

5TH EUROPEAN CONFERENCE ON SLUDGE MANAGEMENT

ECSM'2019 | 6 > 8 OCTOBER 2019

Final program

Sunday, October 6, 2019

19h00 **Welcome reception at “Hotel provincial” – Place Notger 2 – 4000 Liège**

Monday, October 7, 2019

- 8h00 – 9h00 **Participant registration**
Academic Room of University of Liège, Place du 20 Août 7, 4000 Liège
- 9h00 – 9h15 **Conference opening by Angélique Léonard**
Welcoming address by Pierre Wolper, Rector of ULiège
- 9h15 – 10h00 **Plenary lecture 1 – Chair: Ludovico Spinosa**
« A holistic approach to face challenges of wastewater operators for sewage sludge management in Europe » by Jean-Pierre Silan, EurEau
- 10h00 – 10h45 **Plenary lecture 2- Chair : Andrea Gianico**
« Developments in regulatory and downstream user perspectives in sewage sludge management in Europe: drivers, challenges, opportunities» by Chris Thornton, European Sustainable Phosphorus Platform
- 10h45 – 11h10 **Coffee break and poster session**
- 11h10 – 12h30 **Session 1: Strategic aspects of sludge management – Chair : F. Dilek Sanin**
- 11h10 – 11h30: Re-conceptualizing Sludge Management: Regulatory and Socio-economic aspects, Ludovico Spinosa, Puja Doshi
- 11h30 – 11h50: Use of biosolids in Europe: possibilities and constraints, Andrea Gianico, Giuseppe Mininni, Camilla Maria Braguglia, Giulia Sagnotti, Marco Porrega
- 11h50 – 12h10: Handling sewage sludge – technological opportunities and limitations, Veronika Kerberová
- 12h10 – 12h30: Sewage sludge as a source of energy, Ferenc Zsabokorszky, Ferenc Ligetvári
- 12h30 – 14h00 **Lunch and poster session**

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- 14h00 – 15h00 **Session 2: Thermal treatment and characterization – Chair: Antonio Moran**
- 14h00 – 14h20: Influence of back mixing on the pilot-scale convective drying of sewage sludge: evolution of the volume and exchange surface, Jie Li, Cheng-Wei Wu, Laurent Fraikin, Thierry Salmon, Dominique Toye, Angélique Léonard
 - 14h20 – 14h40: Energy efficiency in sludge drying, Jasper Aalders, Peter Quaak, Jeffrey IJdo, Angélique Léonard, Laurent Fraikin, Thierry Salmon, Menno Maingay
 - 14h40 – 15h00: Towards 3D rheology for sludge? Mohamed Mouzaoui, Martial Sauceau, Jean-Christophe Baudez, Patricia Arlabosse
- 15h00 – 16h20 **Session 3: Sludge valorization – Chair: Pascal Ginisty**
- 15h00 – 15h20: Enzyme production by bacillus licheniformis from thermally hydrolysed sludge, Manuel García, Sergio Collado, Paula Oulego, Mario Díaz
 - 15h20 – 15h40: Ultrafiltration for recovery of valuable components from hydrolysed sludge, Sergio Collado, Daniel Núñez, Paula Oulego, Mario Díaz
 - 15h40 – 16h00: Secondary sludge treatment by microbial electrolysis cell: simultaneous nitrogen and carbon removal, M. Isabel San-Martín, Guillermo Pelaz, A. Sofia Portillo, Adrián Escapa, Antonio Morán
 - 16h00 – 16h20: Disposal of sludge in agriculture: the effect of the electro-dewatering process on biological stability and pathogenic contamination, Simone Visigalli, Jannatul Rumky, Andrea Turolla, Roberto Canziani
- 16h20 – 16h45 **Coffee break – Free time until bus departure**
- 18h00 **Bus departure from conference site to Blegny-Mine, one of the 4 majors mining sites of Wallonia recognized Unesco World Heritage**
- 18h30 **Visit of Blegny-Mine followed by conference banquet at 20h00.**

