



## Poster presentations

Tuesday 25-06-2019 and Wednesday 26-06-2019

### Anaerobic MBR, research & application

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#### **EVALUATION OF THE METHANOGENIC POTENTIAL OF CASSAVA PEELS, CASSAVA WASTEWATER AND WATER HYACINTH TO OPTIMIZE ANAEROBIC DIGESTION IN REPUBLIC OF BENIN**

S. Ahou, L.S. Baba-Moussa, J. Bautista Angeli, S. Awad, Y. Andres, France

#### **Membrane performance and operation optimization of a hollow fiber anaerobic membrane bioreactor (HF-AnMBR) in treating food waste**

H. Cheng, Y. Li, Y.Y. Li, Japan

#### **Effect of ultrafiltration membrane material on fouling dynamics in submerged anaerobic membrane bioreactor treating domestic wastewater**

A.D. Grossman, Y. Yang, D.C. Camarena, G. Oron, R. Bernstein, Israel

#### **Performance of a mini pilot plant of AnMBR treating real municipal sewage**

J. Ji, S. Sakuma, A. Ohtsu, Y. Chen, T. Hojo, Y.Y Li, Japan

#### **Membrane fouling control through mitigating cake layer formation by powdered activated carbon addition in a submerged anaerobic membrane bioreactor treating domestic wastewater**

Z. Lei, W. Wen, S. Yang, X.C. Wang, R.Chen, China

#### **Effect of selenium and cobalt addition on the stability of food waste anaerobic digestion**

K. Li, K. Wang, China

#### **Effect of HRT on the operating feasibility of AnMBR technology for primary-settled sulfate-rich sewage treatment**

O. Mateo, P. Sanchis-Perucho, N. Zamorano-López, A. Robles, L. Borrás, N. Martí, J. Serralta, J. Ferrer, A. Seco, Spain

#### **Codigestion of sewage sludge with wastewater. Performance assessment through batch and continuous test**

A. Donoso-Bravo, V. Ortega, Y.Lesty, H. Vanden, D. Zambrano, D. Olivares, Chile

#### **A2O MBR system for the treatment of lead contaminated wastewater and their application in remote mining communities**

H. Ravishankar, S. Moazzem, V. Jegatheesan, Ireland

**Exploring microalgae and primary sludge co-digestion in a thermophilic Anaerobic Membrane Bioreactor (AnMBR).**

R. Serna-García, G. Noriega-Hevia, A. Bouzas, A. Seco, Spain

**Silicon carbide (SiC) anaerobic ceramic membrane bioreactor to treat high-strength organic wastewater**

K. Cho, K. Seo, S.G. Shin, S. Lee, M.B. Gu, C. Park, Republic of Korea

**Anaerobic degradation of monosodium glutamate from wastewater in an up-flow anaerobic sludge blanket reactor**

Y. Wei, H. Chen, M. Xie, C. Du, C. Lei, G. Zhang, China

**Size-fractionation and Fouling Behavior of Sub-visible Particles (0.45-10 µm) in Anaerobic Membrane Bioreactors (AnMBRs): Impacts of Feed Composition**

Z. Zhou, Y. Yao, F. Meng, China

**Bio-methane production variation under different draw solute reverse diffusions in an anaerobic digester simulated for FO-AnMBR**

S. Li, Y. Kim, S. Phuntsh, H. Kyong Shon, T. Leiknes, N. Ghaffour, China

**Cell-associated and extracellular antibiotic resistance gene profile in AnMBR effluent under elevated antibiotic conditions**

P. Wang, M. Harb, A. Zarei-Baygi, L.B. Stadler, A.L. Smith, United States

**Energy positive wastewater treatment: A novel cloth-filter anaerobic membrane bioreactor combined with ammonia recovery and electrolysis**

A.D. Martin-Ryals, L.C. Schideman, United States

**Enhanced phenol conversion rate and recovery time after phenol shock load in anaerobic membrane bioreactors by the dosage of acetate**

V.S. Garcia Rea, L.M. Fonseca Aponte, J.D. Muñoz Sierra, D.G. Cerqueda, H. Spanjes, J.B. van Lier, The Netherlands

## **Pre-treatment technologies (physicochemical/ biological)**

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**Mild alkaline pretreatment of cassava pulp for accelerating high-solids anaerobic digestion**

N. Aramrueang, P. Lomwongsopon, Thailand

**Pre-treatment of agave bagasse using ruminal fluid for methane production**

M. Barragán-Trinidad, G. Buitrón, Mexico

**How can pretreatments overcome the limitations of the main solid feedstock anaerobic digestion?**

H. Carrère, A. Battimelli, I. Ferrer, France

**Comparison of pretreatment's effects on olive mill solid waste to enhance biogas production**

V. Wyman, S. Albornoz, E. Trigo, A. Garrido, A. Donoso-Bravo, A. Carvajal, Chile

**Thermal pre-treatment for enhanced anaerobic co-digestion of food waste and sewage**

D. Somani, H. Srivastava, P.C. Sabumon, G. Anjali, India

**Measurement of physical properties of biomass from simple methods: indicators of mechanical pre-treatments efficiency on feeding and mixing of anaerobic digesters**

H. Coarita, R. Teixeira Franco, R. Bayard, P. Buffière, France

**Effect of chemical pre-treatment with phase-separation on the methane potential of lignocellulosic substrate**

L. D'avila, A. Ortega, J. H. L. Alino, J. G. Somer, T. Edwiges, Brazil

**Co-storage as an alternative pre-treatment strategy to increase biodegradability of garden grass**

L. D'avila, A. Ortega, J. A. Bastos, L. Schmoeller, Jin Mi Triolo, T. Edwiges, Brazil

**Anaerobic digestion of emulsified and non-emulsified oleic, palmitic and stearic acid**

A.Eftaxias, C. Michailidis, V. Diamantis, A. Aivasidis, Greece

**Ultrasound to Maximise Digestion of Thermally Hydrolysed Sewage Sludge**

M. Darke, J. Donnelly, A. Henley, S. Savvas, P. Kumi, A. Oliveira, T. Patterson, J Reed, Z Chong, L. Vergara, V. Wilson, R Matthews, S. Esteves, United Kingdom

