is the gap between these solutions and the industry's actual needs. What are the opportunities for collaborative research?* ***Moderated by Pr. Hanene BACCOUR AKROUT*** *Director of the Laboratory of Wastewater & Environment, CERTE* ***Panellists:*** ▪ *Pr. Hakim GABTNI, General Director of CERTE* ▪ *Pr. Latifa BOUSSELMI, Laboratory of Wastewater & Environment, CERTE* ▪ *Mr. Nizar MEL, Directeur, Aramys Group, FINO textile industry (tbc)* ▪ *Mrs. Nadaa LACHAAL, General President Director, BorjCedria Technopark Management Company, SGTBC* ▪ *Mr. Mohsen MISSAOUI, General Director of the Technical Center for Textiles CETTEX (tbc)*
09:45 - 10:30	***Panel 2:*** *What is the most suitable transfer mechanism for an industrial application, and what are the opportunities and limitations?* Is *the transition towards a circular, environmentally responsible model in the textile sector becoming urgent?"* ***Moderated by Pr. Latifa BOUSSELMI*** *Laboratory of Wastewater & Environment, CERTE* ***Panellists:*** ▪ *Mr. Mohamed MEKSI, Director of the R&D study bureau, Sartex* ▪ *Mr. Chekib BEN MUSTAPHA, Expert in economics, UPMI* ▪ *Mr. Tarek FERJAOUI, G*eneral President Director, *Monastir El Fejja Competitiveness Pole, Mfcpole (tbc)*

	▪ *Mrs. Imen BEN SOYEH, Deputy Director of Environmental Management and Labelling - Directorate for Companies Assistance – CITET* ▪ *Prof. Hanene AKROUT, Director of Laboratory of Wastewater & Environment, CERTE*
10:30- 12:00	**SIDE EVENT2:** **Micro-Algae Cultivation For Industrial Wastewater Treatment In Smart Circular Farming Systems.** ***Moderated by Pr. Ahmed GHRABI*** ***Research in Action, REACT*** *This event will highlight the use of micro-algae as a powerful biological tool for treating agri-food wastewater, transforming waste into valuable resources within a circular economy framework, developed in the framework of* ***Combifarm*** *Project. The event will feature a moderated roundtable discussion focused on research results, practical strategies and policy frameworks for implementing micro-algae-based wastewater treatment in smart agricultural systems.* ***Panellists:*** ▪ *Pr. Thouraya RHIM, Director of the Laboratory of Horticulture, INRAT* ▪ *Dr. Cheima KEFFALA- BAZILE, Higher Institute of Agronomy Chott Mériem (ISA-CM)* ▪ *Mr. Taeib NEMISSI, Algaepool Company* ▪ *Dr. Rahma ZOGHLAMI, Laboratory of Horticulture, INRAT* ▪ *Dr. Leila EL-BASSI, Laboratory of Wastewater & Environment, CERTE*
12:00 - 12:30	***"Au revoir" Coffee***