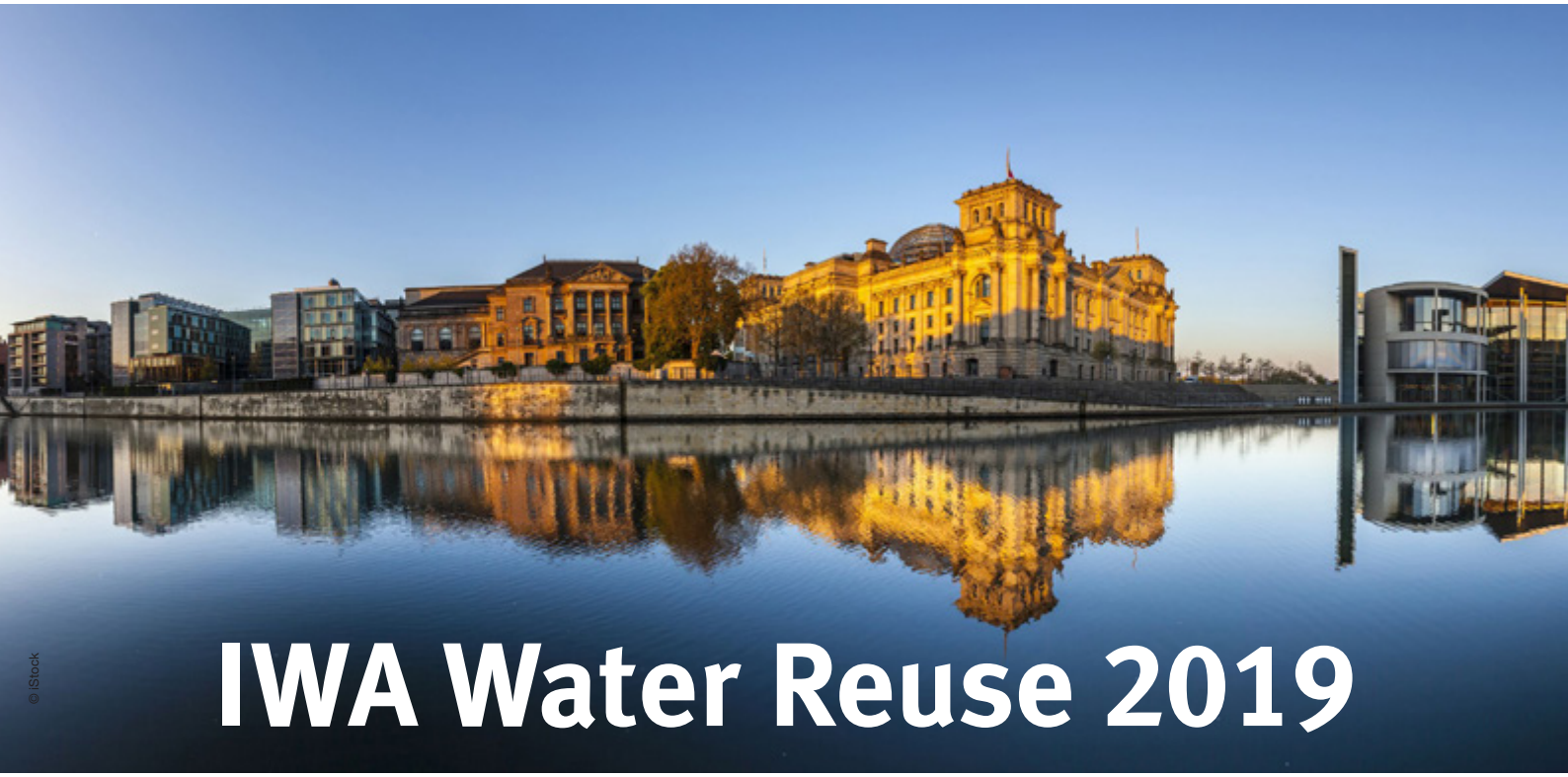
IWA WATER REUSE

the international water association



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IWA Water Reuse 2019

12th IWA International Conference on Water Reclamation and Reuse

16 – 20 June 2019 · Berlin · Germany

Overcoming Water Stress by Water Reclamation and Reuse

Organizer: DECHEMA

Primary Support: DWA Clear Concepts. Clean Environment.

Primary Sponsor: Federal Ministry of Education and Research

www.iwareuse2019.org

PROGRAMME

WATER IS TOO PRECIOUS TO BE USED ONLY ONCE.

We have not only completed water reclamation schemes for

- *irrigation and service water,*
- *and advanced water recycling systems for industry,*
- *but also the world's first direct potable reuse (DPR) plant in Windhoek, Namibia.*

Employing the latest technologies, we turn used water into high-quality water.

Courtesy City of Windhoek

VA TECH WABAG GmbH
Dresdner Str. 87-91
1200 Vienna, Austria
Tel.: +43-1-25105-0
contact@wabag.com

www.wabag.com

We are a global leader in the design, construction and operation of water and used water treatment plants and a renowned specialist for sustainable water reclamation. We have built over 50 water recycling plants worldwide during the past twenty years. Every day, we reclaim > 2 million m^3 used water and thus save freshwater resources.

sustainable solutions. for a better life.

WABAG

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BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE)

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SUEZ International

EXHIBITION

AQUANET Berlin Brandenburg
Berlin

Berlin Partner für Wirtschaft und Technologie GmbH
Berlin

BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE)

Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA)
Hennef/D

Evides Industriewater
Rotterdam/NL

Kompetenzzentrum Wasser Berlin gGmbH
Berlin

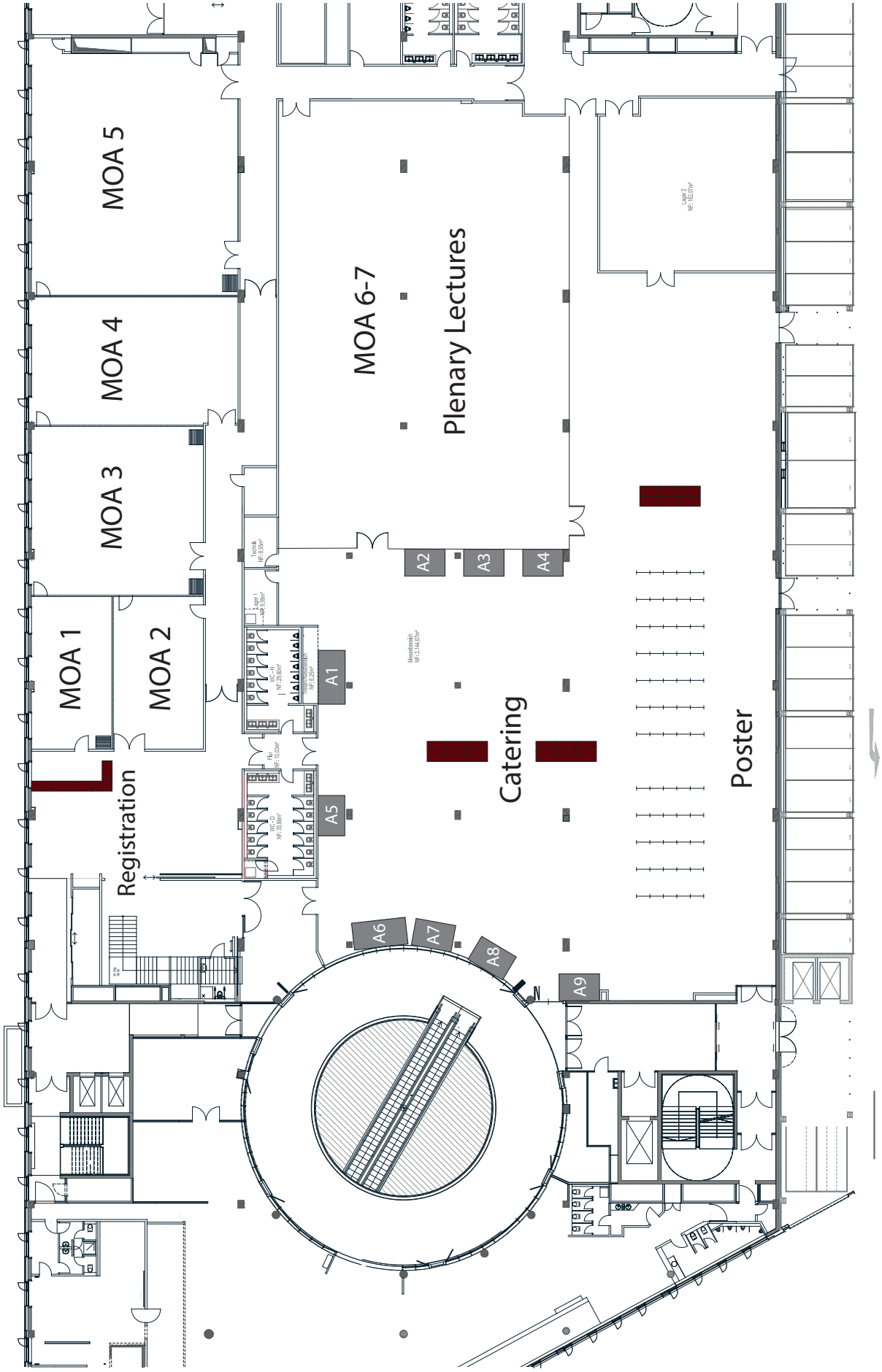
PyroScience GmbH
Aachen/D

Trojan Technologies
London/CAN

VA TECH WABAG GmbH
Vienna/A

Xylem Services GmbH
Herford/D

EXHIBITION


MOA 5
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Plenary Lectures
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EXHIBITORS

AQUANET Berlin Brandenburg Booth: A8
c/o MARTIN Systems GmbH
Friedrichstr.95
10117 Berlin
Germany
pritsch@aquanet.berlin
www.aquanet.berlin

Berlin Partner für Wirtschaft und Technologie GmbH
Fasanenstr. 85
10623 Berlin
Germany
hannes.lebert@berlin-partner.de
www.berlin-partner.de

AQUANET – the network for the Water Sector in the Capital Region connects companies and institutions of the whole Berlin-Brandenburg water sector. This cooperative approach promotes innovative ideas and unconventional solutions.

Business and technology support for companies, investors and scientific institutions in Berlin – this is the Berlin Partner für Wirtschaft und Technologie GmbH mission. With an excellent science and research network we help companies secure their economic future in Berlin.

BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE) Booth: A9
Contact:
Scientific support action TransWavE
Christina Jungfer, Thomas Track
DECHEMA e.V.
Theodor-Heuss-Allee 25
60486 Frankfurt a.M.
Germany
christina.jungfer@dechema.de; thomas.track@dechema.de
www.bmbf-wave.de/en

"Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination", so called "WavE" is a funding measure of the German Federal Ministry of Education and Research (BMBF). The aim is to develop innovative technologies, operational concepts and management strategies to realize a sustainable increase in water availability. Topic areas are: (I) Water reuse by utilizing treated municipal wastewater, (II) recycling of industrial water, (III) treatment of saline ground-water and surface water.

Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA) Booth: A4
Theodor-Heuss-Allee 17
53773 Hennef
Germany
www.dwa.de

The German Association for Water, Wastewater and Waste (DWA) is strongly committed to the development of secure and sustainable water management. As a politically and economically independent organisation it is professionally active in the fields of water management, wastewater, waste and soil protection. In Europe, the DWA is the association with the largest number of members within this field and holds a unique position through its professional competence with regard to standardisation, professional training and public information.

EXHIBITORS

Evides Industriewater B.V. (EIW) Booth: A1
Schaardijk 150
3063 NH Rotterdam
The Netherlands
sales@evides.nl
www.evidesindustriewater.nl

Evides Industriewater B.V. (EIW) is a subsidiary of Evides N.V., a supplier of drinking water in the Netherlands. EIW is a leading supplier of water services to industries in the Benelux and Germany. These services include the supply of industrial process water, demineralised water and feed water, reuse of water and cooling & heating solutions. Additionally we own and operate several industrial and municipal wastewater treatment plants. EIW realizes water treatment plants on the basis of DBFO (Design, Build, Finance & Operate) contracts, which include the management and operation of plants for an agreed period of time.

Kompetenzzentrum Wasser Berlin gGmbH Booth: A7
Cicerostrasse 24
10709 Berlin
Germany
www.kompetenz-wasser.Berlin

Kompetenzzentrum Wasser Berlin (KWB) is a non-profit water research centre based in Berlin. Our shareholders are Berliner Wasserbetriebe and Technologiestiftung Berlin. According to our mission statement, our major concern is to advance scientific knowledge and to push research & development activities in the water sector. To this end, we design research projects relating to all issues of the water cycle and carry them out together with our partners from academia, business enterprises and public authorities. The results contribute to keeping cities liveable also in the future.

PyroScience GmbH Booth: A3
Hubertusstr. 35
52064 Aachen
Germany
info@pyro-science.com
www.pyro-science.com

PyroScience is a manufacturer of innovative optical sensor solutions. These are based on a broad range of fibre-based and smart contactless oxygen sensors for measurements in aqueous and gas samples in combination with compact PC-operated and stand-alone read-out devices. Oxygen sensors are available in various formats and can be used for applications ranging from life sciences to environmental monitoring. Now we introduce unprecedented multi-analyte solutions, with new optical pH sensors in various formats, for applications in life sciences, biotechnology and aquatic sciences.

Trojan Technologies Booth: A5
3020 Gore Rd
N5V 4T7 London
Canada
www.trojantechnologies.com

TrojanUV designs, manufactures and sells pressurized and open-channel UV disinfection systems for municipal wastewater and drinking water, and UV-oxidation systems for environmental contaminant treatment applications. TrojanUV plays an important role in advancing disinfection technology, and is committed to providing municipalities with more efficient, environmentally-friendly water treatment solutions. There are over 10,000 TrojanUV installations in over 100 countries, treating water every day.

EXHIBITORS

VA TECH WABAG GmbH
Dresdner Str. 87-91
1200 Vienna
Austria

contact@wabag.com
www.wabag.com

WABAG Water Technology Ltd.
Bürglistrasse 31,
8401 Winterthur
Switzerland

water@wabag.net
www.wabag.net

Booth: A2

As a global leader in the design, construction and operation of water and wastewater treatment plants, our credo is that "Water is too precious to be used only once".

WABAG is a renowned specialist for sustainable water reclamation and has built over 50 water recycling plants worldwide. Moreover, we have not only completed reuse schemes for irrigation and service water, and advanced water recycling systems for industry, but also the world's first direct potable reuse (DPR) plant in Wind-hoek, Namibia.

sustainable solutions. for a better life.

Xylem Services GmbH
Boschstrasse 4
32051 Herford
Germany

Booth: A6

Xylem is delivering advanced technologies to the world's water challenges. We offer solutions to improve the way water is used, conserved, and re-used. Our products and services move, treat, analyze, monitor and return water to the environment for public utilities, industrial companies or building services. Xylem also provides a leading portfolio of smart metering, network technologies, pipe leakage detection and advanced analytics solutions. In more than 150 countries, Xylem is known for successful brands like Flygt, Lowara, Sensus, Wedeco, wtw.

For more information www.xylem.com

COMMITTEES

ORGANIZING COMMITTEE

Jörg E. Drewes	Chair of IWA Water Reuse Specialist Group, TU Munich/D
Sven U. Geissen	Chair of the National DECHEMA Integrated Industrial Water Management Committee, TU Berlin/D
Regina Gnirss	Berliner Wasserbetriebe/D
Jens Haberkamp	Chair of the National DWA Water Reuse Committee, FH Münster/D
Christina Jungfer	DECHEMA e.V., Frankfurt am Main/D
Sema Karakurt	TU München/D
Roland Knitschky	DWA e.V., Hennef/D
Thomas Track	DECHEMA e.V., Frankfurt am Main/D
Veronika Zhiteneva	TU München/D

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Akica Bahri	National Agricultural Institute of Tunisia (INAT), Tunis/TN
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Peter Cornel	TU Darmstadt/D
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Niels Groot	Dow Benelux B.V., Hoek/NL
Manuela Helmecke	Umweltbundesamt, Dessau/D
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Jiangyong Hu	National University of Singapore/SG
Blanca Jimenez	National Autonomous University of Mexico/MX
Christina Jungfer	DECHEMA e.V., Frankfurt am Main/D
Stuart Khan	University of New South Wales, Sydney/AUS
Josef Lahnsteiner	VA TECH WABAG GmbH, Vienna/A
Stevo Lavrnić	Universita di Bolognia/I
Olivier Lefevbre	National University of Singapore/SG
Jeff Mosher	Water Environment & Reuse Foundation, Alexandria/USA
Michael Muston	University of Wollongong/AUS
Thomas Track	DECHEMA e.V., Frankfurt am Main/D
Mias van der Walt	Bigen Africa LTD, Pretoria/ZA

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Paul Jeffrey	Cranfield University, Bedford/UK
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Melissa Meeker	Water Environment & Reuse Foundation WE&RF, Alexandria/USA
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Achim Ried	Xylem Water Solutions Deutschland GmbH, Herford/D
Joan Rose	Michigan State University, East Lansing/USA
Holger Scheer	Emscher Wassertechnik GmbH, Essen/D
Shane Snyder	University of Arizona, Tucson/USA
George Tchobanoglous	University of California, Davis/USA
R Rhodes Trussell	Trussell Technologies, Inc., Passadena/USA

Building Confidence in Water Reuse

Over the past **25 years**, we've worked with hundreds of communities – large and small – that are now collectively recycling over **1.5 billion gallons** of wastewater every day.

To learn more, visit us here at IWA Water Reuse 2019 and trojanuv.com.