**Assessment of mesophilic semi-continuous anaerobic digestion of olive mill solid waste pretreated with steam-explosion**

A. Serrano, F.G. Feroso, B. Alonso-Fariñas, G. Rodriguez-Gutierrez, J. FernándezBolaños, R. Borja, Spain

**Valuable compounds extraction and methane production from strawberry extrudate**

J. Cubero-Cardoso, A. Trujillo-Reyes, A. Serrano, G. Rodriguez-Gutierrez, R. Borja, F.G. Feroso, Spain

**Valorization of tomato peels and grape pomace with sequential pretreatment: from lab to pilot scale**

M. Garuti, A. Giuliano, M. Soldano, R. Guzzinati, C. Fabbri, L. Petta, S. Piccinini, Italy

**Improving Methane Production of Brewer's Spent Grain by Physical Pretreatment**

M.M. Gomes, M.B.A. Varesche, Brazil

**Visualization of the research field of pre-treatments for anaerobic digestion using bibliometrics**

A. Gonzalez, A.T.W.M. Hendriks, M.K. de Kreuk, J.B. van Lier, The Netherlands

**Co-storage of wheat straw with alkaline or acidic waste can increase methane production**

A.H. Vazifehkhoran, M.C. Roda-Serrat, R. El-Houri, J.M. Triolo, Denmark

**Thermal – NaOH Pretreatment of Adapted Switchgrass for the Enhancement of Consecutive Ethanol and Methane Production**

E. Kökdemir Ünşar, N.A. Perendeci, Turkey

**Enhancing anaerobic digestion of fat enriched substrates by hydrodynamic cavitation pre-treatment**

J. Lunnbäck, A. Björn, A. Karlsson, J. Ejlertsson, F. Ometto, Sweden

**Enhanced disintegration of waste activated sludge with low organic content by "Solid hydrogen peroxides" treatment**

H. Luo, W. Guo, N. Ren, China

**Enhancement of biogas production of mixed slurry by pulsed electric field treatment**

I.A. Nges, J. Möllerström, Sweden

**Anaerobic Digestion State-of-the-Art Examples from the Latest Generation Installations**

D.L. Parry, C.D. Clark, United States

**Effects of enzymatic hydrolysis on ethanol and subsequent methane productions from energy crop *Panicum virgatum* L. (Switchgrass)**

S.I.A. Başar, E.Kökdemir Ünşar, A. Perendeci, Turkey

**Effect of the coagulant addition prior to Primary Settling over the Anaerobic Digestion performance. A case study.**

L. M. Ruiz, A. Checa, J. I. Perez, J. M. Torre-Marín, A. Munoz-Ubina, M. A. Gómez, Spain

**Increase in hydrolysis and acidogenesis of the organic fraction of urban solid waste: effect of a fungal pretreatment.**

R. Mancera, O. Loera, F. Ramírez, Mexico

**Full-scale demonstration of a new methane fermentation accelerator at sewage sludge digestion tank**

J. Takahashi, J. Inamura, N. Kataoka, Japan

**Magnéli-phase Ti4O7 film for electro-oxidation treatment of herbicide wastewater**

J. Teng, S. You, China

**Innovative approach towards the bio-stimulation of anaerobic digestion processes by low intensity ultrasonication**

V.K. Tyagi, Y. Zhou, India

**Thermal hydrolysis of semi-solid residues from beverage industries to increase biogas production in anaerobic high-rate reactors**

B. Weber, E.A. Stadlbauer, Mexico

**Accelerated methane production from corn straw: Pretreated by mixed enzymes**

X. Zhao, J. Wang, X. Wang, K. Wang, China

**Comparison of the concentration and odour properties of selected volatile aromatic compounds emitted from disintegrated and digested sludge**

H. Byliński, J. Aszyk, M. Szopińska, A. Remiszewska-Skwarek, A. Łuczkiwicz, S. Fudala-Książek, J. Namieśnik, Poland

**Converting organic waste into energy by coupling hydrothermal liquefaction and anaerobic digestion**

D. Cabrera, C. Celis, R. Labatut, Chile

**Alkaline and Thermal Inocula Pretreatments in Cheese Whey Anaerobic Digestion on Apparent Kinetics Parameters and Volatile Fatty Acids and Biogas Production**

M.P.G. de Almeida, V.A.O. Silva, G. Mockaitis, Brazil

**Sewage sludge pretreatment by low thermal disintegration for better efficacy of sludge digestion process**

A. Kasinath, A. Remiszewska-Skwarek, M. Szopińska, S. Fudala-Książek, E. Zaborowska, A. Luczkiewicz, Poland

**Anaerobic membrane bioreactor employing ethanol fermentation as a pre-treatment for food waste**

Y. Kosaki, S. Jin, Japan

**Impact of pressure on the efficiency of ultrasonic sewage sludge pre-treatment**

T. Lippert, J. Bandelin, J.E. Drewes, K. Koch, Germany

**Enhancing mesophilic anaerobic digestion of waste activated sludge by heat pretreatment and its kinetics modeling**

B. Liu, M. Terashima, M. Fujiwara, F. Shinya, H. Yasui, Japan

**Improvement of the anaerobic digestion of purple phototrophic bacteria-based biomass by thermal hydrolysis**

I. Rodríguez, R. Molina, Y. Segura, T. Hülsen, D. Batstone, V. Monsalvo, F. Martinez, J.A. Melero, D. Puyol, Spain

**Electrochemical treatment of maize processing industrial wastewater: phosphorus, turbidity and COD removal**

A.B. Ribas, K.Q. Carvalho, C. Benincá, F.B. Freire, Brazil

**Pretreatment of spiramycin fermentation residue using hyperthermophilic digestion: quick startup and performance**

Z. Tian, M. Awad, M. Yang, Y. Zhang, China

**Co-treatment of sulfite wastes and waste activated sludge for energy recovery: a feasibility study**

F. X. Zan, Q. Zeng, T. W. Hao, G.H. Chen, China

**Quantifying the environmental and economic indicators of different sludge management schemes**

A. Arias, G. Feijoo, M.T. Moreira, Spain

**Demonstration of a continuous TORWASH® pilot plant for sewage sludge: Thermal treatment, dewatering and effluent processing**

