

VDI

3rd International VDI Conference

Sewage Sludge Treatment

April 9 – 10, 2019 in Antwerp, Belgium

- Implications of EU Legislation and Policy
- Current Technology on (energetic) Recovery of Sewage Sludge
- Ressource Recovery from Sewage Sludge
- Recent Developments of international Markets
- New Insights on Thermal Treatment of Sewage Sludge

+ Excursion to **INDAVER** and **SLECO** Joint Venture Waste-to-Energy Plant **ECLUSE**

Keynote:
Indaver NV

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An event organized by VDI Wissensforum GmbH
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08:30 Registration & Welcome Coffee

09:00 Chairs' Welcome and opening address

Prof. Peter Quicker, Chairholder, RWTH Aachen - Unit of Technologies of Fuels;
Dr.-Ing. Ragnar Warnecke, Managing Director, GKS - Gemeinschaftskraftwerk Schweinfurt GmbH, both: Germany

I. Legislation, Policy and Legal Implications for international Projects

09:15 EU Legislation on Energy and Materials from Waste

- Recycling: Quantity vs. quality?
- How to achieve a non-toxic environment?
- Diversion from landfills
- Boosting recovery from bottom ash

Dr. Ella Stengler, Managing Director, CEWEP, Belgium

09:45 Implementing EU Waste Rules and Recycling Goals

- Sources of EU waste legislation, control and procedure by the EU
- Main targets, time horizon 2020 and 2030
- Current implementation in member countries
- Investments and markets

Mark Döing, General Manager, ecoprog GmbH, Germany

10:15 Pursuing Energy from Waste Projects: Structures and recent Developments in the Middle Eastern and North African Region

- Market overview and driver
- Regulatory framework on selected countries
- Case studies: Kuwait, Dubai and Oman
- Legal pitfalls and considerations

Dr. Tobias Faber, Lawyer/Partner, Hogan Lovell, Germany

10:45 ☕ Networking & Coffee Break

II. Perspectives on Emerging and Established Markets

11:15 The future Role of WtE in the Circular Economy

- Sustainability and value creation through CE
- Residual waste produced within CE and how to deal with it through WtE
- Double role of WtE: Use of residual waste & keeping circles safe and clean
- WtE as an enabler to make CE happen
- The need of further investments to achieve CE package goals

Paul De Bruycker, CEO, Indaver NV, Belgium

11:45 Emerging Countries and Markets for Waste-to-Energy

- Global waste development, EfW market overview
- Importance of value chain
- Alternative waste management strategies
- Dynamic of selected „Waste-to-Energy“ emerging markets

Amedeo Vaccani, Managing Director, A.Vaccani&Partner, Switzerland

Keynote

12:15 The Role of Product Regulations and Standards in the Circular Economy

- Revisiting the concept of end-of-waste and its function in a circular economy
- How “circular” are existing product regulations and standards?
- How to deal with the absence of (circular) product regulations and standards?
- Contribution of product regulations and standards to secondary products and raw materials movement in the internal market

Emiel de Bruijne, Consultant, co-author: Ferdinand Zotz, both: Resource and Waste Management Department, Ramboll, Germany

12:45 What's happening on both Sides of the Channel for Waste-to-Energy?

- What's the WtE market status in France?
- What's the story of WtE success in UK?
- What's the evolution of alternative thermal treatment in UK?
- Some case studies of projects and realization in both countries

Christophe Cord'homme, Business & Products Development Director, CNIM Group, France

13:15 🍷 Lunch

III. Status Quo of Sewage Sludge Treatment

14:30 Treatment of Sewage Sludge – Introduction and Overview

- Disposal structures, quantities and capacities
- Treatment and disposal options for sewage sludge
- Thermal treatment technologies

Prof. Peter Quicker, Chairholder, RWTH Aachen - Unit of Technologies of Fuels, Germany

15:00 Incineration Technologies for Sewage Sludge

- Co-combustion and Mono-combustion
- Overview of P-recovery processes

Dipl.-Phys. Edmund Fleck, Managing Director, MARTIN GmbH für Umwelt- und Energietechnik, Germany

15:30 Alternative Techniques for thermal Treatment of Sewage Sludge from medium sized Sewage Treatment Plants

