



Curriculum Vitae



Name : Sabine Marie Podmirseg
 Titles : Mag.^a biol, Dr.^a rer.nat.
 Date & Place of birth: 3rd June 1983, Rum in Tirol (A)
 Nationality: Austria/France

Current Work Address

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Scientific Experience:

During the last years I have gained a lot of scientific experience and project management skills, have participated in the phases of project fund acquisition and project coordination, integration into international scientific networks, co-organised a conference (ISAM8) and contributed to project reports and scientific outputs. I have worked in projects funded by: FWF, FFG, alpS GmbH, D. Swarovski & Co, ACIB, WERF, TWF and HRSM in the research field of microbial resource management. My research focuses mainly on wastewater treatment (anammox and bioaugmentation), anaerobic digestion (process monitoring and -optimization) and molecular techniques that enable reliable characterisation of microbial consortia. The peculiar group of anaerobic fungi (Neocallimastigomycota) has attracted my attention since 2012 and has become one of my main research disciplines. I am curator of the UIBK anaerobic fungi culture collection.

Education

03/2020-04/2018-03/2020	Maternity leave University assistant at the Institute of Microbiology, University of Innsbruck, Austria
01/2017-03/2018-02/2014-	Maternity leave University assistant at the Institute of Microbiology, University of Innsbruck, Austria
10/2011-01/2014	Post-doctoral Researcher at the Institute of Microbiology, University of Innsbruck, Austria
02/2008-10/2011	PhD Studies (Microbiology) at the University of Innsbruck, Austria
03/2005-11/2007	Master-studies (Microbiology) at the University of Innsbruck, Austria
10/2001-03/2005	Bachelor-studies (Biology), at the University of Innsbruck, Austria

Qualifications

07 th October 2011	Doctor of natural sciences (Microbiology); “Microbial communities in organic waste- and waste water management – with a special focus on bioaugmentation of nitrifiers, mesophilic biogas reactors and digestate application to soil”; graduation with distinction;
27 th November 2007	Master in Biology (Mag. ^a biol. Microbiology); „Characterization of the microbial gut community of <i>Lumbricus rubellus</i> by PCR-DGGE and cloning“; graduation with distinction;
11th April 205	Bachelor of natural sciences ; BNatSc (Biology)

Ongoing Projects

03/2019-	DACH-HiPoAF (Lead) Unleashing the hidden potential of anaerobic fungi (Neocallimastigomycota) in cooperation with LfL Freising, ZHAW Zürich, TUM Munich, CeBiTec Bielefeld, IAPG Prague and IBERS Aberystwyth
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Completed Projects

02/2014-07/2018	MicrobeEnergy Project (Lead) HRSM : Evaluation and comparison of pretreatment strategies and their effect on biomethanisation with a special focus on anaerobic fungi; In cooperation with the Management Centre Innsbruck (MCI) and the University of Applied Sciences Upper Austria (FH Wels)
05.2015-07.2016	ACIB Project (scientific partner): “Balancing flocs and granules for activated sludge process intensification”; research project of the ACIB (Austrian Centre of Industrial Biotechnology)
10.2015-07.2016	ACIB Project (project leader): “Rumen fluid as source for novel enzymes and amendment to biogas reactors”; feasibility study of the ACIB (Austrian Centre of Industrial Biotechnology)
04.2015-09.2015	ACIB Project (scientific partner): “Taming Polymer-Oxidoreductases and – Hydrolases“; (Austrian Centre of Industrial Biotechnology)

- 09.2011-
03.2013 **alpS GmbH**
BiEne C- Anammox Project: "Monitoring of the first Anammox-biomass-enrichment in the mainstream of a WWTP (Strass, A) for improved Energy-and cost-balance." Comet-Centre alpS-GmbH in Cooperation with the University of Innsbruck (Mikrobiology) and ARAconsult GmbH
- 07.2012-
12.2013 **FFG**
Fesibility-study: "Anaerobic Fungi for the process optimization of Biogas plants (Fungi4Gas)." Austrian Research promoting agency
- 10.2010-
04.2011 **D. Swarovski & Co**
Project: "The effect of wood ash on biogas production." Aktion D. Swarovski & Co
- 12.2008-
11.2009 **TWF**
Project: "Nitrifier-bioaugmentation in a WWTP." Tyrolean Research Fund.

