



International Symposium
 on
Emerging Pollutants in Irrigation Waters:
Origins, Fate, Risks, and Mitigation
 with special sessions
 on
Good Governance in Universities and Research Institutions
 and
« Meet the Project »

November 25-28, 2013

Alhambra Thalasso Hotel- Hammamet, Tunisia

Organized by



In association with



CLEAN Soil, Air, Water

Supported by



Deutscher Akademischer Austausch Dienst
 German Academic Exchange Service



Objectives

This International Symposium is the first to be organized in Tunisia and may be in the entire Arab World, to deal with **Emerging Pollutants in water resources used for irrigation, their origins, fate, potential risks and tools for mitigation**. It is held in the framework of the German-Tunisian joint research project **EMPOWER Tunisia** carried out by the Technical University of Braunschweig (TUBS, Germany), the National Research Institute for Rural Engineering, Water, and Forestry (INRGRAF, Tunisia) and the Higher Institute of Agronomy Chatt Meriem (ISA CM, Tunisia).

It aims at:

- Bringing together scientific communities around the Mediterranean Sea Basin and the Arab countries working on emerging pollutants: chemists, environmental scientists, hydrologists, biologists, etc. to present and to discuss their research findings, and explore further opportunities of collaboration.
- Gathering the experts from the Arab-Mediterranean countries together with scientists from other countries to discuss issues related to the pollution of water resources used for irrigation, and establish a list of the most relevant pollutants and their potential hazardous effects on human health and the environment.
- Exchanging experiences of environmentally sound technologies to mitigate the occurrence of emerging pollutants.

Topics and Sessions

- The Symposium is organized around Oral and Poster sessions in addition to 2 special sessions: Good Governance and Meet the Project.
- **Oral presentations** are organized according the following sessions:
 - Introduction to emerging pollutants
 - Water quality in Mediterranean countries
 - Irrigation water quality in Tunisia
 - Treatment technologies and mitigation
 - Advanced treatment technologies for remediation
- **Poster sessions** are organized around two topics and two sessions. Topics will cover the followings:
 - Analysis and monitoring
 - Treatment technologies and mitigation
- Poster will be displayed starting from November 24 evening. They should be ready to be visited on November 25 starting from 14:30.
- **« 2 minutes Poster »**: it is a flash-talk session where participants will have to be very strict with the time limited to only **2 minutes**. **SO PLEASE DO NOT SPEAK FOR MORE THAN TWO MINUTES** to advertise your poster.
- **Good Governance** : Within the educational component of the project, experiences from Arab countries on the implementation of good governance in universities and research institutions will be presented.
- **« Meet the Project »**: It is a session where selected Senior Scientists and Students will give a **5 minutes presentation** about on-going or future project to look for project partners or for opportunities of PhD, training, etc.

Symposium Venue

- The Symposium venue is the **Alhambra Thalasso** hotel a 5* hotel in Yasmine Hammamet, about 70 km from Tunis the capital. <http://www.alhambra-thalasso.com>



