

INVITATION

Danish Water Forum proudly invites you to join the 15th Annual Water Research Conference starting on **2nd February 2021**. Covid19 has forced us to go completely online through TEAMS this year, but we are convinced we can provide you with the same enthusiasm as in the usual physical conference, again with 50+ presentations within a wide spectra of themes from both Denmark and abroad.

Since we go online in 2021, we will invite you to a conference with no fee, but with [compulsory sign-up HERE!](#)

The conference starts with an opening session focusing on research in and outside EU and beyond and will be followed by 8 technical sessions, spread out over February and March. Signing up will provide you with a link to all sessions and you can choose and pick as you like!

AWARDS: DWF is proud to announce that our members Grundfos and NIRAS are sponsoring 2 awards of 10.000 DKK each, which will be given to two young scientists for the two best presentations. The award-winners will be announced at the end of the conference.



PROGRAM

OPENING SESSION, Tuesday 2nd February 09:45-12:15 (All time slots given in the program are CET)

THEME: Water in EU and beyond

Moderator and Chair: Bjørn K. Jensen, Vice chairman, Danish Water Forum

- 09:45 Welcome, by Hans-Martin Friis Møller, Chairman, Danish Water Forum
- 09:55 Logistics, by Jesper Dannisøe, Director, Danish Water Forum
- 10:00 Focus on Water in the EU Parliament, by MP Pernille Weiss, Chairwoman of the Water Group in the EU Parliament
- 10:15 Horizon Europe. Opportunities for Danish Research and Innovation in the Water Sector, by Stefanie Bondy Jørgensen, Ministry of Higher Education and Science
- 10:35 Water4All. A Water Partnership within Horizon Europe, by Olivier Bouc, Agence Nationale de La Recherche, France
- 10:50 Q&A
- 11:00 A New Research Membership in European Water Association, by Bjørn Kaare Jensen, European Water Association
- 11:10 Water Europe – a Gateway to Research in EU and Beyond, by Durk Krol, Water Europe
- 11:25 Danida and water resources research in developing countries, by Mike Speirs, Ministry of Foreign Affairs of Denmark
- 11:40 International Cooperation in IFD Grand Solution Projects, by NN, InnovationFund Denmark
- 11:55 Q&A
- 12:05 Wrap up, by Jesper Dannisøe, Director, Danish Water Forum
- 12:10 Lunch break (on your own!!)

See next page for technical sessions

Technical sessions:

Session and date	Title	Chair and co-chair
Session 1: 02. February 2021, 13:00 – 15:00	Drinking water and treatment technologies.	Hans-Jørgen Albrechtsen, DTU Envir. and Torben Lund Skovhus, Via University College
Session 2: 03. February 2021, 09:00 – 12:00	Bridging the gap between SME's and the universities. Pitching session. (IN DANISH)	Bjørn K. Jensen, Danish Water Forum and European Water Association and Jesper Goodley Dannisøe, DWF secretariat.
Session 3: 3. February 2021, 13:00-15:00	Urban water and Climate change	Ole Mark, Krüger and Peter E. Holm, University of Copenhagen
Session 4: 4. February 2021, 13:00-16:00	International research cooperation in Africa	Chair Bjørn K. Jensen, Danish Water Forum and European Water Association and Lars Skov Andersen, China Resource Management
Session 5, Part A: 11. February 2021, 13:00-15:30	Advances in wastewater treatment technologies, PART A.	Hans-Martin Friis Møller, Danish Water Forum and Kalundborg Forsyning,
Session 5, Part B: 2. March 2021, 13:00-15:30	Advances in wastewater treatment technologies, PART B.	Hans-Martin Friis Møller, Danish Water Forum and Kalundborg Forsyning and xx
Session 6: 4. March 2021, 13:00-15:00	Taking a moment - Bridging Seniors and Young Water Professionals	Ines Breda, and moderators, Agnete Ansbæk and Eirini R. Kouzi, Young Water Professionals
Session 7: 18. March 2021, 13:00-15:00	Water Resources	Esben Auken, GEUS, Anders Refsgaard, COWI.

