



**3rd**  
Wetland  
Pollutant  
Dynamics  
and  
Control -  
WETPOL  
2009

FINAL PROGRAMME



Barcelona  
20-24 September 2009

[www.wetpol.org](http://www.wetpol.org)



## Welcome



Welcome to Barcelona, to the 3<sup>rd</sup> Wetland Pollutant Dynamics and Control Symposium-WETPOL 2009. It is a pleasure to welcome you to this conference on behalf of Organizing and Scientific Committees. As organizers, we are very proud to cover in this conference most of the process based topics on pollutant dynamics in both natural and constructed wetlands. More precisely, advances in scientific aspects related to pollutant removal processes and fate in natural and constructed wetlands for pollution control will be presented in 110 oral presentations and 95 posters.

The WETPOL 2009 to be held in Barcelona is a follow up of the previous ones in 2005 in Gent (Belgium), and 2007 in Tartu (Estonia). This edition is organized by the Department of Hydraulics, Maritime and Environmental Engineering Department of the Technical University of Catalonia (UPC) and the Institute of Environmental Assessment and Water Research (IDAEA-CSIC) of Barcelona.

Plenary lectures and keynote presentations will be given in the CaixaForum, while parallel and poster presentations will take place in the Plaza Hotel located at the Plaça Espanya (walking distance between venues). As Organizing Committee, we strongly believe in the promotion of high quality scientific standards, so 3 awards will be given during the closing ceremony on Thursday 24<sup>th</sup> to the best posters presented by PhD students.

As in former WETPOL editions, we plan a technical visit that will be held on Wednesday 23<sup>th</sup>. On this occasion it will be at the Aiguamolls de l'Empordà Natural Park, where natural and constructed wetlands coexist in a good ecological status. It will be a full day excursion.

Finally, to those that not know Barcelona, remember that it is by far more than a tourist city since many cultural activities are going on continuously. We encourage to visit its worldwide famous architecture buildings such as the Sagrada Familia, Parc Güell, la Pedrera, AGBAR Tower, etc... nice museums (Science Museum, CosmoCaixa), walk on cosmopolitan streets like Les Rambles and why not, to enjoy nice restaurants and to participate in the many activities foreseen for City Summer Holyday (La Mercè) from September, 20<sup>th</sup> to 27<sup>th</sup>.

Have a nice time in Barcelona and enjoy the WETPOL 2009 Symposium!!!.

The Organizing Committee

## Committees



## Organizing Committee

Josep Maria Bayona	CSIC	Co-chair, Spain
Joan Garcia	UPC	Co-chair, Spain
Esther Ojeda	UPC	Spain
Ivet Ferrer	UPC	Spain
Anna Pedescoll	UPC	Spain
Jaume Puigagut	UPC	Spain
Cristina Àvila	UPC	Spain
Enrica Uggetti	UPC	Spain
Carolina Reyes	CSIC	Spain
Diana Calderón	CSIC	Spain
Sergi Diez	CSIC	Spain
Gina Cárdenas	CSIC	Spain
Cristal Fernández	CSIC	Spain
Rosario Pastor	URL	Spain
Xavier Quintana	UdG	Spain
Víctor Matamoros	UdG	Spain
Lluís Sala	Consorci de la Costa Brava	Spain
Antoni Munné	Agència Catalana de l'Aigua	Spain
Jordi Molist	Agència Catalana de l'Aigua	Spain
Martín Gullón	Entitat MA. Barcelona	Spain

## Scientific Committee

Eloy Bécares	Co-chair, Spain
Esther Llorens	Co-chair, Spain
Jan Vymazal	Czech Republic
Margaret Greenway	Australia
Patrick J. Magonigal	USA
Nancy B. Dise	UK
Karin Tonderski	Sweden
Ülo Mander	Estonia
Hans Brix	Denmark
Diederik Rousseau	The Netherlands
Günter Langergraber	Austria
Robert Kadlec	USA
Peter Kusch	Germany
Carlos Vale	Portugal
Marija Teresa Alarcón	Mexico
Gijs du Laing	Belgium
Yong Cai	USA
Francisco Comín	Spain
William Mitsch	USA

## Plenary Lecturers

Eloy Bécares	Spain
Patrick J. Magonigal	USA
Peter Kusch	Germany
Carlos Vale	Portugal
Yong Cai	USA

## Dates and Venues

From Sunday, September 20<sup>th</sup> to Thursday, September 24<sup>th</sup>, 2009

### 1. CAIXAFORUM

**(Plenary Sessions: Monday, September 21<sup>st</sup> and Thursday September 24<sup>th</sup>, 2009)**

Av. Marquès de Comillas, 6-8 - 08038 Barcelona

[http://obrasocial.lacaixa.es/centros/caixaforumbcninfoserveis\\_es.htm](http://obrasocial.lacaixa.es/centros/caixaforumbcninfoserveis_es.htm)

### 2. BARCELONA PLAZA HOTEL:

**(Oral and poster presentations: Monday September 21<sup>st</sup>, Tuesday September 22<sup>nd</sup>, 2009)**

Pl. Espanya, 6-8 - 08014 Barcelona

[www.hoteles-catalonia.es](http://www.hoteles-catalonia.es)



## Technical Secretariat



### GRUPO PACÍFICO

Marija Cubí, 4 Pral - 08006 Barcelona - Spain

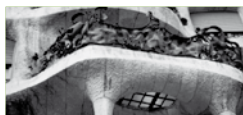
Tel. (34) 932 388 777 - Fax. (34) 932 387 488

[wetpol2009@pacifico-meetings.com](mailto:wetpol2009@pacifico-meetings.com)

## General Information



## General Information



### Technical Secretariat at the Venues and On-Site Registration

The Technical Secretariat and on-site registration desk will be open at the Venues as follows:

- **Sunday, September 20<sup>th</sup>:** From 16:00h to 18:30h.  
Preregistration at Barcelona Plaza Hotel
- **Monday, September 21<sup>st</sup>:** From 8:30h to 18:30h.  
8:30h to 12:00h CaixaForum  
12:00h to 18:30h Barcelona Plaza Hotel
- **Tuesday, September 22<sup>nd</sup>:** From 8:30h to 19:00h.  
Barcelona Plaza Hotel
- **Thursday, September 24<sup>th</sup>:** From 8:30h to 13:30h.  
CaixaForum

### Registration Fees

Registration fee after June 30, 2009:	590.00 €
Student Registration fees after June 30, 2009 (*):	430.00 €

*VAT 7% included*

### Full registration fee covers:

- Attendance to all sessions
- Congress Documentation
- Attendance Certificate
- Coffee breaks
- 2 lunches
- 1 Technical visit full day on Wednesday, September 23<sup>rd</sup> (includes a picnic lunch)
- Welcome Reception
- Gala Dinner

### Cancellation policy

Registered participants unable to attend the Congress may ask for refunds. All cancellation must be addressed by writing to the General Secretariat.

- A cancellation fee of 25,00€ will be withheld if refund is requested in writing after July 1st, 2009; and 50% of registration fees if before September 1st, 2009.

- No refunds will be accepted if requested after September 1st, 2009.

All refunds will be done after the congress.

### Technical visit, September 23<sup>rd</sup> 2009

#### Parc Natural dels Aiguamolls de l'Empordà, Empuriabrava WWTP and Constructed Wetlands

8.00	Departure from Barcelona (Outside of Hotel Barcelona Plaza)
10.30	Arrival and breakfast
11.00	Brief presentation of the visit at the Information Center
11.45	Group 1: Visit of the WWTP and constructed wetlands Group 2: Visit of the observatories of the Natural Park
14.00	Picnic-lunch at the Information Center
15.30	Group 1: Visit of the observatories of the Natural Park Group 2: Visit of the WWTP and constructed wetlands
17.30	Depart for Barcelona
19.30	Arrival in Barcelona

**It is recommended to bring binoculars, appropriate clothes and footwear**

### Poster and oral presentations (Technical Information)

#### Oral Presentations:

Sessions will be divided into 15min presentation plus 5 min for questions and comments. Speakers are encouraged to test and deliver their presentations in the speakers' room to technical personnel.

#### Posters

**Set up:** Venue Hotel Barcelona Plaza

Monday 21<sup>st</sup> from 12:30h to 14:00h

#### Dismantling:

Tuesday 22<sup>nd</sup> from 18:40h to 19:40h

Note: Please, when hanging the posters note no thumbtacks will be allowed. We ask you to please, use double-sided tape.

## General Information



## Social Events

### • Sunday, September 20<sup>th</sup>:

19:00h Welcome Reception at City Hall of Barcelona  
Address: Plaça Sant Jaume s/n  
Metro Station: L4- Jaume I / L3- Liceu

### • Tuesday, September 22<sup>nd</sup>:

20:30h Congress Dinner at Sala Maremagnum  
Address: Moll d'Espanya s/n  
Metro Stations: L3- Drassanes

\*NOTE: NO TRANSFERS WILL BE PROVIDED

## Official Language

The official language of the Congress is English. No simultaneous translation will be provided.

## Badges and Security

It is essential that you wear your personal badge at all times while in the Congress venue and during the Social Events, as it is the official entrance pass to scientific sessions, technical visits and other Congress activities. For the Social Events, it will also be necessary to present the corresponding ticket.

## Medical Assistance and Insurance

Participants are advised to make their own arrangements regarding travel insurance and medical assistance during the Congress. Neither the Organization nor the Congress Secretariat are able to accept any responsibility whatsoever for damage or injury to persons or their belongings during the Congress.

