Barth F. Smets - Publications - DTU Orbit (13/09/2018)


Li, L, Dechesne, A, He, Z, Madsen, JS, Nesme, J, Sørensen, SJ & Smets, BF 2018, 'Estimating the Transfer Range of Plasmids Encoding Antimicrobial Resistance in a Wastewater Treatment Plant Microbial Community' Environmental Science & Technology Letters, vol 5, no. 5, pp. 260-265. DOI: 10.1021/acs.estlett.8b00105


Domingo-Felez, C, Calderó-Pascual, M, Sin, G, Plósz, BG & Smets, BF 2017, 'Calibration of the NDHA N2O model via respirometric assays' Frontiers International Conference on Wastewater Treatment (FICWTM2017), Palermo, Italy, 21/05/2017 - 24/05/2017,

Tatari, K, Gülay, A, Thamdrup, B, Albrechtsen, H-J & Smets, BF 2017, 'Challenges in using allylthiourea and chlorate as specific nitrification inhibitors' Chemosphere, vol 182, pp. 301-305. DOI: 10.1016/j.chemosphere.2017.05.005

Blum, J-M & Smets, BF 2017, Changes in intermittent aeration regimes are effective tools to manage bio-granule size and microbial communities in partial nitritation-anammox SBRs. in L Flindt Jørgensen, T Mosolf Larsen & BK Jensen (eds), Abstract proceedings - 11th annual meeting danish water forum. University of Copenhagen, Frederiksberg, pp. 20-20.

Fowler, J, Palomo, A & Smets, BF 2017, 'Comammox Nitrospira are key nitrifiers in diverse groundwater-fed drinking water filters' AEESP 2017, Ann Arbor, United States, 20/06/2017 - 22/06/2017,


Jensen, MM, Ma, C, Lavik, G, Smets, BF & Thamdrup, B 2017, 'Dynamics of N$_2$O production pathways analyzed by $^{15}$N$^{18}$O isotope labeling' International workshop on marine geomicrobiology - A matter of energy, Sønderborg, Denmark, 28/08/2017 - 01/09/2017,


Domingo Felez, C, Pellicer i Nàcher, C, Petersen, MS, Jensen, MM, Plósz, BG & Smets, BF 2017, 'Heterotrophs are key contributors to nitrous oxide production in mixed liquor under low C-to-N ratios during nitrification - batch experiments and modelling' Biotechnology and Bioengineering, vol 114, no. 1, pp. 132-140. DOI: 10.1002/bit.26062


Su, Q., Jensen, MM & Smets, BF 2017, 'Low nitrous oxide production in intermittent-feed high performance nitritating reactors' Frontiers International Conference on Wastewater Treatment (FICWTM2017), Palermo, Italy, 21/05/2017 - 24/05/2017,


Ma, Y., Piscedda, A. & Smets, BF 2017, 'Membrane-aerated Nitrifying Biofilms: Continuous versus Intermittent Aeration' 10th International Conference on Biofilm Reactors, Dublin, Ireland, 09/05/2017 - 12/05/2017,


Fowler, SJ & Smets, BF 2017, 'Microbial biotechnologies for potable water production' Microbial Biotechnology, vol 10, no. 5, pp. 1094-1097. DOI: 10.1111/1751-7915.12837

Torresi, E., Polese, F., Smets, BF., Andersen, HR., Plósz, BG & Christensson, M 2017, 'Moving bed biofilm reactors (MBBRs) for removal of pharmaceuticals in biological wastewater treatment' 15th Nordic Wastewater Conference, Aarhus, Denmark, 10/10/2017 - 12/10/2017,

Domingo-Felez, C., Plósz, BG., Sin, G. & Smets, BF 2017, 'N2O and NO dynamics in AOB-enriched and mixed-culture biomass: experimental observations and model calibration' ICoN5: 5th International Conference on Nitrification, Vienna, Austria, 23/07/2017 - 27/07/2017,