TROJAN UV

Water Confidence™

PROGRAMME AT A GLANCE

Sunday, 16 June 2019

Room:	MOA 6-7	MOA 3	MOA 4	MOA 5
10:00	**Workshop 1**	**Workshop 2**	**Workshop 3**	**Workshop 4**
13:00	Lunch for workshop participants			
Room:	MOA 6-7			
14:00	OPENING CEREMONY			
	WELCOME LECTURES			
14:30	Simon			
14:50	Gerten			
15:10	**Conference Introduction** Drewes			
15:30	Coffee break with posters and exhibition			
Room:	MOA 6-7	MOA 3	MOA 4	MOA 5
	Reuse in Developing Countries Agricultural reuse	**Direct Potable Reuse** Direct potable reuse across the globe	**Industrial Reuse** Chemical and petro-chemical industry	**Integrating reuse in existing systems**
16:00	Kluge	Lovell	Schießer	Adin
16:20	Sinn	Mosher	Veleva	Roccaro
16:40	Sánchez Román	Olivieri	Poussade	Caucci
17:00	Kätzl	Swartz	Vanoppen	Mohr
17:20	Ronen	Jefferson	Kochan	Ramin
17:40	**WELCOME RECEPTION** in the exhibition hall (17:40-20:00)			
20:30	**YWRPs Networking Event** at Kapitel 21, Lehrterstraße 55 (at own expenses)			

PROGRAMME AT A GLANCE

Monday, 17 June 2019

Room:	MOA 6-7			
	PLENARY LECTURES			
8:30	Bahri			
9:00	van Rensburg			
Room:	MOA 6-7	MOA 3	MOA 4	MOA 5
	Reuse in Developing Countries Treatment technologies	**Direct Potable Reuse** DPR developments in the United States	**Industrial Reuse** Food and beverage industry	**New perspectives in reuse**
9:30	Beck	Steinle-Darling	Godskesen	Helmi
9:50	Noophan	Pecson	Albrechtsen	Lavrnić
10:10	Discussion	Debroux	Dickhoff	Londoño
10:30	Coffee break with posters and exhibition			
	Reuse in Developing Countries Reviews, strategies, risks	**Direct Potable Reuse** Performance assessment for DPR trains	**Industrial Reuse** Miscellaneous industries	**Integrated reuse systems (industrial, urban, rural)**
11:00	Goyal	Li	Lahnsteiner	Nahrstedt
11:20	Chen	Ni	Henkel/Slagt/Groot	Raat
11:40	Nas	Fujioka	Echevarria	Albrechtsen
12:00	Discussion	Yonetani	Mattingly	Gukelberger
12:20	Poster pitches		Poster pitches	Poster pitches
12:40	Lunch break with posters and exhibition			
	Groundwater Recharge Managed aquifer recharge	**Direct Potable Reuse** Challenges in DPR	**Industrial Reuse** Planning and assessment of industrial water reuse concepts	**Risk Management** Risk management of reuse schemes
13:40	Sperlich	Szczuka	Bauer	Drewes
14:00	Gerdes	Fujioka	Pohl	Grützmacher
14:20	Sanz Prat	Peterson	Jacob	Smeets
14:40	Ho	Minakata/Kibler	Kureck	Mueller
15:00			Poster pitches	Poster pitches
15:20	Coffee break with posters and exhibition			
	Groundwater recharge Enhancement of managed aquifer recharge systems	**Innovative Treatment Technologies & Applications** Disruptive membrane treatments and their applications	**Agricultural Reuse** Role of reclaimed water in agricultural irrigation	**Risk Management** Risk mitigation strategies
15:50	Vaidya	Rodriguez-Roda	Sheikh	Le-Clech
16:10	Wünsch	de la Torre	Salgot	Vanysacker
16:30	Reeve	Baaklini	Scheideler	Honda
16:50	Gnirss	Guo	Leite	Tanaka
17:10	Donnaz	Viegas	Bartholomeus	Jahne
Room:	MOA 6-7			
17:35	**2021 IWA REUSE CONFERENCE – CANDIDATE PRESENTATIONS** **YWRP WORKSHOP AWARD**			
18:10	**POSTER AND EXHIBITION PARTY** **with drinks and buffet** (18:10-21:00)			

PROGRAMME AT A GLANCE

Tuesday, 18 June 2019

Room:	MOA 6-7			
	PLENARY LECTURES			
8:30	Simón Andreu			
9:00	Delacamara			
Room:	MOA 6-7	MOA 3	MOA 4	MOA 5
	Potable Reuse New concepts of potable reuse	**Innovative Treatment Technologies & Applications** Disruptive technologies for hard-to-treat wastewater	**Agricultural Reuse** Transfer of contaminants into irrigated crops	**Risk Management** Validation procedures
9:30	Mattingly	Yogendran	Reemtsma	Maruya
9:50	Orsoni	Lefebvre	Srikantaiah	Khan
10:10	Hogard	Huang	Wanner	Kohn
10:30	Coffee break with posters and exhibition			
	Potable Reuse New groundwater recharge concepts	**Innovative Treatment Technologies & Applications** Control and applications of biological processes	**Agricultural Reuse** Benefits of agricultural irrigation with reclaimed water	**Social & Economic Perspectives** Economic and sustainability perspectives
11:00	Peri	Choo	Mange/Wéry/Ait Mouheb	Listowski
11:20	Warner	Ali	Coppini	Haak
11:40	Karakurt	Zhang	Watanabe	Declercq
12:00	Filter	Risse	Bliedung	Wencki
12:20	Poster pitches	Poster pitches	Poster pitches	Poster pitches
12:40	Lunch break with posters and exhibition			
	Potable Reuse New treatment concepts for potable reuse	**Innovative Treatment Technologies & Applications** Trends in membrane distillation	**Agricultural Reuse** Environmental impacts	**Social & Economic Perspectives** Regional perspectives
13:40	Grischek	Hai	Weidhaas	Hahn / Kirschke
14:00	Katz	Deka	Beraud	Mattingly
14:20	Scheideler	Guo	Phung Duc	Collard
14:40	Stefan	Poster pitches	Barros	Khan
15:00			Poster pitches	
15:20	Coffee break with posters and exhibition			
	Small-scale/ Decentralized Systems	**Extending the Limits of Traditional Treatment**	**Case Studies: from 0% up to 100% Reuse**	**Developing Risk Assessment Models** Microbial and chemical components
15:50	Ramezanianpour	Kehrein	Jungfer	Smeets
16:10	Avellán	Zhang	Blach	Delli Compagni
16:30	Kätzl	Baresel	Schwaller	Wigginton
16:50	Zinati Shoah	Foschi	Cao	Nocker
17:10	Wang	Khanzada	Döpkens	Zhiteneva
17:30		Wei	Billenkamp	Rien
17:50	**IWA WATER REUSE SPECIALIST GROUP MEETING** (MOA 6-7) (17:50-18:20)			
19:00	**CONFERENCE DINNER** at Zollpackhof, Elisabeth-Abegg-Str. 1, Berlin (19:00-23:00) (separate registration necessary)			

PROGRAMME AT A GLANCE

Wednesday, 19 June 2019

Room:	MOA 6-7			
	PLENARY SESSION			
8:30	Van Houtte			
	McArdell			
	Rose			
9:10	**PANEL DISCUSSION POSTER AWARDS**			
Room:	MOA 6-7	MOA 3	MOA 4	MOA 5
	Operation, Maintenance and Service Arrangements	**Innovative Treatment Technologies & Applications** Combining ozonation and biofiltration for potable reuse trains	**Urban Reuse including Landscape Irrigation** Microbial aspects	**Monitoring and Compliance** Microbial contaminants and decision support
9:30	Rudolph	Hübner	Bell	Brinkman
9:50	Staaks	Li / Peri	Wu	Roccaro
10:10	Deka	Bell	Kastl	Pettenati
10:30	Coffee break with posters and exhibition			
	Public Perception and Acceptance	**Innovative Treatment Technologies & Applications** Combining ozonation and biofiltration for advanced treatment	**Urban Reuse including Landscape Irrigation** Case studies and valuables	**Monitoring and Compliance** Organic and inorganic contaminants
11:00	Baresel	Sauter	Al-Azzawi	Steinle-Darling
11:20	Montginoul	Trussell	Gnirss	Hoppe-Jones
11:40	Etale	Slipko	Salgot	Neubauer
12:00	Schramm/Ebert	Olvera-Vargas	Dao	Takeuchi
12:20	Dicussion	Telegang Chekem	Clement	Ganguly
12:40	Lunch break with posters and exhibition			
	Regulation, Governance and Engagement	**Innovative Treatment Technologies & Applications** Towards a sustainabble society	**Concentrate and Residual Management**	**Market Acceptance of Reuse Solutions**
13:40	Maharaj/Schalkwyk	Casadellà	Hogen	Steinle-Darling/Thomure/ Meeker/Sinicropi/Poling
14:00	Martinez Lopez	Xiao	Hegde	
14:20	Echevarría	Reoyo-Prats	Shi	
14:40	Miehe	Viegas	Becker	
15:00	Zimmermann	Roest	Xu	Jeffrey
15:20	Coffee break with posters and exhibition			
Room:	MOA 6-7			
15:50	**CLOSING SESSION**			

Thursday, 20 June 2019

	TECHNICAL TOURS (separate registration necessary)

LECTURE PROGRAMME

SUNDAY, 16 JUNE 2019

	Room: MOA 6-7	Room: MOA 3
10:00	**WORKSHOP 1** **Young Water Reuse Professionals development and integration workshop**	**WORKSHOP 2** **"Risk management in water reuse – National and international perspectives"** **BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE)**
	Room: MOA 4	Room: MOA 5
10:00	**WORKSHOP 3** **AquaNES QMRA-tool: a webtool for quantitative microbial risk assessment of water reuse applications**	**WORKSHOP 4** **Water reclamation and reuse in development cooperation case studies – challenges, approaches, achievementsand the way forward**
13:00	Lunch for workshop participants	

Room: MOA 6-7

OPENING CEREMONY

14:00 **WELCOME ADDRESS**

J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D
S. Tidow[1]; [1] Permanent Secretary for the Environment and Climate Protection of Berlin Senate, Berlin/D
T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D
M. Delay[1]; [1] Project Management Agency Karlsruhe (PTKA), Karlsruhe/D
K. Vairavamoorthy[1]; [1] International Water Association/UK

14:30 **WELCOME LECTURE**

Managing the urban water cycle in Berlin
J. Simon[1]; [1] Berliner Wasserbetriebe, Berlin/D

14:50 **WELCOME LECTURE**

Water scarcity, climate change and food security: a solution spectrum
D. Gerten[1]; [1] Potsdam Institute for Climate Impact Research (PIK), Potsdam/D

15:10 **Conference Introduction**

J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D

15:30 Coffee break with posters and exhibition

Room: MOA 6-7

Reuse in Developing Countries

Agricultural reuse

Chair: P. Cornel[1]; S. Lavrnić[2]; [1] TU Darmstadt/D; [2] University of Bologna/I

16:00 **Integrating sanitation, water reuse and the production of food crops – 6 years of experiences in Central Northern Namibia**
T. Kluge[1]; S. Liehr[1]; M. Zimmermann[1]; P. Cornel[2]; [1] ISOE - Institute for Social-Ecological Research, Frankfurt am Main/D; [2] Technische Universität Darmstadt/D

16:20 **Waste stabilisation ponds with pre-treatment provide irrigation water – a case study in Namibia.**
J. Sinn[1]; S. Lackner[1]; P. Cornel[1]; [1] TU Darmstadt/D

16:40 **Wastewater disinfection for agricultural reuse using solar radiation in a developing county: field observations**
T. Lima da Silva[1]; R. Sánchez Román[1]; J. Thomaz Queluz[1]; [1] São Paulo State University (UNESP), Botucatu/BR

17:00 **On-farm wastewater treatment using biochar from local agroresidues promotes safer irrigation water for food production and enhanced crop yields in West Africa**
K. Kätzl[1]; M. Lübken[1]; B. Marschner[1]; G. Nyarko[2]; G. Kranjac-Berisavljevic[2]; K. Stenchly[3]; M. Wichern[1]; [1] Ruhr-Universität Bochum/D; [2] University for Development Studies, Tamale/GH; [3] Universität Kassel, Witzenhausen/D

17:20 **Remove of antibiotic-resistant bacteria from greywater**
Z. Ronen[1]; [1] Ben Gurion University of the Negev, Midreshet Ben Gurion/IL

17:40 **WELCOME RECEPTION** in the exhibition hall (17:40-20:00)

20:30 **YWRPs Networking Event** at Kapitel 21, Lehrterstraße 55 (at own expenses)

SUNDAY, 16 JUNE 2019

LECTURE PROGRAMME

Room: MOA 6-7

OPENING CEREMONY

14:00 **WELCOME ADDRESS**
J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D
S. Tidow[1]; [1] Permanent Secretary for the Environment and Climate Protection of Berlin Senate, Berlin/D
T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D
M. Delay[1]; [1] Project Management Agency Karlsruhe (PTKA), Karlsruhe/D
K. Vairavamoorthy[1]; [1] International Water Association/UK

14:30 **WELCOME LECTURE**
Managing the urban water cycle in Berlin
J. Simon[1]; [1] Berliner Wasserbetriebe, Berlin/D

14:50 **WELCOME LECTURE**
Water scarcity, climate change and food security: a solution spectrum
D. Gerten[1]; [1] Potsdam Institute for Climate Impact Research (PIK), Potsdam/D

15:10 **Conference Introduction**
J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D

15:30 Coffee break with posters and exhibition

Room: MOA 3

Direct Potable Reuse

Direct potable reuse across the globe

Chair: M. Meeker[1]; V. Zhiteneva[2]; [1] Gwinnett County, Lawrenceville, GA/USA; [2] Technical University of Munich, Garching/D

16:00 **The view from Australia**
S. Wilson[1]; A. Lovell[1]; D. Francis[1]; [1] Water Services Association of Australia, Sydney/AUS

16:20 **Development of regulatory criteria for direct potable reuse in the United States**
J. Mosher[1]; J. Minton[2]; G. Vartanian[3]; [1] Carollo Engineers, Los Angeles/USA; [2] The Water Research Foundation, Alexandria/USA; [3] National Water Research Institute, Fountain Valley/USA

16:40 **Potable water reuse in Califorina – Update on recent developments, regulations and research topics (USA)**
A. Olivieri[1]; [1] EOA, INC., USA/USA

17:00 **Emerging contaminants in wastewater treated for direct potable re-use: the human health risk priorities in South Africa**
C. Swartz[1]; B. Genthe[2]; J. Menge[3]; C. Coomans[1]; [1] Chris Swartz Water Utilisation Engineers, Durbanville, Cape Town/ZA; [2] Council for Scientific and Industrial Research (CSIR), Stellenbosch/ZA; [3] Consultant/City of Windhoek, Windhoek/NAM

17:20 **How will switching from water recycling to resource factories impact disinfection by product formation?**
B. Jefferson[1]; [1] Cranfield University, Cranfield/UK

17:40 **WELCOME RECEPTION** in the exhibition hall (17:40-20:00)

20:30 **YWRPs Networking Event** at Kapitel 21, Lehrterstraße 55 (at own expenses)

LECTURE PROGRAMME

SUNDAY, 16 JUNE 2019

Room: MOA 6-7

OPENING CEREMONY

14:00 **WELCOME ADDRESS**
J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D
S. Tidow[1]; [1] Permanent Secretary for the Environment and Climate Protection of Berlin Senate, Berlin/D
T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D
M. Delay[1]; [1] Project Management Agency Karlsruhe (PTKA), Karlsruhe/D
K. Vairavamoorthy[1]; [1] International Water Association/UK

14:30 **WELCOME LECTURE**
Managing the urban water cycle in Berlin
J. Simon[1]; [1] Berliner Wasserbetriebe, Berlin/D

14:50 **WELCOME LECTURE**
Water scarcity, climate change and food security: a solution spectrum
D. Gerten[1]; [1] Potsdam Institute for Climate Impact Research (PIK), Potsdam/D

15:10 **Conference Introduction**
J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D

15:30 Coffee break with posters and exhibition

Room: MOA 4

Industrial Reuse
Chemical and petro-chemical industry

Chair: J. Lahnsteiner; VA TECH WABAG GmbH, Vienna/A

16:00 **Recycling of industrial process brines**
Y. Schießer[1]; C. Bloecher[1]; [1] Covestro Deutschland AG, Leverkusen/D

16:20 **Innovative technologies for reuse of petrochemical condensates**
I. Veleva[1]; M. Vanoppen[1]; N. Groot[2]; A. Verliefde[1]; [1] Ghent University (UGent), Ghent/B; [2] Dow Benelux NV, Terneuzen/NL

16:40 **Industrial reuse of advanced reclaimed water: six years of experience in Camp de Tarragona**
J. Sanz[1]; R. Mujeriego[2]; D. Montserrat[3]; Y. Poussade[4]; V. Gómez[5]; [1] Veolia Water Technologies, Sant Cugat del Vallès/E; [2] Universidad Politécnica de Catalunya, Barcelona/E; [3] AITASA, Bonavista/E; [4] VEOLIA, Aubervilliers/F; [5] Dow Water Solutions, Tarragona/E

17:00 **Condensate reuse in the chemical industry - pilot scale experience**
M. Vanoppen[1]; E. De Meyer[1]; I. Hitsov[1]; F. Fasaei[2]; H. Cappon[2]; E. van den Brande[3]; A. Verliefde[1]; [1] Ghent University (UGent), Gent/B; [2] Hogeschool Zeeland, Vlissingen/NL; [3] Yara Sluiskil B.V., Sluiskil/NL

17:20 **Advanced Zero Liquid Discharge concept for the chemical industry**
M. Pastur Romay[1]; S. Vila[2]; C. Niewersch[2]; C. Pătruţ[3]; J. Kochan[4]; R. Wünsch[5]; L. van Dijk[3]; C. Kazner[6]; J. Koppe[7]; J. Palacín[1]; F. Zorn[4]; [1] Clariant Ibérica Producción, Tarragona/E; [2] Dow Water & Process Solution, Tarragona/E; [3] Blue-Tec, Renkum/NL; [4] Clariant Produkte (Deutschland) GmbH, Frankfurt/D; [5] FHNW - University of Applied Sciences and Arts Northwestern Switzerland, Basel/CH; [6] Ruhr Universität Bochum, Bochum/D; [7] MOL Katalysatortechnik GmbH, Schkopau/D

17:40 **WELCOME RECEPTION** in the exhibition hall (17:40-20:00)

20:30 **YWRPs Networking Event** at Kapitel 21, Lehrterstraße 55 (at own expenses)

SUNDAY, 16 JUNE 2019

LECTURE PROGRAMME

Room: MOA 6-7

OPENING CEREMONY

14:00 **WELCOME ADDRESS**
J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D
S. Tidow[1]; [1] Permanent Secretary for the Environment and Climate Protection of Berlin Senate, Berlin/D
T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D
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K. Vairavamoorthy[1]; [1] International Water Association/UK

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D. Gerten[1]; [1] Potsdam Institute for Climate Impact Research (PIK), Potsdam/D

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J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D

15:30 Coffee break with posters and exhibition

Room: MOA 5

Integrating Reuse in Existing Systems

Chair: S. Geißen[1]; H. Olvera-Vargas[2], [1] Technische Universität Berlin/D; [2] National University of Singapore/SG

16:00 **Sustainable integration of water reuse in a multi-resources system**
A. Adin[1]; [1] Hebrew University of Jerusalem, Herzliya/IL

16:20 **Evaluation of the sustainability of wastewater reuse in agriculture: development and application of a holistic approach**
P. Roccaro[1]; [1] Università degli Studi di Catania, Catania/I