Grants/Awards

- 2014 Pümpel, T. and **Podmirseg, S.**: "Verfahren zur Ermittlung der Menge an Anammox-Bakterien. Austrian Patent Office; A50579/2014;
- 11.2014-
03.2015 **Scholoraship for short-term research trainings abroad** (France). University of Innsbruck
- 07.2014-
10.2014 **Scholoraship for short-term research trainings abroad** (Great Britain). University of Innsbruck
- 2011 **Best Scientific Talk** at the ISAM7. International Symposium on Anaerobic Microbiology; Smolenice (SK) 15.06.2011-18.06.2011
- 02.2010 **Scholoraship for short-term research trainings abroad** (France). University of Innsbruck
- 09.2008-
02.2010 **Doctoral fellowship**; "Microbial Communities in biological waste treatment processes." University of Innsbruck; Office of the vice-rector for research;
- 2004 **Performance scholarship** for the study year 2003/2004 (Bachelor-studies) University of Innsbruck
- 2003 **Performance scholarship** for the study year 2002/2003 (Bachelor-studies) University of Innsbruck

Stays abroad / Workshops

- 11/2014-04/2015
06/2015 **National Research Institute of Science and Technology for Environment and Agriculture** (IRSTEA), IRSTEA, Antony, France; Focus: Metatranscriptomics and Metagenomics of Anaerobic fungi
- 07/2014-10/2014 **Institute of Biological, Environmental and Rural Sciences** (IBERS), University of Aberystwyth (UK); Focus: Cultivation and Detection of Anaerobic fungi
- 07/2012 **Institute of Animal Physiology and Genetics**, Laboratory of Anaerobic Microbiology, Prague (CZ) Focus: Cultivation of anaerobic Fungi
- 05/2012 **Lab Microbial Systems Ecology**, Technische Universität München (D) International FISH Workshop – Fluoreszenz *in situ* Hybridisierung (Lead: Dr. Natuschka Lee)
- 02/2010 **Laboratoire Microorganismes: Génome et Environnement** - Université Blaise Pascal, Clermont-Ferrand (F) Focus: Microarray

Teaching Experience

- Course 718786 Molecular microbial ecology (Lecture VO1)
- Course 718291 Microbiological Techniques (Lecture VO1)
- Course 718712 Biodegradation (Lab Course UE3)
- Course 718722 Biogas (Lab Course UE3)
- Course 718112 Basic Lab Course Microbiology (UE3)
- Course 718771 Microbial Ecology (Lab Course VU4)

Publications (last 5 years)

- Fliegerova, K.O.*; Podmirseg, S.M.*; Vinzelj, J.*; Grilli, D.J.*; Kvasnová, S.;** Schierová, D.; Sechovcová, H.; Mrázek, J.; Siddi, G.; Arenas, G.N.; Moniello, G. (2021) The Effect of a High-Grain Diet on the Rumen Microbiome of Goats with a Special Focus on Anaerobic Fungi. *Microorganisms* **9**:157.
<https://doi.org/microorganisms9010157>
IF 4.17 *these authors contributed equally to this work
- Nagler, M.; **Podmirseg, S.M.**; Mayr, M.; Ascher-Jenull, J.; Insam, H. (2020) The masking effect of extracellular DNA and robustness of intracellular DNA in anaerobic digester NGS studies: A discriminatory study of the total DNA pool. *Molecular Ecology* **30**(2):438-450. DOI: 10.1111/mec.15740
IF 5.16
- Hupfauf, S.; Etemadi, M.; Fernández-Delgado Juárez, M.; Gómez-Brandón, M.; Insam, H.; **Podmirseg S.M.** (2020) CoMA – an intuitive and user-friendly pipeline for amplicon-sequencing data analysis. *PLoS ONE* **15**(12):e0243241;
<https://doi.org/10.1371/journal.pone.0243241>
IF 2.74
- Suksong, W.; Wongfaed, N.; Sangsri, B.; Kongjan, P.; Prasertsan, P.; **Podmirseg, S.M.**; Insam, H.; O-Thong, S.; (2020) Enhanced solid-state biomethanisation of oil palm empty fruit bunches following fungal pretreatment. *Industrial Crops & Products* **145**:112099
- Hupfauf, S.J.; Winkler, A.; Wagner, A.O.; **Podmirseg, S.M.**; Insam, H. (2020) Biomethanation at 45 °C offers high process efficiency and supports hygienisation. *Bioresource Technology* **300**:122671
IF 7.54
- Vinzelj, J.M.; Joshi, A.; Insam, H.; **Podmirseg, S.M.** (2019) Employing anaerobic fungi in biogas production: challenges & opportunities. *Bioresource Technology* **300**:122687
IF 7.54
- Jäger, A.; Eder, A.; Krennhuber, K.; **Podmirseg, S.M.** (2019) Orange Peels as Substrate for Biogas Plants. *Proceedings of the 4th I.C. FABE 2019*. pp.: 18-24.
- Podmirseg S.M.**, Waldhuber S., Knapp B.A., Insam H., Goberna M. (2019) Robustness of the autochthonous microbial soil community after amendment of cattle manure or its digestate. *Biology and Fertility of Soils* **55**(6):565-576
IF 3.81
- Nagler M., Kozjek K., Etemadi-Shalamzari M., Insam H., **Podmirseg S.M.** (2019) Simple yet effective: microbial and biotechnological benefits of rumen liquid addition to lignocellulose-degrading biogas plants. *Journal of Biotechnology* **300**:1-10
IF 2.53
- Mamimin C., Probst M., Gómez-Brandón M., **Podmirseg S.M.**, Insam H., Reungsang A., O-Thong S. (2018) Trace metals supplementation enhanced microbiota and biohythane production by two-stage thermophilic fermentation. *International Journal of Hydrogen Energy* **44**:3325-3338.
IF 4.23

