

Curriculum Vitae

of

Professor Dr.-Ing. Eberhard Morgenroth

Personal Data

Address (work): ETH: Swiss Federal Institute of Technology Zürich
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Date of birth: 07. March 1967

Place of birth: Göttingen, Germany

Citizenship: Federal Republic of Germany

Education

1995-1998 Technical University of Munich (Germany), Department of Water Quality and Waste Management
Degree: Doktor der Ingenieurwissenschaften (Ph.D.)
Title of Ph.D. thesis: *Enhanced biological phosphorus removal in biofilm reactors*

1993-1994 University of California, Davis (USA)
Degree: Master of Science
Title of M.S. thesis: *Degradation Kinetics of Hexane in a Biofilter*

1989-1993 Technical University of Hamburg-Harburg (Germany)
Degree: Diplom-Ingenieur
Areas of specialization: Water/wastewater, soil/solid waste, process engineering, concrete construction.

Appointments

since 2013 Director of Studies in Environmental Engineering (D-BAUG, ETH Zürich)

since 2012 Head of the Process Engineering Department at Eawag

since 2009 Full Professor, ETH: Swiss Federal Institute of Technology Zürich

since 2009 Full Professor, Eawag: Swiss Federal Institute of Aquatic Science and Technology

2007 - 2009 Associate Professor for Environmental Engineering (with tenure), Department of Civil and Environmental Engineering and Department of Animal Science, University of Illinois, USA.

2007 - 2009 Harold E. Babbitt Faculty Scholar in Civil and Environmental Engineering

2000 - 2007 Assistant Professor for Environmental Engineering, Department of Civil and Environmental Engineering and Department of Animal Science, University of Illinois, USA.

1998-2000 Assistant Research Professor, Department of Environmental Science and Engineering, Technical University of Denmark

Awards

2014 IWA Global Project Innovation Award for Blue Diversion Toilet (Global Honour Award for the Applied Research Category)

2004 Xerox Awards for Faculty Research from the College of Engineering recognizing outstanding research during the past year.

2003 "Incomplete List of Teachers Ranked as Excellent by Their Students" (<http://cte.illinois.edu/>)

2003-2004 Beckman Fellow at the Center for Advanced Studies at the University of Illinois (www.cas.uiuc.edu) to study "Mechanisms of Coexistence in Binary Culture Biofilms".

2002 NSF Faculty Early Career Development Program (CAREER) Award.

1998 Ulrich-Finsterwalder-Award (15.000 DM) sponsored by Dykerhoff & Widmann and presented by the department of Civil Engineering at the Technical University of Munich for an outstanding Ph.D. thesis.

Selection of previous teaching experiences

TU Munich Computer aided design and control (II): Wastewater treatment plants (1997, 1998)

TU Denmark Wastewater treatment plant design (1998)
Environmental biotechnology (1999)
Design of wastewater treatment plants (2000)

Univ. of Illinois Advanced Biological Wastewater Treatment (CEE 538) (2001, 2002, 2003, 2006, 2007, 2008, 2009)
Introduction to Environmental Quality Engineering (CEE 330) (2003, 2004, 2005, 2006)
Water and Wastewater Treatment Processes (CEE437) (2007, 2008)
Mathematical modeling of microbiological processes in environmental engineering, CEE 398 EM (2001, 2005)
Animal residual management, AnSci 358 (2003)
Graduate Student Seminar, CEE 495 G (2002)

ETH Zürich Siedlungswasserwirtschaft Grundzüge (BSc) (since 2013)
Siedlungswasserwirtschaft II (BSc) (2009 – 2012)
Seminar Umweltingenieurwissenschaften (BSc) (since 2009)
Process Engineering I (MSc) (since 2009)
Process Engineering II (MSc) (since 2009)
Systems Analysis and Mathematical Modeling (MSc) (since 2013)
Water Resources Seminar (MAS)
See http://www.ifu.ethz.ch/SWW/education/lectures/index_EN for details

Professional Activities

since 2016 Member of the German Water Association (DWA) Fachausschuss KA 6 (Aerobe biologische Abwasserreinigungsverfahren)

2015 Conference chair for IWA conference on "Biofilms in drinking water systems - From treatment to tap", 23. – 26. August 2015 in Arosa (Switzerland)

2013 Conference co-chair for 2nd Water Research Conference, 20. – 23. January 2013, Singapore on Urban water management to increase sustainability of cities.

2012	Swiss Delegation to the Netherlands: Bilaterale Kooperation im Bereich Innovation Schweiz - Niederlande: Water Event organized by Eidgenössisches Volkswirtschaftsdepartement EVD, 21. und 22. August 2012.
2012 - 2014	Swiss Water Partnership: Member of the steering board.
since 2011	External reviewer of the Doctoral Programme on Water Resource Systems (DK+), TU Vienna (Meetings: 1. + 2. December 2011, 26. + 27. November 2012,)
since 2010	ACQUEAU (EUREKA Cluster, http://www.acqueau.eu/): Member of the scientific committee.
2010	Conference chair (with Josh Boltz, CH2M-Hill) for joint WEF/IWA conference on "Biofilm Reactor Technology" co-sponsored by the IWA Biofilm Specialist Group and the WEF Municipal Wastewater Treatment Plant Design Committee.
since 2008	IWA: Chair of the Publications Committee (Member: 2008 – 1015, Chair since 2015)
2008	Session chair for six sessions at the Annual Meeting of the Environmental Division of the American Chemical Society co-sponsored by WaterCAMPWS and ACS, New Orleans, April 6. – 10.
2007	Consulting: "Review of mathematical modeling of biofilms in whole plant simulator for wastewater treatment plant design" for CH2M HILL, Inc.
2007	Consulting: "Review of design of Spring Creek and Sugar Creek Wastewater Treatment Facilities at the Springfield Metro Sanitary District" for Crawford, Murphy & Tilly, Inc.
2006 - 2009	ATV (German wastewater association): Member of the working group on mathematical modeling of biofilm reactors
2005	Consulting: Review of In-Pipe Technology for Oryx Capital International investment company.
2004	Consulting: Suggestions on reactor design and operation in "A study of metal sequestering and release from microbes", for Lehman College, NY.
2003	Conference chair for the Conference on Environmental Engineering Education Sept. 24 - 26, 2003 in Zurich, Switzerland.
2003	Consulting: "Nutrient removal in new and retrofitted wastewater treatment plants. Developing principles and applications" for Curry and Associates.
since 2002	IWA: Editor for <i>Water Research</i>
since 2002	IWA: Member of the management committee of the specialist group on Systems Analysis and Integrated Assessment
2000 - 2009	IWA: Member of the management committee of the specialist group on environmental engineering education (Chair: 2000 – 2009, Members since 2009)
since 2000	IWA: Chair of the management committee of the specialist group on Biofilm Processes (Member 2000 – 2012, Chair since 2012)
2000 – 2009	WEF: Member of the working group on Agriculture
1999 – 2008	IWA: Member of the task group on Biofilm Modeling
since 1999	IWA: Member of the editorial board for <i>Water Science and Technology</i>
since 1999	ATV (German wastewater association): Member of the working group 7.5.6 on biofilm processes
1997	Short-term scientific mission to the Technical University of Denmark funded by the European Union (COST 682), 19 October - 2 November.
1997	Consulting: Design of a SBR system to treat the wastewater of the Nürburgring (Gutachten über die Bemessung einer SBR-Anlage für die Kläranlage der Nürburgring GmbH).
since 1996	Reviews for the following journals: <i>Biodegradation, Biotechnology and Bioengineering, Biotechnology Progress, Chemosphere, Environmental Science & Technology, Environmental Technology, Journal of the Air and Waste Management Association, Process Safety and Environmental Protection, Water Environment Research, and Water Research.</i>
1996-2000	IAWQ: Member of the task group on sequencing batch reactors.