- Technical framework of pyrolysis and gasification processes for the treatment of municipal sewage sludge
- First experiences from two projects with alternative treatment techniques in Linz-Unkel and Renningen
- Outlook on alternative thermal processes considering the recovery of phosphorus or the use of treatment residues as fertilizer

Markus Gleis, Scientific Staff, German Environment Agency, Germany

16:00 Excursion to INDAVER and SLECO:Waste-to-Energy Plant ECLUSE

The visit is included in the registration fee. Due to organizational reasons we kindly ask our participants to register for the tour in advance. Please see the registration form on the last page. **Limited Places!**

20:00  Get-together

At the end of the first conference day we kindly invite you to use the relaxed and informal atmosphere for in-depth conversations with other participants and speakers.

IV. Sludge Incineration and Plant Concepts

09:00 P-Recovery from Sludge

- Current state of P-recovery from sludge
- Legislation and technology challenges
- Developments in the Netherlands and Germany

M.Sc. Renske Verhulst, Nutrient Platform, Netherlands and **Dr. Daniel Frank**, Managing Director, Deutsche Phosphor-Plattform e.V., Germany

09:30 Low Temperature Belt Drying: An efficient, safe and environmentally-friendly Solution when well done!

- Energy efficiency: Enhanced waste heat recovery
- Intrinsically safe: Out of ATEX application
- Odour management: Not only the dryer process air
- Application field: Examples of a broad range of applications

Lynne Bouchy, International Business Development, Suez, Spain

10:00 Electro-Dewatering (EDW) of Sludge: A technological Solution to turn a Problem into an Opportunity

- Mechanical sludge dewatering achieves maximum dry solid content of 30%
- EDW: Dry solid content up to 45%, compatible with monoincineration without prior thermal drying
- EDW: Effective on aerobically stabilized sludge
- High energy consumption of EDW is counterbalanced by lower costs in transport and disposal

MScEng, Simone Visigalli, Research Fellow, co-authors: PhD Andrea Turolla, Post-Doc Fellow Researcher; Prof. Roberto Canziani, Professor, all: Politecnico di Milano, Italy

10:30  Networking & Coffee Break

11:00 Integrated Concepts for thermal Sludge Recycling with Option for phosphorus Recovery

- Efficiently combined drying and thermal utilisation of sewage sludge in a fluidized bed furnace
- Sludge drying with the innovative HUBER belt dryer system
- Production of phosphorus-rich sewage sludge ash & optional phosphorus recovery

Harald Plank, Managing Director, sludge2energy GmbH - Team leader Sludge Drying of HUBER SE, co-author: Dipl.-Ing.(FH) Sonja Wiesgickl, Sales Engineer, sludge2energy GmbH, both: Germany

11:30 A financially viable Solution to Use treated Sludge as Fertilizer

- Main challenges of using sludge as fertilizer
- How to approach sludge treatment as a solution
- The combined method of treatment/drying
- Main benefits of using enriched sludge on soil

Gabriel Kainuma, CEO, Lodologic, Brazil

12:00  Lunch

V. Recovery of Phosphorus and other Resources from Sludge

13:00 Ammonia Recovery from Wastewater and Digestate as Nitrogen Fertilizer

- Closing the nitrogen cycle
- Recovery of ammonium sulphate or nitrate
- Proven concept with business case of € 0.5 - 3.0 per kg N recovered, depending on ammonium concentration and local circumstances

Wilbert Menkveld, Manager Research, Development & Technology, Nijhuis Water Technology B.V., Belgium

13:30 Proven full scale Struvite Technology for Phosphate Recovery

- Struvite recovery and Long term full scale experience
- Dosing only Mg(OH)₂
- Simultaneous PO₄ recovery and BOD removal
- Downstream nitrogen removal by anammox

Dr. Tim Hendrickx, Process Specialist and Product Manager, and **Emil Sandstra**, Sales Manager Benelux, both: Paques bv, The Netherlands

14:00 Sewage Sludge Utilization with the TetraPhos® Process

- Legal framework: Challenge and opportunity
- Sewage sludge recycling: Source of energy and valuable resources
- Phosphorus recycling: Findings, possibilities and economic implementation

Ralf Czarnicki, CEO, REMONDIS Aqua Stoffstrom GmbH & Co. KG, Germany

14:30  Networking & Coffee Break

15:00 Phosphorus Recovery Actions in Copenhagen

- The history of investigations in BIOFOS
- Why not struvite
- Electrodialysis and Pilot experiments with Ash2Pho
- Design of a demonstration plant