16:40 **Making it happen: water reuse regulatory frame in Colombia: bottleneck and wicked problems to overcome**
S. Caucci[1]; H. Hettiarachchi[1]; N. Jimenez[1]; [1] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D

17:00 **Water reuse in hydroponic systems: results from four European feasibility studies**
M. Mohr[1]; T. Günkel-Lange[2]; M. Fischer[3]; J. Germer[4]; M. Winker[3]; G. Bürgow[5]; [1] Fraunhofer IGB, Stuttgart/D; [2] aquadrat ingenieure GmbH, Griesheim/D; [3] ISOE - Institut fuer sozial-oekologische Forschung, Frankfurt/D; [4] University of Hohenheim, Stuttgart/D; [5] aquatectura, Berlin/D

17:20 **Design of a water reuse network in an industrial site in Kenya**
E. Ramin[1]; C. Schneider[1]; V. Takou[1]; A. Damgaard[1]; A. Setti[1]; C. Helix-Nielsen[1]; X. Alsina[1]; P. Ramin[1]; K. Gernaey[1]; M. Andersen[1]; [1] Technical University of Denmark (DTU), Kgs. Lyngby/DK

17:40 **WELCOME RECEPTION** in the exhibition hall (17:40-20:00)

20:30 **YWRPs Networking Event** at Kapitel 21, Lehrterstraße 55 (at own expenses)

LECTURE PROGRAMME

MONDAY, 17 JUNE 2019

MORNING

Room: MOA 6-7

Chair: S. Khan; University of New South Wales, Sydney/AUS

08:30 **PLENARY LECTURE**
Opportunities and challenges to implement and grow water reuse in Africa
A. Bahri[1]; [1] National Agricultural Institute of Tunisia (INAT), Tunis/TN

09:00 **PLENARY LECTURE**
The experience on practicing direct potable reuse in Windhoek, Namibia
P. van Rensburg[1]; [1] City of Windhoek, Windhoek/NAM

Room: MOA 6-7

Reuse in Developing Countries
Treatment technologies

Chair: J. Rose[1]; C. Schwaller[2]; [1] Michigan State University, East Lansing/USA; [2]Technical University of Munich, Garching/D

09:30 **Evaluating woven textile filtration and ultraviolet light emitting diodes (UV-LEDs) for water reuse in developing economies**
S. Beck[1]; [1] EAWAG, Dubendorf/CH

09:50 **Comparison of treated effluents characteristics from full-scale of wetland systems in Thailand, Japan, and USA**
P. Noophan[1]; [1] Faculty of Engineering, Kasetsart University, Kasetsart U, Bangkok/T

10:10 **Discussion with session speakers and plenary speaker Pierre van Rensburg**

10:30 Coffee break with posters and exhibition

Room: MOA 6-7

Reuse in Developing Countries
Opportunities, strategies, risks

Chair: S. Karakurt[1]; E. Van Houtte[2]; [1] Technical University of Munich, Garching/D; [2] Intercommunale Waterleidingsmaatschappij van Veurne-Ambacht (IWVA), Koksijde/B

11:00 **Wastewater reclamation and reuse in India: review and strategic issues**
K. Goyal[1]; A. Kumar[1]; [1] Indian Institute of technology, Roorkee, Roorkee/IND

11:20 **Evaluation of water reuse models and development potentials in urban areas of China**
Z. Chen[1]; [1] Tsinghua University, Beijing/CN

11:40 **Opportunities and obstacles for wastewater reclamation and reuse in Turkey**
B. Nas[1]; S. Uyanik[2]; S. Doğan[1]; A. Aygün[3]; T. Dolu[1]; [1] Konya Technical University, Konya/TR; [2] Harran University, Şanlıurfa/TR; [3] Bursa Technical University, Bursa/TR

12:00 **Discussion with session speakers and plenary speaker Akica Bahri**

12:20 **Poster pitches: Posters 1.24, 1.35, 1.38, 1.40, 1.41, 1.43, 3.32, 3.35, 3.40**

12:40 Lunch break with posters and exhibition

MONDAY, 17 JUNE 2019 LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: S. Khan; University of New South Wales, Sydney/AUS

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The experience on practicing direct potable reuse in Windhoek, Namibia
P. van Rensburg[1]; [1] City of Windhoek, Windhoek/NAM

Room: MOA 3

Direct Potable Reuse
DPR developments in the United States

Chair: J. Mosher; Carollo Engineers, Los Angeles/USA

09:30 **Novel Non-RO direct potable reuse in the United States**
A. Salveson[1]; E. Steinle-Darling[2]; J. Mosher[3]; [1] Carollo Engineers, Walnut Creek/USA; [2] Carollo Engineers, Austin/USA; [3] Carollo Engineers, Los Angeles/USA

09:50 **Potable reuse and public health: QMRA from the DPR demonstration project**
B. Pecson[1]; R. Trussell[2]; S. Triolo[1]; A. Olivieri[3]; R. Trussell[4]; [1] Trussell Technologies. Inc., Oakland/USA; [2] Trussell Technologies. Inc., Solana Beach/USA; [3] EOA, INC., Oakland/USA; [4] Trussell Technologies. Inc., Pasadena/USA

10:10 **Direct potable reuse research update: DPR-4, treatment for averaging chemical peaks**
J. Debroux[1]; R. Trussell[2]; M. Plumlee[3]; [1] Kennedy/Jenks Consultants, San Francisco/USA; [2] Trussell Technologies. Inc., San Diego/USA; [3] Orange County Water District, Fountain Valley/USA

10:30 Coffee break with posters and exhibition

Room: MOA 3

Direct Potable Reuse
Performance assessment for DPR trains

Chair: M. Muston[1]; E. Peterson[2]; [1] University of Wollongong, Fairy Meadow NSW/AUS; [2] University of Colorado Boulder/USA

11:00 **Application of pre-ozonation and biofiltration in potable reuse water reclamation – Characterization of microbial community**
L. Li[1]; T. Guarin[2]; V. Sundaram[3]; L. Peri[4]; K. Pagilla[2]; [1] University of Nevada, Reno, Reno, NV, USA/USA; [2] University of Nevada, Reno, Reno/USA; [3] Stantec, Sacramento/USA; [4] Washoe County CSD, Reno/USA

11:20 **Reclamation of secondary effluents from the municipal wastewater plant – A pilot test and economic evaluation**
F. Ni[1]; [1] Eco-digital Tech Inc., Taipei/RC

11:40 **Real-time bacteriological counting for integrity monitoring of reverse osmosis treatment for potable reuse**
T. Fujioka[1]; M. Leddy[2]; [1] Nagasaki University, Nagasaki/J; [2] Essential Environmental and Engineering Systems, Huntington Beach/USA

12:00 – 12:20 **Validation of ceramic membrane filtration for removing enteric viruses in tertiary treated wastewater**
T. Yonetani[1]; A. Hata[2]; Y. Matsui[1]; L. A. Ikner[3]; C. P. Gerba[3]; H. Katayama[2]; [1] METAWATER co., ltd., Tokyo/J; [2] The University of Tokyo/J; [3] The University of Arizona, Tucson, Arizona/USA

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME

MONDAY, 17 JUNE 2019

MORNING

Room: MOA 6-7

Chair: S. Khan; University of New South Wales, Sydney/AUS

08:30 **PLENARY LECTURE**
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P. van Rensburg[1]; [1] City of Windhoek, Windhoek/NAM

Room: MOA 4

Industrial Reuse
Food and beverage industry

Chair: T. Track; DECHEMA e.V., Frankfurt am Main/D

09:30 **Eco-efficiency of on-site water reclamation at a large brewery**
B. Godskesen[1]; D. Sundaram D.[1]; H. Albrechtsen[1]; M. Rygaard[1]; [1] Technical University of Denmark (DTU), Lyngby/DK

09:50 **Water efficiency in food industry – ways to improvements**
H. Albrechtsen[1]; H. Bengaard[2]; J. Rasmussen[3]; [1] Technical University of Denmark, Kgs. Lyngby/DK; [2] Danish Agriculture & Food Council, Copenhagen/DK; [3] Water Advice, Helsinge/DK

10:10 **Water reuse in food industry – Practical examples from dairy and potato processing industry**
K. Dickhoff[1]; [1] EnviroChemie GmbH, Rossdorf/D

10:30 Coffee break with posters and exhibition

Room: MOA 4

Industrial Reuse
Miscellaneous industries

Chair: N. Groot[1]; R. Wünsch[2]; [1] Dow Benelux BV, Hoek/NL; [2] FHNW University of Applied Sciences and Arts Northwestern Switzerland, Muttenz/CH

11:00 **Industrial water reclamation and reuse in India**
J. Lahnsteiner[1]; P. Andrade[2]; R. Mittal[2]; [1] VA TECH WABAG, Vienna/A; [2] VA TECH WABAG Ltd., Chennai/IND

11:20 **The Dow Terneuzen 2025 water reuse concept – Incorporating over 20 years of industrial water reuse experience**
J. Henkel[1]; M. Slagt[2]; N. Groot[2]; [1] Dow DuPont, Rheinmuenster/D; [2] Dow Benelux BV, Terneuzen/NL

11:40 **Advanced RO for water reuse and brine concentration in Copper Smelter effluents**
I. Martín García[1]; J. Salinero[1]; M. Arnaldos Orts[1]; X. Bernat[1]; A. Mejía[2]; I. Ruiz[2]; G. Rios[2]; C. Echevarria[1]; [1] Cetaqua, Centro tecnológico del agua, Cornellà de Llobregat,/E; [2] Atlantic Copper S.L.U., Huelva/E

12:00 **Water Reseach Foundation's agricultural water reuse research efforts**
K. VandenHeuvel[1]; J. Mattingly[2]; [1] Water Research Foundation, Alexandria/USA; [2] Water Research Foundation, Alexandria, VA/USA

12:20 **Poster pitches: Posters 1.09, 1.10, 1.12, 1.14, 1.16, 1.17, 3.19, 3**

12:40 Lunch break with posters and exhibition

MONDAY, 17 JUNE 2019 LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: S. Khan; University of New South Wales, Sydney/AUS

08:30 **PLENARY LECTURE**
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09:00 **PLENARY LECTURE**
The experience on practicing direct potable reuse in Windhoek, Namibia
P. van Rensburg[1]; [1] City of Windhoek, Windhoek/NAM

Room: MOA 5

New Perspectives in Reuse

Chair: B. Sheikh; Bahman Sheikh Water Reuse Consulting, San Francisco/USA

09:30 **Smart Ferti Tool: a smart fertigation solution as a decision support tool to irrigate with treated wastewater**
K. Helmi[1]; S. Grellier[1]; B. Teiser[2]; T. Dockhorn[3]; C. Siemers[4]; [1] Veolia Recherche et Innovation, Maisons-Laffitte/F; [2] AVB - Abwasserverband Braunschweig, Wendenburg/D; [3] TUBS - Technische Universität Braunschweig/D; [4] SEBS - Stadtentwässerung Braunschweig/D

09:50 **Constructed wetlands in Italy between national and proposed EU reuse regulations: viable option for water reuse in agriculture?**
S. Lavrnić[1]; A. Toscano[1]; [1] University of Bologna/I

10:10 **Potential of electrically driven membrane processes for water reuse applications**
D. Londoño[1]; E. Gilbert[1]; [1] EnviroChemie GmbH, Rossdorf/D

10:30 Coffee break with posters and exhibition

Room: MOA 5

Integrated Reuse Systems (industrial, urban, rural)

Chair: K. Krömer[1]; C. Jungfer[2]; [1] OOWV (Oldenburgisch-Ostfriesischer Wasserverband), Brake/D; [2] DECHEMA e.V., Frankfurt am Main/D

11:00 **Reuse of municipal wastewater for different purposes based on a modular treatment concept**
A. Nahrstedt[1]; B. Zimmermann[1]; A. Gaba[1]; A. Rohn[1]; K. Krömer[2]; Y. Tiemann[2]; C. Starke[3]; J. Lipnitzki[4]; U. Dölchow[4]; K. Mende[5]; [1] IWW Zentrum Wasser, Mülheim an der Ruhr/D; [2] OOWV (Oldenburgisch-Ostfriesischer Wasserverband), Brake/D; [3] inge GmbH, Greifenberg/D; [4] Lanxess Deutschland GmbH, Köln/D; [5] De.EnCon GmbH, Oldenburg/D

11:20 **Aquifer storage and recovery (ASR) to enable water reuse across sectors: wastewater from food industry turned into irrigation water for greenhouses**
K. Raat[1]; [1] KWR Watercycle Research Institute, Nieuwegein/NL

11:40 **Use of salty groundwater for toilet flushing to substitute drinking water – water and microbial quality**
H. Albrechtsen[1]; C. Lee[1]; B. Godskesen[1]; M. Vester[2]; H. Hoffmann[2]; M. Rygaard[1]; C. Jørgensen[3]; [1] Technical University of Denmark, Kgs. Lyngby/DK; [2] HOFOR, Copenhagen/DK; [3] DHI, Hørsholm/DK

12:00 **Upscaling of innovative PBM coating for Polyether Sulfone membranes within the VicInAqua pilot project**
E. Gukelberger[1]; F. Galiano[2]; R. Mancuso[3]; J. Mamo[4]; K. Hoevenaars[4]; J. Hoinkis[1]; B. Gabriele[3]; A. Figoli[2]; [1] Hochschule Karlsruhe - Technik und Wirtschaft, Karlsruhe/D; [2] Institute on Membrane Technology ITM-CNR, Rende (CS)/I; [3] University of Calabria, Rende (CS)/I; [4] AquaBioTech Group, Mosta/M

12:20 **Poster pitches: Posters 1.21, 1.25, 1.36, 3.01, 3.03, 3.18, 3.36, 3.37, 3.39**

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME

MONDAY, 17 JUNE 2019

AFTERNOON

Room: MOA 6-7

Groundwater Recharge

New managed aquifer recharge and biofiltration concepts

Chair: T. Grischek; HTW University of Applied Sciences Dresden/D

13:40 **Managed aquifer recharge: history, practice and applied research in Berlin, Germany**
A. Sperlich[1]; S. Schimmelpfennig[1]; G. Massmann[2]; J.E. Drewes[3]; U. Hübner[3]; R. Gnirss[1]; [1] Berliner Wasserbetriebe, Berlin/D; [2] Carl von Ossietzky Universität Oldenburg/D; [3] TU München/D

14:00 **Groundwater recharge as a key technology for water reuse**
H. Gerdes[1]; M. Ergh[1]; [1] BGS Umweltplanung GmbH, Darmstadt/D

14:20 **Multidimensional reactive transport model of trace organic compounds in an infiltration pond (Baumwerder Island, Berlin)**
A. Sanz Prat[1]; V. Burke[1]; J. Greskowiak[1]; I. Schröter[1]; C. Rohde[1]; J. Diether[2]; J. Frankenstein[2]; A. Sperlich[2]; G. Massmann[1]; [1] Carl von Ossietzky University of Oldenburg, Oldenburg/D; [2] Berliner Wasserbetriebe, Berlin/D

14:40 – 15:00 **Elimination of antibiotic resistant bacteria, viruses and indicator bacteria in sequential bio filtration for purification of WWTP effluent**
J. Ho[1]; J. Bühler[1]; U. Hübner[2]; J.E. Drewes[2]; A. Tiehm[1]; [1] TZW: DVGW-Technologiezentrum Wasser, Karlsruhe/D; [2] Technical University of Munich, Garching/D

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

Groundwater Recharge

Enhancement of managed aquifer recharge systems

Chair: M. Jekel; Technische Universität Berlin/D

15:50 **Enhancing the removal of trace organic contaminants in an ozone-biofiltration process for advanced water treatment and managed aquifer recharge**
R. Vaidya[1]; G. Salazar-Benites[2]; C. Wilson[2]; C. Bott[2]; [1] Virginia Tech, Blacksburg/USA; [2] Hampton Roads Sanitation District, Virginia Beach/USA

16:10 **UV/H_2O_2 as pre-treatment before managed aquifer recharge in drinking water production – impact on bulk water parameters and micropollutant abatement**
R. Wünsch[1]; J. Plattner[2]; F. Eugster[2]; C. David[3]; N. Rastetter[3]; R. Hochstrat[3]; J. Gebhardt[4]; P. Temmler[2]; R. Wülser[2]; U. von Gunten[5]; T. Wintgens[3]; [1] FHNW University of Applied Sciences and Arts Northwestern Switzerland/ Ecole Polytechnique Fédérale de Lausanne (EPFL), Muttenz/CH; [2] IWB (Industrielle Werke Basel), Basel/CH; [3] FHNW University of Applied Sciences and Arts Northwestern Switzerland, Muttenz/CH; [4] Xylem Services GmbH, Herford/D; [5] Ecole Polytechnique Fédérale de Lausanne (EPFL) / Eawag, Lausanne/CH

16:30 **The removal of emerging organic contaminants in managed aquifer recharge schemes to ensure a safe, sustainable and high quality water resource.**
P. Reeve[1]; I. Wallis[1]; J. Hutson[1]; H. Fallowfield[1]; [1] Flinders University, Adelaide/AUS

16:50 **Managing the urban water cycle in Berlin: Implementing barriers for trace organic compounds and antibiotic resistant bacteria**
R. Gnirss[1]; A. Sperlich[1]; M. Jekel[2]; C. Stange[3]; [1] Berliner Wasserbetriebe, Berlin/D; [2] TU Berlin/D; [3] DVGW-Technologiezentrum Wasser (TZW), Karlsruhe/D

17:10 **Recharge local water cycle from surface water and wastewater reuse**
S. DONNAZ[1]; M. Sanz[1]; [1] Suez International Treatment Infrastructure, RUEIL-MALMAISON/F

17:35 **2021 IWA Reuse Conference – Candidate Presentations** Room: MOA 6-7
YWRP Workshop Award

18:10 **POSTER AND EXHIBITION PARTY with drinks and buffet** (18:10 – 21:00)

MONDAY, 17 JUNE 2019 LECTURE PROGRAMME

AFTERNOON

Room: MOA 3

Direct Potable Reuse
Challenges in DPR

Chair: U. Miehe; Kompetenzzentrum Wasser Berlin/D

13:40 **Anaerobic secondary treatment and potable reuse: RO fouling and DBP formation**
A. Szczuka[1]; W. Mitch[2]; [1] Stanford University, STANFORD/USA; [2] Stanford University, Stanford, CA/USA

14:00 **Online monitoring of N-nitrosodimethylamine for assessing the removal of trace organic chemicals by reverse osmosis**
T. Fujioka[1]; H. Takeuchi[2]; H. Tanaka[2]; L. Nghiem[3]; H. Kodamatani[4]; [1] Nagasaki University, Nagasaki/J; [2] Kyoto University, Otsu/J; [3] University of Technology Sydney/AUS; [4] Kagoshima University, Kagoshima/J