- Hupfauf S., Plattner P., Wagner A.O., Kaufmann R., Insam H., **Podmirseg S.M.** (2018) Temperature shapes the microbiota in anaerobic digestion and drives efficiency to a maximum at 45 °C. *Bioresource Technology* **269**:309-318.
IF 5.80
- Walter A., Probst M., Franke-Whittle I.H., Ebner C., **Podmirseg S.M.**, Etemadi-Shalamzari M., Hupfauf S., Insam H. (2018) Microbiota in anaerobic digestion of sewage sludge with and without co-substrates. *Water and Environment Journal*, doi:10.1111/wej.12392
IF 1.22
- Nagler M., **Podmirseg S.M.**, Griffith G.W., Insam H., Ascher-Jenull J. (2018) The use of extracellular DNA as a proxy for specific microbial activity. *Applied Microbiology and Biotechnology*, doi.org/10.1007/s00253-018-8786-y
IF 3.42
- Insam H., Delgado-Granados H., Nagler M., Waldhuber S., **Podmirseg S.M.**, Quideau S. (2017) Soil microbiota along Ayoloco glacier retreat area of Iztaccíhuatl volcano, Mexico. *Catena* **153**:83-88.
IF 3.191
- Wett B.***, **Podmirseg S.M.***, Gómez-Brandón M., Hell M., Nyhuis G., Bott C., Murthy S. (2015) Expanding DEMON sidestream deammonification technology towards mainstream application. *Water and Environmental Research* **87**(12):2084-2089.
IF 1.000 *these authors contributed equally to this work
- Dollhofer V., **Podmirseg S.M.**, Callaghan T.M., Griffith G.W., Fliegerova K. (2015). Anaerobic Fungi and Their Potential for Biogas Production, in Guebitz GM, Bauer A, Bochmann G, Gronauer A, Weiss S, eds. *Biogas Science and Technology*, Springer International Publishing. **151**:41-61.
IF 1.660
- Podmirseg S.M.**, Gadermaier M., Franke-Whittle I., Wett B., Insam H., Goberna M. (2015) Prokaryotic community dynamics during the start-up of a full-scale BIO4GAS digester. *Journal of Environmental Engineering*, [10.1061/\(ASCE\)EE.1943-7870.0001011](https://doi.org/10.1061/(ASCE)EE.1943-7870.0001011).
IF 1.221
- Callaghan T.M., **Podmirseg S.M.**, Hohlweck D., Edwards J.E., Puniya A.K., Singh S.D., Griffith G.W. (2015) A new genus of anaerobic fungus: *Buwchfawromyces* isolated from buffalo faeces. *MycKeys* **9**:11-28.
IF 1.846
- Podmirseg S.M.**, Pümpel T., Markt R., Murthy S., Bott C., Wett B. (2015) Comparative evaluation of multiple methods to quantify and characterise granular anammox biomass. *Water Research* **68**:194-205.
IF 5.323
- Jabornig, S. and **Podmirseg S.M.** (2015) A Novel Fixed Fibre Biofilm Membrane Process for On-site Greywater Reclamation requiring no fouling control. *Biotechnology and Bioengineering* **112**(3):484-493. doi: 10.1002/bit.25449.
IF 4.164