Final Program

Monday , November 25, 2013

8:30-09:00	Arrival of participants and registration
09:00-10:00	Plenary Session: Welcome speeches and Official Opening <i>Representative of the Ministry of Agriculture, Tunisia</i> <i>Representative of the Ministry of Infrastructure and Environment</i> <i>Prof. Dr. Mohamed Aziz Darghouth, President of IRESA, Tunisia</i> <i>Representative of the German Embassy to Tunisia</i> <i>Prof. Dr. Faysal Mansouri, University of Sousse, Tunisia</i> <i>Mr. Gerard Faupel, GIZ, Tunisia</i> <i>Mrs. Beate Schindler-Kovats, DAAD, Tunisia</i> <i>Prof. Dr. Müfit Bahadir, TUBS, Germany</i> <i>Prof. Dr. Georgios Pilidis, MESAEP, Greece</i> <i>Prof. Dr. Abdelhamid Boujelben, ISA CM, Tunisia</i> <i>Dr. Mohamed Ali Ben Abdallah, INRGREF, Tunisia</i>
10:00-10:30	The EMPOWER Tunisia Project, <i>Müfit Bahadir, Germany</i>
10:30-11:00	Coffee break
11:00-13:00	Plenary Session : Introduction to Emerging Pollutants in the Environment Chairpersons: Prof. Dr. Müfit Bahadir and Dr. Thameur Chaibi Rapporteur: Sami Ameur
11:00-11:25	Research on emerging pollutants as part of the environmental pollution in the Mediterranean basin, <i>Georgios Pilidis, Greece</i>
11:25-11:50	Emerging pollutants do not belong in aquatic ecosystems: towards a roadmap for a sustainable use of water resources, <i>Elke Fries, France</i>
11:50-12:15	Wastewater reuse and emerging pollutants in Tunisia : Current status and challenges, <i>Borhane Mahjoub and Olfa Mahjoub</i>
12:15-12:25	Discussion
12:25-12:45	MESAEP network, <i>Bülent Topkaya, Turkey</i>
12:45-13:00	Organization of the Symposium and instructions to participants, <i>Olfa Mahjoub and Borhane Mahjoub</i>
13:00-14:30	Lunch break
14:30-18:00	Plenary Session: Water Quality in the Mediterranean Countries Chairpersons: Prof. Dr. Elke Fries and Prof. Dr. Ahmed Azmy Khalil Rapporteur: Dr. Adel El Yadini
14:30-14:50	Occurrence and removal of emerging pollutants in water resources, <i>Hichem Mahjoub, Tunisia (OP EM74)</i>
14:50-15:10	Optimum water quality management scenario using GIS and WASP model in Rosetta Branch", <i>Rasha El Gohari and Khaled Roshdy, Egypt (OP EM26)</i>
15:10-15:30	Monitoring the risk of nitrate pollution in Mnasra groundwater related to irrigation system in Morocco", <i>Bouchra Marouane, Abdelmalek Dahchour, Sylvie Dousset, Souad El Hajjaji, Morocco (OP EM81)</i>
15:30-15:50	Alkylphenols and alkylphenol polyethoxylates in a Mediterranean developing country context: spatial and seasonal contamination of river and coastal sediments, <i>Helmieh Amine, Jalal Halwani, Elena Gomez, Claude Casellas, Hélène Fenet, Lebanon (OP EM48)</i>
15:50-16:00	Discussion
16:00-16:30	Coffee break and Poster session
16:30-16:50	Cyanobacterial hepatotoxins in the sea: the case of Amvrakikos Gulf, <i>Georgios Pilidis, Greece (OP EM94)</i>
16:50-17:10	<i>In vitro</i> bioassay in environmental analysis of treated wastewater in Tunisia, <i>Selma Etteieb, Atsushi Kawachi, Junkyu Han, Jamila Tarhouni, Hiroko Isoda, Tunisia (OP EM37)</i>
17:10-17:30	Fate and ecological risk of steroidal estrogens in Centre Eastern Tunisia Wastewater treatment plant, <i>Dalel Belhaj Ayadi, Habib Ayadi, Monem Kallel, John L. Zhou, Tunisia (OP EM111)</i>
17:30-17:50	Investigation of drugs in abuse and relevant metabolites in urban wastewater by liquid chromatography tandem mass spectrometry, <i>Evroula Hapeshi and Despo Fatta-Kassinou, Cyprus (OP EM51)</i>
17:50-18:00	Discussion