## PROGRAMME AT A GLANCE

### Sunday September 20<sup>th</sup>

16:00 - 18:30	Pre-registration at Hotel Barcelona Plaza
19:00	Welcome Reception at Barcelona City Hall

### Monday September 21<sup>st</sup>

#### Venue CaixaForum and Hotel Barcelona Plaza

	Plenary Lectures	Parallel Sessions			
9:15 - 10:00	Opening Ceremony <i>Venue CaixaForum</i>				
10:00 - 10:40	Dr. E. Bécares				
10:40 - 11:10	Coffee Break				
11:10 - 11:50	Dr. C. Vale				
11:50 - 12:30	Dr. Y. Cai				
12:30 - 14:00	Pic-nic. Poster set up <i>Venue Hotel Barcelona Plaza</i>				
		Session 1	Session 2	Session 3	Session 4
14:20 - 16:00		Wetlands' role in pollutant management at catchment scale (1): agriculture and urban runoff	Spatial and temporal redox changes in wetlands	Trace elements (1): removal processes	Pollutant modelling in wetlands (1)
16:00 - 17:00	Coffee and Poster Session 1 (P-001- P-047) <i>Venue Hotel Barcelona Plaza</i>				
17:00 - 18:20		Wetlands' role in pollutant management at catchment scale (2): natural buffers	Technological developments in constructed wetlands (1)	Trace elements (2): fate and mobility	Pollutant modelling in wetlands (2)

## PROGRAMME AT A GLANCE

**Tuesday September 22<sup>nd</sup>**

**Venue Hotel Barcelona Plaza**

Parallel Sessions				
	Session 1	Session 2	Session 3	Session 4
9:00 - 10:40	Molecular and microbial advances in wetlands (1)	Behaviour of priority and emerging pollutants in wetlands (1)	Assessment of clogging processes in constructed wetlands	Role of substrate in pollutant removal
10:40 - 11:20	Coffee break			
11:20 - 13:00	Molecular and microbial advances in wetlands (2)	Behaviour of priority and emerging pollutants in wetlands (2)	Dewatering and stabilisation of sludge in constructed wetlands	Hydraulic behaviour and hydrological processes in wetlands
13:00 - 14:20	Lunch			
14:20 - 16:00	Technological developments in constructed wetlands (2)	Role of plants in pollution control (1)	Wetlands' role in pollutant management at catchment scale (3): assessment and management	Impact of global changes on wetlands
16:00 - 17:00	Coffee break and Poster Session 2 (P-048- P- 096)			
17:00 - 18:40	Technological developments in constructed wetlands (3)	Role of wetlands' plants in pollution control (2)	Water reclamation and reuse in wetlands	Workshop: Artwet Project (pesticide mitigation)
20:30	Conference Dinner			

## PROGRAMME AT A GLANCE

**Wednesday September 23<sup>rd</sup>**

### Technical visit

Parc Natural dels Aiguamolls de l'Empordà, Empuriabrava WWTP and Constructed Wetlands

**Thursday September 24<sup>th</sup>**

**Venue CaixaForum**

	Plenary Lectures	Keynotes
9:00 - 9:40	Dr. P. Kusck	
9:40 - 10:00		Dr. G.Thiere
10:00 - 10:20		Dr. R.Kadlec
10:20 - 10:40		Dr. Stein
10:40 - 11:20	Coffee Break	
11:20 - 11:40		Dr. C.Craft
11:40 - 12:00		Dr. H.Brix
12:00 - 12:40	Dr. P. Megonigal	
12:40 - 13:30	Closing Ceremony	

## PROGRAMME

### Sunday September 20<sup>th</sup>

- 16:00 -18:30 Pre-registration at Hotel Barcelona Plaza
- 19:00 Welcome Reception at Barcelona City Hall

### Monday September 21<sup>st</sup>

#### Venue CaixaForum

- 9:15 - 10:00 **Opening Ceremony**  
Chair: García, J.
- 10:00 - 10:40 **Plenary Lecture:**  
L- 001 Biodiversity, pollutants and mediterranean wetlands  
*Bécares, E.*  
  
Department of Ecology, Faculty of Biology, University of León. León, SPAIN.
- 10:40 - 11:10 **Coffee Break Venue CaixaForum**
- 11:10 - 11:50 **Plenary Lecture:**  
L- 002 Complex interactions and fluxes of trace elements in salt marshes  
*Vale, C.*  
  
IPIMAR, National Institute of Biological Resources. Lisbon, PORTUGAL.
- 11:50 - 12:30 **Plenary Lecture:**  
L- 003 Mercury cycling and biogeochemical controls in the Florida Everglades  
*Cai, Y.*  
  
Department of Chemistry and Biochemistry and Southeast Environmental Research Center; Florida International University. USA.

#### Venue Hotel Barcelona Plaza

- 12:30 - 14:00 **Lunch and Posters set up**  
**(All posters will remain exhibited during Monday 21<sup>st</sup> and Tuesday 22<sup>nd</sup>)**

## PROGRAMME

Sunday 20<sup>th</sup> /Monday 21<sup>st</sup>

### ROOM LLIMONA

- 14:20 - 16:00 Parallel Session 1:**  
**Wetlands'role in pollutant management at catchment scale (1): agriculture and urban runoff**  
Chair: Tonderski, K.
- 14:20 - 14:40 O - 001 Irrigation canal management as a strategy to reduce the pollutant effects of agriculture at the middle Ebro river (NE Spain).  
*Gonzalez-Sanchis, M., Murillo, J., Garcia M., Comin, F.A., Garcia-Navarro P.*  
  
Pyrenean Institute of Ecology-CSIC, Zaragoza, SPAIN.
- 14:40 - 15:00 O - 002 Performance of a constructed surface flow wetland in abating nutrients in agricultural drainage waters  
*Salvato, M., Borin, M.*  
  
Dipartimento di Agronomia Ambientale e Produzioni Vegetali, Università di Padova, Legnaro, ITALY.
- 15:00 - 15:20 O - 003 Integration of planted filters into wet detention ponds for improving urban stormwater treatment  
*Arias, C.A., Istenič, D., Vollertsen, J., Lange, K.H., Pedersen, J., Hallager, P., Bruus, A., Laustsen A., Bundensen V.W., Nielsen A.H., Nielsen N.H., Wium-Andersen T., Hvitved-Jacobsen T., Brix,H.*  
  
Aarhus University, Department of Biological Sciences, Århus C, DENMARK.
- 15:20 - 15:40 O - 004 Water quality discharged from the constructed wetlands in the Besòs River bed  
*Sasa, J., Escalé, M.V., Maza, A., Folch, M., Huertas, E., Salgot, M.*  
  
Soil Science Laboratory, Facultat de Farmàcia, Universitat de Barcelona, Barcelona, SPAIN.
- 15:40 - 16:00 O - 005 Treatment of log yard runoff in a free water surface constructed wetland  
*Hedmark, A., Scholz, M., Elowson, T.*  
  
Swedish University of Agricultural Sciences, Department of Forest Products. Uppsala, SWEDEN.

### ROOM UTRILLO

- 14:20 - 16:00 Parallel Session 2:**  
**Spatial and temporal redox changes in wetlands**  
Chair: du Laing, G.

**PROGRAMME**Monday 21<sup>st</sup>

- 14:20 - 14:40 O - 006 Oxygen transfer in subsurface-flow treatment wetlands: a review of processes and limitations  
*Nivala, J., Headley, T., Brix, H.*  
Environmental and Biotechnology Center (UBZ), Helmholtz Center for Environmental Research (UFZ). Leipzig, GERMANY.
- 14:40 - 15:00 O - 007 Determination of oxygen transfer in a subsurface flow constructed wetland  
*Tyroller, L., Garcia, J., Rousseau, D.*  
TU Berlin, FG. Berlin, GERMANY.
- 15:00 - 15:20 O - 008 Spatial and temporal dynamics of redox conditions in soils and sediments  
*Van der Geest, H.G., Hunting, E.R.*  
Department of Aquatic Ecology and Ecotoxicology, Institute for Biodiversity and Ecosystem Dynamics. University of Amsterdam, Amsterdam, NETHERLANDS.
- 15:20 - 15:40 O - 009 Analysis of redox dynamics in a water treatment residual-based constructed wetland system using self organizing maps  
*Babatunde, A.O., Fuller, M., Zhao, Y.Q.*  
Centre for Water Resources Research. School of Architecture, Landscape and Civil Engineering, University College, Dublin, IRELAND.
- 15:40 - 16:00 O - 010 Influence of temperature and season on the removal of pollutants in constructed floating wetlands  
*Van de Moortel, A.M.K., De Pauw, N., Tack, F.M.G.*  
Laboratory of Analytical Chemistry and Applied Ecochemistry. Faculty of Bioscience Engineering, Ghent University. Gent, BELGIUM.

**ROOM 1**

- 14:20 - 15:40 Parallel Session 3:  
Trace elements (1): removal processes**  
Chair: Alarcón, M.T.
- 14:20 - 14:40 O - 011 Heavy metals removal and accumulation in H-SSF systems receiving domestic and industrial wastewaters  
*Galletti, A., Verlicchi, P., Ranieri, E., Chilorio, E.*  
Department of Engineering, University of Ferrara, Ferrara, ITALY.

**PROGRAMME**Monday 21<sup>st</sup>

- 14:40 - 15:00 O - 012 The arsenic removal efficiency of *Eleocharis macrostachya* in constructed wetlands with subsurface flow  
*Olmos M., Benavides, a., Rosette, M., Alarcón-Herrera, M.T.*  
Centro de Investigación en Materiales Avanzados, Av. Miguel de Cervantes 120, Chihuahua. MEXICO.
- 15:00 - 15:20 O - 015 Bioprecipitation coupled with biosorption systems for zinc Removal  
*Southichak, B., Nakano K., Arai, S., Nishimura, O Aikawa, Y.*  
Graduate School of Engineering, Tohoku University. Miyagi, JAPAN.
- 15:20 - 15:40 O - 016 Chromium sorption and desorption from wetland media used for tannery effluent treatment  
*Dotro, G., Larsen, D., Palazolo, P.*  
Department of Civil Engineering, The University of Memphis. Memphis, USA.

**ROOM 7**

- 14:20 - 16:00 Parallel Session 4:  
Pollutant modelling in wetlands (1)**  
Chair: Langergraber, G.
- 14:20 - 14:40 O - 017 Kinetics of domestic wastewater COD removal by subsurface flow constructed wetlands using different plant species  
*Villaseñor, J., Mena, J., Fernández, F.J., Gómez R., de Lucas, A.*  
Department of Chemical Engineering, Institute of Chemical and Environmental Technology. University of Castilla-La Mancha, Ciudad Real, SPAIN.
- 14:40 - 15:00 O - 018 Evaluation of first-order kinetics in subsurface flow constructed wetlands treatment  
*Liu, W.E., Dahab, M.F.*  
Iowa Department of Natural Resources. USA
- 15:00 - 15:20 O - 019 Modelling assessment of the nitrogen abatement in pilot sub-surface flow constructed wetlands with different macrophytes  
*Iannelli, R., Bianchi, V., Salvato, M., Borin, M.*  
Department of Civil Engineering, University of Pisa. Pisa, ITALY.
- 15:20 - 15:40 O - 020 Simulation of carbon, nitrogen and sulphur cycles in batch-operated, lab-scale treatment wetlands: an application of CWM1  
*Rousseau, D., Gaviano, A., Stein, O.R., Hook, P.B., Lens, P.*  
Department of Environmental Resources. UNESCO-IHE Institute for Water Education. Delft, The NETHERLANDS.