14:20 **Evaluating disinfection byproduct regulations for limiting human health risk after ozone-biofiltration-GAC treatment for potable reuse**
E. Peterson[1]; S. Johnson[1]; S. Shiokari[1]; Y. Yu[1]; S. Cook[1]; R. Summers[1]; [1] University of Colorado Boulder/USA

14:40 – 15:00 **Development of a group contribution method to predict the mass transfer coefficients of small molecular weight neutral organics through RO membranes for potable reuse application**
D. Minakata[1]; R. Kibler[1]; M. Zhang[1]; L. Breitner[2]; K. Howe[3]; [1] Michigan Technological University, Houghton/USA; [2] Trussell Technologies. Inc., San Diego/USA; [3] University of New Mexico, Albuquerque/USA

15:20 Coffee break with posters and exhibition

Room: MOA 3

Direct Potable Reuse
Disruptive membrane treatments and their applications

Chair: P. Le-Clech; UNSW, Sydney/AUS

15:50 **Advances in forward osmosis to combine desalination and reuse**
G. Blandin[1]; J. Comas[2]; A. Verliefde[3]; P. Le-Clech[4]; I. Rodriguez-Roda[2]; [1] University of Girona, GIRONA/E; [2] Fundació Català de Recerca de l'Aigua (ICRA), Girona/E; [3] Ghent University (UGent), Ghent/B; [4] UNSW, Sydney/AUS

16:10 **FO-NF treatment of municipal wastewater for customized agricultural reuse**
A. Álvarez[1]; T. de la Torre[1]; J. Malfeito[1]; [1] Acciona Agua, El Prat de Llobregat/E

16:30 **Disruptive water reuse scheme based on Direct Ultrafiltration (DUF) of municipal wastewater**
D. Baaklini[1]; H. Humbert[1]; [1] Veolia, Aubervilliers/F

16:50 **A novel self-cleaning electrospun BiOBr/Ag photocatalyst membrane with UV exposure applied for membrane distillation treatment of textile wastewater.**
J. GUO[1]; [1] City University of Hong Kong, City University of Hong Kong/HK

17:10 **Water reclamation with hybrid powdered activated carbon / ceramic microfiltration: pilot studies for the removal of EfOM and contaminants of emerging concern**
R. Viegas[1]; E. Mesquita[1]; M. Campinas[1]; C. Almeida[2]; M. Rosa[1]; [1] LNEC – National Civil Engineering Laboratory, Lisbon/P; [2] Department of Toxicological and Bromatological Sciences, Faculty of Pharmacy, University of Lisbon, Lisbon/P

17:35 **2021 IWA Reuse Conference – Candidate Presentations** Room: MOA 6-7
YWRP Workshop Award

18:10 **POSTER AND EXHIBITION PARTY with drinks and buffet** (18:10 – 21:00)

LECTURE PROGRAMME

MONDAY, 17 JUNE 2019

AFTERNOON

Room: MOA 4

Industrial Reuse

Planning and assessment of industrial water reuse concepts

Chair: H. Olvera-Vargas[1]; M.-A. Sanz[2]; [1] National University of Singapore/SG; [2] Suez International Treatment Infrastructure, Rueil-Malmaison/F

13:40 **Sustainability requirements of wastewater management concepts for new industrial park developments in water-stressed regions**
S. Bauer[1]; A. Dell[1]; J. Behnisch[2]; H. Linke[1]; M. Wagner[2]; [1] Technische Universität Darmstadt, Institut für Geodäsie, Darmstadt/D; [2] Technische Universität Darmstadt/ Institut IWAR, Darmstadt/D

14:00 **Dealing with uncertainty in the conceptual design of industrial water reuse networks**
D. Pohl[1]; M. Beier[2]; S. Köster[2]; [1] Leibniz University Hannover, Hannover/D; [2] Leibniz University Hannover, Institute of Sanitary Engineering and Waste Management (ISAH), Hannover/D

14:20 **development of a decision support tool to foster water reuse**
M. Jacob[1]; B. Delahaye[2]; J. Bayart[3]; [1] Total S.A., LACQ/F; [2] Total S.A., Paris/F; [3] Quantis, Lausanne/CH

14:40 **Zero Liquid Discharge by reuse of wastewater in an office complex in India**
M. Kureck[1]; [1] Koch Membrane Systems, Aachen/D

15:00 **Poster pitches: Posters 1.07, 1.08, 1.11, 1.15, 1.18, 1.19, 1.37, 2.01**

15:20 Coffee break with posters and exhibition

Room: MOA 4

Agricultural Reuse

Role of reclaimed water in agricultural irrigation

Chair: A. Adin; Hebrew University of Jerusalem, Herzliya/IL

15:50 **Motivations for increased use of recycled water for agricultural irrigation**
B. Sheikh[1]; K. Nelson[2]; A. Thebo[3]; B. Haddad[4]; T. Gardner[5]; J. Kelly[5]; A. Adin[6]; R. Tsuchihashi[7]; N. Funamizu[8]; S. Spurlock[9]; K. VandenHeuvel; [1] Bahman Sheikh Water Reuse Consulting, San Francisco, CA/USA; [2] University of California, Berkeley, Berkeley/USA; [3] Pacific Institute, Oakland/USA; [4] univversity of California, Santa Cruz, Santa Cruz/USA; [5] ARRIS Water, Highgate, SA/AUS; [6] Hebrew University of Jerusalem, Jerusalem/IL; [7] AECOM, San Francisco, CA/USA; [8] Hokkaido University, Sapporo/J; [9] Denver Urban Gardens, Denver, CO/USA; The Water Research Foundation, Alexandria, VA/USA

16:10 **Risks of pollution and its assessment in wastewater irrigated agricultural systems (ROUSSEAU)**
M. Salgot[1]; M. Folch[1]; S. Diaz-Cruz[2]; D. Barceló[2]; A. Fernandez-Alba[3]; M. Bueno[3]; G. Garcia[2]; A. Soler[2]; [1] Universitat de Barcelona, Barcelona/E; [2] Institute of Environmental Assessment and Water Research, Spanish Council for Scientific Research (IDAEA- CSIC), Barcelona/E; [3] Almeria University, Almeria/E

16:30 **Sustainable wastewater reuse for agricultural application**
A. Lazic[1]; J. Scheideler[2]; C. Baresel[3]; [1] Xylem Inc., Sundbyberg/S; [2] Xylem Services GmbH, Herford/D; [3] IVL Swedish Environmental Research Institute, Stockholm/S

16:50 **Cultivation of Capsicum chinense seedlings with different irrigation water sources**
M. Gomes Ribeiro[1]; N. Felix Bomfim[1]; S. Gavazza[1]; L. Florencio[1]; W. Leite[1]; M. Takayuki Kato[1]; [1] Federal University of Pernambuco, Recife/BR

17:10 **Matching agricultural freshwater supply and demand: using recycled water for subirrigation purposes**
R. Bartholomeus[1]; M. van Huijgevoort[2]; A. van Loon[2]; G. van den Eertwegh[3]; K. Raat[2]; [1] KWR Watercycle Research Institute & Wageningen University, Nieuwegein/NL; [2] KWR Watercycle Research Institute, Nieuwegein/NL; [3] KnowH2O, Berg en Dal/NL

17:35 **2021 IWA Reuse Conference – Candidate Presentations**
YWRP Workshop Award
Room: MOA 6-7

18:10 **POSTER AND EXHIBITION PARTY with drinks and buffet** (18:10 – 21:00)

MONDAY, 17 JUNE 2019 LECTURE PROGRAMME

AFTERNOON

Room: MOA 5

Risk Management

Risk management of reuse schemes

Chair: M. Al-Azzawi[1]; S. Khan[2]; [1] Technische Universität München, Garching/D; [2] University of New South Wales, Sydney/AUS

13:40 **The status of de facto potable reuse – A national reconnaissance of Germany**
S. Karakurt[1]; U. Hübner[1]; J.E. Drewes[1]; [1] Technical University of Munich, Garching-Munich/D

14:00 **Risk management for drinking water production in a partially closed water cycle – The Berlin case**
G. Grützmacher[1]; S. Schimmelpfennig[1]; G. Lorenzen[1]; D. Petersohn[1]; J. Feddern[1]; [1] Berliner Wasserbetriebe, Berlin/D

14:20 **Safe wastewater reuse in the United Arab Emirates; safety assessment from concept to realisation**
P. Smeets[1]; M. Dingemans[1]; M. Stenzel[2]; [1] KWR Watercycle Research Institute, Nieuwegein/NL; [2] TANQIA SIYANA, Fujairah/UAE

14:40 **Water reuse as a sustainable water scarcity risk reduction measure: Integrating risk and sustainability assessment frameworks**
A. Mueller[1]; T. Avellán[2]; J. Schanze[3]; [1] Technische Universität Dresden and United Nations University – Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [2] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [3] Technische Universität Dresden, Dresden/D

15:00 **Poster pitches: Posters 2.06, 3.04, 3.06, 3.08**

15:20 Coffee break with posters and exhibition

Room: MOA 5

Risk Management

Risk mitigation strategies

Chair: P. Jeffrey; Cranfield University, Cranfield/UK

15:50 **Facilitating adoption of MBR for water reuse by improved risk management and development of better guidance**
P. Le-Clech[1]; A. Branch[1]; C. Robillot[2]; [1] UNSW, Sydney/AUS; [2] Headstart Development, Brisbane/AUS

16:10 **The risk of rainwater reuse in household installations**
L. Vanysacker[1]; B. De Gusseme[2]; B. Buysschaert[2]; K. Van den Belt[3]; B. De Winter[1]; [1] De Watergroep, Brussel/B; [2] FARYS/TMVW, Ghent/B; [3] Flanders Environmental Agency, Brussel/B

16:30 **Assessment of elevated risk by antibiotic resistance in indirect reuse of treated livestock wastewater for irrigation**
R. Honda[1]; M. Lin[1]; T. Hirata[1]; H. Hara-Yamamura[1]; R. Yamamoto-Ikemoto[1]; T. Watanabe[2]; [1] Kanazawa University, Kanazawa/J; [2] Yamagata University, Tsuruoka/J

16:50 **Quantitative microbial risk assessment of non-potable water reuse by MBR and CAS based on long-term virus monitoring data**
K. Sasaki[1]; D. Sugita[2]; N. Yamashita[3]; H. Tanaka[4]; [1] Kyoto University, Graduate School of Engineering, Umebayashi, Otsu city, Shiga prefecture, Japan/D; [2] Kyoto Universty, Amagasaki city/J; [3] Ehime University, Matsuyama city/J; [4] Kyoto Universty, Otsu city/J

17:10 **Risk-based guidance for onsite non-potable water systems**
M. Jahne[1]; M. Schoen[2]; J. Garland[1]; [1] United States Environmental Protection Agency (US-EPA), Cincinnati, OH/USA; [2] Soller Environmental, Inc., Berkeley, CA/USA

17:35 **2021 IWA Reuse Conference – Candidate Presentations** Room: MOA 6-7
YWRP Workshop Award

18:10 **POSTER AND EXHIBITION PARTY with drinks and buffet** (18:10 – 21:00)

LECTURE PROGRAMME

TUESDAY, 18 JUNE 2019

MORNING

Room: MOA 6-7

Chair: J. Lahnsteiner; VA TECH WABAG GmbH, Vienna/A

08:30 **PLENARY LECTURE**
Murcia's experience in the use of reclaimed water for agricultural irrigation
P.J. Simón Andreu[1]; [1] ESAMUR, Espinardo/E

09:00 **PLENARY LECTURE**
Economic analysis of water reuse – pricing long-term water security
G. Delacamara[1]; [1] IMDEA Water, Madrid/E

Room: MOA 6-7

Potable Reuse
New concepts of potable reuse

Chair: R. Gnirss; Berliner Wasserbetriebe, Berlin/D

09:30 **Water Research Foundation Potable Reuse Program**
J. Minton[1]; J. Mattingly[2]; [1] Water Research Foundation, Alexandria/USA; [2] The Water Research Foundation, Alexandria, VA/USA

09:50 **Planned indirect potable water reuse to overcome water deficit in Vendée (France): "Jourdain" project as an experimental demonstrator**
J. Orsonil[1]; [1] VENDEE EAU, LA ROCHE SUR YON/F

10:10 **Startup, Operation, and Optimization of HRSD's 3.8 MLD SWIFT Research Center for Advanced Water Treatment and Managed Aquifer Recharge**
S. Hogard[1]; G. Salazar-Benites[2]; R. Pearce[1]; P. Buehlmann[1]; T. Nading[3]; C. Wilson[2]; C. Bott[2]; [1] Virginia Tech, Blacksburg/USA; [2] Hampton Roads Sanitation District, Virginia Beach/USA; [3] Jacobs Engineering Group Inc., Denver/USA

10:30 Coffee break with posters and exhibition

Room: MOA 6-7

Potable Reuse
New groundwater recharge concepts

Chair: E. Firmenich[1]; P. Gislette[2]; [1] KfW Development Bank, Franfurt Main/D; [2] Suez International Treatment Infrastructure, Rueil-Malmaison/F

11:00 **Soil aquifer treatment and subsurface-water interactions during groundwater recharge**
L. Peri[1]; K. Pagilla[1]; [1] University of Nevada, Reno, Nevada/USA

11:20 **Improving water resiliency and reducing potential water stress by advanced water reclamation and aquifer storage**
K. Pagilla[1]; R. Warner[2]; [1] University of Nevada, Reno, Reno/USA; [2] Nevada Water Innovation Institute/Washoe County, Reno/USA

11:40 **Coupling high-rate infiltration trench technology with a plug-flow bioreactor (SMARTplus) for indirect potable reuse via groundwater recharge**
S. Karakurt[1]; [1] Technical University Munich, Garching-Munich/D

12:00 **Options for implementing denitrification in Sequential Managed Aguifer Recharge Technology (SMART) systems**
J. Filter[1]; C. Bosinsky[1]; A. Ruhl[1]; M. Jekel[1]; [1] Technische Universität Berlin/D

12:20 **Poster pitches: Posters 1.26, 1.31, 1.34, 3.12**

12:40 Lunch break with posters and exhibition

TUESDAY, 18 JUNE 2019

LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: J. Lahnsteiner; VA TECH WABAG GmbH, Vienna/A

08:30 **PLENARY LECTURE**
Murcia's experience in the use of reclaimed water for agricultural irrigation
P.J. Simón Andreu[1]; [1] ESAMUR, Espinardo/E

09:00 **PLENARY LECTURE**
Economic analysis of water reuse – pricing long-term water security
G. Delacamara[1]; [1] IMDEA Water, Madrid/E

Room: MOA 3

Innovative Treatment Technologies & Applications
Disruptive technologies for hard-to-treat wastewater

Chair: B. Jefferson; Cranfield University, Cranfield/UK

09:30 **Systematic determination of the inert COD of industrial wastewaters in the context of COD fractionation**
A. Yogendran[1]; M. Beier[1]; S. Köster[1]; [1] Leibniz University Hannover, Institute of Sanitary Engineering and Waste Management (ISAH), Hannover/D

09:50 **A novel gas diffusion electrode reactor for the treatment of highly concentrated membrane fabrication wastewater.**
O. Garcia-Rodriguez[1]; A. Peh Shu Fang[1]; H. Olvera-Vargas[1]; O. Lefebvre[1]; [1] National University of Singapore, Singapore/SGP

10:10 **A study of synergistic oxidation between ozone and chlorine on benzalkonium chloride removal for municipal wastewater reclamation RO (mWRRO) concentrate treatment**
N. Huang[1]; W. Wang[1]; Z. Xu[1]; Q. Wu[2]; H. Hu[1]; [1] Tsinghua University, Beijing/CN; [2] Tsinghua University, Shenzhen/CN

10:30 Coffee break with posters and exhibition

Room: MOA 3

Innovative Treatment Technologies & Applications
Control and applications of biological processes

Chair: J. Müller[1]; S. Mutnuri[2]; [1] Technische Universität München, Garching/D; [2] BITS Pilani K K Birla Goa campus, Goa/IND

11:00 **Layered quorum quenching media for more sustainable biofouling control in membrane bioreactors**
K. Choo[1]; H. Yu[2]; X. Zhang[1]; K. Lee[1]; [1] Kyungpook National University, Daegu/ROK; [2] Harbin Institute of Technology, Harbin/CN

11:20 **Adaptation of marine ANAMMOX bacterium to low salinity and organics to simulate complete nitrogen removal saline wastewaters**
M. Ali[1]; D. Shaw[1]; P. Saikaly[1]; [1] King Abdullah University of Science and Technology (KAUST), Thuwal/SAR

11:40 **Microalgae cultivation in a ceramic membrane photobioreactor for nutrients removal from secondary effluent of WWTP and microalgal biomass production**
Q. Zhang[1]; [1] , No. 2279, lishui road, nanshan district, Shenzhen City of Guangdong Province/CN

12:00 **awaregio – Modular wastewater treatment processes for the reuse of wastewater, nutrients and energy**
H. Risse[1]; T. Breuer[1]; [1] FiW at Aachen University (RWTH), Aachen/D

12:20 **Poster pitches: Posters 3.05, 3.09, 3.10, 3.13, 3.14, 3.15, 3.22, 3.31**

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME

TUESDAY, 18 JUNE 2019

MORNING

Room: MOA 6-7

Chair: J. Lahnsteiner; VA TECH WABAG GmbH, Vienna/A

08:30 **PLENARY LECTURE**
Murcia's experience in the use of reclaimed water for agricultural irrigation
P.J. Simón Andreu[1]; [1] ESAMUR, Espinardo/E

09:00 **PLENARY LECTURE**
Economic analysis of water reuse – pricing long-term water security
G. Delacamara[1]; [1] IMDEA Water, Madrid/E

Room: MOA 4

Agricultural Reuse
Transfer of contaminants into irrigated crops

Chair: T. de la Torre; Acciona Agua, El Prat de Llobregat/ES

09:30 **Agricultural reuse of treated municipal wastewater and the transfer of contaminants of concern into food**
H. Mass[1]; M. Moeder[1]; C. Riemenschneider[1]; B. Seiwert[1]; T. Reemtsma[1]; [1] Helmholtz Centre for Environmental Research-UFZ, Leipzig/D

09:50 **The reuse of untreated wastewater in a small town in India A case study from Vijayapura, Karnataka**
V. Srikantaiah[1]; [1] Biome Environment Trust, Bengaluru/IND