Palomo, A., Fowler, J., Pedersen, AG., Sicheritz-Pontén, T. & Smets, BF 2017, 'Niche differentiation and evolution of comammox Nitrospira through a comparative genomics analysis' ICoN5: 5th International Conference on Nitrification, Vienna, Austria, 23/07/2017 - 27/07/2017,

Fowler, J., Dechesne, A., Wagner, FB., Diwan, V., Albrechtsen, H-J. & Smets, BF 2017, 'Niche partitioning within genus Nitrospira is affected by environmental copper concentration' ICoN5: 5th International Conference on Nitrification, Vienna, Austria, 23/07/2017 - 27/07/2017,

Xing, W., Valverde Pérez, B., Pape, ML., De Francisci, D. & Smets, BF 2017, 'Nitrogen recovery from wastewater to produce microbial protein using methane oxidizing bacteria' Conference on Sustainable Wastewater Treatment and Resource Recovery: Research, Planning, Design and Operation, Chongqing, China, 05/11/2017 - 10/11/2017,

Kinnunen, M., Gülay, A., Albrechtsen, H-J., Dechesne, A. & Smets, BF 2017, 'Nitrotoga is selected over Nitrospira in newly assembled biofilm communities from a tap water source community at increased nitrite loading' Environmental Microbiology, vol 19, no. 7, pp. 2785–2793. DOI: 10.1111/1462-2920.13792

Ma, Y., Domingo-Felez, C & Smets, BF 2017, 'Nitrous oxide Production in Membrane-aerated Nitrifying Biofilms: Experimentation and Modelling' Frontiers International Conference on Wastewater Treatment (FICWTM2017), Palermo, Italy, 21/05/2017 - 24/05/2017,

Morset, M., Valverde Pérez, B., Blum, J-M., Domingo Felez, C., Mauricio-Iglesias, M & Smets, BF 2017, 'N2-O emissions from a single-stage partial nitritation/anammox granule-based reactor – a model based assessment' 10th International Conference on Biofilm Reactors, Dublin, Ireland, 09/05/2017 - 12/05/2017,


Li, L, Dechesne, A & Smets, BF 2017, Plasmid host range (permiseveness) in communities of activated sludge in wastewater treatment plant. in The Danish Microbiological Society Annual Congress 2017 - Programme & Abstracts., P98, American Society for Microbiology, Copenhagen, Denmark, pp. 93-94.

Li, L, Dechesne, A & Smets, BF 2017, 'Plasmid host range (permiseveness) in microbial communities of activated sludge in wastewater treatment plant.' Danish Microbiological Society, Copenhagen, Denmark, 13/11/2017 - 13/11/2017,


Torresi, E, Polesel, F, Smets, BF, Andersen, HR, Christensson, M & Plósz, BG 2017, 'Removal of pharmaceuticals in Moving Bed Biofilm Reactors – The impact of design and operating conditions' 10th Micropol & Ecohazard Conference (IWA), Vienna, Austria, 17/09/2017 - 20/09/2017,


Torresi, E, Polesel, F, Christensson, M, Trapp, S, Smets, BF, Andersen, HR & Plósz, BG 2017, 'Sorption and diffusion of micropollutants on/in biofilms: experimental observations and a model-based interpretation' 10th International Conference on Biofilm Reactors, Dublin, Ireland, 09/05/2017 - 12/05/2017,

Cockx, B, Clegg, RJ, Lang, S, Kreft, J & Smets, BF 2017, 'The competitive edge: competition and biofilm composition, an individual-based modelling approach' 10th International Conference on Biofilm Reactors, Dublin, Ireland, 09/05/2017 - 12/05/2017,


Smets, BF, Dechesne, A, Li, L, Madsen, JS, Nesme, J, Sørensen, SJ, Quintela-Baluja, M & Graham, D 2017, 'Tracking and understanding AMR dynamics across European urban water systems' International Symposium on Antimicrobial Resistance in the Environment (ISARE 2017), Shenzen, China, 30/11/2017 - 03/12/2017,


Torresi, E, Christensson, M, Smets, BF, Fowler, SJ, Polesel, F, Andersen, HR & Plósz, BG 2016, Biodiversity positively associates with biofilm thickness in Moving Bed Biofilm Reactors (MBBRs) – implications on micropollutant removal and nitrification. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark , pp. 60-61.