**PROGRAMME**Monday 21<sup>st</sup>

- 15:40 - 16:00 O - O21 CWM1-RETRASO: a dynamic numerical model for subsurface horizontal flow constructed wetlands  
*Llorens, E., Saaltink, M., Garcia, J.*
- Environmental Engineering Division, Department of Hydraulic, Maritime and Environmental Engineering, Technical University of Catalonia, Barcelona, SPAIN.

**16:00 - 17:00 Coffee Break and Poster Session 1**  
**P- 001 – P- 047 (See page num 33)**

**ROOM LLIMONA**

**17:00- 18:20 Parallel Session 1**  
**Wetlands' role in pollutant management at catchment scale (2): natural buffers**  
Chair: Comín, P.

- 17:00 - 17:20 O - O22 Can floodplains serve as a sink for nutrients to treat a river ecosystem?  
*Hendrickx, K., van Diggelen, R., Mouissie, M., Meire P.*
- University of Antwerp, Department of Biology, Ecosystem Management Research Group. Wilrijk, BELGIUM.
- 17:20 - 17:40 O - O23 Potential use of natural flood retention wetlands to control diffuse pollution  
*Yang, Q., McMinn, W.R., Scholz, M.*
- Institute for Infrastructure and Environment, School of Engineering. The University of Edinburgh. Scotland, UNITED KINGDOM.
- 17:40 - 18:00 O - O24 The use of peatland buffer areas to reduce nitrogen loads in boreal forested catchments  
*Vikman, A., Sakari, S., Tapani, S., Hannu, N., Niko, S., Jukka, L., Mika, N.*
- Finnish Forest Research Institute, Vantaa Research Center, Vantaa, FINLAND.
- 18:00 - 18:20 O - O25 High frequency monitoring of nutrient balances in a stream wetland complex  
*Ruecker, K., Schrautzer, J.*
- Ecology Centre, Christian Albrechts University of Kiel, Kiel, GERMANY.

**ROOM UTRILLO**

**17:00- 18:20 Parallel Session 2**  
**Technological developments in constructed wetlands (1)**  
Chair: Rousseau, D.

**PROGRAMME**Monday 21<sup>st</sup>

- 17:00 - 17:20 O - O26 Combined treatment of olive pomace leachate by electrochemical oxidation and vertical-flow constructed wetland  
*Diadamopoulos, E., Grafias, P., Xekoukoulotakis, N.P., Mantzavinis, D.*
- Department of Environmental Engineering, Technical University of Crete. Chania, GREECE.
- 17:20 - 17:40 O - O27 Toxicity assessment of high salinity tannery wastewater for the treatment in constructed wetlands  
*Silva, G., Calheiros, C., Guitério, P., Crispim L., Brix, H., Moura, S., Castro, P.*
- CBQF/Escola Superior de Biotecnologia, Universidade Católica Portuguesa, Porto, PORTUGAL.
- 17:40 - 18:00 O - O28 Strategies to improve pollutants removal efficiency in shallow subsurface flow constructed wetlands  
*Pedescoll, A., Alvarez, E., Garcia, J.*
- Department of Hydraulics, Maritime and Environmental Engineering, Technical University of Catalonia, Barcelona, SPAIN.
- 18:00 - 18:20 O - O29 The examination of effective parameters on wastewater treatment in pilot-scale constructed wetland systems  
*Tuncsiper B., Ciklaoglu S., Gunes K., Akca L.*
- Department of Environmental Engineering, Niğde University. Niğde, TURKEY.

**ROOM 1**

**17:00- 18:20 Parallel Session 3**  
**Trace elements (2): fate and mobility**  
Chair: Cai, Y.

- 17:00 - 17:20 O - O30 Presence and mobility of arsenic in floodplains near a gold mine on the Bolivian altiplano: II. Laboratory experiment  
*Rinklebe, J., du Laing, G.*
- Institute for Soil Engineering, Water- and Waste-Management, University of Wuppertal, Wuppertal, GERMANY.
- 17:20 - 17:40 O - O31 Mobility of heavy metals and arsenic in floodplain soils – experiments at three different scale levels  
*Rupp, H., Bolze, S., Meißner, R.*
- Helmholtz-Centre for Environmental Research – UFZ, Lysimeterstation Falkenberg. Falkenberg, GERMANY.
- 17:40 - 18:00 O - O32 Fate of heavy metals in an urban natural wetland: The Nyabugogo Swamp, Rwanda  
*Sekamo, C.B., Rousseau, D.P.L., Lens P.N.L.*
- National University of Rwanda. Department of Chemistry. Butare, RWANDA.

**PROGRAMME**Monday 21<sup>st</sup>

- 18:00 - 18:20 O - O33 The mobility and speciation of heavy metals in wet soils under aerotechnogenic pollution  
*Minkina, T.M., Saglara, S. M., Nazarenko O.G., Burachevskay M.V.*
- Department of Soil Science and Agrochemistry, Southern Federal University, B. Sadovaya, RUSSIA.

**ROOM 7**

- 17:00- 18:20** **Parallel Session 4**  
**Pollutant modelling in wetlands (2)**  
Chair: Llorens, E.
- 17:00 - 17:20 O - O34 Hydraulic modelization of horizontal subsurface constructed wetlands. Influences of the operation time and the plant species  
*Mena, J., Villaseñor, J., Fernández, F.J., Gómez, R., de Lucas, A.*
- Alquimia Soluciones Ambientales, Research and Development Centre for Environmental Restoration. Daimiel, Ciudad Real, SPAIN.
- 17:20 - 17:40 O - O35 Hydraulics and removal in two H-SSF constructed wetlands with different operation periods  
*Barbagallo, S., Cirelli, G.L., Marzo, A., Milani, M., Toscano, A.*
- Department of Agricultural Engineering – Hydraulics division, University of Catania. Catania, ITALY.
- 17:40 - 18:00 O - O36 Modeling flow and solute transport in a pilot-scale horizontal subsurface flow constructed wetland  
*Mburu, N., Rousseau, D., Van Bruggen, H., Thumbi, G., Lens, P.*
- Department of Civil Engineering, Masinde Muliro University of Science and Technology, Kakamega, KENYA.
- 18:00 - 18:20 O - O37 Performance of a CW for landfill leachate by data analysis with statistical and machine learning methods  
*Ferfila, N., Atanasova, N., Kompare, B., Griessler Bulc, T.,*
- Faculty of Health Studies, University of Ljubljana, Ljubljana, SLOVENIA.

**PROGRAMME**Tuesday 22<sup>nd</sup>**Tuesday September 22<sup>nd</sup>**

Venue Hotel Barcelona Plaza

**ROOM LLIMONA**

- 9:00- 10:20** **Parallel Session 1**  
**Molecular and microbial advances in wetlands (1)**  
Chair: Kuschik, P.
- 9:00 - 9:20 O - O38 Bacterial community and hydrological dynamics during constructed wetland mesocosm start-up  
*Weber, K.P., Legge, R.L.*
- Department of Chemical Engineering, University of Waterloo, CANADA.
- 9:20 - 9:40 O - O39 Characterization of microbial communities removing nitrogen within an integrated constructed wetland treating rural runoff  
*Mustafa A, Scholz, M., Harrington, R.*
- Institute for Infrastructure and Environment, School of Engineering, The University of Edinburgh, Scotland, UNITED KINGDOM.
- 9:40 - 10:00 O - O40 Identification of microbial functional groups within a sub-surface treatment wetland as influenced by plant species selection and season  
*Faulwetter, J.L., Burr, M.D., Camper, Stein, O.R.*
- Center for Biofilm Engineering and Department of Civil Engineering. Bozeman, MT, USA.
- 10:00 - 10:20 O - O41 Effect of the presence of macrophytes on ciliated protozoa in horizontal subsurface-flow constructed wetlands  
*Puigagut, J., Gagnon, V., Brisson, J.*
- Institut de Recherche en Biologie Végétale, Montreal (Quebec), CANADA.

**ROOM UTRILLO**

- 9:00 - 10:40** **Parallel Session 2**  
**Behaviour of priority and emerging pollutants in wetlands (1)**  
Chair: Vale, C.
- 9:00 - 9:20 O - O43 Behaviour of emerging pollutants in constructed wetlands. An overview  
*Matamoros, V., Bayona, J.M.*
- Department of Chemistry, University of Girona, Campus Montilivi, Girona, SPAIN.

## PROGRAMME

Tuesday 22<sup>nd</sup>

- 9:20 - 9:40 O - 044 Influence of hydraulic parameters on paracetamol removal in subsurface constructed wetlands  
*Ranieri, E., Verlicchi, P., Garcia, J.*  
  
Department of Environmental Engineering and Sustainable Development, Polytechnic of Bari, Taranto, ITALY.
- 9:40 - 10:00 O - 045 Sorption behavior of cork material for application to pharmaceutical removal by constructed wetlands  
*Dordio, A., Gonçalves, P., Teixeira, D., Candeias, A., Carvalho, A., Pinto, A.*  
  
Departamento de Química, IMAR – Instituto do Mar, PORTUGAL.
- 10:00 - 10:20 O - 046 Elimination of estrogenic activity and selected estrogens from a municipal effluent by reed-bed: impact of hydraulic regime  
*Song, H-L., Yang, X-L., Nakano, K., Nomura, M., Chiba, N., Nishimura, O.*  
  
Graduate School of Engineering, Tohoku University, Sendai, JAPAN.
- 10:20 - 10:40 O - 047 Evaluation of the primary treatment and loading regimes in the removal of Pharmaceuticals and Personal Care Products from urban wastewaters by subsurface flow constructed wetlands  
*Hijosa-Valsero, M., Matamoros, V., Martín-Villacorta, J., Bayona, J.M., Becares, E., Garcia, J.*  
  
Departamento de Química y Física Aplicadas, Facultad de Ciencias Biológicas y Ambientales, Universidad de León, León, SPAIN.

### ROOM 1

- 9:00- 10:40** **Parallel Session 3**  
**Assessment of clogging processes in constructed wetlands**  
Chair: Rousseau, D.
- 9:00 - 9:20 O - 048 Clogging distribution in two horizontal subsurface flow constructed wetlands through measurements of hydraulic conductivity.  
*Samsó, R., Pedescoll, A., Garcia, J.*  
  
Department of Hydraulics, Maritime and Environmental Engineering, Technical University of Catalonia, Barcelona, SPAIN.
- 9:20 - 9:40 O - 049 Research on clogging in horizontal subsurface flow constructed wetlands  
*Martín, J., Salas, J.J., Sardón, N., Parrado, J., Pidre, J.R., García-Martínez, A.M.*  
  
Division of R&D&i, Foundation Center for New Water Technologies (CENTA), Seville, SPAIN.