10:10 **Distribution of selected pharmaceuticals between soil and plants when irrigated by treated municipal wastewater**
J. Wanner[1]; [1] University of Chemistry and Technology Prague, Praha 6/CZ

10:30 Coffee break with posters and exhibition

Room: MOA 4

Agricultural Reuse
Benefits of agricultural irrigation with reclaimed water

Chair: A. Bliedung[1]; P. Noophan [2]; [1] TU Braunschweig/D; [2] Faculty of Engineering, Kasetsart University, Bangkok/T

11:00 **Urban raw or treated wastewater drip-irrigation for lettuces and leeks crops: chemical and microbiological properties of soil and plants**
A. Mange[1]; N. Wéry[2]; N. Ait Mouheb[1]; [1] IRSTEA - UMR G-EAU, Montpellier/F; [2] LBE, Univ Montpellier, INRA, Narbonne/F

11:20 **Impact of treated wastewaters reused for irrigation in strawberry cultivation**
E. Coppini[1]; D. Fibbi[1]; R. Camisa[1]; M. Bruzzoniti[2]; E. Giordani[3]; L. Rivoira[2]; M. Castiglioni[2]; M. Del Bubba[4]; [1] GIDA SpA, Prato/I; [2] Department of Chemistry, University of Turin, Turin/I; [3] Department of Agri-Food and Environmental Science, University of Florence, Florence/I; [4] Department of Chemistry „Ugo Schiff", University of Florence/I

11:40 **High Yield and Nutritional Quality of Forage Rice (Oryza sativa) Achieved by Continuous Irrigation of Treated Municipal Wastewater without Synthetic Fertilizers in Pilot- and Real-Scale Experiments**
H. Arichi[1]; T. Watanabe[2]; L. Phung[3]; M. Nishiyama[2]; H. Kato[4]; D. Pham[2]; [1] Tsuruoka City Government, Tsuruoka/J; [2] Yamagata University, Tsuruoka/J; [3] Iwate University, Morioka/J; [4] Tohoku University, Sendai/J

12:00 **The HypoWave-System – Nutrient and heavy metal flows within an integrated system of adapted wastewater treatment and subsequent water reuse in a hydroponic system**
A. Bliedung[1]; T. Dockhorn[1]; J. Germer[2]; B. Fiebig[3]; G. Peters[4]; P. Rossmanith[5]; A. Wieland[6]; [1] TU Braunschweig, Institute of Sanitary and Environmental Engineering, Braunschweig/D; [2] University of Hohenheim, Institute of Agricultural Sciences in the Tropics, Stuttgart/D; [3] Abwasserverband Braunschweig, Braunschweig/D; [4] Wolfsburger Entwässerungsbetriebe, Braunschweig/D; [5] ACS-Umwelttechnik GMBH & Co. KG, Rielasingen-Worbingen/D; [6] Xylem Services GmbH, Herford/D

12:20 **Poster pitches: Posters 1.06, 1.20, 1.23, 1.30, 1.39**

12:40 Lunch break with posters and exhibition

TUESDAY, 18 JUNE 2019

LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: J. Lahnsteiner; VA TECH WABAG GmbH, Vienna/A

08:30 **PLENARY LECTURE**
Murcia's experience in the use of reclaimed water for agricultural irrigation
P.J. Simón Andreu[1]; [1] ESAMUR, Espinardo/E

09:00 **PLENARY LECTURE**
Economic analysis of water reuse – pricing long-term water security
G. Delacamara[1]; [1] IMDEA Water, Madrid/E

Room: MOA 5

Risk Management
Validation procedures

Chair: A. Nahrstedt; IWW Water Centre, Muelheim Ruhr/D

09:30 **Bioanalytical tools for monitoring of recycled water – advisory panel recommendations for the State of California (USA)**
K. Maruya[1]; [1] SCCWRP, Costa Mesa/USA

09:50 **Development of a Validation Process for UV-AOPs for Potable Water Reuse**
S. Khan[1]; A. Branch[1]; [1] University of New South Wales, Sydney/AUS

10:10 **Proxies to monitor the inactivation of viruses by ozone**
C. Wolf[1]; A. Pavese[1]; U. von Gunten[2]; T. Kohn[1]; [1] Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne/CH; [2] Ecole Polytechnique Fédérale de Lausanne (EPFL) / Eawag, Lausanne / Dübendorf/CH

10:30 Coffee break with posters and exhibition

Room: MOA 5

Social & Economic Perspectives
Economic and sustainability perspectives

Chair: A. Hahn[1]; J. Wanner[2]; [1] United Nations University - Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [2] University of Chemistry and Technology Prague/CZ

11:00 **Economic viability of recycled water scheme – Can we afford it?**
A. LISTOWSKI[1]; [1] University of Technology Sydney, Newington/AUS

11:20 **Economic benefits of indirect potable reuse in Reno, Nevada**
L. Haak[1]; L. Perry[2]; R. Warner[2]; K. Pagilla[1]; [1] University of Nevada, Reno, Reno/USA; [2] Washoe County CSD, Reno/USA

11:40 **Using cost-benefit analysis to assess economic interests of integrated and multi-purposes reuse scenarios: Cannes basin case-study**
R. DECLERCQ[1]; [1] ECOFILAE, Montpellier/F

12:00 **Sustainability assessment of water reuse technologies – Application of a decision support tool in international case studies**
K. Wencki[1]; V. Thöne[1]; D. Becker[2]; K. Krömer[4]; I. Sattig[4]; G. Lischeid[5]; M. Zimmermann[3]; [1] IWW Water Centre, Mülheim an der Ruhr/D; [2] DECHEMA, Frankfurt am Main/D; [3] ISOE - Institut fuer sozial-oekologische Forschung, Frankfurt am Main/D; [4] OOWV (Oldenburgisch-Ostfriesischer Wasserverband), Brake/D; [5] Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e.V., Müncheberg/D

12:20 **Poster pitches: Posters 1.13, 2.03**

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME TUESDAY, 18 JUNE 2019

AFTERNOON

Room: MOA 6-7

Potable Reuse

Potable reuse (surface water augmentation and groundwater recharge)

Chair: M. Beery[1]; A. Olivieri[2]; [1] akvola Technologies GmbH, Berlin/D; [2] EOA, INC., Oakland/USA

13:40 **Bank filtration at highly polluted rivers**
T. Grischek[1]; C. Sandhu[2]; F. Musche[2]; P. Otter[2]; H. Boernick[3]; [1] HTW University of Applied Sciences Dresden, Dresden/D; [2] HTW Dresden, Dresden/D; [3] TU Dresden, Dresden/D

14:00 **A novel measurement of MBR integrity to augment monitoring in potable reuse applications**
S. Katz[1]; P. Cote[2]; J. Citulski[1]; D. Mosqueda-Jimenez[1]; [1] SUEZ Water Technologies & Solutions, Oakville/CDN; [2] COTE Membrane Separation, Ltd, Hamilton/CDN

14:20 **Non RO based treatment trains for reuse – A solution for inland facilities**
J. Scheideler[1]; [1] Xylem Services GmbH, Herford/D

14:40 – 15:00 **UV advanced oxidation processes for potable reuse: Pilot study at the largest recycled water treatment facility in Northern California**
M. Stefan[1]; M. Kwon[1]; P. Baltar[2]; Z. Helsley[2]; S. McDermid[1]; A. Royce[1]; [1] Trojan Technologies, London, Ontario/CDN; [2] Santa Clara Valley Water District, Santa Clara, CA/USA

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

Small-Scale/Decentralized Systems

Chair: T. Fujioka; Nagasaki University, Nagasaki/JP

15:50 **The water-energy regenerative house**
M. Ramezanianpour[1]; M. Sivakumar[2]; H. Chen[1]; T. Vessey[1]; [1] Ara Institute of Canterbury, Christchurch/NZ; [2] University of Wollongong, Wollongong/AUS

16:10 **Sustainability and success of operation of decentralized, small scale SUWA systems: a case study in central Mexico**
L. Benavides[1]; T. Avellán[1]; A. Müller[1]; A. Hahn[1]; S. Caucci[1]; C. Paillés[2]; E. Muñoz[2]; A. Velasco[2]; [1] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [2] Fideicomiso de Infraestructura Ambiental de los Valles de Hidalgo (FIAVHI), Tepeji del Rio/MEX

16:30 **Improving water quality and pathogen removal using a low-cost anaerobic wastewater filtration – applicable for small-scale agricultural production in developing countries**
K. Kätzl[1]; M. Lübken[1]; G. Uzun[1]; T. Gehring[2]; E. Nettmann[1]; K. Stenchly[3]; M. Wichern[1]; [1] Ruhr-Universität Bochum, Bochum/D; [2] Ruhr-Universität Bochum, Bocum/D; [3] Universität Kassel, Witzenhausen/D

16:50 **Assessment of source separated sanitation technologies for sustainable wastewater management**
T. Zinati Shoa[1]; A. Wriege-Bechtold[2]; B. Zinati Shoa[3]; M. Barjenbruch[2]; M. Lenzen[4]; [1] Technical University of Berlin, Berlrin/D; [2] Technical University of Berlin, Department of urban water management, Berlin/D; [3] Technical University of Shahrood, /IR; [4] TU Berlin, El Gouna/ET

17:10 – 17:30 **High-integrate membrane bioreactor for wastewater treatment and reclamation in rural areas of China**
Q. Wang[1]; L. Zang[2]; Z. Wu[1]; [1] Tongji university, Shanghai/CN; [2] Shanghai Zizheng Environmental Technology Co., Ltd, Shanghai/CN

17:50 **IWA WATER REUSE SPECIALIST GROUP MEETING** (17:50-18:20) Room: MOA 6-7

19:00 **CONFERENCE DINNER** at Zollpackhof, Elisabeth-Abegg-Str. 1, Berlin (19:00-23:00)
(separate registration necessary)

TUESDAY, 18 JUNE 2019 LECTURE PROGRAMME

AFTERNOON

Room: MOA 3

Innovative Treatment Technologies & Applications

Trends in membrane distillation

Chair: K. Choo[1]; A. Sperlich[2]; [1] Kyungpook National University, Daegu/ROK; [2] Berliner Wasserbetriebe, Berlin /D

13:40 **Emerging micropollutants removal by combined persulfate oxidation – membrane distillation process for wastewater reuse**
F. Hai[1]; [1] University of Wollongong, Wollongong/AUS

14:00 **Electrospun nanofiber membranes incorporating PDMS-aerogel superhydrophobic coating with enhanced flux and improved selectively for membrane distillation**
B. Deka[1]; [1] City University Hong Kong, Hong Kong/HK

14:20 **A real seawater membrane distillation system development by reproducible superhydrophobic TiO_2 electrospun membrane with anti-fouling and anti-wetting function**
J. GUO[1]; [1] City University of Hong Kong, City University of Hong Kong/HK

14:40 **Poster pitches: Posters 3.17, 3.21, 3.23, 3.26, 3.27, 3.28, 3.29, 3.30, 3.38**

15:20 Coffee break with posters and exhibition

Room: MOA 3

Extending the Limits of Traditional Treatment

Chair: J. Hu; National University of Singapore/SG

15:50 **A strategical planning and assessment framework to design municipal wastewater treatment plants from a resource recovery perspective**
P. Kehrein[1]; [1] TU Delft, Den Haag/NL

16:10 **Start-up and nitrogen removal performance of SNAD process in a pilot-scale oxidation ditch**
X. Zhang[1]; X. Li[2]; Y. Liu[2]; J. Zhang[3]; [1] Fuzhou University, Fuzhou University, Fuzhou, Fujian, PR China/CN; [2] Fuzhou University, Fuzhou/CN; [3] Fujian Provincial Academy of Environmental Science, Fuzhou/CN

16:30 **Membrane bioreactors (MBR) in municipal WWTPs as turning point in wide-ranging water reuse?**
K. Westling[1]; C. Baresel[1]; S. Andersson[1]; M. Narongin[1]; [1] IVL Swedish Environmental Research Institute, Stockholm/S

16:50 **Integrated use of real-time sensors and process modelling to optimize wastewater disinfection by peracetic acid**
J. Foschi[1]; M. Cascio[1]; A. Turolla[1]; M. Antonelli[1]; [1] Politecnico di Milano, Milano/I

17:10 **Graphene oxide cross-linking polydopamine reverse osmosis (GO-PDA-RO) membrane for desalination and water reclamation**
N. Khanzada[1]; [1] City University of Kong Kong, Hong Kong/HK

17:30 **Electrochemical treatment of typical micropollutants from secondary effluent using a three-dimensional electrode reactor with BDD anode and SnO_2-SbO_2 doped granular activated carbon as particle electrode**
B. Shen[1]; X. Wen[1]; W. Qin[1]; [1] Tsinghua University, Beijing/CN

17:50 **IWA WATER REUSE SPECIALIST GROUP MEETING** (17:50-18:20) Room: MOA 6-7

19:00 **CONFERENCE DINNER** at Zollpackhof, Elisabeth-Abegg-Str. 1, Berlin (19:00-23:00)
(separate registration necessary)

LECTURE PROGRAMME TUESDAY, 18 JUNE 2019

AFTERNOON

Room: MOA 4

Agricultural Reuse
Environmental impacts

Chair: A. Bahri[1]; M. Helmecke[2]; [1] National Agricultural Institute of Tunisia, Le Belvédère-Tunis/TN; [2] Umwelt-bundesamt, Dessau/D

13:40 **Quantitative microbial risk from wastewater reuse for irrigation in a peri-urban setting**
J. Weidhaas[1]; M. Olsen[1]; [1] University of Utah, Salt Lake City/USA

14:00 **Tackling wastewater reuse issues in Tunisia with a multithematic and multiscale approach**
J. BERAUD[1]; T. JALABERT[2]; H. KENNOU[3]; [1] Société du Canal de Provence, Aix-en-Provence Cedex 5/F; [2] Société des Eaux de Marseille, Marseille/F; [3] Institut Méditerranée de l'Eau, Marseille/F

14:20 **Reduction of greenhouse gas emissions from paddy fields in response to continuous irrigation with treated municipal wastewater**
L. Phung Duc[1]; D. Pham Viet[2]; S. Masuda[3]; F. Takakai[4]; N. Kaku[2]; M. Nishiyama[2]; T. Watanabe[2]; [1] Iwate University, Morioka/J; [2] Yamagata University, Tsuruoka/J; [3] National Institute of Technology, Akita College, Akita/J; [4] Akita Prefecture University, Akita/J

14:40 **Essential oil production in Brasil (*Ocimum basilicum*) irrigated with treated effluent**
A. MELO[1]; E. GOMES[1]; W. LEITE[2]; M. KATO[2]; K. BARROS[1]; [1] Federal University of Pernambuco, Caruaru/BR; [2] Federal University of Pernambuco, Recife/BR

15:00 **Poster pitches: Posters 1.01, 1.02, 1.04, 1.05, 2.04**

15:20 Coffee break with posters and exhibition

Room: MOA 4

Case Studies: from 0% up to 100% Reuse

Chair: R. Mujeriego; ASERSA, Spanish Association for Sustainable Water Reuse, Barcelona/ES

15:50 **Water reuse in process industry – case studies and impact**
C. Jungfer[1]; T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D

16:10 **Overcoming urban water scarcity through the reuse of energy-efficient treated grey and black water: SEMIZENTRAL's large-scale plant case study**
T. Blach[1]; M. Engelhart[1]; M. Wagner[1]; [1] TU Darmstadt, Institute IWAR, Darmstadt/D

16:30 **Feasibility of water reclamation for agricultural and urban reuse in Northern Franconia, Germany**
C. Schwaller[1]; F. Zumkeller[2]; B. Helmreich[1]; D. Gondhalekar[1]; H. Gerdes[3]; J.E. Drewes[1]; [1] Technische Universität München/D; [2] Regierung von Unterfranken, Würzburg/D; [3] BGS Umweltplanung GmbH, Darmstadt/D

16:50 **Demonstration of environment friendly water reclamation plant: Beijing Bishui Underground Water Reclamation Plant case study**
X. Cao[1]; H. Pang[1]; P. Li[1]; [1] China Water Environment Group Limited, Beijing/CN

17:10 **ZLD installations in India for F&B, chemistry and metal processing**
E. Döpkens[1]; [1] REMONDIS Aqua Industrie GmbH Co KG, Hannover/D

17:30 **Up to 100% Reuse: Zero Liquid Discharge versus production-integrated water management**
E. Billenkamp[1]; [1] EnviroChemie GmbH, Rossdorf/D

17:50 **IWA WATER REUSE SPECIALIST GROUP MEETING** (17:50-18:20) Room: MOA 6-7

19:00 **CONFERENCE DINNER** at Zollpackhof, Elisabeth-Abegg-Str. 1, Berlin (19:00-23:00)
(separate registration necessary)

TUESDAY, 18 JUNE 2019 LECTURE PROGRAMME

AFTERNOON

Room: MOA 5

Social & Economic Perspectives

Regional perspectives

Chair: J. Koti[1]; D. Ziegler[2]; [1] University of Duisburg-Essen/D; [2] Koblenz University of Applied Sciences, Koblenz/D

13:40 **Designing transdisciplinary research to solve complex problems - A comparative case study of wastewater management in Latin America and the Caribbean**
A. Hahn[1]; S. Kirschke[1]; T. Avellán[1]; S. Caucci[1]; L. Benavides[1]; [1] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D

14:00 **Alternative drivers for potable and nonpotable reuse**
J. Mattingly[1]; J. Minton[2]; [1] The Water Research Foundation, Alexandria, VA/USA; [2] The Water Research Foundation, Alexandria VA/USA

14:20 **The reuse as a reinvention of wastewater use**
A. Collard[1]; N. Ait Mouheb[1]; R. Barbier[2]; [1] IRSTEA - UMR G-EAU, Montpellier/F; [2] UMR GESTE, Irstea, ENGEES, Strasbourg/F

14:40 – 15:00 **Recent developments on potable reuse in South East Queensland**
S. Khan[1]; [1] University of New South Wales, Sydney/AUS

15:20 Coffee break with posters and exhibition

Room: MOA 5

Developing Risk Assessment Models

Microbial and chemical components

Chair: H. Hu; Tsinghua University, Beijing/CN

15:50 **Rolling literature review on pathogen reduction by water treatment processes**
P. Smeets[1]; K. Linden[2]; U. Miehe[3]; [1] KWR Watercycle Research Institute, Nieuwegein/NL; [2] University of Colorado-Boulder, Boulder/USA; [3] Kompetenzzentrum Wasser Berlin (KWB), Berlin/D