See the individual session programs and speakers below

Session 1: Water supply and treatment technologies

2 February 13:00 - 16:00, Teams

Chair: Hans-Jørgen Albrechtsen, DTU Envir. Co-chair: Torben Lund Skovhus, VIA University College

- 13:00 **Hans-Jørgen Albrechtsen**: Welcome
- 13:05 **Jesper Dannisøe**: Logistics
- 13:10 Occurrence of toxic pyrrolizidine alkaloids from butterbur in surface water and seepage water: **Vaidotas Kisielius**, Jawameer R. Hama, Bjarne W. Strobel, Hans Chr. Bruun Hansen, Lars Holm Rasmussen
- 13:25 Spatial analysis of water quality and income in Europe. Erik Brockwella, **Katarina Elofsson**, George Marbuah, and Sandra Nordmark
- 13:40 Membrane technology for removal of pesticide residues BAM, MCPA and MCPP in groundwater-based drinking water treatment: **Mahdi Nikbakht Fini**, Henrik Tækker Madsen, and Jens Muff
- 13:55 Preconcentration by reverse osmosis allows for prolonged biodegradation of pesticide residue BAM in pilot scale sand filters: **Morten Dencher Schostag**, A. Gobbi,, M.N. Fini, L. Ellegaard-Jensen, N. Badawi,, L.H. Hansen, J. Muff, A.C. Koch, J. Aamand, and C.N. Albers:
- 14:10 **Break**
- 14:25 The synergistic integration of advanced oxidation and nanofiltration – effect on fouling and rejection of Bisphenol A: **Katarzyna Janowska**, Xianzheng Ma, Vittorio Boffa, Mads Koustrup Jørgensen, Victor M. Candelari
- 14:40 A Novel Dual-reaction Centre Catalyst for Effective Degradation of Persistent Organic Pollutants (POPs): **Zhiqun Xie**, Zongsu Wei:
- 14:55 InnoFlot: Resource-efficient process optimization by applying flotation technology with food grade flocculants: **Emil Holm**, L.E. Jensen, L.M. Agneessens, C. Kragelund Rickers, J. Rasmussen, E.J. Jurgensen:
- 15:10 Surface disinfection using ozonated water - effects on food quality: **Lars Holm Rasmussen**, D.N. Lindqvist, M. Rosenfeld:
- 15:25 Measured and calculated Calcium Carbonate Precipitation Potential: S. V. Afshar, HJ. Albrechtsen, **Martin Rygaard**
- 15:40 Hans-Jørgen Albrechtsen: Closing remarks

Session 2: Præsentation af små- og mellemstore vandvirksomheder – Samarbejde mellem SMV'er og universiteter/forskere

3 February 9:00 – 12:00, Teams

The session will present Danish small and medium-sized water companies, including tales on the road from researcher and start-up to become a water company, concrete cases on cooperation between SMEs and universities/researchers, opportunities for future cooperation between SMEs and researchers, and lessons learned to share with future entrepreneurs. The presentations will be given in Danish or English.

Chair: Bjørn Kaare Jensen, Co-chair: Lars Skov Andersen

Draft program

- 9:00 Jesper Dannisøe, Director, DWF: *Welcome og logistics*
- 9:10 Mikkel Holmen Andersen, CTO: **Unisense** - The pathway for development of new sensors for N₂O
- 9:20 Søren Porsgaard, CEO: **SulfiLogger** - Reliable H₂S measurements – anywhere in the sewers or at treatment plants
- 9:30 Christian Wieth, CCO: **AquaGreen** - Innovative solution for wastewater sludge treatment
- 9:40 Krzysztof (Chris) Kowalski, Civil Engineer: **Danwatec** - Experience with pilot plants and modelling
- 9:50 Per Skougaard Kaspersen, Senior Specialist: **LNH Water** - Strategisk planlægning af afløbssystemer
- 10:00 *Follow up questions and answers*
- 10:10 Thomas Munch-Laursen, CEO: **Aguardio**
- 10:20 Søren Robenhagen, Sales Director: **Aquaporin** - Water made by nature
- 10:30 Jørgen Bo Nielsen, Director: **CBMC** - Digital climate adaptation tools
- 10:40 Peter Rasch, CEO: **DRYP** - Data and collaboration – bridging boundaries; scientific, geographical and organisational
- 10:50: Vibe Gro, Co-owner: **PileByg**
- 11:00: *Follow up questions and answers*
- 11:10 Karl Haxthausen, PhD: **NIHAX IvS** - PhD projekt leder (snart) til spinoff: bio-elektroder - nyt virkemiddel til sørestaurering
- 11:20 Lasse Boehm, Product manager: **Cembrane**
- 11:30 Mads Nedergaard, CEO: **VIABLE**- Produkt intro MODULE1 og udviklingssamarbejde med DTU
- 11:40 David N. Ø.-Munck, Process Engineer: **LiqTech** – Sustainable water treatment
- 11:50 Rune Kirt, CEO: **Kirt x Thomsen**: Envisioning new water tech innovation
- 12:00 *Follow up questions and answers*
- 12:10 Bjørn Jensen: *Closing remarks*