Dines Thornberg, Development Manager, BIOFOS A/S, Denmark

15:30 Magnetic Vivianite Recovery from Sewage Sludge: A new Perspective for P-Recovery and Pilot Testing

- Up to 80% of all P in sewage sludge can be present as vivianite
- Novel approach for P recovery for sewage treatment plants using chemical precipitation - Also recovers iron and enables lower P effluent limits

Leon Korving, Scientific Project Manager, Wetsus, The Netherlands

16:00 Conference chair's closing remarks

16:15 End of conference

5th International VDI Conference 2019

Energy and Materials from Waste

Date and Venue:

April 9 – 10, 2019 in Antwerp, Belgium

In 2019 the conference „Energy and Materials from Waste“ is held for the 5th time. Use the event to discuss the most recent topics in circular economy, advanced technologies, projects and markets and current developments in the Waste-to-Energy sector with other experts.

The „Energy and Materials from Waste“ conference provides you with information about innovations and trends as well as the current legal position on waste disposal. Amongst others, find out more about:

- W-t-E in the context of international Legislation and Policy
- Emerging Markets and recent Developments
- Cutting Edge Use Cases in Ressource & Energy Recovery
- State-of-the-Art Plant Technology
- Future of Circular Economy

www.vdi-international.com/06K0950019



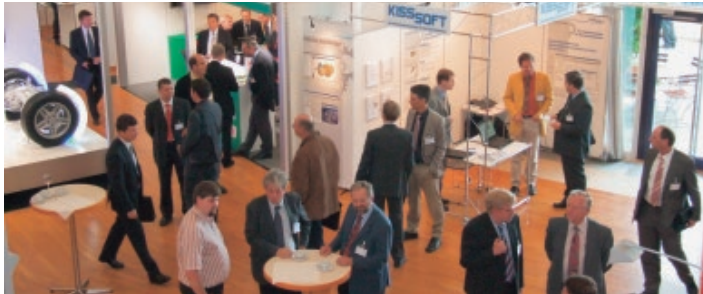
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Sewage Sludge Treatment

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Terms and Conditions

Registrations: Registrations for conference attendance must be made in writing. Confirmation of your registration and the associated invoice will be mailed to you. Please do not pay your conference attendance fee until you have received our invoice and its invoice number to be stated for transfer. Belgian VAT directives apply. Please state your VAT-ID with your registration.

Conference venue

Crowne Plaza Antwerp
A. Gerard Le Grellelaan 10
2020 Antwerp, Belgium
Phone: +32 3 259 75 00
Email: info@cpantwerp.com



You will find more hotels
close to the venue at
www.vdi-wissensforum.de/hrs

Hotel room reservation: A limited number of rooms has been reserved for the benefit of the conference participants at the Crowne Plaza Antwerpen. Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

Please refer to "VDI Conference". For more hotels: www.vdi-wissensforum.de/hrs

VDI Wissensforum service package: The conference package includes the conference documents (online), beverages during breaks, lunch and the get-together on April 9, 2019.

Conference attendance conditions and terms: By way of your registration you accept the conference attendance conditions and terms of VDI Wissensforum GmbH as binding. Any cancellation of your registration must be made in writing. We will charge you only an administrative fee of € 50.00 plus Belgian VAT if you cancel your registration earlier than 14 days ahead of the conference date. Any cancellation that reaches us after this deadline will entail the conference attendance fee as stated in our invoice to be charged in full. The date of the post office stamp of your written cancellation will be the decisive criterion. In that case, we will gladly mail you the conference documents on request. Subject to agreement, you may name a substitute participant. Individual parts and sections of conferences and seminars cannot be booked. You will be informed without delay if an event has to be cancelled for unforeseeable reasons. In that instance, you will be entitled only to a refund of your conference attendance fee if already paid. We reserve the right to exchange speakers and/or change the program sequence in exceptional cases. In any case, the liability of VDI Wissensforum GmbH is restricted exclusively to the conference attendance fee.

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Register online!

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Yes, I will participate as follows:

Participation Fee + VAT

VDI Conference 09.-10.04.2019
(06K0906019) € 1,490

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* For the price category 2, please state your VDI membership number

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