- 1996 Organization of the technical post conference tour following the 18th IAWQ biennial conference in Singapore for the Oswald-Schulze Foundation.
- 1996 Consulting: Retrofitting of the treatment plant in Seefeld in Tirol (Gutachten über den Ausbau der Kläranlage Seefeld in Tirol).
- 1995-1997 ATV (German wastewater association): Contributing guest in the working group 2.6.5 on sequencing batch reactors.
- 1995 Advanced course on environmental biotechnology, Delft, Netherlands, 15. - 24. May.
- 1992 Research project with Mark Wentzel at the University of Cape Town, South Africa, (12 week period): Development of a batch test for the characterization of raw municipal wastewater.

Professional Organizations

Association of Environmental Engineering and Science Professors (AEESP)

Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA)

International Water Association (IWA)

Dübendorf, 23. March 2017

List of Publications and Presentations

of

Dr.-Ing. Eberhard Morgenroth

Books, Chapters and Monographs

1. Morgenroth,E. (1994): Degradation Kinetics of Hexane in a Biofilter. M.S.Thesis, University of California, Davis.
2. Morgenroth,E., Schroeder,E.D., Chang,D.P.Y. and Scow,K.M. (1995): Modeling of a compost biofilter incorporating microbial growth. In: Vidic,R.D. and Pohland,F.G. (eds.), Innovative Technologies for Site Remediation and Hazardous Waste Management, pp. 473-480. (19), pp. 473-480. Pittsburg American Society of Civil Engineers.
3. Teichgräber,B., Kayser,R., Oles,J., Wilderer,P.A., Morgenroth,E. and Stein,E. (1997): Belebungsanlagen im Aufstaubetrieb, Merkblatt ATV-M 210 (Activated sludge variable volume reactors, Guideline ATV-M 210) Abwassertechnische Vereinigung, Hennef.
4. Morgenroth,E. (1998): Enhanced biological phosphorus removal in biofilm reactors. Ph.D. thesis, Department of Water Quality and Waste Management Technical University Munich Germany.
5. Morgenroth,E. and Wilderer,P.A. (1999): Continuous flow and sequential processes in municipal wastewater treatment. In: Winter,J. (ed.), Environmental processes I: Wastewater treatment, pp. 322-334. 2(15), pp. 322-334. Weinheim Wiley-VCH. (Biotechnology 11a).
6. Schmidt,T.C., Morgenroth,E., Schirmer,M., Effenberg,M. and Haderlein,S.B. (2001): Use and Occurrence of Fuel Oxygenates in Europe. In: Diaz,A.F. and Donna,D.L. (eds.), Oxygenates in Gasoline: Environmental Aspects, pp. 58-79.), pp. 58-79. American Chemical Society, Washington DC. (ACS-Symposium Series 799
7. Wilderer,P.A., Irvine,R.L., Goronszy,M.C., Artan,N., Demoulin,G., Keller,J., Morgenroth,E., Nyhuis,G., Tanaka,K. and Torrijos,M. (2001): Sequencing batch reactor technology. Wilderer, P. A., Irvine, R. L., and Goronszy, M. C. (eds.) IWA Publishing. Series: IWA Scientific and Technical Report Series No. 10.
8. Morgenroth,E. (2003): Detachment - an often overlooked phenomenon in biofilm research and modeling. In: Wuertz,S., Wilderer,P.A. and Bishop,P.L. (eds.), Biofilms in wastewater treatment, pp. 264-290.), pp. 264-290. IWA Publishing.
9. Morgenroth,E. and Arvin,E. (2003): The European perspective to MTBE as an oxygenate in fuels. In: Rapport,D., Lasley,W., Rolston,D., Nielsen,O., Qualset,C. and Damania,A. (eds.), Managing for Ecosystem Health, pp. 1447-1456.), pp. 1447-1456. Lewis Publisher, Boca Raton, Florida USA.
10. Wanner,O., Eberl,H.J., Morgenroth,E., Noguera,D.R., Picioreanu,C., Rittmann,B.E. and van Loosdrecht,M.C.M. (2006): Mathematical Modeling of Biofilms IWA Publishing, London, UK. Series: Scientific and Technical Report Series Report No. 18.
11. Morgenroth,E. (2008): Biofilm Systems. In: Henze,M., van Loosdrecht,M.C.M., Ekama,G. and Brdjanovic,D. (eds.), Biological Wastewater Treatment - Principles, Modelling, and Design, IWA Publishing, London.
12. Morgenroth,E. (2008): Modelling Biofilm Systems. In: Henze,M., van Loosdrecht,M.C.M., Ekama,G. and Brdjanovic,D. (eds.), Biological Wastewater Treatment - Principles, Modelling, and Design, IWA Publishing, London.
13. Boltz, J. P.; Morgenroth, E.; deBarbadillo, C.; Dempsey, M. J.; McQuarrie, J.; Ghysin, T.; Harrison, J.; Nerenberg, R. (2010) Biofilm Reactor Technology and Design. In *Design of Municipal Wastewater Treatment Plants*, McGraw Hill. New York, USA Volume 2, Fifth Edition. WEF Manual of Practice No. 8, ASCE Manuals and Reports on Engineering Practice No. 76.

Reviewed Journals

Link to Google Scholar Profile: <http://scholar.google.com/citations?user=q8moFfcAAAAJ>

Link to Scopus Overview: <http://www.scopus.com/authid/detail.url?authorId=7003290812>