Torresi, E, Polesel, F, Andersen, HR, Smets, BF, Christensson, M & Plósz, BG 2016, 'Can we enhance the biotransformation of pharmaceutical micropollutants by controlling biofilm thickness in MBBR?' IFAT - 2016, Munich, Germany, 30/05/2016 - 03/06/2016,


Kinnunen, M, Dechesne, A, Albrechtsen, H-J & Smets, BF 2016, 'De novo biofilm community assembly from tap water source communities favors Nitrotoga over Nitrospira under elevated nitrite surface loading' 16th International Symposium on Microbial Ecology, Montreal, Canada, 21/08/2016 - 26/08/2016,


Ma, C, Jensen, MM, Smets, BF, Lavik, G & Thamdrup, B 2016, Dynamics of N₂O production pathways in a full-scale activated sludge system analysed by ¹⁵N/¹⁸O dual isotope labelling. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark , pp. 82-83.


Diwan, V, Smets, BF, Albrechtsen, H-J & Dechesne, A 2016, Linking nitrifiers diversity to the flux of their key resources. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark, pp. 204-205.


Torresi, E, Fowler, J, Polesel, F, Smets, BF, Andersen, HR, Christensson, M & Plósz, BG 2016, 'Microbial biodiversity enhances micropollutants biotransformation in Moving Bed Biofilm Reactors (MBBR) with controlled biofilm thickness' International Conference on Emerging Contaminants (EmCon2016) and Micropollutants (WoW2016) in the Environment, Sydney, Australia, 20/09/2016 - 23/09/2016,

Albrechtsen, H-J, Smets, BF, Lee, CO, Tatari, K, Nielsen, PB, Binning, PJ, Boe-Hansen, R & Wagner, FB 2016, 'Optimizing nitrification in biological rapid sand filters for drinking water production' IWA World Water Congress & Exhibition 2016, Queensland, Australia, 09/10/2016 - 14/10/2016,


Domingo Felez, C, Valverde Pérez, B, Plósz, BG, Sin, G & Smets, BF 2016, 'Sources and propagation of uncertainty in N2O model predictions' 5 th IWA/WEF Wastewater Treatment Modelling Seminar 2016, Annecy, France, 02/04/2016 - 06/04/2016,

Terada, A, Kinh, CT, Suenaga, T, Hori, T, Riya, S, Smets, BF & Hosomi, M 2016, Spatial distribution of microbial community and N2O depth profiles in counter- and co- diffusion biofilms functioning simultaneous nitrification and denitrification. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark, pp. 76-77.

Fowler, J, Palomo, A, Gülay, A, Tatari, K, Thamdrup, B, Albrechtsen, H-J, Sørensen, S & Smets, BF 2016, 'Stable isotope probing and dynamic loading experiments provide insight into the ecophysiology of novel ammonia oxidizers in rapid gravity sand filters' 16th International Symposium on Microbial Ecology, Montreal, Canada, 21/08/2016 - 26/08/2016,


Ma, Y, Domingo Felez, C, Plósz, BG & Smets, BF 2016, 'Suppression of nitrite-oxidizing bacteria in intermittently aerated biofilms: a model-based explanation' MEWE and biofilms IWA specialist conference, Copenhagen, Denmark, 04/09/2016 - 07/09/2016,

Cockx, B, Clegg, RJ, Kreft, JU & Smets, BF 2016, 'The formation dynamics of microbial aggregates' Conference on The Individual Microbe: Single-cell Analysis and Agent-based Modeling, Washington DC, United States, 18/03/2016 - 20/03/2016,

Polesel, F, Torresi, E, Jensen, MM, Escola Casas, M, Bester, K, Christensson, M & Smets, BF 2016, The influence of reactor staging on microbial structure and functions in pre-denitrifying MBBRs. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark , pp. 92-93.