P. Nanou, J.R. Pels, F. Sebastiani, C.M. van der Meijden, H. Kuipers, W. Driessen, J. Vogelaar, The Netherlands

**Sanitary landfill leachate treatment with double chamber anaerobic reactor in series with constructed wetland**

A. Galindo Montero, E. Pimienta, J. Pérez Montiel, Colombia

**Methane recovery from lignocellulosic biomass pretreated with ruminal microorganisms in a pilot scale reactor**

J.O. Ovis-Sánchez, J.D. Barrios-Pérez, A. Vargas, I. Valdéz-Vázquez, J. Carrillo-Reyes, Mexico

**Enhancing hydrolysis of chicken manure under hyper-thermophilic with in-suit gas phase ammonia stripping**

D.-M. Min, W. Qiao, R. Fan, S.M. Wandera, N. Camilla, R.-J. Dong, China

**Fibrolitic Enzyme Activity During Pretreatment using Rumen Fluid for the Anaerobic Digestion of Lignocellulose**

S. Takizawa, Y. Fukuda, C. Tada, Y. Nakai, Japan

**Thermal hydrolysis: Getting some insights on the formation of recalcitrant compounds and their effects on anaerobic digestion**

E. Ortega-Martínez, D. Jeison, R. Chamy, Chile

**Optimization of alkaline pretreatment of yerba mate (*Ilex paraguariensis*) by response surface methodology**

A.D.N. Ferraz Júnior, M.I. Etchelet, C. Etchebehere, Uruguay

**Modelling, Instrumentation and control**

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**Modeling of the nitrification process in the presence of sulfide and organic matter: Calibration and simulation**

L. Acosta, C. Huiliñir, S. Montalvo, L. Guerrero, Chile

**Peculiarities and (often) ignored aspects of methanogenic activity testing**

F.P. van der Zee, M. Lam, X. Zhang, S. Pacheco-Ruiz, The Netherlands

**Modeling of continuous dark fermentative hydrogen production in an Upflow Column Bioreactor**

M. Alexandropoulou, G. Antonopoulou, G. Lyberatos, Greece

**Threshold inhibition function: a new equation to model inhibition in anaerobic digestion systems**

S. Astals, M. Peces, D.J. Batstone, Australia

**Virtual Reference Feedback Tuning and Model Free Control Approaches for Anaerobic Digestion Processes Control. A Comparative Study**

L. Condrachi, R.Vilanova, E. Ceanga, M. Barbu, Romania

**Comparison of drag force models to predict the liquid/solid interfacial momentum transfer in UASB reactors – CFD study and PIV validation**

C. D. Bastiani, J. L. Alba, G.T. Mazzarotto, S.R. Farias Neto, A. Reynolds, D. Kennedy, L.L. Beal, Ireland

**Modelling of sugarcane vinasse processing in a pilot-scale APBR to energy recovery and organic matter removal using ADM1**

J.X. Carvalho, R. Ribeiro, P.T. Couto, M. Zaiat, G. Tommaso, Brazil

**DETERMINING THE RATIO OF WORKING VOLUMES OF BIOREACTORS IN A TWO-STAGE ANAEROBIC DIGESTION SYSTEM WITH PRODUCTION OF HYDROGEN AND METHANE**

E. Chorukova, I. Simeonov, Bulgaria

**ADM1-based model development for the processing of sugarcane vinasse in an acidogenic batch reactor**

P.T. Couto, F. Enga, I. Nopens, M. Zaiata, R. Ribeiro, Brazil

**Kinetic modeling of anaerobic digestion of microalgae hydrothermal liquefaction wastewater**

M.S. Dias, C. Bonadio, B. E. Bueno, R. Ribeiro, G. Tommaso, Brazil

**Monitoring of methane fermentation of fish waste using an electronic tongue: calibration procedure**

B. Fernández, A. Farmanesh, N. Carbó, L. Tey, R. Martínez-Manez, M.C. Martínez-Bisbal, Spain

**Development of a multidimensional model for AD based on ADM1**

M. Figueroa, R. Nouri, L. Poceiro, A. Rodríguez-Abalde, C. Coteló, G. Ferro, A. Gomez, I. Jove, J.M. Nóbrega, Spain

### **Identification of Wastewater Primary Sludge Composition**

C.E. Gaszynski, G.A. Ekama, D.S. Ikumi, South Africa

### **Supervisory control applied to an anaerobic digestion process exposed to drastic feedstock changes**

P.G. Isfahani, B. Valverde-Pérez, M. Alvarado-Morales, M. Shahrokhi, M. Vossoughi, I. Angelidaki, Denmark

### **The use of single emitter ultrasound sensors to detect solid particle concentrations in UASB reactors**

E. Meursing, M. Wiersma, M. Hoep, D. Yntema, M. Wagterveld, L.S. Azevedo, T. BressaniRibeiro, C.A.L. Chernicharo, L.L.F. Agostinho, The Netherlands

### **Modelling butanol production in anaerobic mixed microbial cultures**

H. Junicke, X. Flores-Alsina, T. Pinto, K.V. Gernaey, Denmark

### **Identification of critical problems in BMP tests from the shape of methane production curves**

K. Koch, S.D. Hafner, S. Weinrich, S. Astals, Germany

### **Modeling microbial response to temperature changes in anaerobic digestion: a novel approach**

A. Kovalovszki, L. Treu, I. Angelidaki, Denmark

### **Extremum seeking control of cascade of anaerobic digesters for separate hydrogen and methane production**

I. Simeonov, V. Lakov, Bulgaria

### **Critical Assessment and Optimisation of Sewage Sludge Mesophilic Anaerobic Digestion Processes at Operational Wastewater Treatment Plant**