1. Morgenroth,E., Schroeder,E.D., Chang,D.P.Y. and Scow,K.M. (1996): Nutrient Limitation in a Compost Biofilter Degrading Hexane. *J Air Waste Manage Assoc*, 46 (4), 300-308.
2. Morgenroth,E., Sherden,T., van Loosdrecht,M.C.M., Heijnen,J.J. and Wilderer,P.A. (1997): Aerobic granular sludge in a sequencing batch reactor. *Water Res.*, 31 (12), 3191-3194.
3. Morgenroth,E. and Wilderer,P.A. (1998): Modeling of enhanced biological phosphorus removal in a sequencing batch biofilm reactor. *Water Sci.Technol.*, 37 (4-5), 583-587.
4. Morgenroth,E. and Wilderer,P.A. (1998): Sequencing Batch Reactor Technology - Concepts, Design, Experiences. *J.CIWEM*, 12 (5), 314-321.
5. Beun,J.J., Hendricks,A., van Loosdrecht,M.C.M., Morgenroth,E., Wilderer,P.A. and Heijnen,J.J. (1999): Aerobic granulation in a sequencing batch reactor. *Water Res.*, 33 (10), 2283-2290.
6. Morgenroth,E. and Wilderer,P.A. (1999): Controlled biomass removal - The key parameter to achieve enhanced biological phosphorus removal in biofilm systems. *Water Sci.Technol.*, 39 (7), 33-40.
7. Morgenroth,E., Eberl,H.J. and van Loosdrecht,M.C.M. (2000): Evaluating 3-D and 1-D mathematical models for mass transport in heterogeneous biofilms. *Water Sci.Technol.*, 41 (4-5), 347-356.
8. Morgenroth,E. and Wilderer,P.A. (2000): Influence of detachment mechanisms on competition in biofilms. *Water Res.*, 34 (2), 417-426.
9. Morgenroth,E., van Loosdrecht,M.C.M. and Wanner,O. (2000): Biofilm models for the practitioner. *Water Sci.Technol.*, 41 (4-5), 509-512.
10. Morgenroth,E., Obermayer,A., Arnold,E., Bruhl,A., Wagner,M. and Wilderer,P.A. (2000): Effect of long-term idle periods on the performance of sequencing batch reactors. *Water Sci.Technol.*, 41 (1), 105-113.
11. Artan,N., Wilderer,P., Orhon,D., Morgenroth,E. and Ozgur,N. (2001): The mechanism and design of sequencing batch reactor systems for nutrient removal - the state of the art. *Water Sci.Technol.*, 43 (3), 53-60.
12. Artan,N., Wilderer,P., Orhon,D., Tasli,R. and Morgenroth,E. (2002): Model evaluation and optimisation of nutrient removal potential for sequencing batch reactors. *Water S.A.*, 28 (4), 423-432.
13. Frigon,D., Oerther,D.B., Morgenroth,E. and Raskin,L. (2002): Oligonucleotide probe hybridization and modeling results suggest that populations consuming readily degradable substrate in plug-flow reactors have high cellular RNA levels. *Water Sci.Technol.*, 45 (6), 115-126.
14. Morgenroth,E., Arvin,E. and Vanrolleghem,P. (2002): The use of mathematical models in teaching wastewater treatment engineering. *Water Sci.Technol.*, 45 (6), 229-233.
15. Morgenroth,E., Kommedal,R. and Harremoës,P. (2002): Processes and modeling of hydrolysis of particulate organic matter in aerobic wastewater treatment - A review. *Water Sci.Technol.*, 45 (6), 25-40.
16. Choi,Y.C. and Morgenroth,E. (2003): Monitoring biofilm detachment under dynamic changes in shear stress using laser-based particle size analysis and mass fractionation. *Water Sci.Technol.*, 47 (5), 69-76.
17. Horn,H., Reiff,H. and Morgenroth,E. (2003): Simulation of growth and detachment in biofilm systems under defined hydrodynamic conditions. *Biotechnol.Bioeng.*, 81 (5), 607-617.
18. Eberl,H.J., van Loosdrecht,M.C.M., Morgenroth,E., Noguera,D.R., Picioreanu,C., Perez,J., Rittmann,B.E., Schwarz,A.O. and Wanner,O. (2004): Modelling A Spatially Heterogeneous Biofilm And The Bulk Fluid: Selected Results From Benchmark Problem (BM2). *Water Sci.Technol.*, 49 (11-12), 155-162.
19. Morgenroth,E., Eberl,H., van Loosdrecht,M.C.M., Noguera,D.R., Picioreanu,C., Rittmann,B.E., Schwarz,A. and Wanner,O. (2004): Comparing biofilm models for a single species biofilm system. *Water Sci.Technol.*, 49 (11-12), 145-154.
20. Morgenroth,E., Daigger,G.T., Ledin,A. and Keller,J. (2004): International evaluation of current and future requirements for environmental engineering education. *Water Sci.Technol.*, 49 (8), 11-18.

21. Morgenroth,E. and Gujer,W. (2004): Environmental engineering education - Preface. *Water Sci.Technol.*, 49 (8), VII.
22. Noguera,D.R. and Morgenroth,E. (2004): Introduction to the IWA Task Group on Biofilm Modeling. *Water Sci.Technol.*, 49 (11-12), 131-136.
23. Rittmann,B.E., Schwarz,A.O., Eberl,H.J., Morgenroth,E. and Wanner,O. (2004): Results from the Multi-Species Benchmark Problem (BM3) Using One-Dimensional Models. *Water Sci.Technol.*, 49 (11-12), 163-168.
24. Sophonsiri,C. and Morgenroth,E. (2004): Chemical composition associated with different particle size fractions in municipal, industrial, and agricultural wastewaters. *Chemosphere*, 55 (5), 691-703.
25. Telgmann,U., Horn,H. and Morgenroth,E. (2004): Influence of growth history on sloughing and erosion from biofilms. *Water Res.*, 38 (17), 3671-3684.
26. Wanner,O. and Morgenroth,E. (2004): Biofilm modeling with AQUASIM. *Water Sci.Technol.*, 49 (11-12), 137-144.
27. Lopez,C., Pons,M.N. and Morgenroth,E. (2005): Evaluation of microscopic techniques (epifluorescence microscopy, CLSM, TPE-LSM) as a basis for the quantitative image analysis of activated sludge. *Water Res.*, 39 (2-3), 456-468.
28. Miyake,H. and Morgenroth,E. (2005): Optimization of enhanced biological phosphorus removal after periods of low loading. *Water Environ.Res.*, 77 (2), 117-127.
29. Nguyen,V.Th., Morgenroth,E. and Eberl,H.J. (2005): A mesoscale model for hydrodynamics in biofilms that takes microscopic flow effects into account. *Water Sci.Technol.*, 52 (7), 167-172.
30. Nogueira,R., Elenter,D., Brito,A., Melo,L.F., Wagner,M. and Morgenroth,E. (2005): Evaluating heterotrophic growth in a nitrifying biofilm reactor using fluorescence in situ hybridization and mathematical modeling. *Water Sci.Technol.*, 52 (7), 135-141.
31. Qi,S.Y. and Morgenroth,E. (2005): Modeling Steady-State Biofilms with Dual-Substrate Limitations. *ASCE Journal of Environmental Engineering*, 131 (2), 320-326.
32. Sudarsan,R., Milferstedt,K., Morgenroth,E. and Eberl,H.J. (2005): Quantification off detachment forces on rigid biofilm colonies in a roto-torque reactor using computational fluid dynamics tools. *Water Sci.Technol.*, 52 (7), 149-154.
33. Amin,M.M., Zilles,J.L., Greiner,J., Charbonneau,S., Raskin,L. and Morgenroth,E. (2006): Influence of the antibiotic erythromycin on anaerobic treatment of a pharmaceutical wastewater. *Environ.Sci.Technol.*, 40 (12), 3971-3977.
34. Asatekin,A., Menniti,A.L., Kang,S., Elimelech,M., Morgenroth,E. and Mayes,A.M. (2006): Nanofiltration Membranes for Membrane Bioreactors from Self-Assembling Graft Copolymers. *J.Membr.Sci.*, 285 (1-2), 81-89.
35. Dimock,R. and Morgenroth,E. (2006): The influence of particle size on microbial hydrolysis of protein particles in activated sludge. *Water Res.*, 40 (10), 2064-2074.
36. Horn,H. and Morgenroth,E. (2006): Transport of oxygen, sodium chloride, and sodium nitrate in biofilms. *Chem.Eng.Sci.*, 61 (5), 1347-1356.
37. Kommedal,R., Milferstedt,K., Bakke,R. and Morgenroth,E. (2006): Effects of initial molecular weight on removal rate of dextran in biofilms. *Water Res.*, 40 (9), 1795-1804.
38. Lopez,C., Pons,M.N. and Morgenroth,E. (2006): Endogenous processes during long-term starvation in activated sludge performing enhanced biological phosphorus removal. *Water Res.*, 40 (8), 1519-1530.
39. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2006): The effect of growth and detachment on formation of large scale biofilm structure. *Biofilms*, 2, 1-2.
40. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2006): Optical method for long-term and large-scale monitoring of spatial biofilm development. *Biotechnol.Bioeng.*, 94 (4), 773-782.
41. Pons,M.N., Milferstedt,K. and Morgenroth,E. (2006): Modelling of chord length distributions. *Chem.Eng.Sci.*, 61, 3962-3973.
42. Brockmann,D., Rosenwinkel,K.H. and Morgenroth,E. (2007): Estimation of kinetic parameters of a model for deammonification in biofilms and evaluation of the model. *Water Sci.Technol.*, 55 (8-9), 291-299.