## PROGRAMME

Tuesday 22<sup>nd</sup>

- 9:40 - 10:00 O - 050 Analysis of the clog matter within a mature horizontal subsurface flow constructed wetland  
*Knowles, P.R., Morris, R.H., Pedescoll, A. Newton, M.I., Davis P.A., Bencsik, M.*  
  
School of Engineering and Applied Science, Aston University, UK.
- 10:00 - 10:20 O - 051 Mechanistic understanding and prediction of bioclogging in sand filters and subsurface flow constructed wetlands  
*Brovelli, A., Rossi, L., Barry D.A.*  
  
Ecological Engineering Laboratory, Institut d'Ingénierie de l'Environnement, École Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND.
- 10:20 - 10:40 O - 052 Simulating particle transport in subsurface flow constructed wetlands with CW2D/HYDRUS  
*Langergraber, G., Šimůnek, J.*  
  
Institute of Sanitary Engineering and Water Pollution Control, University of Natural Resources and Applied Life Sciences (BOKU), Vienna, AUSTRIA.

### ROOM 7

- 9:00 - 10:40** **Parallel Session 4**  
**Role of substrate in pollutant removal**  
Chair: Brix, H.
- 9:00 - 9:20 O - 053 Performances evaluation of phosphorus removal by apatite in constructed wetlands: Column and pilot experiments  
*Harouya, N., Prost-Boucle, S., Morlay, C., Esser, D., Martin Ruel, S., Molle, P.*  
  
Cemagref, Research Unit: Water Quality and Pollution Prevention, Lyon, FRANCE.
- 9:20 - 9:40 O - 054 The phosphorus-binding capacity of hydrated Ca-rich oil shale ash: removal capacity and mechanisms  
*Kõiv, M., Mõtlep, R., Liira, M., Vohla, C., Mander, U., Kirsimäe, K.*  
  
Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu, Tartu, ESTONIA.
- 9:40 - 10:00 O - 055 Phosphorus retention of light-weight expanded clay used in subsurface flow treatment wetlands  
*Van Deun, R., Van Dyck, M.*  
  
Department of Agro- and Biotechnology, Katholieke Hogeschool Kempen, Geel, BELGIUM.
- 10:00 - 10:20 O - 056 Suitability of mineral-based by-products for water treatment in constructed wetlands  
*Wendling, L.A., Douglas, G.B., Coleman, S.*  
  
CSIRO Land and Water, Centre for Environment and Life Sciences, Wembley, AUSTRALIA.

10:20 - 10:40 O - 057 Slag for upgrading phosphorus removal from constructed wetland effluents: effect of slag particle size distribution  
*Anjab, Z., Chazarenc, F., Puigagut, J., Comeau, Y.*

Département CGM (des Génies Civil, Géologique et des Mines), École Polytechnique de Montreal, Montréal (Québec), CANADA.

**10:40 - 11:20 Coffee break**

### ROOM LLIMONA

**11:20-13:00 Parallel Session 1**  
**Molecular and microbial advances in wetlands (2)**  
Chair: Puigagut, J.

11:20 - 11:40 O - 058 Enhancing nitrogen removal rates in subsurface constructed wetlands by anammox process  
*Paredes, D., Kuschik, P., Köser, H.*

Water and Sanitation Research Group, Universidad Tecnológica de Pereira, Pereira, COLOMBIA.

11:40 - 12:00 O - 059 Effects of nanosilver on microbial activity and biogeochemical processes in wetland soils  
*Richardson, C.J., Colman, B.P., Bernhardt, E.E.*

Nicholas School of the Environment, Duke University, Durham. USA.

12:00 - 12:20 O - 060 Effect of infiltration rate on nitrogen dynamics in paddy soil after high-load nitrogen application containing <sup>15</sup>N tracer  
*Zhou S., Sugawara, S., Riya, S., Toyota, K., Hosomi, M.*

Institute of Symbiotic Science and Technology, Tokyo University of Agriculture and Technology, Tokio, JAPAN.

12:20 - 12:40 O - 061 Nitrate contamination, denitrification and biological activities in surface waters and sediments of Doñana National Park  
*Tortosa, G., Correa, D., Sánchez-Raya, A.J., Delgado, A., Sánchez-Monedero, M.A.*

Departamento de Microbiología del Suelo y Sistemas Simbióticos, and Departamento de Geoquímica Ambiental, Estación Experimental del Zaidín, CSIC, Granada, SPAIN.

12:40 - 13:00 O - 062 Solar disinfection of constructed wetland effluent in tropical countries  
*Morales, C. R., Chaparro, T.R., Arias, C.A.*

Faculty of Civil Engineering, Military University "Nueva Granada", Bogota, COLOMBIA.

### ROOM UTRILLO

**11:20-13:00 Parallel Session 2**  
**Behaviour of priority and emerging pollutants in wetlands (2)**  
Chair: Díez, S.

11:20 - 11:40 O - 063 Molecular analysis of the degradation of textile dyes by the enzymatic array of *Phragmites* sp.  
*Davies L., Scalera, F., Ferreira, R., Antunes, C., Novais, J.M., Schwitzguébel, J.P., Martins-Dias, S.*

Institute for Biotechnology and Bioengineering, Centre for Biological and Chemical Engineering, Instituto Superior Técnico (IST), Lisboa, PORTUGAL.

11:40 - 12:00 O - 064 Optimization of conditions for the removal of chlorpyrifos and organic carbon in pilot-scale subsurface flow constructed wetlands  
*Agudelo, R.M., Peñuela, G., Machado, C., Aguirre, N.J., Morató, J.*

Facultad de Ingeniería, Universidad de Antioquia, Medellín, COLOMBIA.

12:00 - 12:20 O - 065 Occurrence of organophosphorus pesticide (OPP) compounds from the Xochimilco wetland area, south of Mexico City  
*Alcantara, V., Heydrich, S.C., Gibson, R.W., Mazari-Hiriart, M., Ponce de Leon, C. A.*

Geology Insitute, UNAM, México city, MEXICO.

12:20 - 12:40 O - 066 Evaluation of the efficiency for removing and/or transforming chlorothalonil by a biofilm in pilot-scale horizontal subsurface flow constructed wetland  
*Ríos, K., Casas, J., Peñuela, G., Morató, J.*

Universidad de Antioquia, Medellín, COLOMBIA.

12:40 - 13:00 O - 067 Multi-tracer experiments to characterize pesticide mitigation capacities for different types of artificial wetland  
*Lange, J., Schütz, T., Gregoire, C., Elsaesser, D., Schulz, R., Passeport, E., Tournebize, J.*

Institute of Hydrology, Universität Freiburg, Freiburg, GERMANY.

### ROOM 1

**11:20-13:00 Parallel Session 3**  
**Dewatering and stabilisation of sludge in constructed wetlands**  
Chair: Ferrer, I.

## PROGRAMME

Tuesday 22<sup>nd</sup>

- 11:20 - 11:40 O - 068 Treatment processes in sludge drying reed beds  
*Uggetti, E., Ferrer, I., Llorens, E., García J.*  
  
Environmental Engineering Division, Department of Hydraulic, Maritime and Environmental Engineering, Technical University of Catalonia. Barcelona, SPAIN.
- 11:40 - 12:00 O - 069 Septage treatment in constructed wetlands: a decade of full scale experiments  
*Chazarenc, F., Paing, J., Voisin, J.*  
  
École des Mines de Nantes, Nantes, FRANCE.
- 12:00 - 12:20 O - 070 Dewatering of waterworks sludge and iron processes in reed beds system  
*Nielsen, S.*  
  
Orbicon A/S, Roskilde, DENMARK.
- 12:20 - 12:40 O - 071 Influence of plants species on performance of constructed wetlands for sludge dewatering during the first year of operation  
*Gagnon, V., Puigagut, J., Chazarenc, F., Brisson, J.*  
  
Institut de Recherche en Biologie Végétale. Montreal (Quebec), CANADA.
- 12:40 - 13:00 O - 072 Heavy metal monitoring in sewage sludge phytotreatment  
*Peruzzi, E., Masciandaro, G., Maxi, C., Doni, S., Mora Ravelo, S.G., Peruzzi, P., Ceccanti, B.*  
  
CNR-ISE, Pisa, ITALY.

## ROOM 7

### 11:20-12:40 **Parallel Session 4** **Hydraulic behaviour and hydrological processes in wetlands**

Chair: du Laing, G.

- 11:20 - 11:40 O - 073 Three-dimensional onsite tracer test and the hydraulic behaviour of an operational horizontal subsurface flow treatment wetland  
*Fonder, N., Bruch, B., Xanthoulis, D.*  
  
Epuvaleau Non-profit Association and Gembloux Agricultural University, Hydrology and Rural Hydraulics Department, Gembloux, BELGIUM.
- 11:40 - 12:00 O - 074 Influence of vegetation on hydraulics in experimental surface-flow wetlands  
*Weisner, S.E.B., Mietto, A., Ehde, P.M., Persson, J.*  
  
Wetland Research Centre, Halmstad University. Halmstad, SWEDEN.

## PROGRAMME

Tuesday 22<sup>nd</sup>

- 12:00 - 12:20 O - 075 Measuring and simulating *Phragmites australis* (Cav.) Trin. evapotranspiration in Northern and Southern Italy  
*Borin, M., Milani, M., Salvato, M., Toscano, A.*  
  
Department of Agricultural Engineering – Hydraulics Division, University of Catania, ITALY.
- 12:20 - 12:40 O - 076 HSSF Constructed wetlands planted with *Heliconia Psittacorum*: Evaluation of its hydraulic behaviour and removal dynamics in the treatment of municipal domestic wastewater  
*Sandoval-Cobo, J.J., Peña, M.R.*  
  
Universidad del Valle, Cali, COLOMBIA.

### 13:00 - 14:20 **Lunch Hotel Barcelona Plaza**

## ROOM LLIMONA

### 14:20-16:00 **Parallel Session 1** **Technological developments in constructed wetlands (2)** Chair: Kadlec, R.

- 14:20 - 14:40 O - 077 Managing Iron and pH with constructed wetlands as legacy contaminants at a former oil refinery site  
*Wallace, S.*  
  
Stantec Consulting, White Bear Lake, Minnesota, USA.
- 14:40 - 15:00 O - 078 Research in constructed wetlands in the Experimental Plant of Carrión de los Céspedes, in Seville (Spain)  
*Sardón, N., Martín, I., Salas, J.J., Pidre, J.R.*  
  
Division of R&D&I, Foundation Center for New Water Technologies (CENTA), Seville, SPAIN.
- 15:00 - 15:20 O - 079 Removal of polyphenols and their interaction with organic matter catabolism in a treatment wetland for winery wastewater  
*Santoro, E., Masi, F.*  
  
IRIDRA, Florence, ITALY.
- 15:20 - 15:40 O - 080 Design and performance of pilot-scale vertical flow constructed wetlands for wastewater treatment  
*Barros, M., Jácome, A., Rubido, A., Soláns, J., Diaz, M.A., Vázquez, J., Suárez, J.*  
  
Grupo de Ingeniería del Agua y del Medio Ambiente (GEAMA), Universidade da Coruña, A Coruña, SPAIN.
- 15:40 - 16:00 O - 081 Reed bed refurbishment: A sustainable approach.  
*Murphy, C., Cooper, D., Williams, E.*  
  
ARM Ltd, Rydal House, Colton Road, Rugeley, Staffordshire, UNITED KINGDOM

## ROOM UTRILLO

14:20-16:00

**Parallel Session 2****Role of plants in pollution control (1)**

Chair: Bécares, E.