J. Liu, S.R. Smith, United Kingdom

### **An assessment of on-line model identification using Luenberger observer for anaerobic digestion processes**

L.G. Cortés, J.D. Marín-Batista, M.A. de la Rubia, A.F. Mohedano, D.F. Larios, J. Barbancho, Spain

### **When you make a psychrophilic BMP without an adapted inoculum, a low cost digester dies**

L.P. Castro, J. Guzmán, H Arenas, J. Martí-Herrero, M. Romero-Güiza, H. Escalante, Spanje

### **NUMERICAL MODELLING AND VALIDATION OF SHEAR THINNING FLOWS IN A LABSCALE DIGESTER**

S. Nagasundaram, A.K. Pozarlik, H. Norouzi-Firouz, G. Brem, The Netherlands

### **Integration of biokinetic and CFD for biogas production**

H. Norouzi-Firouz, A. Pozarlik, S. Nagasundaram, G. Brem, The Netherlands

### **Validation of an advanced predictive model for anaerobic digestion of sewage sludge**

S. Oxtoby, P. Winter, S.R. Smith, United Kingdom

### **Model-based flexibilisation of biogas plants using ADM1**

L. Peters, P. Biernacki, F. Uhlenhut, S. Steinigeweg, Germany

### **VFA monitoring using UV/VIS spectroscopy for anaerobic digestion control**

M. Placer, S. Costas, R. Pena, G. Tenreiro, V. Roca, P. Villar, S. Gómez-Cuervo, J.A. Álvarez, L. Herrero, F. Rodriguez, Spain

**ADM1 modelling as a comprehensive tool for the standardization of BMP protocol**

S. Pommier, M. Peyre Lavigne, France

**Hydrodynamics and organic matter degradation in an Upflow Anaerobic Packed Bed Reactor: characterization and computational fluid dynamics validation**

T.R. Nascimento, R. Ribeiro, G.C. Dacanal, F.L. Caneppele, J.A. Rabi, J.X. Carvalho, Brazil

**A new simplified dry anaerobic digestion model considering modified AM2 and MIM hydrodynamics models**

A. Dujany-Coutu, S. Mottelet, L. André, E. Lamy, S. Guérin, S. Azimi, V. Rocher, A. Pauss, T. Ribeiro, France

**Modelling and Simulation of Solid-Fluid hydrodynamics of UASB reactor with modified geometry.**

K.F.S Richard, L. Philipovsky, A.C. Van Haandel, S.P Pereira, C.A.S Paiva, Brazil

**Automatic optimum start-up of anaerobic digesters using model predictive control and practically feasible sets of measurements**

W. Ahmed, J. Rodríguez

**Value of batch tests for estimating biogas potentials and degradation kinetics in anaerobic digestion**

S. Weinrich, F. Schäfer, J. Pröter, J. Liebetrau, Germany

**Peculiarities and (often) ignored aspects of methanogenic activity testing**

F.P. van der Zee, M. Lam, X. Zhang, S. Pacheco-Ruiz, The Netherlands

**Biohydrogen production from cheese whey in AnSBBR: effects of temperature and metabolic pathway kinetic modeling**

D.M.F. Lima, L.M.H. Maia, J.A.D. Rodrigues, S.M. Ratusznei, M. Zaiat, Brazil

**Numerical simulations of local mixing created by rising biogas bubbles in an anaerobic sludge matrix**

R. Arnau, P. Wei, R. Martínez-Cuenca, M. de Kreuk, J. B. van Lier, S. Chiva, Spain

**On-line optimization of methane production in continuous AD processes via gradient-based ESC feedback control**

G. Lara-Cisneros, D. Dochain, J. Álvarez-Ramírez, Belgium

**Development of a novel multi-parameter monitoring tool using GC-IMS for chemical fingerprinting in anaerobic digestion**

A. Oliveira, T. Patterson, J. Reed, S. Esteves, United Kingdom

**Development of a decision-support software tool for simulation and optimization of co-digestion of various organic waste streams (CODIGEST)**

C. Vaneckhaute, A. Dufour, F. Béline, Canada

**Co-Digestion of Alcohol Distillery Wastes: Interaction of Vinasse, Aniseed and Pomace**

F. Yılmaz, E. Kökdemir Ünşar, N.A. Perendeci, Turkey

**Control-oriented modelling of anaerobic digesters fed on agro-zootechnical waste**

V. Corbellini, A. Negri, G. Ferretti, E. Ficara, Al. Leva, F. Malpei, Italy



**Use of a lab-scale CSTR-type anaerobic digester for the design of a pilot-scale digester producing biomethane from a Food Residue Biomass Product using ADM1**

G.M. Lytras, D. Mathioudakis, K. Papadopoulou, T. Dimitriou, D. Kenanidis, G. Lyberatos, Greece

**Numerical simulations of filtration process and flux distribution in submerged hollow fiber module: Effects of fiber diameter and length**

K. Su, R. Wu, Z. Wang, China

**Biogas and by-products via anaerobic digestion and dark fermentation in Aspen Plus: Case study, Santander - Colombia**

M. Amado, I. Cabeza, C. Barca, J-H. Ferrasse, M. A. Hernández, Colombia

**Linear regression models for BMP prediction of lignocellulosic biomass**

V. Dandikas, H. Heuwinkel, F. Lichti, J.E. Drewes. K. Koch, Germany

**Anaerobic Digestion of Sewage Sludge from Carbon Concentrating Treatment Process: Modeling and LCA Based Approach**

H. Guven, H. Gulhan, R.K. Dereli, M.E. Ersahin, H. Ozgun, I. Ozturk, Turkey

**Mixing characterisation in gas-mixed anaerobic digesters: scaled-down evaluation and scaled-up implication**

P. Wei, R.F. Mudde, W.S.J. Uijttewaal, H. Spanjers, J.B. van Lier, M. de Kreuk, The Netherlands

## **Resource recovery**

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**Production of propionic acid from organic waste residue through acidic hydrolysis process**