43. Brockmann,D. and Morgenroth,E. (2007): Comparing global sensitivity analysis for a biofilm model for two-step nitrification using the qualitative screening method of Morris or the quantitative variance-based Fourier Amplitude Sensitivity Test (FAST). *Water Sci.Technol.*, 56 (8), 85-93.
44. Choi,Y.C., Li,X., Raskin,L. and Morgenroth,E. (2007): Effect of backwashing on perchlorate removal in fixed bed biofilm reactors. *Water Res.*, 41 (9), 1949-1959.
45. Elenter,D., Milferstedt,K., Zhang,W., Hausner,M. and Morgenroth,E. (2007): Influence of detachment on substrate removal and microbial ecology in a heterotrophic/autotrophic biofilm. *Water Res.*, 41 (20), 4657-4671.
46. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2007): Texture analysis of spatial biofilm development. *Water Sci.Technol.*, 55 (8-9), 481-488.
47. Padmasiri,S.I., Zhang,J.Z., Fitch,M., Norddahl,B., Morgenroth,E. and Raskin,L. (2007): Methanogenic population dynamics and performance of an anaerobic membrane bioreactor (AnMBR) treating swine manure under high shear conditions. *Water Res.*, 41 (1), 134-144.
48. Shimada,T., Zilles,J., Raskin,L. and Morgenroth,E. (2007): Carbohydrate storage in anaerobic sequencing batch reactors. *Water Res.*, 41 (20), 4721-4729.
49. Zhang,A., Padmasiri,S.I., Fitch,M., Norddahl,B., Raskin,L. and Morgenroth,E. (2007): Influence of cleaning frequency and membrane history on fouling in an anaerobic membrane bioreactor. *Desalination*, 207, 153-166.
50. Brockmann, D., Rosenwinkel, K.H. and Morgenroth, E. (2008) Practical identifiability of biokinetic parameters of a model describing two-step nitrification in biofilms. *Biotechnology and Bioengineering* 101(3), 497-514.
51. Choi, Y.C., Li, X., Raskin, L. and Morgenroth, E. (2008) Chemisorption of oxygen onto activated carbon can enhance the stability of biological perchlorate reduction in fixed bed biofilm reactors. *Wat.Res.* 42, 3425-3434.
52. Li, X., Morgenroth, E. and Raskin, L. (2008) Quantitative rRNA-Targeted Solution-Based Hybridization Assay Using Peptide Nucleic Acid Molecular Beacons. *Applied and Environmental Microbiology* 74(23), 7297-7305.
53. Milferstedt, K., Pons, M.N. and Morgenroth, E. (2008a) Textural fingerprints: A comprehensive descriptor for biofilm structure development. *Biotechnology and Bioengineering* 100(5), 889-901.
54. Milferstedt, K., Pons, M.N. and Morgenroth, E. (2008b) SPOTLIGHT: Tracking Succession Stages in Biofilm Development Using Quantitative Texture Analysis. *Biotechnology and Bioengineering* 100(5).
55. Shimada, T., Zilles, J.L., Morgenroth, E. and Raskin, L. (2008a) Modelling the effect of the antimicrobial tylosin on the performance of an anaerobic sequencing batch reactor. *Water Science and Technology* 57(11), 1699-1704.
56. Shimada, T., Zilles, J.L., Morgenroth, E. and Raskin, L. (2008b) Inhibitory effects of the macrolide antimicrobial tylosin on anaerobic treatment. *Biotechnology and Bioengineering* 101(1), 73-82.
57. Hug, T., Benedetti, L., Hall, E.R., Johnson, B.R., Morgenroth, E., Nopens, I., Rieger, L., Shaw, A. and Vanrolleghem, P.A. (2009) Wastewater treatment models in teaching and training: the mismatch between education and requirements for jobs. *Water Science and Technology* 59(4), 745-753.
58. Menniti, A., Kang, S., Elimelech, M. and Morgenroth, E. (2009) Influence of shear on the production of extracellular polymeric substances in membrane bioreactors. *Wat.Res.* 43(17), 4305-4315.
59. Menniti, A.L. and Morgenroth, E. (2009) Mechanisms of SMP production in membrane bioreactors: choosing an appropriate mathematical model structure. *Wat.Res.*
60. Milferstedt, K., Pons, M.N. and Morgenroth, E. (2009) Analyzing characteristic length scales in biofilm structures [Note: Paper was awarded Editors' Choice selection]. *Biotechnology and Bioengineering* 102(2), 368-379.
61. Morgenroth, E. and Milferstedt, K. (2009) Biofilm engineering: linking biofilm development at different length and time scales. *Reviews in Environmental Science and Biotechnology* 8(3), 203-208.
62. Pons, M.N., Milferstedt, K. and Morgenroth, E. (2009) Biofilm Monitoring on Rotating Discs by Image Analysis. *Biotechnology and Bioengineering* 103(1), 105-116.
63. Boltz, J.P., Morgenroth, E., Sen, D. (2010). Mathematical Modelling of Biofilms and Biofilm Reactors for Engineering Design. *Water Science and Technology* 62, (8) 1821-1836.

64. Brockmann, D. and Morgenroth, E. (2010) Evaluating operating conditions for outcompeting nitrite oxidizers and maintaining partial nitrification in biofilm systems using biofilm modeling and Monte Carlo filtering. *Wat.Res.* 44(6), 1995-2009.
65. Li, X., Upadhyaya, G., Yuen, W., Brown, J., Morgenroth, E., Raskin, L. (2010) Changes in the Structure and Function of Microbial Communities in Drinking Water Treatment Bioreactors upon Addition of Phosphorus. *Appl. Environ. Microbiol.* 76, (22) 7473-7481.
66. Menniti, A. and Morgenroth, E. (2010) The influence of aeration intensity on predation and EPS production in membrane bioreactors. *Wat.Res.* 44(8), 2541-2553.
67. Menniti, A., Morgenroth, E., 2010. Mechanisms of SMP production in membrane bioreactors: Choosing an appropriate mathematical model structure. *Wat.Res.* 44, (18) 5240-5251.
68. Boltz, J.P., Morgenroth, E., Brockmann, D., Bott, C., Gellner, W.J. and Vanrolleghem, P.A. (2011) Systematic evaluation of biofilm models for engineering practice: components and critical assumptions. *Water Science and Technology* 64(4), 930–944.
69. Joss, A., Derlon, N., Cyprien, C., Burger, S., Szivak, I., Traber, J., Siegrist, H. and Morgenroth, E. (2011) Combined nitrification-anammox: Advances in understanding process stability. *Environmental Science & Technology* 45(22), 9735-9742.
70. Li, X., Yuen, W., Morgenroth, E. and Raskin, L. (2011) Backwash Intensity and Frequency Impact the Microbial Community Structure and Function in a Fixed-bed Biofilm Reactor. *Applied Microbiology and Biotechnology*.
71. Shimada, T., Morgenroth, E., Tandukar, M., Pavlostathis, S.G., Smith, A., Raskin, L. and Kilian, R.E. (2011a) Syntrophic Acetate Oxidation in Two-Phase (Acid-Methane) Anaerobic Digesters. *Water Science and Technology* 64(9), 1812-1820.
72. Shimada, T., Li, X., Zilles, J.L., Morgenroth, E. and Raskin, L. (2011b) Effects of the Antimicrobial Tylosin on the Microbial Community Structure of an Anaerobic Sequencing Batch Reactor. *Biotechnology and Bioengineering* 108(2), 296-305.
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Seminars and Lectures

