

7th International Conference on Biotechniques for Air Pollution Control and Bioenergy

PROGRAMME

July 19, 2017	
18 h 30 – 20 h 00	PRE REGISTRATION
July 20, 2017	
8 h 30 – 8 h 45	CONFERENCE OPENING
8 h 45 – 9 h 25	Lecture: Engineering biocomposite biocatalysts for continuous gas processing using thin liquid film bioreactors; MC Flickinger (USA) (pg. 1)
9 h 25 – 11 h 05	ORAL PRESENTATIONS 1-Waste gas treatment
9 h 25 – 9 h 45	Styrene removal in a two-phase partitioning bioreactor operated as biotrickling filter: experimental and modelling; P San Valero (ES) (pg. 3)
9 h 45 – 10 h 05	Dynamic behaviour of a fungal biofilter with <i>Fusarium solani</i> for the treatment of hexane; C Walgraeve (BE) (pg. 6)
10 h 05 – 10 h 25	Removal of volatile organic and inorganic pollutants: Bioreactor development and application of artificial neural networks; ER Rene (ES, NL) (pg. 8)
10 h 25 – 10 h 45	New adsorbents for the biogas upgrading process; D Peredo-Mancilla (FR) (pg. 95)
10 h 45 – 11 h 05	Biological treatment of waste gases contaminated with solely Benzene, Toluene, Ethylbenzene or m-Xylene; M Süß (CA) (pg. 155)
11 h 05 – 11 h 25	COFFEE BREAK (POSTERS)
11 h 25 – 13 h 25	ORAL PRESENTATIONS 2-Biofuels production and upgrading
11 h 25 – 11 h 45	Removal of hydrogen sulfide in air by abiotic filtration using cellular concrete waste; Mouna Ben Jaber (FR) (pg. 13)
11 h 45 – 12 h 05	Anoxic H ₂ S removal from biogas using nitrite as electron acceptor. Feedback and feedforward control strategies; J Brito (ES) (pg. 16)
12 h 05 – 12 h 25	A simple and reliable method for determining CO ₂ uptake, biomass and O ₂ yields in microalgal systems for biogas upgrading; G Quijano (MX) (pg. 18)
12 h 25 – 12 h 45	Influence of the temperature and alkalinity on biogas upgrading in algal-bacterial photobioreactors; M ^a R Rodero (ES) (pg. 21)

12 h 45 – 13 h 05	Quantitative and qualitative assessment of pure culture dark fermentative biohydrogen production; Í. Ergal (AT) (pg. 24)
13 h 05 – 13 h 25	Visualisation of structured mixed species biofilms for biohydrogen production; B Thallinger (AT) (pg. 26)
13 h 25 – 14 h 45	LUNCH + COFFEE + POSTER SESSION
14 h 45 – 16 h 25	ORAL PRESENTATIONS 3-Bioconversion/Removal of C1 gases (CO, CO₂, H₂, Syngas)
14 h 45 – 15 h 05	Gas transfer enhancement in gaseous bioconversions using elevated pressure operation; J Singh (UK) (pg. 28)
15 h 05 – 15 h 25	Novel insights into the physiology and productivity of a H ₂ /CO ₂ fermenting methanogen; L-M Mauerhofer (AT) (pg. 29)
15 h 25 – 15 h 45	CO ₂ Utilisation via a novel anaerobic bioprocess configuration with simulated gas mixture and real stack gas samples; T Dağlioğlu (TR) (pg. 31)
15 h 45 – 16 h 05	Microbial Electrochemical Technology (MET) platform for turning CO ₂ into acetate; R Blasco-Gómez (ES) (pg. 33)
16 h 05 – 16 h 25	Bioethanol production from C1 gases using clostridia: Effect of operational parameters; HN Abubackar (ES) (pg. 36)
16 h 25 – 16 h 45	COFFEE – BREAK (POSTERS)
17 h 10 – 18 h 50	ORAL PRESENTATIONS 4-Waste gas – Effects and treatment
16 h 45 – 17 h 05	Removal of gasoline vapours by biofiltration; L Malhautier (FR) (pg. 38)
17 h 05 – 17 h 25	Effect of saponins on ethyl benzene removal and biofilm characteristics in biotrickling filters; Chunping Yang (CN) (pg. 42)
17 h 25 – 17 h 45	Determination of the vertical stratification of microbial communities in biofilters for the treatment of industrial gaseous emissions that cause odors nuisance; G Aroca (CL)(pg.43)
17 h 45 – 18 h 05	Evaluation of bioaerosol emissions from biofilters; R Soret (FR) (pg. 45)
18 h 05 – 18 h 25	Odour control practices using chemical and biological scrubbers for a vacuum solid waste collection system; JiHyeon Song (KR) (pg. 48)
18 h 25 – 18 h 45	Studying phytofiltration properties of tree species in green infrastructure of city of Yerevan; G. Nersisyan (RU) (pg. 52)
18 h 45 – 19 h 05	A study on effect of air pollution (fly ash) in response to plant anatomy and biochemical characteristics; P Suganthi (IN) (pg. 50)
20 h 00	CONFERENCE DINNER