14:20 - 14:40

O - 082 Effects of inorganic nitrogen on two wetland plant species: *Cyperus alternifolius* L. and *Typha angustifolia* L.  
*Kladprasert, S., Brix, H., Kantawanichkul, S.*

Department of Environmental Engineering, Chiang Mai University, THAILAND.

14:40 - 15:00

O - 083 The influence of vegetation on nitrogen retention in a long-term experimental wetland study  
*Ehde, P.M., Weisner, S.E.B.*

Wetland Research Centre, Halmstad University, SWEDEN.

15:00 - 15:20

O - 084 Adsorption and accumulation of lead in *Salvinia minima* as affected by environmental conditions in constructed wetlands microcosms  
*Olguin, E.J., Vidal, M., Sánchez-Galván, G., Equihua, M.*

Environmental Biotechnology Unit, Institute of Ecology, Veracruz, MEXICO.

15:20 - 15:40

O - 085 Trace elements in *Phalaris arundinacea* growing in constructed wetlands treating sewage  
*Vymazal, J., Švehla, J., Kröpfelová, L., Němcová, J.*

Department of Landscape Ecology, Czech University of Life Sciences, Prague, CZECH REPUBLIC.

15:40 - 16:00

O - 086 Retention of P, Al and Fe in peaty wetland  
*Karjalainen, S.M., Ronkanen, A.K., Heikkinen, K., Klöve, B.*

Finnish Environment Institute, University of Oulu, FINLAND.

## ROOM 1

14:20-16:00

**Parallel Session 3****Wetlands' role in pollutant management at catchment scale (3): assessment and management**

Chair: Greenway, M.

14:20 - 14:40

O - 087 The management and maintenance of constructed wetlands from Besòs Fluvial Park  
*Vila-Escaló, M., Lleida, J., Acosta, J., Maza A.*

Diputació de Barcelona, Àrea d'Espais Naturals, Oficina Tècnica d'Acció Territorial, Barcelona, SPAIN.

14:40 - 15:00

O - 088 Benefits of flow management on the function and purification efficiency of treatment peatlands: preliminary results  
*Ronkanen, A.K., Marttila, H., Tähtinen, P., Marja-aho, J., Kallikoski, K., Klöve, B.*

Department of Process and Environmental Engineering, Water Resources and Environmental Engineering Laboratory, University of Oulu, FINLAND.

15:00 - 15:20

O - 089 Malaga: a wetland to preserve  
*Salas-Castillo, E., Pérez-López, M., Martínez Prado, A., Rodríguez Tellez, E.*

Department of Environment, IPN-CIIDIR-DGO. Instituto Politécnico Nacional, MÉXICO.

15:20 - 15:40

O - 090 Environmental and recreational use of constructed wetlands: a case study in a periurban park of Northeastern Spain  
*Alfranca, D., Garcia J., Varela, H.*

Department of Food Engineering and Biotechnology, Technical University of Catalonia, Castelldefels, Barcelona, SPAIN.

15:40 - 16:00

O - 091 Optimizing a pond system with constructed wetlands for public services reuse  
*Rivas, H.A., Alarcón R.Y., Vidal T.J.M., Figueroa G.N.E.*

Mexican Institute of Water Technology. Jiutepec, MEXICO.

## ROOM 7

14:20-16:00

**Parallel Session 4****Impact of global changes on wetlands**

Chair: Megonigal, P.

14:20 - 14:40

O - 092 Floods and droughts: effect on *Schoenoplectus californicus* from the Salado River sub-basin (Buenos Aires, Argentina).  
*de Cabo, L., Seoane, R., Arreghini, S., Casares, M.V., Callaú, A.*

Museo Argentino de Ciencias Naturales Bernardino Rivadavia, CONICET, Buenos Aires, ARGENTINA.

14:40 - 15:00

O - 093 Effects of flooding with eutrophicated water on the evolution of nitrate concentrations in carbonated and non-carbonated mine wastes with and without vegetation  
*González-Alcaraz, M.N., Egea Nicolás, C., Jiménez-Cárceles, F.J., Álvarez-Rogel, J.*

Departamento de Ciencia y Tecnología Agraria, ETSIA-UPCT, Cartagena (Murcia), SPAIN.

15:00 - 15:20

O - 094 Demonstration wetlands in Vientiane, Lao PDR  
*Mackenzie, S., Simpson, M., Gerrard P., Ounchith P., Thammavong, S., Aroune, D.*

Wetland Conservation, WWT, Slimbridge, Gloucestershire, UK.

- 15:20 - 15:40 O - 095 Assessment of N<sub>2</sub>O and CH<sub>4</sub> fluxes in undisturbed and drained peatlands of temperate and boreal zone  
*Mander, U., Salm, J.O., Kimmel, K., Kull, A., Lesta, M.*  
Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu. Tartu, ESTONIA.
- 15:40 - 16:00 O - 096 Salt marsh plants contribution to nitrogen cycling and sequestration  
*Sousa, A.I., Lillebø, A.I., Pardal, M., Caçador, I.*  
Institute of Oceanography, Faculty of Sciences - University of Lisbon, PORTUGAL.

**16:00 - 17:00 Coffee break and Poster Session 2****P- 048 – P - 96 (See page num 39)**

## ROOM LLIMONA

- 17:00- 18:20 Parallel Session 1**  
**Technological developments in constructed wetlands (3)**  
Chair: Wallace, S.
- 17:00 - 17:20 O - 097 Design of an intensified hybrid wetland system for the wastewater treatment of an abattoir in Fornalhas Velhas, Odemira, Portugal.  
*Dias, V.*  
Independent Consultant, Lisboa, PORTUGAL.
- 17:20 - 17:40 O - 098 Nitrogen and organic substances speciation in wastewater treated in multistage CW  
*Gajewska M.*  
Gdansk University of Technology, Faculty of Civil and Environmental Engineering, Gdansk, POLAND.
- 17:40 - 18:00 O - 099 Effect of short-term high loads on the performance of constructed wetlands  
*Galvão, A., Matos, J.*  
Department of Civil Engineering, Technical University of Lisbon. Lisbon, PORTUGAL.
- 18:00 - 18:20 O - 100 Winery wastewater treatment in a hybrid constructed Wetlands  
*Serrano, L., de la Varga, D., Diaz, M.A., Ruiz, I., Bondelle, R., Soto, M.*  
Dept. of Physical Chemistry and Chemical Engineering 1. University of A Coruña, A Coruña. Galiza, SPAIN.

## ROOM UTRILLO

- 17:00-18:20 Parallel Session 2**  
**Role of wetlands' plants in pollution control (2)**  
Chair: Vymazal, J.
- 17:00 - 17:20 O - 101 Mobility and sequestration of Zn in *Schoenoplectus californicus* shoots decomposition  
*Arreghini, S., de Cabo, L., Serafini, R., Casares, M.V., de Iorio A.F.*  
Departamento de Recursos Naturales y Ambiente, Facultad de Agronomía, Universidad de Buenos Aires, ARGENTINA.
- 17:20 - 17:40 O - 102 Quantifying nutrient uptake by vegetation in intermittently loaded vertical flow mesocosms  
*Greenway, M.*  
Griffith University, Brisbane, AUSTRALIA.
- 17:40 - 18:00 O - 103 Nitrogen removal in a vertical flow constructed wetland planted with *Vetiveria zizanioides*  
*Almeida, A., Ramalho, V., Fernandes, R., Novais, J.M., Martins-Dias S.*  
Institute for Biotechnology and Bioengineering, Centre of Biological and Chemical Engineering, Lisboa, PORTUGAL.
- 18:00 - 18:20 O - 104 Nitrate reduction efficiencies in a free water surface constructed Wetland, the effect of plants  
*Bañeras, L., García-Lledó, A., Vilar, A.*  
Molecular Microbial Ecology Group (Institute of Aquatic Ecology), University of Girona, SPAIN.

## ROOM 1

- 17:00-18:20 Parallel Session 3**  
**Water reclamation and reuse in wetlands**  
Chair: Matamoros, V.
- 17:00 - 17:20 O - 105 Effect of plants and the combination of wetland treatment type systems on pathogen removal in tropical climate conditions  
*García J.A., Paredes, D., Arias C.A.*  
Water and Sanitation Research Group. Universidad Tecnológica de Pereira, Pereira, COLOMBIA.
- 17:20 - 17:40 O - 106 Water reclamation by means of constructed wetlands in small settlements  
*Martin, I., Ariza, C., Salas, J.J., Ubeda, J.M., Guevara, D.C., Cutillas, C., de Rojas, M.*  
Division of R&D&I, Foundation Center for New Water Technologies (CENTA). Seville, SPAIN.

## PROGRAMME

Tuesday 22<sup>nd</sup>

- 17:40 - 18:00 O - 107 Recirculating aquaculture systems for sustainable fish production in the Mekong Delta, Vietnam  
*Konnerup, D., Diem Trang, N.T., Brix, H.*  
Department of Biological Sciences, Aarhus University, Aarhus C, DENMARK.
- 18:00 - 18:20 O - 108 Microbial removal in different constructed wetlands configurations  
*Adrados, B. Bécarea, E., Codony, F., Fittipaldi, M., Pedescoll, A., Morató J.*  
Health and Environmental Microbiology Laboratory (MSMLab) and UNESCO Chair in Sustainability, Terrassa, Barcelona, SPAIN.