16:10 **Application of a model for supporting risk assessment of emerging contaminants in the context of wastewater reuse for irrigation**
R. Delli Compagni[1]; F. Polesel[2]; K. von Borries[2]; Z. Zhang[2]; M. Gabrielli[1]; A. Turolla[1]; S. Trapp[2]; L. Vezzaro[2]; M. Antonelli[1]; [1] Politecnico di Milano, Milan/I; [2] Technical University of Denmark (DTU), Copenaghen/DK

16:30 **Virus detection methods for water reuse applications**
K. Wigginton[1]; N. Rockey[1]; [1] University of Michigan, Ann Arbor/USA

16:50 **Flow cytometric monitoring of a German pilot study for treating municipal wastewater to different water quality standards**
A. Nocker[1]; B. Zimmermann[1]; A. Nahrstedt[1]; K. Krömer[2]; Y. Tiemann[2]; [1] IWW Water Centre, Muelheim an der Ruhr/D; [2] OOWV (Oldenburgisch-Ostfriesischer Wasserverband), Brake/D

17:10 **Quantitative exposure and risk assessments of sequential biofiltration within a potable reuse treatment train**
V. Zhiteneva[1]; J. Rodriguez[1]; M. Ehre[2]; J.E. Drewes[1]; U. Hübner[1]; [1] Technical University of Munich, Garching/D; [2] Technical University of Munich, Munich/D

17:30 **Reduction of viruses using a semi-industrial and near-natural system for advanced wastewater treatment**
C. Rien[1]; H. Selinka[2]; R. Szewzyk[2]; S. Karakurt[3]; J.E. Drewes[3]; [1] German Enviroment Agency, Berlin/D; [2] German Environment Agency, Berlin/D; [3] Technical University of Munich/D

17:50 **IWA WATER REUSE SPECIALIST GROUP MEETING** (17:50-18:20) Room: MOA 6-7

19:00 **CONFERENCE DINNER** at Zollpackhof, Elisabeth-Abegg-Str. 1, Berlin (19:00-23:00)
(separate registration necessary)

LECTURE PROGRAMME

WEDNESDAY, 19 JUNE 2019

MORNING

Room: MOA 6-7

Chair: J.E. Drewes; Technische Universität München, Garching/D

PLENARY SESSION

08:30 **Overcoming water stress by water reclamation and reuse**
E. Van Houtte[1]; [1] IWVA, Koksijde/B

The Swiss approach in reducing trace organic chemicals in the aquatic environment
C. McArdell[1]: [1] Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf/CH

Tackling water shortage – the Singapore approach
J. Rose[1], M. Rose[1], [1] Michigan State University, East Lansing, MI/USA

09:10 **PANEL DISCUSSION**
POSTER AWARDS

Room: MOA 6-7

Operation, Maintenance and Service Arrangements

Chair: D. Becker; DECHEMA e.V., Frankfurt am Main/D

09:30 **Extension of water reuse in Windhoek**
K. Rudolph[1]; J. Hilbig[2]; K. Stroemer[3]; S. Weil[4]; [1] IEEM gGmbH, Witten/D; [2] IEEM gGmbH - Institute of Environmental Engineering and Management at Witten/Herdecke University, Witten/D; [3] GWFA - Global Water Franchise Agency GmbH, Witten/D; [4] REMONDIS (Aqua) Australia Pty Ltd., Sidney/AUS

09:50 **Treatment of wastewater containing powdered activated carbon with inside-to-Out ultrafiltration membranes**
C. Starke[1]; D. Vial[2]; P. Buchta[1]; R. Winkler[1]; P. Berg[1]; C. Staaks[1]; [1] INGE GMBH / BASF, Greifenberg/D; [2] BASF France SAS, Levallois-Perret Cedex/F

10:10 **Optical coherence tomography (OCT) for the MF fouling investigation under different pretreatment scenarios**
B. Deka[1]; [1] City University Hong Kong, Hong Kong/HK

10:30 Coffee break with posters and exhibition

Room: MOA 6-7

Public Perception and Acceptance

Chair: M. Muston; University of Wollongong, Fairy Meadow/AU

11:00 **Sweden's first beer brewed with recycled water to raise the value of water reuse**
C. Baresel[1]; S. Filipsson[1]; J. Karlsson[1]; C. Junestedt[1]; [1] IVL Swedish Environmental Research Institute, Stockholm/S

11:20 **Water reuse in France - Social perception of an unknown practice**
B. Noury[1]; P. Garin[2]; M. Montginoul[2]; M. Campardon[2]; [1] Société du Canal de Provence / Irstea UMR G-EAU / IMSIC, Aix en Provence/F; [2] IRSTEA - UMR G-EAU, Montpellier/F

11:40 **Potable water re-use: the influence of trust and past water restrictions**
A. Etale[1]; K. Fielding[2], A. Schäfer[3], M. Siegrist[4]; [1] University of the Witwatersrand, Johannesburg/ZA; [2] University of Queensland/ AUS; [3] Karlsruhe Institute of Technology (KIT), Karlsruhe/D; [4] ETH Zurich/CH

12:00 **Operator models for the reuse of municipal wastewater in hydroponic systems: potentials and options for Central and Mediterranean Europe**
E. Schramm[1]; B. Ebert[1]; [1] ISOE - Institute for Social-Ecological Research, Frankfurt am Main/D

12:20 **Discussion on Public Perception and Acceptance with session speakers**

12:40 Lunch break with posters and exhibition

WEDNESDAY, 19 JUNE 2019 LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: J.E. Drewes; Technische Universität München, Garching/D

PLENARY SESSION

08:30 **Overcoming water stress by water reclamation and reuse**
E. Van Houtte[1]; [1] IWVA, Koksijde/B

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C. McArdell[1]: [1] Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf/CH

Tackling water shortage – the Singapore approach
J. Rose[1], M. Rose[1], [1] Michigan State University, East Lansing, MI/USA

09:10 **PANEL DISCUSSION**
POSTER AWARDS

Room: MOA 3

Innovative Treatment Technologies & Applications
Combining ozonation and biofiltration for potable reuse trains

Chair: R. Trussell; Trussell Technologies, Inc., Passadena/USA

09:30 **Development of novel treatment concepts based on sequential biofiltration for indirect potable reuse**
U. Hübner[1]; K. Hellauer[1]; J. Müller[1]; J.E. Drewes[1]; [1] Technische Universität München, Garching/D

09:50 **Emerging frontiers in potable reuse ozone-biofiltration treatment systems**
V. Sundaram[1]; L. Li[1]; T. Guarin[1]; L. Peri[1]; K. Pagilla[1]; [1] University of Nevada, Reno, Reno/USA

10:10 **Evaluating direct potable reuse using ozone biological filtration without reverse osmosis**
D. Funk[1]; J. Hooper[2]; K. Bell[3]; J. Mattingly[4]; [1] Gwinnett County, Lawrenceville, GA/USA; [2] CDM Smith, Bellevue, WA/USA; [3] Brown and Caldwell, Nashville, TN/USA; [4] Water Research Foundation, Alexandria, VA/USA

10:30 Coffee break with posters and exhibition

Room: MOA 3

Innovative Treatment Technologies & Applications
Combining ozonation and biofiltration for advanced treatment

Chair: U. Hübner; Technische Universität München, Garching/D

11:00 **Post-treatment options for ozonation in tertiary municipal wastewater treatment**
D. Sauter[1]; A. Sperlich[1]; R. Bloch[1]; R. Gnirss[1]; J. Schuetz[2]; [1] Berliner Wasserbetriebe, Berlin/D; [2] Kompetenzzentrum Wasser Berlin gGmbH, Berlin/D

11:20 **O_3/BAC versus chloramines: innovative pretreatment to membranes and enhanced energy efficiency of potable reuse treatment train**
R. Trussell[1]; A. Pisarenko[1]; E. Chen[1]; A. Kolakovsky[1]; L. Breitner[1]; J. Quicho[2]; [1] Trussell Technologies, Inc., Solana Beach, California/USA; [2] City of San Diego, San Diego, California/USA

11:40 **Impact of operating conditions of an advanced wastewater treatment plant combining ozonation and granular activated carbon on antibiotic resistant bacteria and antibiotic resistance genes**
K. Slipko[1]; L. Wallmann[1]; E. Radu[1]; H. Schaar[1]; N. Kreuzinger[1]; [1] Vienna University of Technology, Vienna/A

12:00 **Electro-Fenton treatment of real pharmaceutical wastewater: a feasibility study**
H. Olvera-Vargas[1]; N. Gore-Datar[2]; S. Mutnuri[2]; O. Lefebvre[1]; [1] National University of Singapore, Singapore/SGP; [2] bits pilani goa campus, Goa/IND

12:20 **Activation of perpulfates for water decontamination on pilot scale solar equipement: the example of interreg SUDOE 4KET4Reuse project**
C. Telegang Chekem[1]; [1] Centre national de la recherche scientifique (CNRS), Perpignan/F

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME

WEDNESDAY, 19 JUNE 2019

MORNING

Room: MOA 6-7

Chair: J.E. Drewes; Technische Universität München, Garching/D

PLENARY SESSION

08:30 **Overcoming water stress by water reclamation and reuse**
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C. McArdell[1]: [1] Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf/CH

Tackling water shortage – the Singapore approach
J. Rose[1], M. Rose[1], [1] Michigan State University, East Lansing, MI/USA

09:10 **PANEL DISCUSSION**
POSTER AWARDS

Room: MOA 4

Urban Reuse including Landscape Irrigation
Microbial aspects

Chair: C. Jungfer; DECHEMA e.V., Frankfurt am Main/D

09:30 **Non-potable reuse – getting squeezed out in favor of potable reuse?**
K. Bell[1]; [1] Brown and Caldwell, Nashville, TN/USA

09:50 **Can chlorine disinfection control the biofouling of reverse osmosis membrane used for municipal wastewater reclamation?**
Y. Wang[1]; X. Tong[1]; Y. Bai[1]; X. Zhao[1]; N. Ikuno[2]; Y. Wu[1]; H. Hu[1]; [1] Tsinghua University, Beijing/CN; [2] Kurita Water Industries Ltd., Tokyo/J

10:10 **Factors Affecting Chlorine Stability in Recycled Water Distribution System: How Much Do We Know?**
A. Sathasivan[1]; B. Krishna KC[1]; G. Kastl[1]; Q. Thanh Trinh[1]; A. Listowski[2]; [1] Western Sydney University, Penrith/AUS; [2] University of Technology Sydney, Newington/AUS

10:30 Coffee break with posters and exhibition

Room: MOA 4

Urban Reuse including Landscape Irrigation
Case studies and valuables

Chair: R. Mujeriego; ASERSA, Spanish Association for Sustainable Water Reuse, Barcelona/ES

11:00 **Urban water reclamation with resource recovery as key potential to close resource loops in Munich, Germany and Leh, India**
M. Al-Azzawi[1]; D. Gondhalekar[1]; J.E. Drewes[1]; [1] Technische Universität München, Garching/D

11:20 **Wastewater Disinfection: Performic acid compared to conventional treatment processes**
R. Gnirss[1]; C. Lüdicke[1]; H.-C. Selinka[2]; [1] Berliner Wasserbetriebe, Berlin/D; [2] Federal Environment Agency, Berlin/D

11:40 **Golf courses irrigation with reclaimed water: a risk approach**
M. Salgot[1]; M. Folch[1]; [1] Universitat de Barcelona, Barcelona/E

12:00 **Determining the standard of nitrogen and phosphorus concentration in reuse of wastewater in scenic water based on microalgal growth potential**
G. Dao[1]; C. Yang[2]; H. Hu[1]; [1] Tsinghua University, School of Environment, Tsinghua University, Beijing/CN; [2] Tsinghua University, Graduate School of Shenzhen/CN

12:20 **The role of ceramic membranes in water recycling**
J. Clement[1]; [1] Nanostone Water GmbH, Abcoude/NL

12:40 Lunch break with posters and exhibition

WEDNESDAY, 19 JUNE 2019 LECTURE PROGRAMME

MORNING

Room: MOA 6-7

Chair: J.E. Drewes; Technische Universität München, Garching/D

PLENARY SESSION

08:30 **Overcoming water stress by water reclamation and reuse**
E. Van Houtte[1]; [1] IWVA, Koksijde/B

The Swiss approach in reducing trace organic chemicals in the aquatic environment
C. McArdell[1]: [1] Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf/CH

Tackling water shortage – the Singapore approach
J. Rose[1], M. Rose[1], [1] Michigan State University, East Lansing, MI/USA

09:10 **PANEL DISCUSSION**
POSTER AWARDS

Room: MOA 5

Monitoring and Compliance
Microbial contaminants and decision support

Chair: Y. Lu; Tsinghua University, Haidian District, Beijing/CN

09:30 **Developing biological surrogates for monitoring treatment performance of onsite non-potable water systems**
N. Brinkman[1]; S. Keely[2]; E. Wheaton[2]; M. Jahne[2]; J. Garland[2]; [1] US EPA, Ohio/USA; [2] US EPA, Cincinnati/USA

09:50 **Monitoring emerging contaminants in wastewater reuse systems by fluorescence EEM**
P. Roccaro[1]; [1] Università degli Studi di Catania, Catania/I

10:10 **Information and communication technology (ICT) for optimized water reuse solution combining natural-engineered treatment systems in coastal area**
M. Pettenati[1]; [1] Bureau de Recherches Géologiques et Minières (BRGM), Orléans/F

10:30 Coffee break with posters and exhibition

Room: MOA 5

Monitoring and Compliance
Organic and inorganic contaminants

Chair: H.-J. Albrechtsen; Technical University of Denmark (DTU), Kgs. Lyngby/DK

11:00 **Demonstrating real-time collection system monitoring for enhanced source control in potable reuse**
E. Steinle-Darling[1]; G. Dorrington[2]; N. Nye[3]; P. Carlo[4]; A. Salveson[5]; [1] Carollo Engineers, Inc., Austin/USA; [2] Ventura Water, Ventura, California/USA; [3] El Paso Water, El Paso, Texas/USA; [4] Carollo Engineers, Inc., Sacramento, California/USA; [5] Carollo Engineers, Inc., Walnut Creek, California/USA

11:20 **Characterization of organic matter and contaminants during DPR processes compared to surface water supplies**
C. Hoppe-Jones[1]; S. Beitel[1]; K. Daniels[1]; I. Lopez[1]; M. Park[1]; S. Snyder[2]; [1] University of Arizona, Tucson/USA; [2] Nanyang Technological University, Singapore/SGP

11:40 **Is the water fit for use or reuse? How determination and characterization of organics data drives decisions for critical control of potable reuse treatment processes.**
A. Scott[1]; J. Neubauer[2]; [1] Suez Water Technologies and Solutions Analytical Instruments, Boulder/USA; [2] SUEZ WTS Germany GmbH, Ratingen/D

12:00 **A steric pore-flow model to predict N-nitrosamines rejection by reverse osmosis membranes**
H. Takeuchi[1]; T. Fujioka[2]; L. Nghiem[3]; H. Tanaka[1]; [1] Kyoto University, Otsu/J; [2] Nagasaki University, Nagasaki/J; [3] University of Technology Sydney/AUS

12:20 **Deleterious role of silica and lead contaminated drinking water in the induction of Chronic Kidney Disease**
S. Mascarenhas[1]; A. Ganguly[1]; S. Mutnuri[1]; [1] BITS Pilani K K Birla Goa campus, Zuarinagar/IND

12:40 Lunch break with posters and exhibition

LECTURE PROGRAMME

WEDNESDAY, 19 JUNE 2019

AFTERNOON

Room: MOA 6-7

Regulation, Governance and Engagement

Chair: B. Hultquist; California SWB, El Cerrito/USA

13:40 **Establishment of a national learning platform for direct potable reuse in South Africa**
L. Maharaj[1]; M. Schalkwyk[1]; M. Mnguni[1]; [1] Umgeni Water, Pietermaritzburg/ZA

14:00 **Promoting waste water reuse through a reclaimed water master plan in the Consorci Besòs Tordea environment**
B. Martinez Lopez[1]; P. Aguiló Martos[1]; [1] Consorci Besòs Tordera, Granollers/E

14:20 **Water Reuse Hubs as enablers of water reuse implementation**
C. Echevarría[1]; X. Bernat[1]; M. Arnaldos Orts[1]; M. Termes Rife[2]; [1] CETAQUA, Barcelona/E; [2] University of Barcelona/E

14:40 **Compliance of combined nature-based and engineered systems with European water reuse regulations**
U. Miehe[1]; [1] Kompetenzzentrum Wasser Berlin gGmbH, Berlin/D

15:00 **Capacity development for wastewater management and water reuse in Informal partnerships in Northern Namibia**
M. Zimmermann[1]; F. Frick-Trzebitzky[1]; T. Kluge[1]; [1] ISOE - Institute for Social-Ecological Research, Frankfurt am Main/D

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

15:50 **CLOSING SESSION**

WEDNESDAY, 19 JUNE 2019

LECTURE PROGRAMME

AFTERNOON

Room: MOA 3

Innovative Treatment Technologies & Applications

Hybrid systems and alternative concepts

Chair: O. Lefebvre; National University of Singapore/SGP

13:40 **Water reclamation using regenerated membranes for indirect potable reuse and irrigation of private gardens**
S. Casas[1]; A. Serra[1]; A. Casadellà[1]; J. Ribera[1]; X. Martínez[1]; S. Reyes[2]; A. Perez[2]; L. Sala[3]; A. Con[4]; J. Couso[5]; [1] CTM Foundation - EURECAT, Manresa/E; [2] Water Agency of Catalonia (ACA), Barcelona/E; [3] CCB - Consorci Costa Brava, Girona/E; [4] Aigües Costa Brava, Girona/E; [5] Ajuntament Tossa de Mar, Tossa de Mar/E

14:00 **Biodegradable ion-exchange resins for nutrient recovery from effluents of anaerobic membrane bioreactors**
Y. Xiao[1]; [1] Shantou University, Shantou/CN

14:20 **Solar photo-oxidation process: an innovative technology to partially mineralize three major pharmaceuticals to make them biodegradable.**
B. REOYO-PRATS[1]; C. JOANNIS-CASSAN[2]; M. HAMMADI[1]; C. DEZANI[1]; V. GOETZ[1]; C. CALAS-BLANCHARD[3]; S. LACORTE BRUGUERA[4]; G. PLANTARD[1]; [1] Laboratoire PROcédés, Matériaux et Energie Solaire (PROMES), CNRS UPR 8521, Perpignan/F; [2] Université de Toulouse, INPT, Laboratoire de Génie Chimique / CNRS, Laboratoire de Génie Chimique, UMR 5503,, Toulouse/F; [3] Laboratoire Biocapteurs-Analyse-Environnement (BAE), CNRS UMR 5054, Perpignan/F; [4] Department of Environmental Chemistry, IIQAB-CSIC, Jordi Girona, Barcelona/E