R. Ali, F. Saravia, J. Gescher, H. Horn, Germany

**Volatile fatty acids production from thermally hydrolyzed potato starch using anaerobic digestion**

M. Bhargav, K. Singh, Canada

**Volatile fatty acids production from olive mill solid waste (OMSW) in pHcontrolled fed-batch anaerobic reactors**

F. Cabrera, A. Torres, A. Serrano, G. Rodriguez-Gutierrez, D. Jeison, F.G. Feroso, Chile

**Biohydrogen production in continuous acidogenic reactors fed with sucrose at pH below 3.0**

J. Cardoso Ribeiro, G. Cesar Dacanal, M. Zaiat, Brazil

**Light intensity directly effects the physiology of purple non-sulfur bacteria and increases nutrient removal from wastewater under anaerobic sequencing batch reactor regime**

M. Cerruti, J. Hoon Kim, D.G. Weissbrodt, The Netherlands

**Anaerobic Treatment of Blast Furnace Gases**

R.P. Chalmers-Brown, R.M. Dinsdale, J. Massanet-Nicolau, G. Lloyd, United Kingdom

**Energy conversion efficiency produced from treatment of wastewater through an hybrid UASB anaerobic reactors**

D.M. Hernandez, L.A.P.Hurtado, K.L. Fuentes, J.G. Rueda-Bayona, T.R.Chaparro, Colombia

**Using endogenous electron donors and acceptors in food waste for n-caproate production**

C. A. Contreras-Davila, C. J. N. Buisman, D. P. B. T. B. Strik, The Netherlands

**Substrate and light impacts on novel anaerobic associations of fermenters and purple non-sulfur bacteria for waste-based carbohydrate valorization**

G. Crosset-Perrotin, M. Cerruti, D.G. Weissbrodt, The Netherlands

**Preliminary results of an anaerobic hybrid reactor treating sugarcane vinasse in a sugar and alcohol industry**

V. Del Nery, M.H.R.Z. Damianovic, E.C. Pires, M.M. de Araujo Jr, Brazil

**Effect of the operating conditions on the anaerobic digestion of wheatgrass for chemicals and energy production**

I.M.O. Silva, D. Dionisi, United Kingdom

**Effect of operational pH on volatile fatty acid production using strawberry extrudate as a carbon source**

E. Russo, A. Serrano, G. Rodriguez, J. Cubero-Cardoso, G. Esposito, F.G. Feroso, Spain

**Effect of Barium addition on biohydrogen production and ecotoxicity of sugarcane vinasse**

A.F.M. Braga, M.R. Lima e Silva, M.C. Felipe, A.C. Bernegossi, C.G. Issa, J J. Corbi, F.G. Feroso, M. Zaiat, Brazil

**H<sub>2</sub>/CO<sub>2</sub>-based carboxylate chain elongation: case study with an acidogenic and a methanogenic inoculum**

F.C.F. Baleeiro, H. Sträuber, Germany

**Fermentative biohydrogen production as an energy approach for sugarcane biorefineries: Comparing juice and molasses as substrates**

L.T. Fuess, M. Zaiat, C.A.O. Nascimento, Brazil

**Overcoming Ammonia Inhibition in Blackwater Anaerobic Treatment: Impact of Feedstock Storage**

M. Gao, L. Zhang, Y. Zhang, N. Yu, Y. Liu, Canada

**Activity of the Candidatus Accumulibacter under mesophilic and thermophilic digester conditions and the significance for P-recovery**

K.A. Smith Hansen, M. Nierychlo, A. Oehmen, P.H. Nielsen, Denmark

**Short branch chain fatty acid production using methanol by an open culture enrichment: a community perspective investigation**

S. Huang, R. Ganigué, R. Kleerebezem, K. Rabaey, Belgium

**Potential role of anaerobic digestion in remediation of sedimented fibers originating from pulp and paper industry**

M. Kokko, P. Chatterjee, P. Lindqvist, J. Rintala, Finland

**Characterization and anaerobic biodegradability of an effluent from a Chilean wine industry**

Y. Lauzurique, C. Huilñir, A. Castillo, R. Salazar, V. García, Chile

**Energy and exergy based suitability analysis of biogas production from vegetable, fruit and flower (VFF) market wastes considering its seasonal variations**

M.M. Mondal, C.J. Speier, M. Velusamy, D. Weichgrebe, S.V. Srinivasan, Germany

**Resource recovery linked to anaerobic digestion of concentrated municipal sewage from a forward osmosis pilot system**

J. Muñoz Sierra, K. Roest, L. van Dijk, A. Polman, H. Ramaekers, A. Hendriks, E. Cornelissen, The Netherlands

**Alleviating sulfide toxicity using biochar during anaerobic treatment of high-sulfate wastewater with sulfur recovery**

F.R. Oliveira, K.C. Surendra, D.P. Jaisi, H. Lu, S.K. Khanal, United States

**Stimulating Lactic Acid production in Enrichment Cultures by B vitamins and peptides**

J.L. Rombouts, E.M.M. Kranendonk, D.G. Weissbrodt, R. Kleerebezem, M.C.M. van Loosdrecht, The Netherlands

**Production of carboxylic acids from slaughterhouse wastewaters**

N.W.S. Morais, M. M. H. Coelho, T.J.T. Ferreira, F.S.S. Silva, E.L. Pereira, R.C. Leitão, A.B. Dos Santos, Brazil