Cockx, B, Clegg, RJ, Lang, S, Smets, BF & Kreft, JU 2016, 'The perks of agent-based modelling with iDynoMiCS 2' MEWE and biofilms IWA specialist conference, Copenhagen, Denmark, 04/09/2016 - 07/09/2016,

Cockx, B, Clegg, RJ, Lang, S, Smets, BF & Kreft, JU 2016, 'The perks of agent-based modelling with iDynoMiCS 2' MEWE and biofilms IWA specialist conference, Copenhagen, Denmark, 04/09/2016 - 07/09/2016,

Cockx, B, Clegg, RJ, Lang, S, Smets, BF & Kreft, J-U 2016, The perks of agent-based modelling with iDynoMiCS 2. in Microbial ecology and water engineering & biofilms specialist groups (MEWE2016). IWA, Copenhagen, Denmark , pp. 190-191.


Domingo Felez, C, Valverde Pérez, B, Plósz, BG, Sin, G & Smets, BF 2016, 'Towards an optimal experimental design for N2O model calibration during biological nitrogen removal' 5 th IWA/WEF Wastewater Treatment Modelling Seminar 2016, Annecy, France, 02/04/2016 - 06/04/2016,


Gülay, A, Musovic, S, Albrechtsen, H-J & Smets, BF 2015, A comprehensive 454 survey provides insights into microbial diversity and community structure in rapid sand filters. in IWA Specialized Conference biofilms in drinking water systems from treatment to tap. IWA Publishing, Arosa, Switzerland, pp. 79-83.


Kinnunen, M, Dechesne, A, Albrechtsen, H-J & Smets, BF 2015, 'A novel high-throughput drip-flow system to grow autotrophic biofilms of contrasting diversities' 13th Symposium on Bacterial Genetics and Ecology, Milan, Italy, 14/06/2015 - 18/06/2015,

Domingo Felez, C, Pellicer i Nàcher, C, Petersen, MS, González-Combarros, R, Jensen, MM, Sin, G & Smets, BF 2015, Challenges encountered calibrating N2O dynamics from mixed cultures. in ICoN4 - 4th International Conference on Nitrification (and Related Processes): Poster Abstracts., EE-7, Edmonton, Canada.


Valverde Perez, B, Wágner, DS, Cecchin, F, Jensen, CK, Smets, BF & Plósz, BG 2015, 'Impact of operational conditions and reactor configuration on process performance and microbial community in short solid retention time EBPR systems' 1st IWA Resource Recovery Conference, Ghent, Belgium, 30/08/2015 - 02/09/2015,

Torresi, E, Andersen, HR, Smets, BF, Plósz, BG & Christensson, M 2015, 'Influence of biofilm thickness on micropollutants removal in nitrifying MBBRs' 9th IWA Specialist Conference on Assessment and Control of Micropollutants and Hazardous Substances in Water, Singapore, Singapore, 22/11/2015 - 25/12/2015,


Pedersen, LL, Smets, BF & Dechesne, A 2015, 'Measuring biogeochemical heterogeneity at the micro scale in soils and sediments' Soil Biology & Biochemistry, vol 90, pp. 122-138. DOI: 10.1016/j.soilbio.2015.08.003


Klümper, U, Brandt, KK, Dechesne, A, Riber, L, Sørensen, S & Smets, BF 2015, Metal specific modulation of community permissiveness towards broad host range plasmids through stress. in Abstracts. 6th Congress of European Microbiologists (FEMS 2015)., FEMS-2555.