Free evening

Final Program

Tuesday , November 26, 2013

09:00-10:30	Plenary Session: Water Quality in Tunisia Chairpersons: Prof. Dr. Marwan Haddad and Prof. Dr. Georgios Pilidis Rapporteur: Dr. Irene Michael
09:00-09:20	Chlorinated pesticides and polychlorinated biphenyles in wastewater and surface water in Tunisia» <i>Imen Haddaoui, Olfa Mahjoub, Borhane Mahjoub, Abdelhamid Boujelben, Müfit Bahadir, Tunisia (OP EM113)</i>
09:20-09:40	Polycyclic aromatic hydrocarbons in wastewater and surface water used for agricultural irrigation in Tunisia, <i>Afef Oueslati, Imen Haddaoui, Borhane Mahjoub, Olfa Mahjoub, Müfit Bahadir, Tunisia (OP EM114)</i>
09:40-10:00	Occurrence of pharmaceuticals, biocides, and industrial compounds in reclaimed and surface waters in Tunisia, <i>Elke Fries, Olfa Mahjoub, Borhane Mahjoub, Müfit Bahadir, France (OP EM116)</i>
10:00-10:20	Characterization of water and sediment quality of Oued Laya”, <i>Lotfi Dridi, Rajouene Majdoub, Firas Ghorbel, Monia Ben Hlima, Tunisia (OP EM112)</i>
10:20-10:30	Discussion
10:30-11:00	Coffee break and Poster session
11:00-11:20	Heavy metals in conventional and non-conventional water resources used for irrigation: Case studies from Tunisia , <i>Marwa Rmili, Borhane Mahjoub, Olfa Mahjoub, Mohamed Chaker Ncibi, Müfit Bahadir, Tunisia (OP EM 115)</i>
11:20-11:40	Heavy metals in soils and plants in the agricultural area of Jebel Ressay ancient mine, northern Tunisia, <i>Naima Benzina Kolsj, Imen Bejaoui, Mariem Hamza, Valérie Sappin-Didier, Marguerite Munoz, Tunisia (OP EM68)</i>
11:40-12:00	General discussion
12:00-13:00	Plenary Session: « 2 minutes Poster » Chairpersons: Dr. Borhane Mahjoub and Dr. Olfa Mahjoub
11:50-12:30	« 2 minutes Poster » Session : Analysis and Monitoring
12:30-13:00	« 2 minutes Poster » Session : Treatment Technologies and Mitigation
13:00-14:30	Lunch break
14:30-18:00	Plenary Session: Treatment technologies and Mitigation Chairpersons: Prof. Dr. Abdelmalek Dahchour and Prof. Dr. Serge Chiron Rapporteur: Dr. Abir Kouzayha
14:30-14:50	In-stream wetland as a low cost wastewater treatment technique”, <i>Rasha El Gohary and Ahmed Azmy Egypt (OP EM83)</i>
14:50-15:10	Phytofiltration of pentachlorophenol and cadmium from the water using <i>Phragmites australis</i> (common reed), <i>Nejla Hechmi, Nadhira Ben Aissa, Hassen Abdennaceur, Naceur Jedidi, Tunisia (OP EM54)</i>
15:10-15:30	Sorptive removal of métacycline, bromhexine and oxytétracycline from water on local clay, <i>Lamia Mahouachi, Ibtissem Ghorbel-Abid, Malika Trabelsi-Ayadi, Tunisia (OP EM76)</i>
15:30-15:50	Remediation techniques of heavy metals and chlorinated pesticides concerning sewage effluent and sludge treated soils, <i>Mohamed Elssaidi, Lybia (OP EM36)</i>
15:50-16:00	Discussion
16:00-16:30	Coffee break and Poster session
16:30-16:50	Assessment of carbamazepine biodegradability by activated sludge using response surface methodology, <i>Samer Semrany, Samir Taha, Lidia Favier, Hayet Djelal, Abdeltif Amrane, Lebanon (OP EM99)</i>
16:50-17:10	Photolysis and photodegradation of Chlorpyrifos insecticide in various aqueous solutions, <i>Bouchra Marouane, Abdelmalek Dahchour, Adil El Yadini, Sylvie Dousset, Souad El Hajjaji, Morocco (OP EM120)</i>
17:10-17:30	Photocatalytic removal of licite and illicite drugs from the aqueous phase using TiO ₂ coupled with graphene as a photocatalyst, <i>Popi Karaolia, Katerina Drosou, Irene Michael, Nikos Xekoukoulotakis, Despo Fatta-Kassinou, Cyprus (OP EM66)</i>
17:30-18:00	General discussion