1. Morgenroth E., Schroeder E.D., Chang D.P.Y., Scow K.M. (1995): Nutrient Limitation in a Compost Biofilter Degrading Hexane. Proceedings of the 88th annual meeting of the Air and Waste Management Association, San Antonio, Texas, June 1995, Paper No. 95-TP9C.05.
2. Morgenroth E., Wilderer P.A. (1996): Chemische und biologische Phosphatelimination in der Festbetttechnologie. ATV-Seminar am 6. + 7. November 1996: "Phosphorelimination auf biologischen und chemischen Wege".
3. Morgenroth E., Wilderer P.A. (1997): Sequencing batch reactor technology - from lab scale to full scale applications. Oral presentation at the BMBF-Workshop at the Prague Institute of Chemical Technology, 9. December 1997.
4. Morgenroth E., Wilderer P.A. (1997): Modeling of enhanced biological phosphorus removal in a sequencing batch biofilm reactor. IAWQ conference on microorganisms in activated sludge and biofilm processes, Berkeley, California, July 1997.
5. Morgenroth E., Wilderer P.A. (1997): Sequencing Batch Reactor Technology - Concepts, Design, Experiences. Oral presentation, Manchester, Chartered Inst. of Wat. and Envr. Mng.

6. Morgenroth E., Wilderer P.A. (1997): Chemische und biologische Phosphatelimination in der Festbetttechnologie. Proceedings of ATV-Seminar am 13. + 14. November 1997: "Phosphorelimination auf biologischen und chemischen Wege".
7. Wilderer, P.A. and Morgenroth, E. (1997): Kontinuierliche und schubweise beschickte Belebungsanlagen: Gemeinsames und Gegensätzliches. Proceedings of 4. Abwassertagung des VDMA, SBR-Technik - Anlagenbauer und Planer berichten über ihre Erfahrungen in Deutschland, 11. November 1997.
8. Morgenroth E., Wilderer P.A. (1998): Long term starvation in activated sludge and biofilms - can the IAWQ model be applied?. Oral presentation at the COST 682 workshop, Danish Technical University, 12. + 13. January 1998.
9. Morgenroth E., Wilderer P.A. (1998): Chemische und biologische Phosphatelimination in der Festbetttechnologie. Proceedings of ATV-Seminar am 23. + 24. November 1998: "Phosphorelimination auf biologischen und chemischen Wege".
10. Morgenroth, E., Wilderer, P.A. (1998): Controlled biomass removal - the key parameter to achieve enhanced biological phosphorus removal in biofilm systems. Proceedings of the IAWQ specialty conference on "Microbial Ecology of Biofilms: Concepts, Tools, and Applications", Lake Bluff, Illinois, USA.
11. Morgenroth, E. and Wilderer, P.A. (1998): Influence of detachment mechanisms on solids retention time distributions within the biofilm and on overall process efficiency. Oral presentation at the Forum for Applied Biotechnology, Brugge.
12. Morgenroth, E. and Harremoës, P. (1998): Fate of particulate organic matter in biofilm reactors. 1st BioToBio Network Meeting, Munich, October 1998.
13. Morgenroth, E. and Harremoës, P. (1999): Hydrolysis of particulate organic matter - the fuel for biological nutrient removal. 2nd BioToBio Network Meeting, Braga, December 1999.
14. Wilderer, P.A. and Morgenroth, E. (1999): Design and operation of sequencing batch reactor plants: An overview. In: Muttamara, S., Parkpian, P., Visvanathan, C., Kim Oanh, N. T. and Polprasert, C. (eds.): Civil and Environmental Engineering Conference - New Frontiers & Challenges, AIT, Bangkok, Thailand, 8. - 12. Nov. 1999.
15. Morgenroth, E., Eberl, H. and van Loosdrecht, M.C.M. (1999): Evaluating 3-D and 1-D mathematical models for mass transport in heterogeneous biofilms. "4th IAWQ Conference on Biofilm Systems", 17-20 October 1999, New York, USA.
16. Morgenroth, E. and Arvin, E. (1999): The European perspective to MTBE as an oxygenate in fuels. In: International Congress on Ecosystem Health - Managing for Ecosystem Health, Sacramento, California (USA), 15. - 20. August 1999.
17. Morgenroth, E., Obermayer, A., Arnold, E., Wagner, M. and Wilderer, P.A. (1999): Effect of long term idle periods on the performance of sequencing batch reactors. "4th Specialized Conference on Small Wastewater Treatment plants", IAWQ, Stratford-upon-Avon, U.K., 19. - 21. April 1999.
18. Artan, N., Wilderer, P.A., Orhon, D., Morgenroth, E. and Özgür, N. (2000): Application of sequencing batch reactor systems for nutrient removal - the state of the art. 2nd International Symposium on Sequencing Batch Reactor Technology, 10-12 July 2000, Narbonne, France.
19. Morgenroth, E. (2000): Opportunities for nutrient recovery in handling of animal residuals. WEF conference on animal residuals management, Kansas City, Missouri, Nov 12-14, 2000.
20. Morgenroth, E. and Harremoës, P. (2000): Hydrolysis of large organic particles in biofilm reactors. Abstract in "Biofilms 2000", American Society for Microbiology conference proceedings, July 16-20, 2000, Big Sky, Montana, USA.
21. Morgenroth, E. and Harremoës, P. (2000): Unbalanced growth in biofilm reactors - Influence of transport limitations. COST 624 WG 4 Meeting, 6.-7. April 2000, Delft.
22. Morgenroth, E. and Harremoës, P. (2000): Hydrolysis of very large organic particles - How do bacteria chew their food? 3rd BioToBio Network Meeting, Paris, July 2000.
23. Frigon, D., Oerther, D. B., Morgenroth, E., and Raskin, L. (2001): Oligonucleotide probe hybridization and modeling results suggest that populations consuming readily degradable substrate in plug-flow reactors have high cellular RNA levels. 5th Kollokollo Seminar on Activated Sludge Modelling, Processes in Theory and Practice, Denmark, September 10-12, 2001