July 21, 2017	
8 h 45 – 9 h 25	Lecture – Ecosystem functioning <i>versus</i> Community Composition in Engineered Environments: current knowledge and prospects; L. Malhautier (FR) (pg. 54)
9 h 25 – 11 h 05	ORAL PRESENTATIONS 5- Bioreactors and Bioprocess modelling
9 h 25 – 9 h 45	Multiple steady states in a diffusion-limited biofilm of a VOC degrading biofilter; M Süß (CA) (pg. 55)
9 h 45 – 10 h 05	Application of DO microsensors in heterogeneous respirometry to characterize H ₂ S oxidizing biofilms grown on desulfurizing trickling beds; X. Guimerà (ES) (pg. 57)
10 h 05 – 10 h 25	Validation of a rapid procedure to determine biofilter performance; E Dumont (FR) (pg. 60)
10 h 25 – 10 h 45	Removal of acetone, dimethyl sulphide and hexane with a biofilter packed with silicon foam, compost and wood; Joren Bruneel (BE) (pg. 63)
10 h 45 – 11 h 05	Multiphase modeling of fluid dynamics and mass transfer phenomena in a fixed biofilm reactor; L. Prades (ES) (pg. 65)
11 h 05 – 11 h 25	COFFEE – BREAK (POSTERS)
11 h 25 – 13 h 25	ORAL PRESENTATIONS 6-Anaerobic gas treatment and bioelectrochemical systems (BES)
11 h 25 – 11 h 45	Enhancement of sludge granulation by chitosan in UASB reactors treating volatile organic compounds; K Torres (ES) (pg. 68)
11 h 45 – 12 h 05	Long-term UASB operation as first stage of an elemental sulfur recovery process from S-rich effluents; D Gabriel (ES) (pg. 70)
12 h 05 – 12 h 25	Modelling of the anaerobic bioscrubber for controlling VOC emissions by Aspen Plus®; J Álvarez-Hornos (ES) (pg. 72)
12 h 25 – 12 h 45	Influence of air flowrate on the recovery of elemental sulfur in the treatment of sulphide-laden wastewaters containing ammonium; D Cueto (ES) (pg. 75)
12 h 45 – 13 h 05	Performance and microbial community of a novel electrochemical biofilter for gaseous toluene removal; J Xi (CN) (pg. 78)
13 h 05 – 13 h 25	Effect of pH on the treatment of high-strength sulfate wastewaters in bioelectrochemical systems for elemental sulfur recovery; E Blázquez (ES) (pg. 80)
13 h 25 – 14 h 50	LUNCH + COFFEE + POSTER SESSION

	ORAL PRESENTATIONS
14 h 50 – 16 h 00	7-Bioconversion/Removal of C1 gases (CO, CO₂, H₂, Syngas)
14 h 50 – 15 h 10	<i>Clostridium carboxidivorans</i> as a biocatalyst for the production of higher alcohols from gaseous substrates; Á Fernández (ES) (pg. 83)
15 h 10 – 15 h 30	Two-stage strategy for the combined production of (bio)ethanol and biopolymers (PHA) from syngas; B Lagoa (ES) (pg. 86)
15 h 30 – 15 h 50	The Hydrofinery project – Bioconversion of CO ₂ and hydrogen to (bio)fuels and platform chemicals; L. Rachbauer (AT) (pg. 88)
15 h 50 – 16 h 10	High performance biomethanation of CO ₂ to CH ₄ using a biotrickling filter and hydrogenotrophic methanogens; T.L. Dupnock (USA) (pg. 90)
16 h 10 – 16 h 30	COFFEE - BREAK
16 h 50 – 18 h 10	ORAL PRESENTATIONS
	8-Biofuels production and upgrading
16 h 30 – 16 h 50	Feast-famine strategies as a low-cost and robust alternative for CH ₄ biofiltration; JC López (ES) (pg. 93)
16 h 50 – 17 h 10	Coupled Ammonium-Rich water nitrification and anoxic biogas desulfurization using a feedback control; P Cano (ES) (pg. 97)
17 h 10 – 17 h 30	Evaluating microbial robustness in continuous vs. feast-famine bioreactors via methane-oxidizing activity by q-PCR; E Rodríguez (ES) (pg. 99)
17 h 30 – 17 h 50	Biohydrogen and Biochar production from fruits and vegetables by dry fermentation and hydrothermal carbonization, respectively; HN Abubackar (TR) (pg. 142)
17 h 50 – 18 h 10	Enhanced adsorption and regeneration of activated carbon for the removal of CO ₂ and H ₂ S from biogas stream; M Farooq (UK) (pg. 101)
18 h 10 – 18 h 45	BEST POSTER AWARD
	FAREWELL / END OF CONFERENCE