Session 3: Urban Water and Climate Change

3 February 2021, 13:00 - 14:45, Teams

Chair: Ole Mark, Krüger. Co-chair: Peter E. Holm, KU, PLEN.

- 13:00 **Ole Mark:** Welcome
- 13:05 **Jesper Dannisøe:** Logistics
- 13:10 Surface permeability for permeable asphalt and effects of maintenance. **J. Støvring**, L. S. Meyer.
- 13:25 Risk of reactivating existing contamination in establishment of SUDS in urban environments. **Anna B. Medhus**, S.E. Poulsen, T.R. Andersen, M. Bak, N.K. Christensen, P. Thomsen, J.-O. Andreasen, T.B. Hansen.
- 13:40 Water Smart Planning. **M. Ryom**, P. Thomsen.
- 13:55 A detailed, adaptable, country-wide rainfall-runoff model – application in Denmark: **Alexandra M. Murray**, G.H. Jørgensen, N. Balbarini.
- 14:10 Vacant
- 14:25 **Ole Mark, Peter E. Holm:** Closing remarks

Session 4: International research cooperation in Africa

4 February 13:00 - 16:00, Teams

The session is of particular interest to present and future young water professionals with interest in international research cooperation that contributes to the Sustainable Development Goals, in particular Goal 17 Target 9: “Enhance international support for implementing effective and targeted capacity-building ... to implement all the Sustainable Development Goals, including North-South cooperation”.

The presentations include recent and on-going North-South water cooperation projects between Denmark, Ghana, Tanzania and South Africa, not surprisingly with focus on Danish peak competences in groundwater management, use and protection, but also including other Danish strongholds.

The projects are financed mainly by “Danida” via the Danish Fellowship Centre and the Strategic Sector Cooperation, but the Poul Due Jensen Fund has given us the opportunity to present the winner of the Grundfos prize for the best presentation at the 2019 DWF Annual Conference.

Chair: Bjørn Kaare Jensen, Co-chair: Lars Skov Andersen

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| 13:00 | Peter E. Holm: Welcome |
| 13:10 | Jesper Dannisøe: Logistics |
| 13:15 | Delineating groundwater potential zones of the Nasia Basin, Northern Ghana using geo-statistics, GIS/RS: Abdul-Samed Aliou , Sandow Mark Yidana, Yvonne Sena Akosua Loh, Larry Pax Chegbeleh |
| 13:30 | Groundwater recharge controlled by ephemeral rivers and climate in the semi-arid Limpopo Province of South Africa: John Lindle , Karen Villholth, Richard Taylor, Karsten Høgh Jensen |
| 13:45 | Holistic groundwater resource characterisation and assessment model for the Nasia Basin, Northern Ghana: Millicent Obeng Addai , Sandow Mark Yidana, Peter Engesgaard, Larry-Pax Chebeleh, Lars Trolborg, Clement Alo: |
| 14:00 | Integrated groundwater management in a semi-arid diverse stakeholder catchment in Limpopo Province, South Africa: Karen G. Villholth , Girma Y. Ebrahim, Manuel Magombeyi, Karsten H. Jensen, Jaqui Goldin, Resego Mokomela |
| 14:15 | Break |
| 14:25 | North – South Groundwater Partnership: Lars Skov Andersen , James Sauramba: |
| 14:40 | New geophysical tools applied for siting of groundwater wells in SADC Member States: Denys Grombacher , P. Maurya, R. Kraghede, J. Pedersen, J. Lind and E. Auken: |
| 14:55 | Testing Danish groundwater mapping methodologies in South Africa, Case Ladysmith, South Africa: Jan Kürstein , T.M Madsen, P.G. Pedersen, M. S. Linneberg, F. Fourie, M. Awodwa, N. Vermaak, G. Metcalf: |
| 15:10 | Flowing rivers and full stomachs? Socio-economic benefits of ecological infrastructure in South Africa: Maya Pasgaard, Niels Fold , Rasmus Skov Olesen, Laura Vang Rasmussen: |
| 15:25 | Pathways to Water Resilient South African Cities (PaWS): Lise Herslund , Patience Mguni, Marina Bergen Jensen, Kirsty Carden, Neil Armitage: |
| 15:40 | Assessment of new sludge management strategies in the Cape Flats wastewater treatment works, South Africa: Xavier Flores-Alsina , E. Ramin, K.V. Gernaey, T. Harding, D. Ikumi, C. Brouckaert, D. J. Batstone, S. Söttemann: |
| 15:55 | Peter Holm: Closing remarks |