### ROOM 7

- 17:00-18:40** **Parallel Session 4**  
**Workshop: Artwet Project (pesticide mitigation)**  
Chair: Mander, U.
- 17:00 - 17:20 O - 109 Mitigation of pesticide pollution in an experimental vegetated surface flow constructed wetland system  
*Elsaesser, D., Geist, A., Schulz, R.*  
Institute for Environmental Sciences – University of Landau, Landau, GERMANY.
- 17:20 - 17:40 O - 110 Pesticide mitigation in storm basin collecting runoff from a vineyard catchment area  
*Imfeld, G., Grégoire, C., Payraudeau, S.*  
Laboratory of Hydrology and Geochemistry of Strasbourg, University of Strasbourg, Strasbourg, FRANCE.
- 17:40 - 18:00 O - 111 Efficiency of an artificial wetland and a forest buffer for pesticide mitigation  
*Passeport, E., Tournebize, J., Chaumont, C., Bernard, V., Margoum, C., Gril, J.-J., Paineau, F., Culhaoglu, T., Gene, A., Coquet, Y.*  
CEMAGREF of Antony, Hydrosystems and Bioprocesses, Parc de Tourvoie, FRANCE.
- 18:00 - 18:20 O - 112 The adsorption distribution impact on preferential transport within horizontal flow constructed wetland (HFCW)  
*Wankó, A., Tapia, G., Mosé, R., Gregoire, C.*  
Urban Hydraulic Systems – UdS, Strasbourg, FRANCE.
- 18:20 - 18:40 O - 113 A system to help natural bioremediation in artificial wetlands  
*Merli, A., Trevisan, M., Ferrari, F., Capri, E.*  
Istituto di Chimica Agraria ed Ambientale, Università Cattolica del Sacro Cuore, Piacenza, ITALY.

20:30 **Conference Dinner at Sala Maremagnum**  
(See page:8)

## PROGRAMME

Wednesday 23<sup>rd</sup> / Thursday 24<sup>th</sup>

### Wednesday September 23<sup>rd</sup>

Technical visit  
Parc Natural dels Aiguamolls de l'Empordà, Empuriabrava WWTP and Constructed Wetlands

(See page 9)

### Thursday September 24<sup>th</sup>

#### Venue CaixaForum

- Chair: Bayona, J.M.
- 9:00 - 9:40 **Plenary Lecture:**  
Dr. P. Kuschk  
L- 004 Dynamics of carbon-, nitrogen- and sulphur transformation processes in the root near environment of wetlands  
*Kuschk, P., Wiessner, A., Kästner, M., Kappelmeyer, U., Paredes, D.*  
Helmholtz Centre for Environmental Research – UFZ, Leipzig, GERMANY.
- 9:40 - 10:00 **Keynote Session:**  
Dr. G. Thiery  
K- 001 Biodiversity and ecosystem functioning in created agricultural wetlands  
*Thiery, G., Weisner, S.E.B.*  
Wetland Research Centre, Halmstad University, Halmstad, SWEDEN.
- 10:00 - 10:20 **Keynote Session:**  
Dr. RH Kadlec,  
K- 002 Water quality performance of runoff treatment wetlands in the Imperial Valley, California  
*Kadlec, R.H., Roy, S.B.*  
Wetland Management Services. Westbourne Drive, Chelsea, MI, USA.
- 10:20 - 10:40 **Keynote Session:**  
Dr. O.R. Stein  
K - 003 Patterns of rootzone oxidation in treatment wetland microcosms across diverse plant species  
*Hook, P.B., Taylor, C.R., Stein, O.R., Zabinski, C.A.*  
Center for Biofilm Engineering and Department of Civil Engineering. Bozeman, USA.

- 10:40 - 11:20 Coffee Break
- 11:20 - 11:40 Keynote Session:  
Dr. C.Craft  
K- 004 Water quality improvement functions of tidal forests and marshes  
*Craft, C.*  
  
School of Public and Environmental Affairs, Indiana University, Bloomington, Indiana, USA.
- 11:40 - 12:00 Keynote Session:  
Dr. H. Brix  
K- 005 The Flower and the Butterfly constructed wetland system at Koh Phi Phi – System design and lessons learnt during implementation and operation  
*Brix, H., Koottatep, T., Fryd, O., Laugesen, C. H.*  
  
Aarhus University, Department of Biological Sciences. Århus, DENMARK.
- 12:00 - 12:40 Plenary Lecture:  
Dr. P. Megonigal  
L- 005 Wetland ecosystem responses to carbon dioxide pollution  
*Megonigal, P.*  
  
Smithsonian Environmental Research Center. Edgewater, MD, USA.
- 12:40 - 13:30 Closing Ceremony

Poster sessions will take place in the **Hotel Barcelona Plaza**.  
All posters will remain exhibited during Monday 21<sup>st</sup> and Tuesday 22<sup>nd</sup>.

### POSTER SESSION 1 (From P-001 to P-047)

**SEPTEMBER 21<sup>st</sup> 2009**  
**ROOM LLIMONA HOTEL BARCELONA PLAZA**  
**FROM 16:00H - TO 17:00H**

#### Trace elements: removal processes, fate and mobility

P- 001 Contaminant removal in a constructed wetland for industrial wastewater treatment  
*Maine M.A., Hadad H.R., Sánchez G.C., Caffaratti S.E., Mufarrege M.M, di Luca G., Pedro M.C., Bonetto C.*

Facultad de Ingeniería Química, Universidad Nacional del Litoral, Santiago del Estero, Santa Fe, ARGENTINA.

P- 002 Preliminary evaluation of constructed wetlands for tannery effluent treatment in Argentina  
*Dotro G., Larsen D., Palazolo P.*

Department of Civil Engineering, The University of Memphis, Memphis, USA

P- 003 Removal of heavy metals in a constructed wetland  
*Arroyo P., Ansola G., de Luis E.*

Instituto de Medio Ambiente, Recursos Naturales y Biodiversidad, Universidad de León, SPAIN.

P- 004 Presence and mobility of arsenic in floodplains near a gold mine on the Bolivian altiplano: I. Field sampling  
*du Laing G., JRinklebe J., Tack, F.*

Laboratory of Analytical Chemistry and Applied Ecochemistry, Gent University, Gent, BELGIUM.

P- 005 Managed Realignment. Inundation areas: a heavy metal sink or source?  
*Teuchies J., Deckere E., Bervoets L., Blust R., Meire P.*

Ecosystem Management Research Group, Antwerp University. Wilrijk, BELGIUM.

P- 006 *Ambystoma mexicanum*, an endemic species under ecological extinction in the wetlands of Xochimilco, Mexico: 2. Biochemical indicators of metal sublethal effects  
*Rodríguez F., Rendón E.S., Hernández M., Robles C., Ponce de León C., Vanegas R.C.*

Department of Ecology and Natural Resources, Faculty of Sciences, Universidad Nacional Autónoma de México. México, MEXICO.

P- 008 Mineral-based by-products for neutralisation of acidity and attenuation of metals  
*Wendling L.A., Douglas G.B., Coleman S.*

CSIRO Land and Water, Centre for Environment and Life Sciences, Wembley, AUSTRALIA.

P- 009 In situ passive sensors for constructed wetlands survey (study area: Kharkiv region, Ukraine)  
*Vystavna Y., Le Costumer P., Huneau F.*

Department of Environmental Engineering and Management, Nacional Academy of Municipal Economy, Kharkiv, UKRAINE.

P - 009/1 Fate of Metals (Cr, Ni, Zn and Fe) in the Sediment of a Constructed Wetland  
*Di Luca, G.A., Maine, M.A., Sánchez G.C., Mufarrije, M.M.*

Facultad de Ingeniería Química, Universidad Nacional del Litoral, Santiago del Estero, Santa Fe, ARGENTINA.

### **Wetlands' role in pollutant management at catchment scale (1): agriculture and urban runoff**

P- 010 Duckweeds for desalination and treatment of agricultural drainage water in detention ponds  
*Balla D., Mohie O.*

Leibniz Centre for Agricultural Landscape Research, Institute of Landscape Hydrology, Eberswalder MÜNcheberg, GERMANY.

P- 011 Constructed wetlands for agricultural drainwater  
*Sival, F.P., Noij J.G.A.M., de Haan, J., van der Schoot, J.R.*

Alterra, Department of Water and Climate, Wageningen, The NETHERLANDS-

P- 012 Effectiveness of a constructed wetland in reducing phosphorus inflow loads from an agricultural catchment Area  
*Skonieczek P., Koc J., Duda M.*

Department of Land Reclamation and Management, University of Warmia and Mazury in Olsztyn, Olsztyn, POLAND.

P- 013 Flow-through vegetated ditch mesocosm for estimating mitigation potentials of agricultural non-point source pollution  
*Stang C., Elsaesser D., Schulz R.*

Institute for Environmental Science – University of Landau, Landau, GERMANY.

P- 014 Narrow buffer strips in the river network of the Po Valley (Italy)  
*Balestrini R., Arese C., Delconte C.A., Lotti A., Passatore L.*

Water Research Institute (IRSA-CNR), Brugherio, ITALY.

P- 015 Mitigation of agricultural nonpoint-source pesticide pollution and phytoremediation in artificial wetland ecosystems  
*Grégoire C., Elssaeser D., Imfeld G., Jezequel K., Lange J., Lebeau T., Merli A., Mose R., Paineau F., Passeport E., Schulz R., Tournebize J., Trevisan M., Payraudeau S., Wanko A.*

LHYGES, Université de Strasbourg, Strasbourg, FRANCE.

### **Pollutant modelling in wetlands**

P- 017 Modeling microbial degradation of volatile organic compounds in vertical flow constructed wetlands  
*de Biase C., Maier U., Mosig P., van Afferden M., Reger D., Oswald S., Thullner M.*

Department of Environmental Microbiology, UFZ – Helmholtz Centre for Environmental Research. Leipzig, GERMANY.

P- 018 Comprehensive process-based modelling of sand filters and subsurface flow constructed wetlands

*Brovelli A., Baechler S., Rossi L., Barry D.A.*

Ecological Engineering Laboratory, Institut d'Ingénierie de l'Environnement, École Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND.

P- 019 Effect of substrate heterogeneity on flow in constructed wetlands and sand filters  
*Carranza O., Brovelli A., Rossi L., Barry D.A.*

Ecological Engineering Laboratory, Institut d'Ingénierie de l'Environnement, École Polytechnique Fédérale de Lausanne, Lausanne, SWITZERLAND.

P- 020 Biogeochemical modelling of constructed wetlands for groundwater remediation  
*Maier U., Oswald S., Thullner M., Grathwohl P.*

Center for Applied Geoscience, University of Tübingen, GERMANY.

P- 021 Hydraulic/kinetic modelling and influence of operative parameters on removal efficiency in Brazilian subsurface flow constructed wetlands  
*Vitali G., Ficara E., Philippi L.S., Dos Santos D.*

Politecnico di Milano, DIIAR, Milan, ITALY.