14:40 **Modelling and predicting the potential application of new waste-derived activated carbons for controlling pharmaceutical compounds in conventional wastewater treatment**
R. Viegas[1]; E. Mesquita[1]; M. Campinas[1]; A. Mestre[2]; A. Carvalho[2]; M. Rosa[1]; [1] LNEC – National Civil Engineering Laboratory, Lisbon/P; [2] Centro de Química Estrutural, Faculdade de Ciências, Universidade de Lisboa, Lisbon/P

15:00 **CoRe Water: from WWTP to a sustainable water factory**
K. Roest[1]; L. van Dijk[2]; A. Polman[2]; H. Ramaekers[3]; A. Hendriks[3]; E. Cornelissen[1]; [1] KWR Watercycle Research Institute, Nieuwegein/NL; [2] Blue-Tec, Renkum/NL; [3] Royal HaskoningDHV, Amersfoort/NL

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

15:50 **CLOSING SESSION**

LECTURE PROGRAMME

WEDNESDAY, 19 JUNE 2019

AFTERNOON

Room: MOA 4

Concentrate and Residual Management

Chair: C. Blöcher; Covestro Deutschland AG, Leverkusen/D

13:40 **Conditioning of super-concentrate brines from industrial water recycling for salt recovery**
T. Hogen[1]; M. Kieselbach[1]; S. Geißen[1]; J. Wellmann[1]; [1] Technische Universität Berlin, Berlin/D

14:00 **Experimental results on brine treatment with special configuration of membrane distillation**
V. Hegde[1]; D. Winter[1]; R. Schwantes[2]; J. Went[1]; [1] Fraunhofer ISE, Freiburg/D; [2] SolarSpring GmbH, Freiburg/D

14:20 **Concentration of reverse osmosis concentrate from incineration leachate using membrane distillation coupled with a pre-treatment process**
J. Shi[1]; D. Sun[2]; [1] , Beijing/CN; [2] Beijing Forestry University, Beijing/CN

14:40 **Utilisation of residues from concentrates (salts) - disposal or recovery?**
D. Becker[1]; M. Wimmer[2]; T. Hogen[2]; S. Geißen[2]; [1] DECHEMA e.V., Frankfurt am Main/D; [2] TU Berlin/D

15:00 **Transformation of organic matters in reverse osmosis concentrate from a municipal wastewater reclamation plant**
Z. Xu[1]; W. Wang[1]; Q. Wu[1]; H. Hu[1]; [1] Tsinghua University, Beijing/CN

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

15:50 **CLOSING SESSION**

WEDNESDAY, 19 JUNE 2019

LECTURE PROGRAMME

AFTERNOON

Room: MOA 5

Market Acceptance of Reuse Solutions

Chair: M. Meeker; Gwinnett County, Lawrenceville, GA/USA

13:40 **DISCUSSION:**
Potable Reuse: US Examples of changing the conversation to be about more than a "project"
J. Mattingly[1], M. Meeker[2], P. Sinicropi[3], E. Steinle-Darling[4], M. Poling[5]; [1] The Water Research Foundation, VA/USA; [2] Gwinnett County, GA/USA; [3] WateReuse Association, VA/USA; [4] Carollo Engineers, TX/USA; [5] Clean Water Services, OR/USA

Moderator: E. Steinle-Darling, Carollo Engineers, Inc., Austin, TX/USA

15:00 **The growth of water reuse in Europe: 2006 to 2017**
S. Boubekri[1]; P. Jeffrey[1]; K. Le Corre[1]; [1] Water Reuse Europe, Cranfield/UK

15:20 Coffee break with posters and exhibition

Room: MOA 6-7

15:50 **CLOSING SESSION**

WORKSHOPS

SUNDAY, 16 JUNE 2019

10:00 – 13: 00 — Room: MOA 6-7

Young Water Reuse Professionals development and integration workshop

Organizer: IWA Young Water Reuse Professionals, Olivier Lefebvre, SGP

Discription: During this experiential workshop, Young Water Reuse Professionals (YWRP) will integrate in teams guided by a senior mentor to develop an innovative solution to a local case study that will be proposed by the organizers (e.g., design a water reuse system for the hotel facility in which the conference is held). The teams will present their solution to a panel of judges for feedback and recognition.

Fees: 25,- Euro
(limited to 30 Participants)

10:00 – 13: 00 — Room: MOA 3

"Risk management in water reuse – National and international perspectives"
BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE)

Organizer: BMBF funding measure Future-oriented Technologies and Concepts to Increase Water Availability by Water Reuse and Desalination (WavE)

Discription: The funding measure WavE is developing innovative technologies and management concepts to realize a sustainable increase in water availability. The focus is on: (I) water reuse of municipal wastewater, (II) reuse of water in industry, (III) use of saline ground- and surface water. The workshop will discuss challenges and barriers for implementation of reuse solutions and ways forward towards and efficient use of innovative solutions.

Fees: 30,- Euro
supported by BMBF funding measure WavE/D

10:00 – 13: 00 — Room: MOA 4

AquaNES QMRA-tool: a webtool for quantitative microbial risk assessment of water reuse applications

Organizer: Patrick Smeets, KWR Watercycle Research Institute, Nieuwegein/NL; Ulf Miehe, Kompetenzzentrum Wasser Berlin, D

Discription: It is important to determine the microbial safety of reused water to prevent spreading of diseases. Quantitative Microbial Risk Assessment provides a methodology to assess health risks from water reuse. This workshop introduces a free, web-based QMRA tool for both beginners and experienced users that uses state of the art scientific knowledge and approaches.

Fees: 60,- Euro

10:00 – 13: 00 — Room: MOA 5

Water reclamation and reuse in development cooperation
case studies – challenges, approaches, achievementsand the way forward

Organizer: KfW Development Bank/D; GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit/D; BGR Federal Institute for Geosciences and Natural Resources/D

Discription: The main objective of the workshop is to bring together practitioners of the Development Cooperation (Consultants, Engineers, Agriculture, Industry), the scientific community, representatives of partner countries and politicians in order to share experiences based on the presented case studies and to proceed to a reality check on drivers, challenges, unexpected obstacles and unexpected dynamics with regard to the implementation of water reclamation and reuse projects. In conclusion of the workshop ideas and recommendations with regard to the way forward should be compiled and highlighted.

Fees: 30,- Euro
supported by KfW Development Bank/D

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THURSDAY, 20 JUNE 2018 TECHNICAL TOURS

TECHNICAL TOUR 1

Full day (8:00 – 16:00h)

Water management in support of urban potable/non-potable water supply

Location: Berlin area

Discription: Berlin is a constantly growing city and it's drinking water supply heavily relies on bank filtration from streams and lakes that also receive significant amounts of wastewater discharge. Currently only natural treatment processes followed by conventional drinking water treatment are employed. Different measures are being implemented at the city scale to proactively manage this unplanned indirect potable reuse scheme. Besides a new concept of managed aquifer recharge (SMART), various installations ensuring a sustainable water supply will be visited, addressing further reuse specific aspects: Micropollutant and pathogens removal, managed aquifer recharge, surface water treatment and decentralised urban non-potable water reuse installations.

Fees: 75,- Euro plus VAT
(maximum number of participants 30)
supported by Berliner Wasserbetriebe

TECHNICAL TOUR 2

Half day (8:00 – 14:00h)

Water reuse and concentrate treatment in industrial applications

Location: Berlin area

Discription: The tour gives different examples of water reuse in industry. (I) In an industrial laundry about 40 % of the used water is recycled by a multistep membrane processes. In parallel a high amount of wastewater based residual heat is reused. (II) In a food production site (coffee extract) a scheme for increasing water reuse up to 60 % by membrane bioreactor and reverse osmosis is under implementation. Challenges are the hardly biodegradable fraction of the wastewater and the chemical and hygienic permeate quality for reuse. For both sites, innovative solutions for concentrate treatment are currently implemented and will be featured during the tour.

Fees: 50,- Euro plus VAT
(minimum number of participants 20, maximum 30)

TECHNICAL TOUR 3

Full day (8:00 – 18:00h)

Towards water reuse in agriculture

Location: Wolfsburg area

Discription: Solutions for upgrading reclaimed water in such a way that water and nutrients are available for the use within hydroponic plant growth systems in agriculture will be shown. In addition recovery of nutrients as phosphorus and efficient wastewater treatment installations will be shown.

Fees: 90,- Euro plus VAT
(maximum number of participants 50)

POSTER PROGRAMME

Solutions

P 1.01 **Use of soil column to assess ion mobility present in treated effluent**
R. DANTAS DE LUCENA ROCHA[1]; K. Barros da Silva[1]; L. BISERRA[1]; E. PASTICH[1]; [1] UNIVERSIDADE FEDERAL DE PERNAMBUCO, CARUARU/BR

P 1.02 **Irrigation with treated sewage for coriander seed germination**
N. Bomfim[1]; M. Henrique Gomes Ribeiro[1]; W. Leite[1]; M. Florêncio[1]; M. Kato[1]; [1] UFPE, Recife/BR

P 1.03 **Chlorination for anti-clogging in drip irrigation emitters using reclaimed water: A case study in Suranaree University of Technology (Thailand)**
J. Yimrattanabovorn[1]; [1] Suranaree Univ. of Technology, Muang/T

P 1.04 **Treated domestic effluent reuse in the germination process of Zea Mays 'BRS Gorutuba'**
K. Barros da Silva[1]; E. Galindo[1]; E. França[1]; J. Moreira[1]; N. Silva[1]; [1] Federal University of Pernambuco - Agreste Academic Center, Caruaru/BR

P 1.05 **Enabling aquifer storage and recovery (ASR) by high flowrate filtration for improved water management**
J. Appels[1]; M. Paalman[2]; K. Raat[2]; [1] microLAN, Waalwijk/NL; [2] KWR Water B.V., Nieuwegein/NL

P 1.06 **SuWaNu-Europe: Network for effective knowledge transfer on safe and economic wastewater reuse in agriculture in Europe**
R. Casielles[1]; [1] BIOAZUL S.L., Málaga/E

P 1.07 **Recommended Limits of Reclaimed Water for Industrial Use**
H. Huang[1]; Y. Huang[1]; H. Tsai[1]; C. Chu[1]; Y. Chung[1]; [1] Sinotech Engineering Consultants, Inc., Taipei/RC

P 1.08 **Reuse of treated wastewater in industrial symbiosis**
K. Hoyer[1]; [1] VA SYD, Malmö/S

P 1.09 **Long-term effect of oxygen concentration on BAC performance in a water reclamation plant**
L. Palli[1]; S. Fiaschi[1]; M. Allocca[2]; V. Viviani[2]; C. Lubello[1]; R. Gori[1]; R. Camisa[2]; D. Fibbi[2]; E. Coppini[3]; [1] University of Florence, Florence/I; [2] GIDA SpA, Prato/I; [3] GIDA SpA , prato/I

P 1.10 **Impact of organic fouling layers on the transport of micropollutants in FO process**
D. Jang[1]; S. Kang[2]; S. Choi[1]; [1] Korea Advanced Institute of Science and Technology, Daehak-ro, Yuseong-gu, Daejeon/ROK; [2] Korea Advanced Institute of Science and Technology, Daejeon/ROK

P 1.11 **Novel Smart Assemblies for Industrial Waste Water Remediation**
P. Ambre[1]; J. Paneysar[1]; N. Ahmed[2]; S. Barton[2]; E. Coutinho[1]; [1] Bombay College of Pharmacy, Mumbai/IND; [2] Kingston University London, London/UK

P 1.12 **Multi-Criteria Assessment of Water Reuse in Industrial Parks**
D. Pohl[1]; M. Beier[1]; J. Cristobal[2]; J. Hilbig[3]; A. Dell[4]; [1] Leibniz University Hannover, Institute of Sanitary Engineering and Waste Management (ISAH), Hannover/D; [2] TU Darmstadt, Institut IWAR, Darmstadt/D; [3] IEEM gGmbH, Witten/D; [4] Technische Universität Darmstadt, Institut für Geodäsie, Darmstadt/D

P 1.13 **Cost-Benefit Analysis of Water Reuse in Industrial Parks**
J. Hilbig[1]; K. Rudolph[2]; B. Boysen[1]; J. Beckmann[1]; [1] IEEM gGmbH, Witten/D; [2] IEEM gGmbH & Faculty of Management and Economics, Witten/Herdecke University, Witten/D

P 1.14 **Establishing water reuse networks in mixed-industry parks using a model-based approach**
D. Pohl[1]; M. Beier[1]; S. Köster[1]; [1] Leibniz University Hannover, Institute of Sanitary Engineering and Waste Management (ISAH), Hannover/D

P 1.15 **Ceramic-based Microflotation-Microfiltration Process for the Reuse of Challenging Industrial Effluents Through the Removal of Suspended Solids, Fats, Oils and Greases**
M. Beery[1]; D. Srinivasan[1]; [1] akvola Technologies GmbH, Berlin/D

P 1.16 **Minimal Liquid Discharge (MLD): A water source and discharge solution**
T. Arrowood[1]; J. Henkel[2]; [1] Dow Water Solutions, Elko New Market, MN/USA; [2] DuPont, Rheinmuenster/D

POSTER PROGRAMME

P 1.17 **Phosphate uptake from wastewater using iron oxide doped halloysite nanotubes**
D. Almasri[1]; M. Atieh[2]; S. Ahzi[3]; [1] Qatar Environment and Energy Research Institute (QEERI), Doha/Q; [2] Qatar Environment and Energy Research Institute/Hamad Bin Khalifa University, Doha/Q; [3] Qatar Environment and Energy Research Institute, Doha/Q

P 1.18 **Wastewater reuse in a potato factory: from pilot studies to full scale reuse plant**
S. Lübbecke[1]; D. Dr. Moed[2]; E. Koper[2]; [1] Evides Industriewater, Rotterdam/NL; [2] Evides Industriewater B.V., Rotterdam/NL

P 1.19 **Stabilized-hypobromite as a novel agent for biofouling control in the polyamide RO membrane systems**
Y. NAKAMURA[1]; H. Yoshikawa[2]; T. Oe[2]; [1] ORGANO CORPORATION, SAGAMIHARA,KANAGAWA/J; [2] ORGANO CORPORATION, Kanagawa/J

P 1.20 **Enhancement of water reuse in GIDA: design of a biodiversity garden and a service area**
D. Iacopini[1]; M. Allocca[1]; B. Gargani[2]; G. Bettini[2]; E. Coppini[1]; E. Bettazzi[1]; [1] Gestione Impianti Depurazione Acque S.p.A., Prato/I; [2] Studio Biosfera, Prato/I

P 1.21 **Flushing toilets with Seawater a step in creating sustainable cities**
B. Godskesen[1]; M. Vester[2]; H. Hoffmann[2]; H. Albrechtsen[1]; M. Rygaard[1]; [1] Technical University of Denmark (DTU), Lyngby/DK; [2] HOFOR, Copenhagen/DK

P 1.22 **Fouling characteristics of reverse osmosis membrane along feed channel of a full-scale plant for municipal wastewater reclamation**
X. Tong[1]; Y. Wang[1]; Y. Bai[1]; X. Zhao[1]; T. Yu[1]; N. Ikuno[2]; Y. Wu[1]; H. Hu[1]; [1] Tsinghua University, Beijing/CN; [2] Kurita Water Industries Ltd., Tokyo/J

P 1.23 **Season effect on the efficiency of domestic grey water treatment by Green wall and Advanced Oxidation Processes for irrigation reuse: GrowGreen project**
A. Lara[1]; R. Rodríguez-Alegre[1]; A. Marí[1]; E. Licon[1]; [1] LEITAT Technological Center, Terrassa/E

P 1.24 **Ultrafiltration allows water reuse to mitigate water scarcity in northeast Brazil**
V. Kohlgrüber[1]; A. Abels[1]; J. Wolters[1]; J. Pinnekamp[1]; [1] RWTH Aachen - ISA, Aachen/D

P 1.25 **Characterization of Microbial Community Structure on Biofilm in Forward Osmosis Membrane**
A. Jang[1]; S.J. Im[1]; S.-H. OH[1]; S. Jeong[1]; [1] Sungkyunkwan University, Suwon/ROK

P 1.26 **Modelling the behaviour of trace organic compounds during an aquifer recharge pilot-scale experiment: the SMARTplus tank**
B. Moser[1]; A. Sanz Prat[1]; J. Greskowiak[1]; S. Karakurt[2]; U. Hübner[2]; J.E. Drewes[2]; G. Massmann[1]; [1] Carl von Ossietzky University of Oldenburg, Oldenburg/D; [2] Technical University of Munich, Garching/D

P 1.27 **Carbon Fiber-based Flow-Through Electrode System (FES) for Point-of-Use Reclaimed Water Disinfection**
H. Liu[1]; H. Hu[2]; [1] Tsinghua University, Beijing P. R. China/CN; [2] Tsinghua University, Beijing/CN

P 1.28 **The influence of an extra aeration pipe in a sand filter performance as anaerobic post-treatment system**
D. Camargo Bueno[1]; B. Gomes[1]; R. Lima Coasaca[1]; L. Paulino Leonel[1]; A. Tonetti[1]; [1] University of Campinas, Campinas/BR

P 1.29 **UV-LED as alternative to anaerobic systems effluents disinfection**
N. Bochi Silva[1]; L. Paulino Leonel[1]; A. Tonetti[1]; [1] University of Campinas, Campinas/BR

P 1.30 **Wastewater reuse in agriculture: an alarming presence of pathogens**
L. Paulino Leonel[1]; A. Tonetti[1]; [1] University of Campinas, Campinas/BR

P 1.31 **Operating world's first UV Hypo AOP System for Reuse – An Operators Story**
J. Scheideler[1]; [1] Xylem Services GmbH, Herford/D

P 1.32 **Degradation Emerging Contaminant and Elimination of Toxic By-products from Reclaimed Water by Catalytic Ozonation**
Y. Zhang[1]; Y. An[2]; D. Yuan[2]; Y. Li[1]; W. Meng[1]; F. Qi[1]; [1] Beijing Forestry University, Beijing/CN; [2] Beijing University of Civil Engineering and Architecture, Beijing/CN

POSTER PROGRAMME

P 1.33 **A new insight into ozonation coupled with tubular ceramic membrane in wastewater treatment: performance, membrane fouling formation and the mitigation mechanism**
F. Qi[1]; Y. Li[1]; Y. Zhang[1]; C. Liu[1]; B. Xu[1]; F. Qi[1]; [1] Beijing Forestry University, Beijing/CN

P 1.34 **Total Organic Carbon as a Surrogate for the Removal of Pharmaceutical and Personal Care Products in the Coagulation-Flocculation Process**
K. Pierce[1]; K. Pagilla[1]; B. Jahan[1]; [1] University of Nevada, Reno/USA