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Tuesday, October 8, 2019

- 8h30 – 9h15 **Plenary lecture 3 – Chair: Angélique Léonard**
«Micropollutants in Sludge: Challenges and the Need for New Approaches in Sludge Management» by Prof. Dilek Sanin
- 9h15 – 10h35 **Session 4: Sludge digestion – Chair: Pavel Jenicek**
- 9h15 – 9h35: Improving the Flexibilization of Digester Gas Production Through Predictive Choice of Co-Substrates, Christian Hubert, Bettina Steiniger, Christian Schaum
- 9h35 – 9h55: Enhanced anaerobic digestion of sewage sludge by hydrogen addition: Influence on microbial population, Elia Judith Martínez, Ana Sotres, Georgios Papacharalampos, Cristian Bernabe Arenas, Antonio Morán, Xiomar Gómez
- 9h55 – 10h15: Investigation of energy production potential and toxic effects of industrial sludges during anaerobic digestion, Hazal Aksu Bahçeci, Latif Selim Sanin, F. Dilek Sanin
- 10h15 – 10h35: Comparison of Methane Yields from Batch Tests and Continuous Digesters, Bettina Steiniger, Christian Hubert, Christian Schaum
- 10h35 – 11h00 **Coffee break**
- 11h00 – 12h40 **Session 5 : Sludge dewatering – Chair: Marie-Line Daumer**
- 11h00 – 11h20: Economic and environmental overview of sludge treatment in reed systems - 30 years of experience, Steen Nielsen
- 11h20 – 11h40: Sludge conditioning, thickening and dewatering optimization in a screw centrifuge decanter: which means for which result ? Pascal Ginisty, Romain Mailler, Vincent Rocher
- 11h40 – 12h00: Sludge dewatering with automatically optimised conditioning –initial technical experience with the new flocculation principle, Michael Sievers, Michael Niedermeiser, Jochen Gaßmann, Tim Hartmann, Sven Dilba

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12h00 – 12h20: Polyelectrolyte consumption optimisation of dewatering centrifuges at the North-Budapest Wastewater Treatment Plant, Katalin Kiss, Zsófia Kassai

12h20 – 12h40: Impact of the anaerobic digestion process configuration on the sludge dewaterability, Pavel Jenicek, M Capuano, Ch. Marchi, Marie Vojtiskova

12h40 – 13h45 **Lunch**

13h45 – 14h30 **Plenary lecture 4 – Chair: Laurent Fraikin**
« The new EU fertilizing products regulation and its practical implications» by Dr Antoine Hoxha, Fertilizers Europe

14h30 – 15h30 **Session 6: Phosphorus recovery – Labscale – Chair: Joe Harrington**

14h30 – 14h50: Understanding Phosphorus dissolution in sewage sludge by bioacidification, Mohamed Amine Saoudi, Karel As, Marie-Line Daumer

14h50 – 15h10: Potential for increasing phosphorus recovery from sewage sludge by bio-Acidification, Marie-Line Daumer, Younes Bareha, Mohamed Saoudi

15h10 – 15h30: Phosphorus recovery from dried sludge with reactive extraction to remove impurities, Zaheer Ahmed Shariff, Laurent Fraikin, Angélique Léonard, Andreas Pfennig

15h30 – 16h00 **Coffee break**

16h00 – 17h20 **Session 7: Phosphorus recovery – Pilot scale - Chair: Andreas Pfennig**

16h00 – 16h20: First results of the EUPHORE pilot plant, Daniel Klein, Karl-Georg Schmelz, Levent Pamuk, Marie-Edith Ploteau, Frank Zepke, Siegfried Klose

16h20 – 16h40: Results of Pilot Scale Tests for P-Recovery from Emschergerossenschaft-Lippeverband Sewage Sludge Ashes with REMONDIS TetraPhos® Process, Dennis Blöhse, Patrick Herr