### **Wetlands' role in pollutant management at catchment scale (2): natural buffers**

P- 022 Spatial variability on sediment-associated nutrients and contaminants deposition at the Middle Ebro River floodplain  
*Gonzalez-Sanchis M., Cabezas A., Jiménez J.J., Comín F.A.*

IPE-CSIC. Zaragoza, SPAIN.

P- 023 Effect of river straightening on the hydrochemical diversity of floodplain lakes: a comparative study of the Łyna and Drwęcza rivers, NE Poland  
*Glińska-Lewczuk K.*

Department of Land Reclamation and Environmental Management, University of Warmia and Mazury, Olsztyn, POLAND.

P- 024 Anthropogenic pollution of rivers in the wetlands of Narew National Park in north-eastern Poland  
*Skorbiłowicz M., Skorbiłowicz E.*

Technical University. Białystok, POLAND.

P- 025 Macrophytes as the indicators of heavy metals bio-availability in rivers on peat-bog and swamp areas of Knyszynska forest (NE Poland)  
*Skorbiłowicz E., Skorbiłowicz M.*

Technical University. Białystok, POLAND.

P- 026 Short-term effects of river restoration on macrophyte communities in the example of the Kwacza River (northern Poland)  
*Osadowski Z.*

Department of Botany and Genetics, Pomeranian Academy, Słupsk, POLAND.

P- 027 Effect of the hydrological connectivity on nutrient distribution in bottom sediments of floodplain lakes in the Lyna River valley  
Kobus S., Glińska-Lewczuk K.

Department of Land Reclamation and Environmental Management, University of Warmia and Mazury. Olsztyn, POLAND.

P- 028 Influence of retention reservoirs on the quality of groundwater supplying riparian wetlands  
Cymes L., Glińska-Lewczuk K.

Department of Land Reclamation and Environmental Management, University of Warmia and Mazury. Olsztyn, POLAND.

P- 029 Nitrate buffering efficiency of riparian wetlands within embedded agricultural catchments  
Merot P., Montreuil O.

INRA , Soil Agro and hydroSystem. Rennes, FRANCE.

P- 030/1 Recovering estuarine salt marshes in order to mitigate heavy metals pollution in transitional waters

Fernández S., Santín C., González M.A., Álvarez, M.A.  
INDUROT, Natural Resources Institute of the University of Oviedo. Asturias, SPAIN.

P- 030/2 Hydrochemical and isotopic valuation of water recharge quality inkarst and wetland systems at the Syrian coast  
Kassem, A.

Department of Geology, Atomic Energy Commission. Damascus, Syria

### Wetlands' role in pollutant management at catchment scale (3): assessment and management

P- 031 Factors affecting the biological differences between constructed wetlands  
Buxton A., Mackenzie S.

Wildfowl and Wetlands Trust, WWT, Slimbridge. Gloucestershire, UK.

P- 032 Are the macroinvertebrate a good tool to evaluate the efficiency of a constructed wetland to treat wastewater in small villages?  
Falagán Fernández J., Arroyo Hernández P., Martínez Sanz C., Ansoa González G., de Luis Calabuig E.

Departamento de Biodiversidad y Gestión Ambiental, León, ESPAÑA.

P- 033 Phosphorus dynamics and microbial activities of running water sediments in a German wetland depending on hydrodynamics  
Balla D., Maassen S.

Leibniz Centre for Agricultural Landscape Research, Institute of Landscape Hydrology. Müncheberg, GERMANY.

P- 034 Macroinvertebrate patterns along environmental gradients and hydrological connectivity within oxbow lakes  
Obolewski K.

Department of Water Ecology, Pomeranian Academy. Slupsk, POLAND.

P- 035 Review of carbon storage within wetlands  
Kayranli B., Scholz M., Mustafa A., Hedmark A.

Swedish University of Agricultural Sciences, Department of Forest Products. Uppsala, SWEDEN.

P- 036 Dynamics of lakes morphometry and littoral zones development in various hydrological and trophic conditions  
Lawniczak, A.E., Choinski, J.A.  
Department of Ecology and Environmental Protection, Poznan University of Life Sciences,

Poznan, POLAND.

### Role of plants in pollution control

P- 037 Seasonal variation of dissolved oxygen in mesocosms vegetated with different macrophytes  
Salvato M., Borin M.

Dipartimento di Agronomia Ambientale e Produzioni Vegetali, Università di Padova, Legnaro, ITALY.

P- 038 Selection of an aquatic plant species and a substrate for the construction of a subsurface artificial wetland  
Pérez López M., Burciaga-Siqueiros M., Vicencio-de la Rosa M., González-Sánchez G., Gonzales A.Z.I., Martínez-Prado A.

Department of Environment, CIIDIR-DGO. Instituto Politécnico Nacional, MÉXICO-

P- 039 The effects of heavy metal on the tolerance and root anatomy of *Typha domingensis*  
Mufarrege M.M., Hadad H.R., di Luca G.A., Maine M.A.  
Facultad de Ingeniería Química, Universidad Nacional del Litoral, Santiago del

Estero, ARGENTINA.

P- 040 Simultaneous metal removal by dried biomass of plants harvested from a constructed wetland  
Sánchez G.C., Caffaratti S.E., Suñe N.L., Pedro M.C., Maine M.A.

Facultad de Ingeniería Química, Universidad Nacional del Litoral, Santiago del Estero, ARGENTINA.

P- 041 Comparative analysis of *Phragmites australis* leaves and roots protein extraction methods  
Ferreira R., Davies L., Novais J.M., Martins-Dias S.

Institute for Biotechnology and Bioengineering, Centre of Biological and Chemical Engineering, Instituto Superior Técnico, Lisboa, Portugal

P- 042 Copper bioaccumulation capacity of the floating fern *Salvinia minima*  
de Cabo L., Casares M.V., Seoane R., Arreghini S.

Museo Argentino de Ciencias Naturales Bernardino Rivadavia, CONICET, Buenos Aires, ARGENTINA.

P- 043 Effect of mycorrhizal colonozation on growth, Cd and Mn uptake by *Trifolium alexandrinum* L.  
Nadian H., Jafari S.

Department of Soil Science, Ramin University of Agriculture and Natural Resources. Mollasani, IRAN.

P- 044 Biaccumulation of cadmium in wild plants from Xochimilco wetlands with potential for phytoremediation

Carranza H., Ponce de Leon C., Hernández M., Cram S., Vanegas R.C.

Department of Ecology and Natural Resources, Faculty of Sciences, Universidad Nacional Autónoma de México, México D.F, MEXICO.

P- 045 Screening of different plant species for the application on constructed floating wetlands

van de Moortel A., de Pauw N., Tack F.

Laboratory of Analytical Chemistry and Applied Ecochemistry, Faculty of Bioscience Engineering, Gent University, Gent, 9000, BELGIUM

P- 046 Biomass loss of *Schoenoplectus californicus* shoots containing different levels of Zn during decomposition

Arreghini S., de Cabo L., Serafini R., de Iorio A.F.

Departamento de Recursos Naturales y Ambiente, Facultad de Agronomía, Universidad de Buenos Aires, Buenos Aires, ARGENTINA.

P- 047 Metal uptake in a peri-urban *Lactuca sativa* cultivated area

Vanegas C., Ponce de León C., Murguía F., Cram S., Sommer I., Hernández M.

Department of Ecology and Natural Resources, Faculty of Sciences, Universidad Nacional Autónoma de México, México D.F., MEXICO.

## POSTER SESSION 2 (From P-048 to P-096)

SEPTEMBER 22<sup>nd</sup> 2009

ROOM LLIMONA HOTEL BARCELONA PLAZA

FROM 16:00H - TO 17:00H

### Technological developments in constructed wetlands

P- 048 Continuous redox measurements in wetlands

Vorenhout M., van der Geest G.

MVH Consult, Utrecht, the NETHERLANDS

P- 049 Nutrient removal in vertical subsurface flow constructed wetlands treating eutrophic river water

Tang X., Huang S., Scholz M., Li J.

Institute for Infrastructure and Environment, The University of Edinburgh, Edinburgh, Scotland, UNITED KINGDOM.

P- 050 Novel integrated constructed wetlands for the treatment of anaerobically digested swine wastewater

Scholz M., Culleton N., Harrington C., Rory Harrington

Institute for Infrastructure and Environment, The University of Edinburgh, Edinburgh, Scotland, UNITED KINGDOM.

P- 051 Influence of temperature on the organic matter and nitrogen removal in constructed wetlands in Portugal and Poland

Gajewska M., Albuquerque A.

Faculty of Civil and Environmental Engineering, Gdansk University of Technology. Gdansk, POLAND.

P- 052 Nitrogen transformation in two vertical subsurface flow pilot plants

Llorens M., Pérez Marín A.B., Aguilar M.I., Meseguer V.F., Ortuño J.F., Sáez J.

Department of Chemical Engineering, University of Murcia, Murcia, SPAIN.

P- 053 High tolerance of organic matter loading variation in a symbiotic treatment

Pérez-Marín A.B., Lloréns M., Sáez J., Aguilar M.I., Ortuño J.F., Meseguer V.F.

Department of Chemical Engineering, University of Murcia, Murcia, SPAIN .

P- 054 Nitrogen behaviour contained in swine wastewater during a start-up of constructed wetland in the spring-summer season

Vidal G., Plaza C., Neubauer M., Belmonte M., Vera L., Decap G.

Environmental Science Center, EULA-Chile, University of Concepción, Concepción, CHILE.

P- 055 Problems encountered in the implementation of constructed wetland systems and sustainable solution offers - Case Study in Turkey, Italy and US

Gunes K., Tuncsiper B., Masi F., Ayaz S.-., Leszczynska D., Nas B.-

TUBITAK MRC, Environment Institute, Kocaeli, TURKEY.

P- 056 Artificial wetland to treat wineries liquid waste

Fonseca R., Volker K., Morales R., André G.

Environment Program, Fundación Chile, Vitacura, Santiago, CHILE.

P- 057 Assessment of the first industrial-scale integrated constructed wetland system to treat domestic wastewater

Miklas S., Hofmann O., Harrington R., Prasad T., Fairfield C.

Institute for Infrastructure and Environment, The University of Edinburgh, Edinburgh, Scotland, UNITED KINGDOM.

P- 058 Constructed wetlands treating the effluent of an anaerobic digester

Ruiz I., Crujeiras B., Soto M.

Department of Physical Chemistry and Chemical Engineering 1. University of A Coruña, A Coruña, Galiza, SPAIN.

P- 059 Integrated constructed wetlands: providing a joined up approach to sustainable water management

Harrington R., Scholz M., McInnes R.

Water and Policy Division, Department of Environment, Heritage and Local Government. Waterford, IRELAND.