Free evening

Final Program

Wednesday , November 27, 2013

09:00-10:30	Plenary Session: <i>Advanced Oxidation Methods for the Removal of Emerging Pollutants</i> Chairpersons: Prof. Dr. Jalal Halwani and Dr. Zeinab Abo El-Naga Rapporteur: Dr. Sami Ameur
08:40-09:00	Electro-oxidation of micro-pollutant o-cresol by RuO ₂ electrode , <i>Zoubida Taleb, Emilia Morallon, Raoul Berenguer, Cesar Quijada, Safia Taleb, Algeria (OP EM101)</i>
09:00-09:20	Solar photo-Fenton using persulfate/peroxymonosulfate for pharmaceutical residues removal from domestic wastewater », <i>Moussa Mahdi-Ahmed and Serge Chiron, France (OP EM24)</i>
09:20-09:40	Optimization of monocrotophos oxidation and mineralization in the Fenton process using response surface methodology, <i>Gökhan Ekrem Üstün, Seval Kutlu Akal Solmaz, Hilal Safiye Azak, Turkey (OP EM9)</i>
09:40-10:00	Removal of an endocrine disrupting chemical (DEP) by catalyzed ozonation using O ₃ / Fenton reagents system <i>Lobna Mansouri, Marina Sabelfeld, Sven-Uwe Geissen, Latifa Bousselmi, Tunisia (OP EM79)</i>
10:00-10:20	Combining electro-Fenton and biological treatment for the remediation of a pharmaceutical industry effluent , <i>Dorsaf Mansour, Florence Fourcade, Didier Hauchard, Nizar Bellakhal, Abdeltif Amrane, Tunisia (OP EM78)</i>
10:20-10:30	Discussion
10:30-11:00	Coffee break and Poster session
11:00-13:00	Plenary Session: <i>Good Governance in Universities and Research Institutes</i> Chairpersons: Prof. Dr. Anwar Jiries and Dr. Bülent Topkaya Rapporteur: Dr. Rasha El-Gohary
11:00-11:25	Good governance in universities and promotion of women in science, <i>Zeinab Abo-El Naga, Egypt</i>
11:25-11:50	The role of good governance in universities and research institutions in controlling and managing existing and potential coming pollutants in irrigation waters, <i>Marwane Haddad, Palestine</i>
11:50-12:15	Toward sustainable universities in Jordan, <i>Wael Taher Sulaiman, Jordan</i>
12:15-12:40	Creating a learning culture in Zagazig University – Prototype of good governance in Higher Education and Research, <i>Mohamed Abouhashim, Egypt</i>
12:40-13:00	General discussion
13:00-14:30	Lunch break
14:30-17:00	Plenary Session: « Meet the Project » Chairpersons: Prof. Dr. Müfit Bahadir and Dr. Mohamed Abouhashem Rapporteurs: Dr. Borhane Mahjoub and Dr. Olfa Mahjoub
14:30-15:15	Senior Scientists Session
	<ul style="list-style-type: none">- Emerging pollutants in groundwater, <i>Elke Fires, France</i>-Biosolid management in MENA region, <i>Wael Suleiman, Jordan</i>- Veterinary drugs residues, <i>Abdelmalek Dahchour, Morocco</i>- Electrochemical biosensors, <i>Sami Ameur, Tunisia</i>- De-inking sludge in agriculture, <i>Naïma Ben Zina Kolsi, Tunisia</i>
15:15-16:00	Students' Session
	<ul style="list-style-type: none">- Pesticides residues and prevalence of diseases, <i>Mokhtari Moussa, Algeria</i>- Biosurfactants from genetically modified bacteria, <i>Nadia Samak, Egypt</i>- Wastewater reuse and sewage sludge use in Lebanon, <i>Samer Semrany, Lebanon</i>- Pesticides and hydrocarbons in sea water, <i>Amal Abdulwahid, Libya</i>- Ecological filters for water purification, <i>Bouchra Marouane, Morocco</i>- Kenaf for phytoremediation, <i>Sarra Arbaoui, Tunisia</i>- Plant contamination by heavy metals, <i>Naïma Ben Zina Kolsi, Tunisia</i>- Remediation of pharmaceutical effluents, <i>Dorsaf Mansour, Tunisia</i>
16:00-16:30	Coffee break and Poster session
16:30-17:30	General discussion and first outcomes
19:30-22:30	Gala Dinner: Sherazade Restaurant - Hammamat