POSTERS

- Rheological properties of biofilms: steady and transient shear flow modeling; L. Prades, Y. Bautista, J. Climent, V. Sanz, S. Chiva, A. D. Dorado and X. Gamisans
- On-line monitoring, control and mitigation of greenhouse gases emissions in WWTPs; JA Baeza, D Gabriel, A Guisasola, J Lafuente, E Katsou, T Massara, C Noutsopoulos, K Antoniou, A Andreadakis, D Mamais, E Koumaki, M Gioldasi, O Prado, J Colón, D. Rosso, G Krieg, S Malamis
- Simultaneous dissolved oxygen and pH continuous monitoring through biofilms using a minimally invasive microsensor; Guimerà X., Moya A., Rodríguez D., Gabriel D., Villa R., Dorado A. D., Gabriel G., Gamisans X
- Biofiltration of toluene, formaldehyde y benzo[a]pirene using a consortium bacteria/fungus; Yáñez, D.; Aroca, G; Diaz-Robles, L; Vergara-Fernández, A.
- Trimethylamine abatement in algal-bacterial photobioreactors coupled with nitrogen recovery; Celia Pascual, Raúl Muñoz, Ilker Akmirza, Raquel Lebrero
- Nutrient addition by recycling method in a methane biofilter; Bahman Khabiri, Milad Ferdowsi, Gerardo Buelna, J. Peter Jones, Michèle Heitz
- Effect of N/S ratio on anoxic sulfide oxidizing bioreactors; Ramita Khanongnuch, Franceso Di Capua, Aino-Maija Lakaniemi, Eldon R. Rene and Piet N. L. Lens
- Miniaturized biotrickling filters for process intensification of indoor air VOC treatment; Lopez, L.R., Deaton, K.E., Deshusses, M.A.
- Evolution of reactor and microbial community in the anaerobic treatment of printing solvents; Ferrero P., Martinez-Soria V., Gabaldón C. and Penya-Roja J. M.
- Anaerobic biodegradation of soluble solvents emissions in a laboratory-scale CSTR: 2-propanol as target pollutant; San-Valero P., Vermorel N., Penya-roja J.M., Gabaldón C. and Izquierdo M.

- Performance and microbial characteristics in an aqueous-silicone oil system using *Delftia tsuruhatensis* LW26 to remove chlorobenzene; Jie-Xu Ye, Tong-Hui Lin, Dong-Zhi Chen, Zhuo-Wei Cheng, Shi-Han Zhang, Jian-Meng Chen
- Development of a novel packing material with high sorption capacities for biofilter applications; JiHyeon Song, Jeong-Hee Kang and Hyunsup Jang
- Selenate bioreduction in the presence of methane using slow growing biomass from deep sea sediment in a biotrickling filter; Tejaswini Eregowda, Shrutika L. Wadgaonkar, Eldon R. Rene, Jack van de Vossenberg and Piet N. L. Lens
- Absorption and desorption of different alcohols by N-tertiary butyl acrylamide (N-tBA)/acrylic acid (AA) copolymer gel; Samayita Chakraborty, Rabin Bera, Arup Mandal, Debabrata Chakraborty, Eldon R. Rene, Piet N. L. Lens
- Hydrogen sulfide removal from biogas mimic by an anoxic biofilter packed with expanded schist particles; Mouna Ben Jaber, Eric Dumont, Annabelle Couvert, Abdeltif Amrane, Pierre Le Cloirec
- Simultaneous H₂S and NO₃⁻ removal using different NR-SOB strains isolated from hot springs in Thailand; Wannapawn Watsuntorn, Eldon R. Rene, Piet N.L. Lens, Warawut Chulalaksananukul
- Syngas biomethanation by enriched microbial consortia: Inhibition and kinetic studies; Grimalt-Aleman A., Kennes-Veiga D.M., Skiadas I.V., Gavala H.N.
- CO₂ bioconversion: trace elements utilization in biological methane production (BMP); Annalisa Abdel Azim, Christian Pruckner, Philipp Kolar, Ruth-Sophie Taubner, Debora Fino, Guido Saracco, Filipa L. Sousa, Simon K.-M. R. Rittmann
- Enhancement of CO₂ capture on populus wood biomass-derived grapheme; Ekhlesi L., Younesi H., Rashidi A. and Bahramifar N.