Wagner, FB, Lee, CO, Nielsen, PB, Tatari, K, Boe-Hansen, R, Binning, PJ, Smets, BF & Albrechtsen, H-J 2015, 'Phosphorus addition can increase nitrification in biological rapid sand filters for drinking water treatment' 9th Annual Danish Water Research Meeting 2015, Copenhagen, Denmark, 29/01/2015 - 29/01/2015,


Klümper, U, Brandt, KK, Dechesne, A, Riber, L, Sørensen, SJ & Smets, BF 2014, 'Metal stress alters a bacterial community's permissiveness towards plasmids' The Danish Microbiological Society Annual Congress 2014, Copenhagen, Denmark, 10/11/2014,


Gülay, A, Tatari, K, Musovic, S, Mateiu, RV, Albrechtsen, H-J & Smets, BF 2014, 'Mineral coating creates internal porosity and supports microbial activity in rapid sand filters treating groundwaters' Biofilms6: 6th International conference on Biofilms, Vienna, Austria, 11/05/2014 - 13/05/2014,


Tatari, K, Smets, BF & Albrechtsen, H-J 2013, 'A novel bench-scale column assay to investigate site-specific nitrification biokinetics in biological rapid sand filters' Water Research, vol 47, no. 16, pp. 6380-6387. DOI: 10.1016/j.watres.2013.08.005


Klümper, U, Riber, L, Sannazzaro, A, Dechesne, A, Musovic, S, Hansen, LH, Sørensen, SJ & Smets, BF 2013, 'Assessing the permissiveness of complex bacterial communities towards conjugal plasmids - A novel method' Danish Microbiological Society 2013, Copenhagen, Denmark, 18/10/2013 - 18/10/2013,


De Francisci, D, Holdt, SL, Van Wagenen, J, Podevin, M, Smets, BF, Plósz, B, Møller, P & Angelidaki, I 2013, ‘Development of an algal wastewater treatment concept, based on the selection of microalgal strains with optimal bioextraction characteristics’ International Conference on Algal Biorefinery, Kharagpur, India, 10/01/2013 - 12/01/2013,


Mutlu, AG, Vangsgaard, AK, Chen, L, Domingo Felez, C, Sin, G & Smets, BF 2013, ‘Driving towards stratified aggregation in single-stage nitritation/anammox reactors by varying aeration regimes’ IWA 9th international Conference on Biofilm Reactors, Paris, France, 28/05/2013 - 31/05/2013,

Tatari, K, Smets, BF, Lee, CO, Nielsen, PB & Albrechtsen, H-J 2013, ‘Examining biological sand filters for drinking water treatment as biofilm reactors: experimental and modeling approach’ IWA 9th international Conference on Biofilm Reactors, Paris, France, 28/05/2013 - 31/05/2013,


Gülay, A, Tatari, K, Musovic, S, Mateiu, RV, Albrechtsen, H-J & Smets, BF 2013, ‘Interactions between microbial activity and distribution and mineral coatings on sand grains from rapid sand filters treating groundwater’ 5th International Conference Microbial Ecology and Water Engineering, Michigan, United States, 07/07/2013 - 10/07/2013,


Gülay, A, Musovic, S, Albrechtsen, H-J & Smets, BF 2013, ‘Microbial community structure and a core microbiome in biological rapid sand filters at Danish waterworks’ 5th International Conference Microbial Ecology and Water Engineering, Michigan, United States, 07/07/2013 - 10/07/2013,


Pellicer i Nàcher, C, Jensen, MM, Petersen, MS & Smets, BF 2013, 'N₂O production dynamics in nitrifying/denitrifying activated sludge under defined environmental conditions' ICON3: 3rd international conference on Nitrification, Tokyo, Japan, 02/09/2013 - 05/09/2013,


An operation protocol for facilitating start-up of single-stage autotrophic nitrogen removing reactors based on process stoichiometry, Mutlu, AG, Vangsgaard, AK, Sin, G & Smets, BF An operation protocol for facilitating start-up of single-stage autotrophic nitrogen removing reactors based on process stoichiometry. Sound/Visual production (digital).