Final Program

Thursday , November 28, 2013

09:00-11:30	Plenary Session: <i>Closure and Perspectives</i> Chairpersons: Prof. Dr. Abdelhamid Boujelben and Dr. Mohamed Ali Ben Abdallah Rapporteur: Mr. Karsten Bressler
09:00-09:30	Reporting on Scientific Sessions by corresponding chairpersons
09:30-10:00	Reporting on Good Governance Session by corresponding chairpersons
10:00-10:30	Reporting on « Meet the Project » Session by corresponding chairpersons
<i>10:30-11:00</i>	<i>Coffee break and Poster session</i>
11:00-11:30	Best Poster Award
11:30-12:00	The Way Forward and Closure of the Symposium
<i>13:00-14:00</i>	<i>Lunch break</i>
14:00-20:00	<i>Social Programme: Excursion to Carthage and Sidi BouSaid</i>

Final Program

Poster Presentations – Analysis and Monitoring

Contrasted arsenic speciation in two alkaline pit lakes from the abandoned Pb mining area of Zeida (Morocco), *El Mehdi Benyassine, Abdelilah Dekayir, Marina Héry, Sophie Delpoux, Angélique Desoeuvre, Odile Bruneel, Hassan Ait Benhassou, Mohamed Rouai, Corinne Casiot, Morocco (PP EM18)*

Study on the seasonal changes in physico-chemical, biological and toxicological properties of the Mellègue Dam water, *Saoussen Benzarti, Helmi Hamdi, Ameni Belarbi, Tunisia (PP EM19)*

Impact of surface and wastewater usage on the efficacy of the fungicide procymidone, *Fadoua El Makhoukhi, Abdelmalek Dahchour, Fatiha Bentata, Mohamed Alaoui El Belguiti, Mohammadine El M'Rabet, Morocco (PP EM29)*

Oxygen Uptake Rate of Activated Sludge in the Presence of TiO₂ Nano Particles , *Fehiman Çiner, Hüseyin Selçuk, Rahman Çalhan, Turkey (PP EM40)*

Potential of the method of reactive drawing for the evaluation of leaching of Polycyclic Aromatic Hydrocarbons (PAH) *Habib Kadari, K Benhabib, G. Mimanne, M. Djellouli, Safia Taleb, Algeria (PP EM63)*

Calibration of POCIS for the monitoring of 26 pesticides in surface water, *Aisha Al Ashi, Abir Kouzayha, Mohamad Al Iskandarani, Helene Budzinski, Farouk Jaber, Lebanon (PP EM69)*

Quantification of the treated waste water impact on soil and ground water. Modeling the pollutant mode of transfer, *Mohamed Habib Sellami, Tunisia (PP EM86)*

Pesticide residus in irrigated fruit and vegetables, *Mokhtari Moussa, Mouhouche Fazia, Algeria (PP EM88)*

Metal concentrations in surface sediments of Ghazaouet Bay in the western part of Algerian coast, Hichem Belhadj, Nacéra Dali Youcef, Wacila Benguedda, Algeria, (PP EM92)

Production and characterization of di-rhamnolipid produced by *Pseudomonas aeruginosa TMN*", *Nadia Abdrabo Samak, Tarek A. A. Moussa, Mervat Mohamed , Egypt (PP EM97)*

The role of treated wastewater reuse in the development of water resources and agriculture in West Bank of Palestine: Ein Alsultan spring case, *Mohamed Sbeih, Palestine (PP EM98)*

Occurrence and determination of antibiotic drug sulfamethoxazole in treated wastewater in Tunisia, *Bilel Mosleh, Tunisia (PP EM122)*

Poster Presentations - Treatment Technologies and Mitigation

Determining the dimensions of sodium dodecyl sulfonate and dodecyl sulfonic acid by molecular modeling. Study of their adsorption on montmorillonite, *Abdellatif Benahmed, Mustapha Hallouch, Imene Aoues, Zahia Zizi , Algeria (PP EM3)*