P 1.35 **Direct Potable Reuse in the City of Cape Town to Improve Water Supply Resiliency**
G. du Toit[1]; [1] Aurecon South Africa, Cape Town/ZA

P 1.36 **Smart Biodegradable Composite Materials for Waste Water Management**
J. Paneysar[1]; P. Ambre[1]; A. Vasilaki[2]; S. Barton[2]; E. Coutinho[1]; [1] Bombay College of Pharmacy, Mumbai/IND; [2] Kingston University London, London/UK

P 1.37 **Integrated water management for industrial parks in Vietnam – a case study for textile industry**
M. Sabelfeld[1]; S. Geißen[1]; [1] Technische Universität Berlin, Berlin/D

P 1.38 **Single household greywater recycling using Constructed wetland in developing countries**
S. Mutnuri[1]; [1] bits pilani goa campus, goa/IND

P 1.39 **Wastewater disinfection for agricultural reuse using solar radiation in a developing county: field observations**
T. Lima da Silva[1]; R. Sánchez Román[2]; J. Thomaz Queluz[3]; [1] São Paulo State University (UNESP) - Agronomic Science Faculty, Campus of Botucatu, Brazil./BR; [2] Department of Rural Engineering, Agronomic Science Faculty-São Paulo State University, Botucatu-SP, Botucatu/BR; [3] Institute of Geosciences and Exact Sciences- São Paulo State University, Rio Claro-SP, Rio Claro/BR

P 1.40 **Reclaimed Water Development and Opportunity in Taiwan**
H. Tai[1]; K. CHANG[2]; Q. ZHENG[2]; T. CHEN[2]; Y. WANG[3]; S. YOU[3]; [1] , Taoyuan City/RC; [2] Water Resources Agency, MOEA, Taipei City/RC; [3] Chung Yuan Christian University, Taoyuan City/RC

P 1.41 **Mine water reuse as option for urban areas close to mining**
K. Brömme[1]; H. Stolpe[2]; V. Trinh Quoc[1]; J. Wiggett[3]; [1] Ruhr University Bochum, Bochum/D; [2] Ruhr-University Bochum, Bochum/D; [3] Ruhr-universität Bochum, Bochum/D

P 1.42 **Integrated water management and water reuse solutions for prosperous regions tackling water scarcity**
M. Krauss[1]; S. Wasielewski[1]; S. Stauder[2]; P. Richter[1]; P. Maurer[1]; M. Hügler[2]; Y. Zahumensky[3]; H. Kosow[3]; C. León[3]; R. Minke[1]; [1] Universität Stuttgart, Institut für Siedlungswasserbau, Wassergüte- und Abfallwirtschaft, Stuttgart/D; [2] TZW: DVGW-Technologiezentrum Wasser, Karlsruhe/D; [3] Universität Stuttgart, Zentrum für Interdisziplinäre Risiko - und Innovationsforschung, Stuttgart/D

P 1.43 **Greywater Cooling Tower- Wastewater Treatment in Façade Structures for Cooling houses and Urban Green**
T. Zinati Shoa[1]; M. Lenzen[2]; C. Riechelmann[2]; M. Barjenbruch[3]; [1] TU Berlin, Berlrin/D; [2] TU Berlin, Berlin/D; [3] TU Berlin, berlin/D

Adopting water reuse

P 2.01 **A CASE STUDY OF 7 YEARS OPERATION OF A2/O-MBR IN XIAN SIYUAN UNIVERSITY**
d. li[1]; [1] siyuan university, xian city, shaanxi,/CN

P 2.02 **Finding sustainability pathways in wastewater management systems in an inter-disciplinary and participatory manner in Latin America**
L. Benavides Mondragon[1]; T. Avellan[1]; S. Caucci[1]; A. Hahn[1]; S. Kirschke[1]; A. Mueller[1]; [1] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D

P 2.03 **MBR - The Corner Stone Of Water Reuse Adoption**
S. DONNAZ[1]; S. Katz[2]; M. Sanz[3]; [1] Suez International Treatment Infrastructure, RUEIL-MALMAISON/F; [2] Suez Water Treatment Solutions, Toronto/CDN; [3] Suez Treatment Infrastructure, RUEIL-MALMAISON/F

P 2.04 **Drip irrigation biofouling with treated wastewater: Influence of hydrodynamic conditions on microbial communities and pathogen persistence**
K. Lequette[1]; N. Ait Mouheb[2]; N. Wéry[1]; [1] LBE, Univ Montpellier, INRA, Narbonne/F; [2] IRSTEA - UMR G-EAU, Montpellier/F

POSTER PROGRAMME

P 2.05 **Risk Assessment Study Of Biofilm & Chlorine Stability In Recycled Water Distribution System**
A. Listowski[1]; [1] University of Technology Sydney, Newington/AUS

P 2.06 **SHAREBOX - Developing a secure management platform for shared process resources**
N. Heine[1]; [1] DECHEMA e.V., Frankfurt am Main/D

Solving water reuse bottlenecks

P 3.01 **Fluorite removal by modified activated aluminum for wastewater reuse**
C. Huang[1]; Y. Chen[2]; [1] National Chiao Tung Uviversirt, Hsinchu/RC; [2] National Chiao Tung University, Hsinchu/RC

P 3.02 **The influences of biological carriers on the performance of anammox process comparison of GAC and PVA-gel beads**
X. Zhang[1]; Z. Li[2]; J. Zhang[3]; [1] Fuzhou University, Fuzhou University, Fuzhou, Fujian, PR China/CN; [2] Fuzhou University, Fuzhou/CN; [3] Fujian Provincial Academy of Environmental Science, Fuzhou/CN

P 3.03 **Assessments of recycled water sources for recreational water replenishment in urban area**
H. Chen[1]; T. Ou[1]; G. Wang[1]; [1] National Taiwan University, Taipei/RC

P 3.04 **Indirect methods based on stochastical modelling for peracetic acid decay estimation in wastewater**
J. Foschi[1]; R. Delli Compagni[1]; M. Cascio[1]; A. Turolla[1]; M. Antonelli[1]; [1] Politecnico di Milano, Milano/I

P 3.05 **Efficient aeration for biological wastewater treatment**
S. Reinecke[1]; E. Mohseni[2]; R. Herrmann-Heber[2]; U. Hampel[3]; [1] Helmholtz-Zentrum Dresden-Rossendorf, Dresden/D; [2] Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden/D; [3] Chair of Imaging Techniques in Energy and Process Engineering, Technische Universität, Dresden/D

P 3.06 **Risks of inhalation exposure of reclaimed water and toxicity removal by oxidation treatments**
Y. Lu[1]; [1] , Beijing/CN

P 3.08 **DO CONVENTIONAL WASTEWATER TREATMENT PROCESSES EFFECTIVELY REMOVE EMERGING CONTAMINANTS FOR WATER REUSE PURPOSES?**
M. Thoola[1]; S. Mazibuko[1]; L. Maharaj[1]; [1] Umgeni Water, Pietermaritzburg/ZA

P 3.09 **Fenton based advanced oxidation processes for organics removal in reverse osmosis concentrate**
M. Wu[1]; Q. Cai[1]; B. Lee[1]; S. Ong[1]; J. Hu[2]; [1] NUS, Singapore/SGP; [2] National University of Singapore, Singapore/SGP

P 3.10 **Treatment of phenol production wastewater with combined catalytic ozonation-biological process**
L. Jothinathan[1]; G. Oh[1]; W. Loh[1]; S. Ong[1]; J. Hu[2]; [1] NUS, Singapore/SGP; [2] National University of Singapore, Singapore/SGP

P 3.12 **Effects of Water Matrices on Radical Distribution in the UV/monochloramine Process for Potable Water Reuse**
Z. ZHONG[1]; R. YIN[1]; Y. XIANG[1]; C. SHANG[1]; [1] Hong Kong University of Science and Technology, Hong Kong/CN

P 3.13 **Photochemical Oxidation of Emerging Contaminants Using a Combination of Solar Irradiation and Free Available Chlorine**
X. Yang[1]; S. Cheng[1]; X. Zhang[1]; [1] Sun Yat-sen University, Guangzhou/CN

P 3.14 **Performance and Mechanisms of Ultrafiltration Membrane Fouling Mitigation in a Novel Electrochemical Membrane Reactor (EMR)**
C. Hu[1]; [1] Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing/CN

P 3.15 **Visible-light-driven photocatalytic disinfection on antibiotic resistant bacteria in secondary treated effluent**
Y. Sun[1]; [1] Beijing Technology and Business University, Beijing/CN

P 3.16 **Electrochemical precipitation reactor for water softening and diclofenac removal**
T. Muddemann[1]; D. Haupt[2]; M. Sievers[2]; U. Kunz[1]; [1] Clausthal University of Technology, Institute of Chemical and Electrochemical Process Engineering, Clausthal-Zellerfeld/D; [2] CUTEC Clausthaler Umwelttechnik Forschungszentrum, Clausthal-Zellerfeld/D

P 3.17 **Removal of Perfluorooctanoic acid (PFOA) in Wastewater Using Electrocoagulation**
M. Kim[1]; K. ZOH[1]; [1] Seoul National University, Seoul/ROK

POSTER PROGRAMME

P 3.18 **Supporting water reuse by innovative materials - BMBF Funding Measure "Materials for a sustainable water management (MachWas)"**
S. Giebner[1]; K. Wendler[1]; T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D

P 3.19 **Innovative treatment scheme for Water reuse in the petrochemical industry**
V. Gomez[1]; D. Arias[2]; E. Taberna[3]; J. Sanz[3]; C. Bosch[4]; M. Calderer[4]; X. Martinez Lladó[4]; [1] The Dow Chemical Company, La Canonja - Tarragona/E; [2] The Dow Chemical Company, La Canonja, Tarragona/E; [3] Veolia Water Technologies, Sant Cugat del Vallès/E; [4] CTM Foundation - EURECAT, Manresa/E

P 3.20 **Improvement of energy efficiency of electrochemical industrial wastewater treatment**
D. Haupt[1]; T. Muddemann[2]; K. Ulrich[2]; M. Sievers[1]; [1] CUTEC Clausthaler Umwelttechnik Forschungszentrum, Clausthal-Zellerfeld/D; [2] TU-Clausthal, ICVT, Clausthal-Zellerfeld/D

P 3.21 **Is Biochar adsorbent a viable option for removal of emerging contaminants from treated wastewater?**
S. Yanala[1]; K. Pagilla[2]; K. Pierce[3]; [1] University of Nevada, Reno., Apt#6/USA; [2] University of Nevada, Reno., Reno/USA; [3] University of Nevada, Reno, Reno/USA

P 3.22 **Water Structures & Membrane Systems - Rising Performance with Catalytic Water Treatment**
J. Koppe[1]; G. Battagello[1]; [1] MOL Katalysatortechnik GmbH, Schkopau/D

P 3.23 **Water Reuse and Desalination Concepts to Increase Water Availability**
C. Jungfer[1]; T. Track[1]; [1] DECHEMA e.V., Frankfurt am Main/D

P 3.24 **An innovative bioreactor for sustainable industrial wastewater treatment finalized to water reuse and resource recovery**
M. Tomei[1]; D. Mosca Angelucci[1]; [1] Water Research Institute of the Italian National Research Council, Monterotondo Stazione Roma/I

P 3.25 **Nitrate removal from secondary effluent using solid-phase denitrification process**
W. Qin[1]; X. Wen[2]; [1] Tsinghua University, Haidian distract, Beijing city/CN; [2] Tsinghua University, Beijing/CN

P 3.26 **Ultrasonic TiO_2 solar photodecomposition and biocarbon sorption processes to remove amoxicillin and cephalexin from binary systems.**
N. Ortiz[1]; T. Nicolau[1]; J. Souza[1]; A. Silva[2]; [1] Institute for Nuclear and Energy Research - IPEN, Sao Paulo/BR; [2] Carbosolo Desenvolvimento Agrícola Ltda - Cietec, Sao Paulo/BR

P 3.27 **Using microstructured yeast as biotemplate for TiO2 deposition applied on amoxicillin solar photodecomposition**
N. Ortiz[1]; F. Maichin[1]; M. Macedo[1]; [1] Institute for Nuclear and Energy Research - IPEN, Sao Paulo/BR

P 3.28 **Ciprofloxacin (CIP) degradation and CIP resistant E.faecium inactivation by UV-LED/chlorine process**
T. Kim[1]; K. ZOH[1]; [1] Seoul National University, Seoul/ROK

P 3.29 **Hybrid systems based on ultrafiltration membranes and powdered activated carbon for advanced waste water treatment**
G. Hoffmann[1]; J. Koti[1]; P. Berg[2]; S. Panglisch[1]; [1] University Duisburg-Essen, Duisburg/D; [2] inge GmbH, Greifenberg/D

P 3.30 **Removal of micro-pollutants and closing the water cycle using hollow fiber nanofiltration**
E. Roesink[1]; R. Negrini[2]; [1] NXFiltration/ University of Twente, Enschede/NL; [2] NXFiltration, Enschede/NL

P 3.31 **Biomass and lipid production of autotrophic oleaginous microalgae using leachate of saline-alkali land from Shandong Province**
Y. He[1]; Y. HONG[1]; X. Liu[1]; W. Gu[1]; [1] Beijing Forestry University, Beijing/CN

P 3.32 **Reuse focused water reclamation technology in urban areas: An analysis of Indian Scenario**
P. K. Singh[1]; S. Maurya[2]; A. Ohri[2]; [1] Indian Institute of Technology, Banaras Hindu University, Varanasi (India), Varanasi/IND; [2] IIT(BHU), Varanasi/IND

P 3.33 **Water reuse under the perspectives of the Water-Energy-Food Nexus and the Water-Soil-Waste Nexus**
A. Mueller[1]; T. Avellan[2]; J. Schanze[3]; [1] Technische Universität Dresden and United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [2] United Nations University -Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES), Dresden/D; [3] Technische Universität Dresden, Dresden/D

POSTER PROGRAMME

P 3.34 **Using Treated Sewage Effluent to increase water security in Qatar**
H. Baalousha[1]; F. Ramasomanana[1]; [1] Qatar Environment and Energy Research Institute (QEERI), Doha/Q

P 3.35 **Water and Energy Nexus in Agricultural Water Supply for the Water-Energy-Food Nexus Approach**
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P 3.36 **Energy recovery from solids produced in biological domestic wastewater treatment.**
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J. Scheideler[1]; A. Ried[1]; [1] Xylem Services GmbH, Herford/D

P 3.40 **Beneficial wastewater use: Sorghum for fodder and energy**
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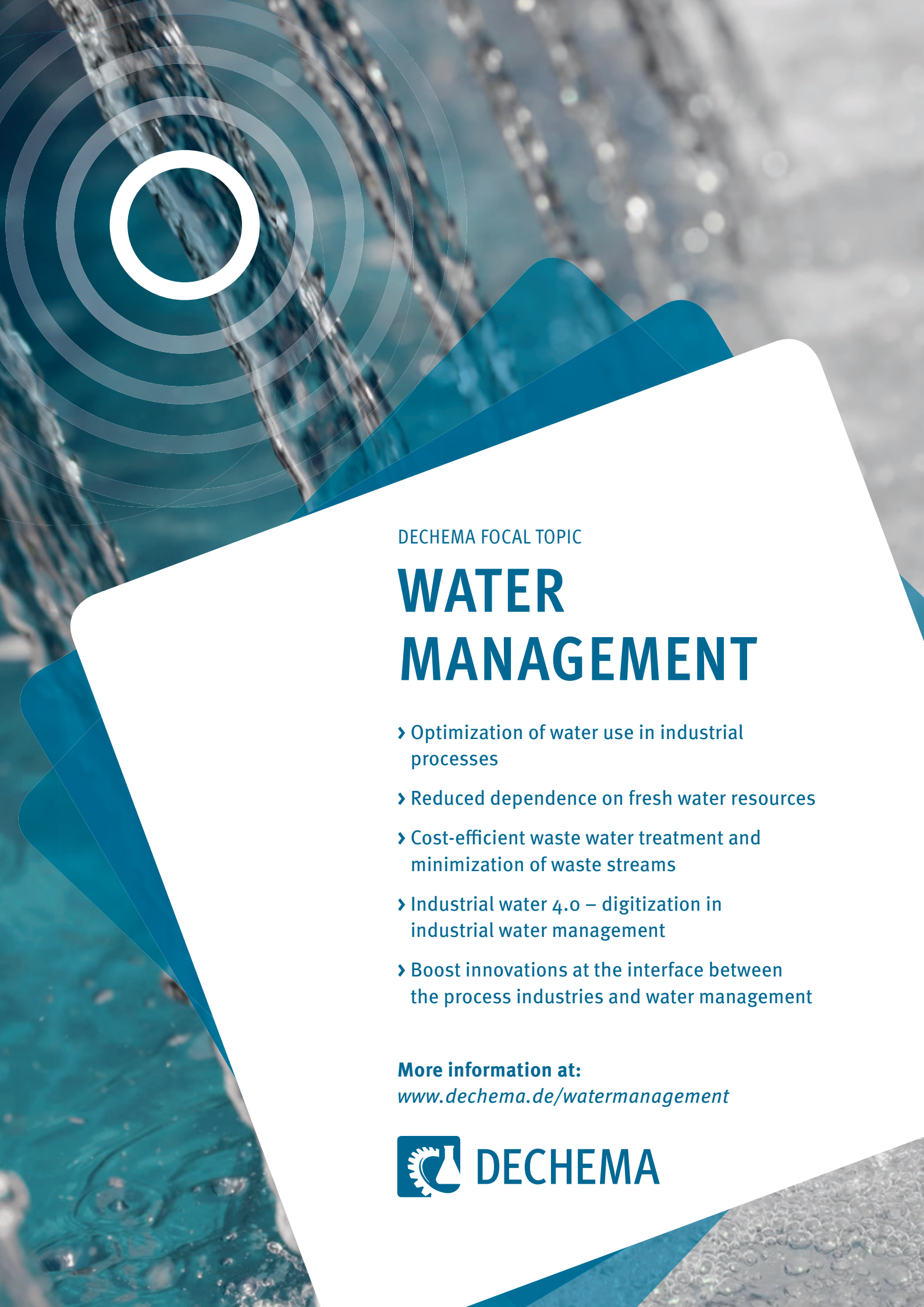

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WATER MANAGEMENT

- Optimization of water use in industrial processes
- Reduced dependence on fresh water resources
- Cost-efficient waste water treatment and minimization of waste streams
- Industrial water 4.0 – digitization in industrial water management
- Boost innovations at the interface between the process industries and water management

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