Mutlu, AG, Vangsgaard, AK, Jensen, MM & Smets, BF 2012, ‘Architecture evolution of biomass aggregates in single stage nitrification/anammox reactors’ 14th International Symposium on Microbial Ecology, Copenhagen, Denmark, 19/08/2012 - 24/08/2012,


Tatari, K, Smets, BF & Albrechtsen, H-J 2012, 'Effect of surface loading fluctuations in rapid sand-filters used to remove ammonium from drinking water' 2012 Water Quality Technology Conference and Exposition (WQTC), Toronto, Ontario, Canada, 04/11/2012 - 08/11/2012,

Tatari, K, Smets, BF, Nielsen, PB, Lind, S & Albrechtsen, H-J 2012, 'Effect of surface loading fluctuations on ammonium removal during rapid sand filtration' 2012 Water Quality Technology Conference and Exposition (WQTC), Toronto, Ontario, Canada, 04/11/2012 - 08/11/2012,


Pellicer i Nácher, C, Domingo Felez, C & Smets, BF 2012, 'In-situ microbial activity in membrane-aerated biofilms for autotrophic nitrogen conversion' 14th International Symposium on Microbial Ecology, Copenhagen, Denmark, 19/08/2012 - 24/08/2012,

Gozdereilier, E, Dechesne, A, Haubjerg Nicolaisen, M, Sharp, RE, Aamand, J, Albrechtsen, H-J, Smets, BF & Reinhold Serensen, S 2012, 'Isolation of 2-methyl-4-chlorophenoxyacetic acid degrading bacteria from groundwater sediments using a novel low substrate flux approach' 14th International Symposium on Microbial Ecology, Copenhagen, Denmark, 19/08/2012 - 24/08/2012,

Musovic, S, Gülay, A, Albrechtsen, H-J & Smets, BF 2012, 'Microbial Abundance, Distribution and Diversity in Rapid Sand Filters' 2012 Water Quality Technology Conference and Exposition (WQTC), Toronto, Ontario, Canada, 04/11/2012 - 08/11/2012,

Smets, BF, Kreft, J-U, Or, D, Dechesne, A, Gulez, G, Lardon, L, Merkey, B, Seoane, J & Wang, G 2012, 'Micro-scale spatial expansion of microbial cells and mobile genetic elements.' 14th International Symposium on Microbial Ecology, Copenhagen, Denmark, 19/08/2012 - 24/08/2012,
Dechesne, A & Smets, BF 2011, 'Swarming motility is restricted to a narrow range of water matric potential' 4th Congress of European Microbiologists, Geneva, Switzerland, 26/06/2011 - 30/06/2011,


Pellicer i Nàcher, C, Lackner, S, Terada, A, Lardon, L & Smets, BF 2008, 'Redox Stratified Controlled Biofilm Reactor for Completely Autotrophic Nitrogen Removal' IWA Leading-Edge conference on Water and Wastewater Technologies, Zürich, 01/01/2008,


Dechesne, A, Or, D, Gulez, G & Smets, BF 2008, 'The porous surface model, a novel experimental system for online quantitative observation of microbial processes under unsaturated conditions' *Applied and Environmental Microbiology*, vol 74, no. 16, pp. 5195-5200. DOI: 10.1128/AEM.00313-08


Leungsakul, T, Keenan, BG, Mori, M, Morton, MD, Stuart, JD, Smets, BF & Wood, TK 2006, 'Oxidation of aminonitrotoluenes by 2,4-DNT dioxygenase of Burkholderia sp. strain DNT' *Biotechnology and Bioengineering*, vol 93, no. 2, pp. 231-237.


Leungsakul, T, Keenan, BG, Yin, H, Smets, BF & Wood, TK 2005, 'Saturation mutagenesis of 2,4-DNT dioxygenase of Burkholderia sp. strain DNT for enhanced dinotrotoluene degradation' Biotechnology and Bioengineering (Print), vol 92, no. 4, pp. 416-426. DOI: 10.1002/bit.20602