24. Morgenroth, E., Kommedal, R., and Harremoës, P. (2001): Processes and modeling of hydrolysis of particulate organic matter in aerobic wastewater treatment - A review. 5th Kollekolle Seminar on Activated Sludge Modelling, Processes in Theory and Practice, Denmark, September 10-12, 2001
25. Morgenroth, E., Arvin, E., and Vanrolleghem, P. (2001): The use of mathematical models in teaching wastewater treatment engineering. 5th Kollekolle Seminar on Activated Sludge Modelling, Processes in Theory and Practice, Denmark, September 10-12, 2001
26. Choi, Y.-C. and Morgenroth, E. (2002): Monitoring biofilm detachment under dynamic changes in shear stress using laser-based particle size analysis and mass fractionation. Oral presentation at the IWA biofilm conference in Porto, Portugal, 17-20, March 2002.
27. Lee, S.-Y. and Morgenroth, E. (2002): Assessment of microsphere as substitute food source of bacteria and effect of shear forces on protozoa in activated sludge systems. Poster presented at the 102nd General Meeting of ASM, May 19-23, 2002, Salt Lake City, UT.
28. Lin, R., Choi, Y.-C., Brown, J. C., Snoeyink, V. L., Morgenroth, E., and Raskin, L. (2002): Monitoring a Perchlorate-Removing Biofilm Reactor Using Terminal Restriction Fragment Length Polymorphism and Mathematical Modeling. IWA Biofilm Monitoring Conference, Porto, Portugal, March 17-21.
29. Lopez, C. and Morgenroth, E. (2002): Maintenance and decay in enhanced biological phosphorous removal in activated sludge during long-term starvation. WEFTEC 2002, 75th Annual Conference & Exposition, Water Environment Federation.
30. Miyake, H. and Morgenroth, E. (2002): Optimization of enhanced biological phosphorus removal after periods of low loading. WEFTEC 2002, 75th Annual Conference & Exposition, Water Environment Federation.
31. Choi, Y.-C., Raskin, L., and Morgenroth, E. (2003): Effect of oxygen on the perchlorate removal in a biologically active carbon filter examined by mathematical modelling and fluorescence in situ hybridization. Oral presentation at the IWA Conference on Biofilms, Cape Town, South Africa, 14-17 September 2003.
32. Choi, Y.-C., Raskin, L., and Morgenroth, E. (2003): Effect of Backwashing on Perchlorate Removal Efficiency in a Biologically Active Carbon (BAC) Filter. Oral presentation at the AWWA Water Quality Technology Conferences and Exposition (WQTC), Philadelphia, PA, 2.-5. November 2003.
33. Choi, Y.-C., Raskin, L., and Morgenroth, E. (2003): Modeling of Perchlorate Removal Using Biological Activated Carbon (BAC). Presentation at the AWWA Water Quality Technology Conferences and Exposition (WQTC), Philadelphia, PA, 2.-5. November 2003.
34. Eberl, H.J., van Loosdrecht, M.C.M., Morgenroth, E., Noguera, D.R., Picioreanu, C., Perez, J., Rittmann, B.E., Schwarz, A.O. and Wanner, O. (2003): Modelling A Spatially Heterogeneous Biofilm And The Bulk Fluid: Selected Results From Benchmark Problem (BM2). In: IWA conferences on Biofilm Systems - Cape Town, South Africa, 14-17 September 2003.
35. Le Bonte, S., Pons, M.N., Morgenroth, E. and Abdulkarim, E. (2003): Pharmaceutical waste effect assessment by respirometry on nitrification. In: 11th European Congress on Biotechnology, Environmental biotechnology - Part I, 24-29 August 2003, Basel, Switzerland.
36. Le Bonte, S., Abdulkarim, E., Pandolfi, D., Pons, M.N. and Morgenroth, E. (2003): Influence de substances pharmaceutiques sur l'activité de bactéries nitrifiantes. In: Proceedings of 5th International Congress "Micropollutants and Microrganisms in the Environment" Paris, 11-12 Sept 2003.
37. Lopez, C. and Morgenroth, E. (2003): Modeling the performance of enhanced biological phosphorus removal systems under dynamic loading conditions using different mathematical models. In: WEFTEC 2003, 76th Annual Conference of the Water Environment Federation, October 11-15, Los Angeles.
38. Michaud, R. and Morgenroth, E. (2003): The influence of particle size on microbial hydrolysis of particulate organic matter. In: IWA Conference on Nano- and Microparticles in Water and Wastewater Treatment, Zurich, Switzerland, 22 - 24 September 2003.
39. Milferstedt, K. and Morgenroth, E. (2003): Detachment from *Pseudomonas aeruginosa* biofilms. In: Euro Summer School, Biofilms in Industry, Medicine and Environmental Biotechnology 2003, August 9th - 14th, 2003, National University of Ireland, Galway. [Most outstanding poster contribution award]
40. Morgenroth, E. (2003): Dynamischer Betrieb von Kläranlagen - Von der Grundlagenforschung zur praktischen Anwendung (In German). Invited oral presentation, Aachen, 13. Februar 2003.

41. Morgenroth, E., Daigger, G. T., Ledin, A., and Keller, J. (2003): Environmental Engineering Education (E3) - Where do we go from here? Oral presentation at the conference on Environmental Engineering Education in Zurich, Switzerland, Sept. 24 - 26, 2003.
42. Morgenroth, E., Eberl, H.J., van Loosdrecht, M.C.M., Noguera, D.R., Pizarro, G., Picioreanu, C., Rittmann, B.E., Schwarz, A.O. and Wanner, O. (2003): Results from the single species benchmark problem (BM1). Oral presentation at the IWA Biofilm Conference Cape Town, South Africa September 2003.
43. Morgenroth, E. (2003): Opportunities for nutrient recovery in handling of animal residuals. Proceedings of 2003 Pork Industry Conference. 101-110.
44. Morgenroth, E. (2003): Membrane bioreactors for biological wastewater treatment and water reuse. In: Oral presentation at the NSF Water CAMPWS seminar series, University of Illinois, 14.Nov 2003..
45. Noguera, D. R. and Morgenroth, E. (2003): Introduction to the IWA Task Group on Biofilm Modeling. IWA conferences on Biofilm Systems - Cape Town, South Africa, 14-17 September 2003.
46. Raskin, L. and Morgenroth, E. (2003): Opportunities for Nutrient Recovery from Animal Residuals. Oral presentation at the 2003 UI Pork Industry Conference, December 11-12, 2003.
47. Rittmann, B.E., Schwarz, A.O., Eberl, H.J., Morgenroth, E., Perez, J., van Loosdrecht, M.C.M. and Wanner, O. (2003): Results from the Multi-Species Benchmark Problem (BM3) Using One-Dimensional Models. In: IWA conferences on Biofilm Systems - Cape Town, South Africa, 14-17 September 2003.
48. Wanner, O. and Morgenroth, E. (2003): Biofilm modeling with AQUASIM. IWA conferences on Biofilm Systems - Cape Town, South Africa, 14-17 September 2003.
49. Amin, M., Zilles, J.L., Greiner, J., Charbonneau, S., Raskin, L. and Morgenroth, E. (2004): Influence of the antibiotic erythromycin on anaerobic treatment of a pharmaceutical wastewater. In: Oral presentation at the 10th IWA World Congress on Anaerobic Digestion 2004, August 29th to September 2nd, 2004..
50. Choi, Y.-C., Xi, C., Li, X., Raskin, L. and Morgenroth, E. (2004): Biofilm growth patterns in a Biologically Activate Carbon (BAC) filter and their effects on perchlorate removal efficiency. In: 2004 Water Quality Conference, Ontario, CA, October 27-29.
51. Choi, Y.-C., Xi, C., Li, X., Raskin, L. and Morgenroth, E. (2004): Short-term and long-term effects of oxygen on biological perchlorate reduction in biofilm reactors. In: Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA.
52. Choi, Y.-C., Xi, C., Li, X., Raskin, L. and Morgenroth, E. (2004): Interrelationship between dissolved oxygen levels and growth patterns of biofilms and their effects on perchlorate removal from drinking water using biofilm reactors. In: Poster presentation at the 10th International Symposium on Microbial Ecology (ISME), Cancun, Mexico, Aug 22-27.
53. Fitch, M., Zhang, A., Padmasiri, S., Raskin, L. and Morgenroth, E. (2004): Measuring Shear in Real Systems. In: Presented to the Graduate Environmental Engineering Seminar Series at the University of Missouri-Rolla, Rolla, MO, USA, 30 January 2004.
54. Lopez, C., Pons, M.N. and Morgenroth, E. (2004): From optical to two-photon-excitation microscopy for sludge characterization. In: 1st Workshop on Recent Advances in Activated Sludge Flocculation, 27-28 September 2004, Ghent, Belgium.
55. Milferstedt, K. and Morgenroth, E. (2004): Abrasion as a major source of macroscale heterogeneity in biofilm development in annular reactor. In: Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA.
56. Morgenroth, E. (2004): Grundlagenforschung, Lehre und Ingenieurpraxis in der Siedlungswasserwirtschaft (In German: Basic research, teaching, and engineering application in urban water management). Invited oral presentation at the Technical University Munich, 29. January 2004.
57. Morgenroth, E. (2004): Influence of shear on biofilms and biofouling. CAMPWS seminar on membrane fouling, Stanford, 27. + 28. February, 2004.
58. Morgenroth, E. (2004): How to select appropriate parameters for biofilm models. In: Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA..