**Reflections on reactor design for the anaerobic digestion of organic residues on cruise ships**

K. Schumüller, S. Köster, Germany

**Anaerobic digestion of aqueous pyrolysis liquid (APL) with ozone pretreatment**

S. Seyedi, K. Venkiteshwaran, D. Zitomer, United States

**Production of medium chain carboxylic acids from brewery waste using anaerobic fermentation technology**

S. Shrestha, B. Colcord, M. Muermans, L. Aley, X. Fonoll, L. Raskin, United States of America

**Dark photosynthesis: explorations on bioelectrochemical growth of photosynthetic food grade microorganisms on wastewater**

D.P.B.T.B. Strik, M. van der Zwart, L. Jourdin, Y.J. Chu, C.J.N. Buisman, The Netherlands

**Introducing grass to pig farm's crop rotations to feed both pigs and biogas plant – Nutrient flows and techno-economic assessment**

E. Tampio, E. Winqvist, S. Luostarinen, Finland

**Low pH anaerobic operation for the removal of nitrate, sulfate and selenate with biogenic selenium production**

L.C Tan, Y.V. Nancharaiah, S. Lu, E.D. van Hullebusch, R. Gerlach, P.N.L. Lens, Ireland

**Inoculum treatment selection for the improvement of degradation and generation of biomethane from FOG**

L.C. Tan, E. Ryan, P. Keogh, P.N.L. Lens, Ireland

**Anaerobic treatment of wastewater from hydrothermal liquefaction of Spirulina conversion using immobilized biomass.**

B.E. Bueno, D. Quispe-Arpasi, R. Ribeiro, G. Tommaso, Brazil

**Single cell protein production using biogas and effluent produced from anaerobic digestion of urban bio-waste**

P. Tsapekosa, B. Khoshnevisana, B. Valverde- Péreza, Y. Zhang, I. Angelidakia, Denmark

**Biorefining grass silage for farm-scale use – separation efficiency and biomethane potential**

M. Vainio, E. Winqvist, E. Tampio, S. Ervasti, T. Stefansk, Finland

**What is the best anaerobic technology to produce VFA from sugar beet vinasse?**

F. Vedrenne, N. Baffaleuf, N. Brack, J.A. Cacho Rivero, France

**Valorisation of urban bio-waste beyond energy recovery: modified AD process for chemicals production**

F. Velghe, S. Gildemyn, F. De Wilde, I. Wierinck, J. Smis, T. Dietrich, Belgium

**Biological hydrogen production from crude glycerol: inocula and methanogenesis inhibition method**

M.B. Viana, R.I. Dams, B.M. Pinheiro, R.C. Leitão, S. T. Santaella, A.B. dos Santos, Brazil

**Inhibitory effects of free propionic and butyric acids on the activities of hydrogenotrophic methanogens in mesophilic mixed culture fermentation**

W. Zhang, F. Zhang, R. Jianxiong Zeng, China

**Energy potential of biogas and sludge from UASB reactors: Case study of Paraná State in Brazil**

A.P. Rosa, L.S. Lopes, J.S. Marco, T.C.R. Mesquita, G.R.C. Possetti, Brazil

**Assessing the energy potential of scum in a full-scale UASB-based treatment plant**

A.P. Rosa, C.A.L. Chernicharo, A.D.U.C. Schmidt, J.M. Borges, Brazil

**Towards technology integration: anaerobic digestion coupled to pyrolysis of agricultural residues**

N. Acosta, A. Estrada, J. De Vrieze, S. Ghysels, M. Pala, S. Buffel, F. Ronsse, K. Rabaey, Belgium

**Volatile Fatty Acids production from fish waste: Effect of pH and Inoculum Substrate ratio**

L.S. Cadavid-Rodríguez, V. E. Castro-López, Colombia

**Acidogenic fermentation of household solid waste: bacterial enrichment at controlled PH**

L. Digan, S. Dubos, E. Mengelle, E. Paul, C. Pagès, E. Trably, C. Dumas, France

**Biogas Upgrading benefits the Energy Balance at BIOFOS WWTP**

L.K Nielsen, J. Stuhr, Denmark

**Production of high-value volatile fatty acids from A-sludge: impact of pH, pretreatment and hydraulic retention time**

L. Van Peteghem, C. Cagnetta, S.J. Andersen, J. De Vrieze, K. Rabaey, R. Ganigué, Belgium

**Steering microbiomes towards new biochemical production: iso-caproate**

K. de Leeuw, D. Strik, C. Buisman, The Netherlands

**Cellulose recovery from municipal wastewater and its possible use for volatile fatty acids production**

G. Cipolletta, A.L. Eusebi, C. Akyol, N. Frison, A. Foglia, F. Fatone, Italy

**Biomass to energy and metabolites through biological processes using residual waste from typical crops in Colombia**

M.A. Hernández, C. Ochoa, O. L. Bayona, A. M. Candela, I.O. Cabeza, Colombia

## **Sludge and slurry digestion**

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**Developing low-cost psychrophilic anaerobic digesters of food waste and sewage sludge at a household scale**

S. Alcaraz-Ibarra, M. Esparza-Soto, M. Lucero-Chávez, M.A. Mier-Quiroga, M.C. Jiménez-Moleón, Mexico

**Thermophilic anaerobic digestion of organics under mild alkaline conditions**

S. Azman, P. Bogaerts, L. Appels, R. Dewil, Belgium

**Operation of a membrane bioreactor with primary clarifier and anaerobic sludge digestion**

D. Bastian, L. Palmowski, J. Pinnekamp, Germany

**Comprehensive characterization of liquid fraction of digestate: impact of co-digestion and process conditions**

A. Battimelli, A. Akhlar, M. Torrijos, H. Carrère, France

**Anaerobic codigestion of landfill leachate and glycerol to enhance biogas production and organic matter removal**

L.D. Bottega, J.T. Gotardo, B.M. Gomes, S.D. Gomes, P.Y. Takeda, Brazil

**Thermophilic full-scale installation for anaerobic sludge digestion at 's Hertogenbosch (NL): unlocking the energy potential of sludge from wastewater treatment plants**