P- 060 Systematic nomenclature and reporting for treatment wetlands

Fonder N., Headley T.

Epuvaleau Non-profit Association and Gembloux Agricultural University, Hydrology and Rural Hydraulics Department, Gembloux, BELGIUM.

P- 061 Design and functioning of horizontal subsurface-flow constructed wetlands for the treatment of greenhouse wastewater

Narváez L., Cáceres R., Cunill C., Marfá D.

Department of Biosystems Engineering and Agronomy, IRTA. Cabrils, Barcelona, SPAIN.

P- 062 Cold climate experimental wetland system. Two years monitoring results

Comino, E., Riggio, V., Rosso M.

Politecnico di Torino, Torino, ITALY

P- 063 Treatment efficiency for domestic and swine wastewater in a vertical subsurface-flow constructed wetland in Yucatán, México

Glácoman G., Montejó N., Tapia F., Ponce C.

Department of Environmental Engineering, Universidad Autónoma de Yucatán, Mérida, MÉXICO.

P- 064 The application of Imhoff tank and overland flow system for small community wastewater treatment

Türkdoğan I., Acarel M., Comez S., Bayhan .F, Turan M.

Department of Environmental Engineering, Yildiz Technical University, Yildiz, Istanbul, TURKEY.

P- 065 Evaluation of decentralised wastewater treatment systems used in Denmark

Diáková K., Arias A., Hans B.

Department of Ecosystem Biology, Faculty of Science, University of South Bohemia, CZECH REPUBLIC

P- 066 Evaluation of volcanic pyroclasts as filter media for constructed wetlands. Preliminary results

Hernandez Moreno J.M., Jiménez C., Garín M., Vera L.

Departamento de Agua, Instituto Tecnológico de Canarias (ITC), Santa Cruz de Tenerife, Tenerife, SPAIN.

P- 067 Efficiency assessment of a reed bed pilot plant (*Phragmites australis*) for sludge consolidation in Tuscany

Bianchi V., Peruzzi E., Graziana M., Brunello C., Iannelli, R.

Department of Civil Engineering - University of Pisa. Pisa, ITALY.

P- 068 Evaluation of the quality effluent from several constructed wetlands in Canary Islands

Vera L., Martel G., Márquez M., Gutiérrez J.

Departamento de Agua, Instituto Tecnológico de Canarias (ITC), Santa Cruz de Tenerife, Tenerife, SPAIN.

P- 069 Combination of non-conventional technologies for wastewater treatment and reuse in small communities

Lucero M., Sasa J., Martins P., Torrens A., Folch M., Tapias J., Salgot M.

Science Laboratory, Faculty of Pharmacy, University of Barcelona, Barcelona, SPAIN.

P- 070 Operational problems of constructed wetland for landfill leachate treatment: case study

Wojciechowska E., Gajewska M., Obarska-Pempkowiak H.

Gdańsk University of Technology, Faculty of Civil and Environmental Engineering. Gdańsk, POLAND.

P- 071 Evaluation of a pilot-scale subsurface constructed wetland system for leachate treatment from the Morro de Moravia in Medellín, Colombia

Nagles N., Morató J.i, Peñuela G.

Department of Engineering, University of Antioquia. Medellín, COLOMBIA.

### Behaviour of priority and emerging pollutants in wetlands

P- 072 Commercial linear alkylbenzene sulfonate (LAS) - Analysis by GC-FID/MS and <sup>1</sup>H-qNMR

Piechotta Ch., Schmidth S., Win T., Nehls I.

Federal Institute for Materials Research and Testing (BAM). Berlin, GERMANY.

P- 073 Potential of *Typha* spp. for the phytotreatment of water contaminated with Ibuprofen

Dordio A., Ferro R., Teixeira D., Palace A.J., Pinto A. P., Da Costa C.T.

Departamento de Química, IMAR – Instituto do Mar, PORTUGAL.

P- 075 Microwave-assisted extraction of organophosphorus pesticides from *Ambystoma mexicanum* axolotl

Vanegas C., Hernández J., Ponce de Leon C., Hernández M.

Department of Ecology and Natural Resources, Faculty of Sciences, Universidad Nacional Autónoma de México, México D.F, MEXICO.

P- 076 Determination of pollution levels by organochlorines and organophosphorus pesticides in water, soil, sediment and shrimp in shrimp ponds and surrounding areas in Jiquilisco Bay

Nomen R., Rovira M.D, Sempere J., Chávez F., de López N.A.

Universidad Centroamericana José Simeón Cañas, San Salvador, EL SALVADOR.

P- 077 *Ambystoma mexicanum*, an endemic species under ecological extinction in the wetlands of Xochimilco, Mexico: 1. Behavioural alterations due organophosphorous pesticides

Robles C., Hernández M., Cram S., García C.E., Vanegas R.C.

Laboratory of Ecophysiology, Department of Ecology and Natural Resources, Faculty of Sciences, Universidad Nacional Autónoma de México, México D.F, MEXICO.

P- 078 Occurrence of perchlorate in groundwater samples from Catalonia  
Viñas M., Prenafeta-Boldú F.X., Guivernau M., Magri A., Fraile J., Garrido T., Ginebreda A.

GIRO Technological Centre, Process Innovation Unit. Mollet del Vallès, SPAIN.

P- 079 Evaluation of full-scale natural systems for the removal of PPCPs from wastewaters of small communities

Hijosa M., Matamoros V., Martín J., Bécares E., Bayona J.

Departamento de Química y Física Aplicadas, Facultad de Ciencias Biológicas y Ambientales. Universidad de León, León, SPAIN.

P- 080 Assessment of the pharmaceutical active compounds removal in wastewater treatment systems at enantiomeric level

Matamoros V., Hijosa M., Bayona J.M.

Department of Chemistry, University of Girona. Girona, SPAIN.

P- 081 Pesticides in wetlands worldwide: no mitigating circumstances

Stehle S., Schulz R.

Institute for Environmental Sciences, University Koblenz-Landau, Landau, GERMANY.

P- 082 Removal of selected anthropogenic organic pollutants and coliforms in pilot constructed wetlands in Southeastern Mexico

Navarro A.E., Hernández M.E., Bayona J.M., Morales L., Ruiz P.

Universidad Tecnológica de Izúcar de Matamoros, Izúcar de Matamoros, MEXICO.

P- 083 Assessment of PPCPs removal in pilot-scale subsurface flow constructed wetland system: an injection experiment

Ávila, C., Pedescoll, A., Matamoros, V., Bayona, J.M., García, J.

Department of Hydraulic, Maritime and Environmental Engineering, Technical University of Catalonia. Barcelona, SPAIN.

P- 084 Column Techniques for Treatment of Textile SMEs' Effluents

Durasevic V., Parac-Osterman, D., Sutlovic A.,

Faculty of Textile Technology, Department of Textile Chemistry and Ecology, Zagreb, Croatia

### **Molecular and microbial advances in wetlands**

P- 085 Effect of temperature and redox potential on zinc removal in wetland mesocosm fed with lactate to stimulate sulfate reducing bacteria.

Arai S., Southichak B., Nakano K., Nishimura O., Aikawa Y. T. Kashima

Graduate School of Engineering, Tohoku University, Miyagi, JAPAN.

P- 086 Microbial monitoring of a subsurface constructed wetland treating domestic wastewater  
Mina J., Costa M., Matos A., Calheiros C.S.C., Castro P.M.L.

Departamento de Biologia, Universidade do Minho, Braga, PORTUGAL. P- 087 Removal of pathogen organisms in experimental plant of constructed wetlands treating wastewater with low and high organic loading

Tapia F., Giacomani G., Silveira J.H., Ponce C.

Facultad de Ingeniería, UADY, Mérida, MÉXICO.

P- 088 Influence of tubificid worms on phosphorus dynamics between sediment and overlying water in a settling pond

Puigagut J., de Boutray M.L., Chazarenc F., Comeau Y.

Institut de Recherche en Biologie Végétale (IRBV), Montréal (Quebec), CANADA.

P- 089 A new microtiter-plate screening method for viability evaluation of adhering bacteria in a biofilm

Pérez L.M., López B., Codony F., Fittipaldi M., Adrados B., Peñuela G., Morató J.

Universidad Politécnica de Cataluña, Laboratorio de Microbiología Sanitaria y Medioambiental (MSM-Lab), Terrassa (Barcelona), SPAIN.

P- 090 Microbial community biomass and structure in phosphorous removal filters based on oil shale ash

Truu M., Truu J., Juhanson J., Kutti S.

Faculty of Science and Technology, University of Tartu. ESTONIA.

P- 091 Indicator organisms removal in a constructed wetland swine wastewater treatment

Molleda P., Blanco I., Ansola G., de Luis E.

Environmental Research Institute, University of León. León, SPAIN.

P- 092 Methylophilic bacteria isolated from the water, sediment and aquatic plants of an urban-lake: Xochimilco, Mexico.

Rosas L., Martínez L., Salinas E., García L., Cruz A., Amábile-Cuevas C.

Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México, México, MEXICO.

P- 093 Influence of plant-microorganisms associations on hydrocarbons degradation in salt marshes

Ribeiro H., Mucha A.P., Almeida C.M.R., Bordalo A.A.

Laboratório de Hidrobiologia, Instituto de Ciências Biomédicas Abel Salazar, Porto, PORTUGAL.

P- 094 Microbial pathogen removal in different on-site wastewater treatment systems in denmark using traditional and molecular analytical techniques

Adrados B., Arias C.A., Codony F., Morató J., Brix H.

Health and Environmental Microbiology Laboratory, Optics and Optometry Department, Universitat Politècnica de Catalunya. Terrassa, SPAIN.

P- 095 Bacteria removal from axenic cell suspensions as well as from domestic wastewater by filtration on sand columns planted with helophytes

Viessner A., Kuschk P., Wand H., Kästner M., Vacca G.

Helmholtz Centre for Environmental Research – UFZ, Leipzig, GERMANY.

P- 096 Soil bacteria community composition, physicochemistry and denitrification potential in created and natural wetlands of Virginia

Changwoo, A.

Department of Environmental Science and Policy, University Drive. Fairfax, Virginia, USA.

## SPONSORS



## Collaborators



## Notes

Area for taking notes, consisting of a vertical column of horizontal dotted lines.

**Notes**

Lined area for notes with horizontal dotted lines.



**Technical Secretariat**

Grupo Pacifico: Marià Cubí, 4 Pral - 08006 Barcelona - Spain  
Tel. (34) 932.388.777 - Fax. (34) 932 387 488  
E-mail: [wetpol2009@pacifico-meetings.com](mailto:wetpol2009@pacifico-meetings.com)

**[www.wetpol.org](http://www.wetpol.org)**