59. Morgenroth,E., Eberl,H.J., van Loosdrecht,M.C.M., Noguera,D.R., Pizarro,G., Picioreanu,C., Rittmann,B.E., Schwarz,A.O. and Wanner,O. (2004): Results from the single species benchmark problem (BM1). In: Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA.
60. Nguyen,V.Th., Morgenroth,E. and Eberl,H.J. (2004): A mesoscale model for hydrodynamics in biofilms that takes microscopic flow effects into account. Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA..
61. Nogueira,R., Elenter,D., Brito,A.G., Melo,L.F., Wagner,M. and Morgenroth,E. (2004): Evaluating heterotrophic growth in a nitrifying biofilm reactor using fluorescence in situ hybridization and mathematical modeling. Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA..
62. Padmasiri,S., Zhang,A., Fitch,M., Norddahl,B., Morgenroth,E. and Raskin,L. (2004): Startup of anaerobic membrane bioreactor treating swine waste. In: 10th IWA World Congress on Anaerobic Digestion 2004, August 29th to September 2nd, 2004.
63. Pons,M.N., Vivier,H., Milferstedt,K. and Morgenroth,E. (2004): Modélisation de la réponse d'une sonde FBRM dans le cas de particules de forme quelconque. In: National conference on crystallization (Cristal 3), November 24-25, Saint-Etienne, France.
64. Sudarsan,R., Milferstedt,K., Morgenroth,E. and Eberl,H.J. (2004): Quantification of detachment forces on biofilm colonies in a rotatorque reactor using computational fluid dynamics tools. In: Oral presentation at the IWA International Conference, Biofilms 2004: Structure and Activity of Biofilms 24-26 October 2004 - Las Vegas, NV, USA..
65. Xi,C., Lin,R., Li,X., Choi,Y.-C., Morgenroth,E. and Raskin,L. (2004): Using T-RFLP and FISH to characterize perchlorate- reducing bacteria in biological activated carbon (BAC) for perchlorate removal. In: ASM General Meeting, New Orleans, LA, May 23-27.
66. Yeh,D., Criddle,C. and Morgenroth,E. (2004): Membrane Fouling in Membrane Bioreactors (MBRs) for Wastes/Wastewater Treatment. In: NSF WaterCAMPWS Workshop on Membranes in Water Treatment: Membrane Fouling, Testing, Application, and Modeling Stanford University, February, 27-28, 2004.
67. Zhang,A., Padmasiri,S., Fitch,M., Raskin,L. and Morgenroth,E. (2004): Membrane fouling in anaerobic membrane bioreactor (AMBR) treating swine manure. Oral presentation at the 77th Annual conference of the Water Environment Federation (WEFTEC), October 2-6, 2004.
68. Alighardashi,A., Pandolfi,D., Pons,M.N., Potier,O., Le Bonté,S. and Morgenroth,E. (2005): Effet de l'érythromycine sur les boues activées. In: EFFEMER: Risques sanitaires et écologiques des résidus de médicaments dans les eaux - Rapprocher Science et Décision Montpellier, France, Hune 16-17, 2005.
69. Choi,Y.-C., Li,X., Raskin,L. and Morgenroth,E. (2005): Effect of Oxygen and Backwash on Biological Perchlorate Removal from Drinking Water using a Biological Activated Carbon (BAC) Fixed Bed Reactor. In: Poster presentation at the Illinois Section of the American Water Works Association (AWWA 2005) Conference, March 21-24, 2005 [First Prize for Poster Presentation in Young Professional Section].
70. Li,X., Xi,C., Choi,Y.-C., Morgenroth,E. and Raskin,L. (2005): High-Throughput Solution Based rRNA and Whole Cell Quantification Method using Peptide Nucleic Acid Molecular Beacons. In: Poster Presentation at the 105th General Meeting of the American Society for Microbiology, Georgia World Congress Center, June 5 - June 9, 2005.
71. Lopez, C., Zilles, J. L., Pons, M. N., and Morgenroth, E. (2005): Monitoring the start-up of enhanced biological phosphorus removal in terms of phosphorus metabolism, microbial population, and overall floc structure. 4th IWA Activated Sludge Population Dynamics Specialist Conference - Microbial Population Dynamics in Biological Wastewater Treatment, 17. - 20. Juli 2005, Brisbane, Australia.
72. Menniti, A. and Morgenroth, E. (2005): Linking Floc Structure to Membrane Fouling in Membrane Bioreactors. 229th Meeting of the American Chemical Society in San Diego, CA, March 13-17, 2005.
73. Morgenroth,E. and Criddle,C.S. (2005): Water Reuse through Membrane Biotechnology as a new Source of Drinking Water. In: Annual WaterCAMPWS symposium, Atlanta, April 13-25, 2005.

74. Morgenroth,E. (2005): ICT I: Increasing drinking water supplies, to gain new waters from reuse and desalination From the "sea to sink to the sea again". In: Water CAMPWS presentation for the REU seminar, 31. October 2005.
75. Morgenroth,E., Daigger,G.T., Ledin,A. and Keller,J. (2005): International evaluation of current and future requirements for environmental engineering education. In: 2005 conference of Association of Environmental Engineering and Science Professors (AEESP) Pushing the Boundaries: Making Research and Education in Environmental Engineering and Science Count, July 23-27, 2005, Potsdam, N.Y..
76. Morgenroth,E. (2005): Integrated approaches to evaluate biological treatment processes. In: UIUC (EES) and NUS (DESE) joint workshop, National University of Singapore (NUS), 21. - 22. Nov 2005.
77. Padmasiri,S.I., Zhang,A., Fitch,M., Morgenroth,E. and Raskin,L. (2005): Microbial Community Characterization during Startup of an Anaerobic Membrane Bioreactor (AnMBR) Treating Swine Waste. In: Poster Presentation at the 105th General Meeting of the American Society for Microbiology, Georgia World Congress Center, June 5 - June 9, 2005.
78. Padmasiri,S.I., Zhang,A., Fitch,M., Norddahl,B., Morgenroth,E. and Raskin,L. (2005): Effect of Shear on Reactor Performance and Microbial Community Structure in an Anaerobic Membrane Bioreactor (AnMBR) Treating Swine Waste. In: Oral presentation at the 78th Annual conference of the Water Environment Federation (WEFTEC), Washington DC, October, 2005.
79. Shimada,T., Raskin,L. and Morgenroth,E. (2005): Modeling dynamic profiles in specific methanogenic activity batch tests and anaerobic sequencing batch reactors. In: International workshop on the Anaerobic Digestion Model No. 1, 4-6 September 2005, Copenhagen, Denmark [First Prize for Poster Presentation].
80. Brockmann,D., Rosenwinkel,K.H. and Morgenroth,E. (2006): Estimation of kinetic parameters of a model for deammonification in biofilms and evaluation of the model. In: Oral presentation at Biofilm Systems VI, IWA-specialist conference, Amsterdam, The Netherlands, 24-27 September 2006.
81. Brockmann,D., Rosenwinkel,K.H. and Morgenroth,E. (2006): Modelling deammonification in biofilm systems: Using sensitivity and identifiability analysis for optimisation and design of experiments for the estimation of parameters. In: 16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering.
82. Brown,J.C., Lauderdale,C., Morgenroth,E. and Raskin,L. (2006): Biological perchlorate removal - ER-0544 Demonstration Project. In: Partners in Environmental Technology Technical Symposium and Workshop Partners in Environmental Technology Technical Symposium and Workshop, Washington D.C., November 28-30, 2006.
83. Menniti,A.L. and Morgenroth,E. (2006): Membrane Bioreactors: Linking Floc Structure to Membrane Fouling. In: MRS Spring Symposium, 17. April 2006, San Francisco.
84. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2006): Texture analysis of spatial biofilm development. In: Oral presentation at Biofilm Systems VI, IWA-specialist conference, Amsterdam, The Netherlands, 24-27 September 2006.
85. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2006): The effect of growth and detachment on formation of large scale biofilm structure. In: Biofilms II, Leipzig, Germany, 23rd and 24th March 2006.
86. Morgenroth,E. (2006): Biofilms and granular sludge for the removal of organic matter, nutrients, and micropollutants. In: Senate Commission of the German Research Foundation on Water Research. International roundtable discussion on „Optimisation of aquatic ecosystems management", 26.10./27.10. 2006, Leibniz-Institute Freshwater Ecology and Inland Fisheries in Berlin.
87. Morgenroth,E. (2006): Maintaining biological phosphorus removal after periods of low loading. In: 11th WEA Annual Education Seminar, Madison, Wisconsin: 4. April 2006.
88. Morgenroth,E. (2006): Wastewater as a resource - From environmental protection to resource recovery. In: Presentation at the student chapter of the Illinois Water Environment Association, 14. March 2006.
89. Morgenroth,E., Clevenger,T.E., Belyea,R.L., Singh,V., Johnston,D.B., Tumbleson,M.E. and Rausch,K.D. (2006): Increasing the value of phosphorus through membrane separation and biological extraction and conversion. In: 5th Corn Utilization & Technology Conference, National Corn Growers Association, Dallas, TX, June 5-7, 2006.