B. Bundervoet, A.A. Kulagowska, I. Dekker, J. Colsen, I. Angelidaki, The Netherlands

**Valorization of poultry industry waste through hydrogen and methane production**

V. de la Sovera, G. Zinola, F. Marconi, P. Rodriguez, P. Menendez, C. Etchebehere, Uruguay

**Enhancement of biogas productivity using co-digestion of animal carcass and swine wastewater treatment system sludge**

D.C. Tápparo, R.L.R. Steinmetz, A.C. do Amaral, T.C. Gaspareto, A. Cé, A. Kunz, Brazil

**Inhibition of methane production by antibiotics – differences in BMP and CSTR experiments digesting cattle slurry**

S. Ervasti, S. Luostarinen, Finland

**Co-digestion of aquaculture sludge with municipal sewage sludge: effects on methane yield and phosphorous content.**

M.M. Estevez, R.Tomczak-Wandzel, L. Ydstebø, Norway

**Dried aquaculture waste sludge as co-substrate for municipal biogas plants in Norway**

H.E. Hatland, M.M. Estevez, K. Akervold, Norway

**Application of DGT as a potential monitoring tool to assess trace metal bioavailability in anaerobic digestion**

A.Ilic, J.Bartacek, Czech Republic

**Effect of organic loading rate and retention time on bio-hydrogen production from dilute sulphuric acid pre-treated sugarcane trash hydrolysate**

D. Cressey, P. Paulose, A. Puthumana, M. Latif, P. Kaparaju, Australia

**Effect of multiple inocula on co-digestion of poultry and garden waste with thermal pre-treated sugarcane bagasse**

N. Vats, A.A. Khan, K. Ahmad, India

**Synergetic treatment of sewage sludge and food waste for biogas generation and heavy metals immobilization via anaerobic digestion and pyrolysis**

C. Li, S. Xie, X. Zhu, R. Tian, I. Angelidaki, Y. Wang, Denmark

**Bioaugmentation of mono-digestion of grass with methanogenic propionate-utilizing enrichment to restore function**

L. Lianhua, H. Shuibin, S. Yongming, L. Ying, K. Xihui, China

**Potential of Crassulacean Acid Metabolism (CAM) plants as alternative energy crops**

K. Lueangwattanapong, F. Ammam, J.A.C. Smith, I.P. Thompson, United Kingdom

**Thermal vs aerobic hydrolysis of sewage sludge: Technical, economic and environmental comparison**

S. Montalvo, C. Huiliñir, L.Guerrero, A. Castillo, Chile

**Effect of the addition of magnetite on the anaerobic digestion of pig slurry**

N. Muñoz, M. Figueroa, I. Rodríguez, E. Pereira, A. Rodríguez-Abalde, Spain

**Effect of two different hydrolytic additives over the anaerobic digestion process of the liquid fraction of swine manure**

M.A. Ortiz-Cabrera, F. Cruz, X. Flotats, Spain

**Methane production in a dairy farm biogas plant co-digesting cow slurry and screw press separated solid fraction of slurry**

V. Pyykkönen, S. Luostarinen, Finland

**Influence of SRT in activated sludge process on the energy efficiency of wastewater treatment plants**

J. Rühl, M. Engelhart, Germany

**Biogas Production Using Slaughterhouse Wastewater and Domestic Sludge to Cover Energy Demand for Wastewater Treatment Plant**

S.S.B. Dababat, Palestinian Territory, Occupied

**Importance of substrate origin for anaerobic sludge rheology in continuous stirred-tank biogas reactors**

L. Šafarič, S. Shakeri Yekta, B.H. Svensson, A. Schnürer, D. Bastviken, A. Björn, Sweden

**Anaerobic co-digestion approaches traditional WWTPs to electrical self-sufficiency and reduces co-substrates treatment costs**

A. Taboada-Santos, M. Carballa, N. Moralesb, J.R. Vázquez-Padin, R. Gutierrez, J.M. Lema, Spain

**Energy and nutrient recovery potential from microsieved sludge**

E. Tampio, M. Kokko, M. Vainio, S. Rasi, J. Rintala, Finland

**Anaerobic digestion of fur animal manure and assessment of co-digestion with other livestock manures**

E. Tampio, J. Laakso, S. Ervasti, M. Vainio, V. Pyykkönen, S. Luostarinen, Finland

**ORANGE WASTE CODIGESTION EFFECT ON THE BIOMASS AT PILOT AND FULLSCALE**

M. J. Tarrega, P. Granell, C. Beniel, M. Torregrosa, G. Fayos, V.Fajardo, C.Cañigral, I.Garcia, J. Santos, Spain

**Valorisation of sewage sludge in co-digestion with cheese whey to produce volatile fatty acids**

R. Iglesias-Iglesias, C. Kennes, M.C. Veiga, Spain

**Biochemical methane potential (BMP) of secondary sewage sludge from different treatment processes in Peru**

E. Giraldo Araujo, G. Candela Lévano, E. Cadillo La Torre, R.M. Miglio Toledo, R. Vela Cardich, Peru

**Anaerobic Co-digestion of Food Waste and Sewage Sludge**

C. Wang, Y. Wang, Y. Wang, T. Zhang, Hong Kong

**Fate of IMP-producing Escherichia coli in anaerobic co-digestion of food waste and pig manure**

S. Wang, Z. Wang, Y. Jiang, D. Morris, L. O'Connor, Z. Hu, X. Zhan, Ireland

**Influence of ensiled treatment on the anaerobic co-digestion performance of *Pennisetum* hybrid and kitchen waste**

D. Wo, Y. Sun, China

**Comparison of thermal and thermal-alkaline pretreatment on anaerobic digestion of sewage sludge**

B. Xiao, Y. Liu, J. Liu, China

**Anaerobic Codigestion of Household Blackwater with Kitchen Organic Waste**

L. Zhang, B. Guo, Q. Zhang, A.P. Florentino, R. Xu, H. Zhang, Y. Zhang, Y. Liu, Canada

**Dynamic changes in microbial populations during acclimatisation to increasing ammonium concentrations in food waste digestion**