Phytoremediation of contaminated soils by an industrial crop: Hibiscus cannabinus L., *Sarra Arbaoui , Bruno Campanella , Roger Paul , Salah Rezgui, Taoufik Bettaie, Tunisia (PP EM15)*

Use of a Tunisian clay for retention of Doxycycline, contained in wastewater, *Saber Boubakri , Ibtissem Ghorbel-Abid, Malika Trabelsi-Ayadi , Tunisia (PP EM23)*

Oil shale as powerful adsorbent for wastewater depollution, *Majda Flayou , Lail. El Fakir, Meryem Lagrissi, Nadia Ellassal, Abdelmalek Dahchour, Mhammed El'Mrabet, Said Kitane and Souad El Hajjaji, Morocco (PP EM27)*

Study of Photo-oxidation of fenamiphos in aqueous media using the experimental design, *Adil El Yadini, Hamid Saufi and Souad El Hajjaji, Morocco (PP EM31)*

Molecular modeling study of Diazinon and its adsorption on Montmorillonite, *Hakem Atmane , Zahia Zizi , Imene Aoues , Mustapha Hallouch , Abdellatif Benahmed, Algeria (PP EM 47)*

Capacity adsorption of the micro-pollutant: o-cresol by the Algerian sodium clay of Maghnia, *Hayat Herbache, Asma Maghni, Zoubida Taleb, Safia Taleb, Algeria (PP EM56)*

Purification of water containers of the pharmaceutical products by clay, *Oussama Ismail, Ibtissem Ghorbel-Abid ,Malika Trabelsi-Ayadi, Tunisia (PP EM61)*

Assesment of two types of activated carbon prepared from agricultural wastes from removal of basic *El-Sayed Ibrahim Mishaqa , Egypt (PP EM85)*

Tertiary amine sorption to Kaolinite in the remediation of metal processing waste water effluents, *Francis Moyo, Roman Tandlich, PhindileMadikizela, and Ethel Chifunda, south Africa (PP EM89)*

Molecular modeling study of atrazine and simazine adsorption on Montmorillonite, *Mustapha Hallouch, BenAhmaed Abdellatif, Aoues Imene, Zizi Zahia, Algeria (PP EM90)*

Study of sorption properties of inorganic compounds on new materials, *Laila El Fakir, Majda Flayou, Abdelmalek Dahchour, Souad El Hajjaji, Morocco (PP EM121)*

Honorary Committee

The Symposium will be held under the auspices of German and Tunisian Representatives of both Governments:

H.E. Mr. Mohamed Ben Salem, Minister of Agriculture, Tunisia

H.E. Mr. Jens Uwe Plötner, German Ambassador to Tunisia, Germany

Prof. Dr. Mohamed Aziz Darghouth, President of IRESA, Tunisia

Representative of the Ministry of the Infrastructure and Environment, Tunisia

Prof. Faycel Mansouri, President of the University of Sousse, Tunisia

Mr. Gerhard Faupel, GIZ Tunisia, Germany

Mrs. Beate Schindler-Kovats, Director of DAAD Office in Tunisia, Germany

International Organizing Committee

Müfit Bahadir, TU Braunschweig, Germany

Mohamed Ali Ben Abdallah, INRGREF, Tunisia

Abdelhamid Boujelben, ISA CM, Tunisia

Olfa Mahjoub, INRGREF, Tunisia

Borhane Mahjoub, ISA Chatt Meriem, Tunisia

Mohamed Thameur Chaibi, INRGREF, Tunisia

Karsten Bressler, TU Braunschweig, Germany

International Scientific Committee

Zeinab Abo El-Naga, Egypt

Andreas Angelakis, Greece

Müfit Bahadir, Germany

Mufeed Batarseh, Jordan

Mohamed Thameur Chaibi, Tunisia

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Sven-Uwe Geissen, Germany

Remy Gourdon, France

Marwan Haddad, Palestine

Jalal Halwani, Lebanon

Blanca Jimenez, Mexico

Anwar Jiries, Jordan

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