16h40 – 17h00: P-recovery as struvite from digested sludge – experience from the full scale, Bart Saerens, Sam Geerts, Marjoleine Weemaes

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17h00 – 17h20: Recovered Phosphorous fertiliser and effects on residual soil P indices in relation to commercial P fertiliser, Ciaran O'Donnell, Niamh Power, D. Barnett, Joe Harrington

17h20 – 18h00 **Conference conclusions and closing cocktail**

Posters

1. Anaerobic sludge as inoculum for innovative bioelectrochemical systems, Raúl Mateos, Raúl M. Alonso, Daniela Carrillo, Ana Sotres, Adrián Escapa, Antonio Moran
2. Assessment of electrooxidation as pretreatment to enhance anaerobic digestion of waste activated sludge, Elia Judith Martínez, Cristian Barnabe Arenas, Georgios Papacharalampos, I. San Martín and Xiomar Gómez
3. Circular economy with sludge - a novel solution, Verma Prem, Hilmar Sune
4. Emerging pollutants in walloon sewage sludge: towards an integrated methodology to evaluate health and environmental impacts of farmland spreading, Cécile Kech, Stéphanie Bémelmans, Eric Moïis, Caroline Nadin, Christophe Frippiat
5. Implementation of the Struvia phosphorous recovery pilot plant at an Irish waste water treatment plant, Ciaran O'Donnell, Niamh Power, Denise Barnett, Joe Harrington
6. LC/MS and GC/MS determination of emerging pollutants in walloon sewage sludge, Stéphanie Bémelmans, Cécile Kech, Eric Moïis, Caroline Nadin, Christophe Frippiat
7. Microplastic in sewage sludge - an extraction method as a pre-treatment step for the analysis of microplastic, Annett Mundani, Steffen Krause, Christian Schaum
8. Optimization and economic assessment of an environment-friendly in situ enzymatic biodiesel production method from urban sewage sludge, Cécile Kech, Damien. Garot, Caroline Nadin, Christophe Frippiat
9. Pulse process: recovery of phosphorus from sludge and its product quality assessment, Zaheer Ahmed Shariff, Aleksandra Bogdan, Laurent Fraikin, Evi Michels, Angélique Léonard, Erik Meers, Andreas Pfennig, B. Durand
10. Strategy and concept-approach for the recovery of phosphorus in one of the largest sewage sludge producers of Germany, Dennis Blöhse, Dirk Bogaczyk

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11. Towards quality control of feedstocks for biodiesel production: the case of urban sewage sludge, Cécile Kech, Damien. Garot, Caroline Nadin, Christophe Fripiat
12. Utilisation of sewage sludge in combination with recultivation of degraded lands for in-situ production of a soil substitute, Balint Heil, Gábor, Kovács, Sándó, Horváth
13. Validation of a pilot scale belt filter for sludge dewatering, Laurent Fraikin, Pierre Wuidar, Thierry Salmon, Angélique Léonard
14. Demonstration of a continuous TORWASH® pilot plant for sewage sludge treatment, Nanou Pavlina, Jan Pels, Francesco Sebastiani, Christiaan van der Meijden, Hans Kuipers, Willie Driessen, Jaap Vogelaar
15. Wet oxidation of sewage sludge: a promising technology for sludge management, Carlos Ruiz de León, V. Ismael Agueda, Javier Cañas, Blanca Hermana, Juan García
16. Characterizing metal content and extraction potential in domestic sludge – the SUBLIMUS project, Natacha Brion, Xavier Nicolay, Gilles Bruylants, Philippe Claeys, Marc Elskens
17. Application of paddle dryers for pig manure drying: the Andritz experience, Elisia Prucole, Diogo Sebastião, Menno Maingay
18. Optimization of p recovery from sewage sludge by bio-acidification, Younes Bareha, Mohamed Amine saoudi, Marie-Line Daumer

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