W. Zhang, C. Banks, S. Heaven, A. Alessi, J. Chong, United Kingdom

**Magnesium and calcium silicate mediated in-situ CO<sub>2</sub> sequestration and nutrients removal in sludge anaerobic digestion**

Y. Zhang, L. Gong, Q. Jiang, M. Cui, H. Liu, J. Zhang, B. Fu, H. Liu, China

**Dual acid-gas anaerobic co-digestion of excess sludge and pig slurry combined with hydrodynamic cavitation and ozonation**

E. Zuriaga-Agustí, B. Hernández, I. Pastor, M. Galián, G. Silvestre, J. Carvajo, J.L. Aranda, M. Abellán, C. García, Spain

**Improvement of methane production from anaerobic co-digestion of residues generated in sugarcane biorefinery: the effect of add bagasse fly ashes**

O.F. Herrera, B.E.L. Baêta, L.V.A. Gurgel, S. F. de Aquino, Brazil

**Anaerobic digestion of slaughterhouse wastes after hygienization in a continuous two-stage process**

A. Spyridonidis, I.A. Vasiliadou, S. Antonoudis, C. Kivraki, K. Stamatelatou, Greece

**Evaluating effect of substrate to inoculum ratio and enzyme treatment on anaerobic digestion of chicken litter**

N. Bhatnagar, D. Ryan, R. Murphy, A.M. Enright, Ireland

**Anaerobic co-digestion of sludge cake from poultry slaughtering and sweet potato: energy recovery and organic matter removal efficiency**

F.M. Damaceno, M.S.S.M. Costa, J. Lucas Jr., L.A.M. Costa, E.L. Buligon, J.C.P.S. Restrepo, M. Chiarelto, J. Bofinger, R.K. Niedzialkoski, Brazil

**Biogas production by co-ensiling catch crops and straw – effect of substrate blend and influence on microbial communities**

L. Feng , Y.M.L. Perschke, D. Fontaine, M. Nikolausz, A. J. Ward, J. Eriksen, P. Sørensen, H.B. Møller, Denmark

**Anaerobic Co-digestion of Cigarette Butts and Food Waste with Various Pretreatments**

H. Kim, O. Choi, B. Sang, Republic of Korea

**Impact of temperature, loading rate, retention time and feedstock mix on faecal indicator bacteria survival in farm-based anaerobic co-digestion**

S. Nolan, S. Connolly, R. Naga , C. Thorn, D. Bolton, E. Cummins, O. Fenton, K. Richards , V. O’Flaherty , F. Abram, Ireland

**Performance evaluation of a large scale two stages agricultural biogas plant for anaerobic digestion**

P. Peu, R. Girault, R. Bottari, A.-L. Duedal, France

**Impacts of furfural and vanillin on two-stage hythane fermentation**

C. Sun, A. Xia, Q. Liao, X. Guo, Q. Fu, Y. Huang, X. Zhu, China

**Performance of a mini pilot plant of AnMBR treating real municipal sewage**

J. Ji, S. Sakuma, A. Ohtsu, Y. Chen, T. Hojo, Y.-Y Li, Japan

**Treatment of dewatering liquors from biosolids treated by the Torwash process**

W. Driessen, J.T.A. Vogelaar, J.R. Pels, H. Kuipers, The Netherlands

**Anaerobic biodegradation kinetics of pre-treated slaughterhouse wastewater**

V.C. Hernández-Fydrych, M. Meraz-Rodríguez, M.L. Salazar-Peláez , Y. Ramírez-Quirós, M.C. Fajardo-Ortiz, Mexico

**Responses of bioconversion kinetics and microbial activity to feeding frequency during co-digestion of organic wastes**

Q. Li, X. Wang, China

**Anaerobic Treatment of Hydrothermal Aqueous Product for Enhanced Wastewater Energy Recovery**

A.D. Martin-Ryals, L.C. Schideman, United States

**Effect of food/inoculum ratio in methane production by co-digestion of poultry manure and lignocellulosic biomass**

A.G.O. Paranhos, G.F. Barreto, S.Q. Silva, S.F. Aquino, O.F. Herrera, Brazil

**Role of free nitrous acid on hydrogen recovery from waste activated sludge in a pre-fermentation and bio-electrochemical system**

A. Zhou, Z. Liu, S. Wang, X. Yue, China

**Dual acid-gas anaerobic co-digestion of excess sludge and pig slurry combined with hydrodynamic cavitation and ozonation**

E. Zuriaga-Agustí, B. Hernández , I. Pastor, M. Galián, G. Silvestr , J. Carvajo, J.L. Aranda, M. Abellán, C. García, Spain

**Anaerobic Codigestion of Landfill Leachate and Crude Glycerol for Enhanced Biogas Production**

P. Y. Takeda, J. T. Gotardo, S. D. Gomes, L. D. Bottega, Brazil



## **Improvement of Sludge Dewaterability by Anaerobic Digestion and Mechanism Analysis Based on Moisture Distribution**

W. Zhang, D. Dong, X. Dai, China

## **Bio- polymer production using anaerobic systems**

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### **Bioaugmentation with *Lactobacillus delbrueckii* to enhance the production of lactic acid from municipal biopulp**

M. Alvarado-Morales, P. Tsapekos, E.F. Bosma, S. Baladi, I. Angelidaki, Denmark

### **Effect of the sludge retention time in the production of lactic acid and hydrogen during dark fermentation**

L. Braga, E. Castelló, L. Fuentes, V. Rostan, C. Reino, C. Etchebehere, Uruguay

### **CONVERTING urban ORGANIC WASTES INTO BIOPOLYMERS: The resurbis project**

J. Mata-Alvarez, J. Dosta, A. Bodrin, M. Reis, J.M. Lagaron, D. Bolzonella, F. Fanitell, M. Majone, Spain