Session 5A: Advances in wastewater treatment technologies

11. February 13:00 - 16:00, Teams

Chair: Hans-Martin Friis Møller, Co-chair:

- 13:00 Hans-Martin Friis Møller: Welcome
- 13:10 Jesper Dannisøe: Logistics
- 13:15 Ozone microbubbles/ultrasonic system for persistent organic pollutants (POPs) removal in wastewater: **Xingaoyuan Xiong**, Zongsu Wei
- 13:30 Elimination of resistant bacteria from untreated hospital wastewater – an environmentally friendly approach tested in pilot scale: **Sabine Lindholst**, C. Kragelund, M. Mousa, N. Mousa, C. Andersen, T. Eilkær, H.R. Andersen, R. Chhetri
- 13:45 Efficient biological removal of pharmaceuticals from wastewater effluent using moving bed biofilm (MBBR)/ eXeno technology: Emma S. Rasmussen, **Jonas Frigaard**, Kasper U. Kjeldsen, Caroline K. Rickers, Aviaja A. Hansen, Kai Tang, Henrik R. Andersen
- 14:00 **Break/discussion**
- 14:15 Ozonation of xenobiotic compounds from wastewater containing bromide, full scale experiences from Kalundborg Central Wastewater Treatment Plant: **Sille Bendix Larsen**, A. Kamper, D. Rasmussen
- 14:30 Regeneration of Fe(II) from Fenton-derived ferric sludge using a novel biocathode: **Guan Wang**, Kai Tang, Yufeng Jiang, Henrik Rasmus Andersen, Yifeng Zhang
- 14:45 Degradation of metoprolol in a bioelectrochemical system (BES): **Xiaoyan Yang**, Rusen Zou, Kai Tang, Irini Angelidaki, Henrik Rasmus Andersen, Yifeng Zhang
- 15:00 A novel sponge filter for simultaneous removal of oil and chemical additives from produced water: **Pegah Nazari**, Omid Yousefi, Zongsu Wei
- 15:15 Discussion
- 15:30 Closing remarks

Session 5B: Advances in wastewater treatment technologies

2. March 13:00 - 16:00, Teams

Chair: Hans-Martin Friis Møller, Co-chair:

- 13:00 Hans-Martin Friis Møller: Welcome
- 13:10 Jesper Dannisøe: Logistics
- 13:15 Machine learning for anomaly detection in combined sewer systems: **Rocco Palmitessa**, A. Brink-Kjær, L. K. H. Clemmensen, M. Borup, P. S. Mikkelsen
- 13:30 From wastewater to industry, the potential of Constructed Wetland biomass to produce high value bio-resources: **M. A. Rodriguez-Dominguez**, B. E. Bonefeld, M. A. Jensen, H. Brix and C. A. Arias:
- 13:45 Use of struvite and PCP as phosphorus sources for microbial protein production: **Estelle M. Goonesekera**, P. Tsapekos, I. Angelidaki, Borja Valverde-Pérez
- 14:00 Membrane distillation for simultaneous recovery of phosphorus and ammonia from digester centrate: **Aamer Ali**, M.L. Christensen
- 14:15 Phosphorous recovery from wastewater treatment: testing the bioavailability of P bound to calcite material for maize (*Zea Mays* L.) growth: **Solvei Mundbjerg Jensen**, C. Esposito, D. Konnerup, H. Brix, C.A. Aria
- 14:30 **Break/Discussion**
- 14:45 Microflora Danica: Investigation of the microbiome of Denmark with focus on wastewater and wastewater treatment plants: **Per Halkjær Nielsen**, A. Murguz, G. Dottorini, M. Nierychlo, V.R. Jørgensen
- 15:00 Denitrifiers in activated sludge are particularly vulnerable to nanoplastic pollution: **Thomas William Seviour**, S. Mugunthan, S. Kjelleberg:
- 15:15 Putting MABR technology to the test at the Ejby Mølle WRRF: **Nerea Uri Carreño**, P.H. Nielsen, X Flores-Alsina, Krist V. Gernaey
- 15:30 Vacant:
- 15:45 Discussion/closing remarks

Session 6: Taking a moment - Bridging Seniors and Young Water Professionals

4. March 13:00 - 16:00, Teams

Organizers: *Ines Breda, and moderators, Agnete Ansbæk and Eirini R. Kouzi, Young Water Professionals*

This workshop will facilitate communication across generations in the water sector through a series of presentations by guest speakers and panel discussions. The workshop will include guest from the industry and the public sector. You will gain insight on the career path and ambitions of prominent seniors professionals. You will get to know their biggest mistakes and biggest accomplishment. You will get the opportunity to get advice and perspective on your own career.

Tentative program:

15 min Setting up, Intro of topic plus Hi to all studios

5 min Launching the conversation: Take a moment to see what today's challenges are and in what scale of severity and urgency.

10 min Speaker 1 on: Career how this was 30-50 years ago, which were the challenges, were you able to identify them at the time? Did you foresee the challenges of today?

10 min Panel in Studio 1. Do they agree? What do they have to add?

In the meantime, audience is making questions for either panelists or speaker.

10 min Q&A from audience

5 min BREAK

10 min Speaker 2 on: "What advice would you give to a younger you? "

10 min Panel in Studio 2. Do they agree? What do they have to add? Soft Skills vs Technical Skills

In the meantime, audience is making questions for either panelists or speaker.

10 min Q&A from audience

Session 7: Water Resources

18 March 2021, 13:00 - 16:00, Teams

Chair: Esben Auken, GEUS. Co-chair: Anders Refsgaard, COWI.

- 13:00 **Esben Auken:** Welcome
- 13:05 **Jesper Dannisøe:** Logistics
- 13:10 Using machine learning to downscale climate change-induced changes to the shallow groundwater table: **Raphael Schneider**, H. J. Henriksen, J. Koch, S. Stisen
- 13:25 Assessing the effect of shallow hydrogeology on water table depth variation and potential nitrate reduction in subsurface drained clayey till area: **Hafsa Mahmood**, R.R. Frederiksen
- 13:40 A concept for hectare-scale nitrate retention mapping by full integration of geophysical, geological, geochemical and hydrological data: **Rasmus R. Frederiksen**, A.V. Christiansen, N. Claes, T.N. Vilhelmsen, H. Kim, B. Hansen, E. Auken
- 13:55 Test of bacterial isolates to improve nitrate removal efficiency in woodchip bioreactors at low temperature: **Arnaud Jéglot**, S. R. Sørensen, K. M. Schnorr, F. Plauborg, L. Elsgaard
- 14:10 **Break**
- 14:25 Direct Sampling - Quantifying what we know and filling in what we do not know. **Niels Claes**, Vilhelmsen T.N., Frederiksen R.R., Kim H., Foged N., Christiansen A.V.
- 14:40 Vertical flow constructed wetlands to treat water contaminated with cyanotoxins. **Pedro N Carvalho**, A. Potokar, LIMNOS, C.A. Ramirez-Vargas
- 14:55 Electrokinetic remediation of contaminated sites: Advances from process-based simulations and machine learning: **Riccardo Sprocati**, M. Rolle
- 15:10 Vacant
- 15:25 **Esben Auken, Anders Refsgaard:** Closing remarks