90. Padmasiri,S.I., Tontcheva,P., Fitch,M., Pons,M.N., Norddahl,B., Morgenroth,E. and Raskin,L. (2006): Influence of shear on the microbial community in an anaerobic membrane bioreactor (AnMBR) treating high strength wastewater. In: ISME 11, Vienna, August 20 - 25, 2006..
91. Pandolfi,D., Le Bonté,S., AbdulKarim,E.M., Pons,M.N. and Morgenroth,E. (2006): Effect of starvation conditions during storage of activated sludge. In: 11th European Congress on Biotechnology, Environmental biotechnology - Part I, 24-29 August 2003, Basel, Switzerland.
92. Shimada,T., Zilles,J., Morgenroth,E. and Raskin,L. (2006): Effects of macrolide antimicrobials on the performance of anaerobic treatment systems. In: WEFTEC 2006, 79th Annual Conference of the Water Environment Federation, October 21-25, Dallas, TX.
93. Tontcheva,P., Zhang,A., Padmasiri,S.I., Fitch,M., Norddahl,B., Raskin,L. and Morgenroth,E. (2006): Membrane Fouling and Membrane Cleaning in Anaerobic Membrane Bioreactors. In: MRS Spring Symposium, 17. April 2006, San Francisco.
94. Li,X., Choi,Y.C., Morgenroth,E. and Raskin,L. (2007): Optimization of Backwash Strategy to Maintain Continuous Perchlorate Reduction with a Fixed Bed Biofilm Reactor. In: 4th ASM Conference on Biofilms, March 25-29 2007 in Quebec City, Canada.
95. Li,X., Upadhyaya,G., Brown,J.C., Morgenroth,E. and Raskin,L. (2007): Optimization and Scale-up of a Fixed-Bed Bioreactor to Remove Perchlorate from Drinking Water. In: The Sixteenth Annual Michigan Section, AWWA and Michigan Water Environment Association Joint Exposition, Lansing Center, Lansing, February 6 & 7, 2007.
96. Lopez,C. and Morgenroth,E. (2007): Evaluating recovery of biological phosphorus removal after periods of low organic loading and starvation. In: IWA 4th Leading-Edge Conference & Exhibition on Water & Wastewater Technologies, 4. - 7. June 2007, Singapore.
97. Lopez,C. and Morgenroth,E. (2007): Calibration of Aerobic Endogenous Processes in Activated Sludge Models for Enhanced Biological Phosphorus Removal. In: Oral presentation at 80th annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), San Diego, CA, USA, October 13-17, 2007.
98. Menniti,A.L. and Morgenroth,E. (2007): Influence of shear on floc structure development and fouling potential in MBRs. In: Oral presentation at the ACS General Meeting, Chicago, 25. - 29. March, 2007.
99. Menniti,A. and Morgenroth,E. (2007): The Time Scale of Shear and Its Importance to Fouling Potential in MBRs. In: Oral presentation at 80th annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), San Diego, CA, USA, October 13-17, 2007..
100. Milferstedt,K., Pons,M.N. and Morgenroth,E. (2007): Spatial Organization of Biofilms: The Effect of Controlled Disturbances (e.g., Shear and Particle Addition). In: ASM's 107th General Meeting, May 21 – May 25 2007, Toronto, Canada. Session "Biofilm Structure and Function".
101. Padmasiri,S.I., Tontcheva,P., Fitch,M., Pons,M.N., Norddahl,B., Morgenroth,E. and Raskin,L. (2007): Influence of high shear on microbial community activity and structure in an anaerobic membrane bioreactor. In: Oral presentation at the ACS General Meeting, Chicago, 25. - 29. March, 2007.
102. Padmasiri,S.I., Tontcheva,P., Fitch,M., Pons,M.N., Norddahl,B., Morgenroth,E. and Raskin,L. (2007): Performance and microbial community structure of an anaerobic membrane bioreactor treating a synthetic black water. In: Oral presentation at the IWA 11th World Congress Anaerobic Digestion Bio-energy for our Future, 23-27 September 2007 Brisbane, Australia. [NOTE: This presentation received the best presentation award].
103. Tontcheva,P., Padmasiri,S.I., Norddahl,B., Raskin,L. and Morgenroth,E. (2007): Organic and inorganic fouling mechanisms in anaerobic membrane bioreactors. In: Oral presentation at the ACS General Meeting, Chicago, 25. - 29. March, 2007.
104. Brockmann,D. and Morgenroth,E. (2008): Monte Carlo filtering to evaluate operation conditions for out competing nitrite oxidizers and maintaining partial nitrification in biofilm systems. In: Oral presentation at the International IWA Conference on Biofilm Technologies, January 8-10, 2008, Singapore.
105. Horn,H., Alex,J., Beier,M., Brockmann,D., Morgenroth,E., Ochmann,C., Sorensen,K., Wanner,O. and Wichern,M. (2008): Simulation of nitrification in a full-scale biofilter – comparison of different approaches. In: Oral presentation at the International IWA Conference on Biofilm Technologies, January 8-10, 2008, Singapore.

106. Menniti,A., Kang,S., Elimelech,M. and Morgenroth,E. (2008): Influence of shear on EPS production in membrane bioreactors. In: Oral presentation at the ACS General Meeting, New Orleans, April 6 - 10, 2008.
107. Milferstedt,K., Talvy,S., Line,A., Paul,E. and Morgenroth,E. (2008): Biofilm heterogeneities - How to look for them? What causes them? In: Oral presentation at the International IWA Conference on Biofilm Technologies, January 8-10, 2008, Singapore.
108. Pons,M.N., Milferstedt,K. and Morgenroth,E. (2008): Macrostructural Biofilm Characterization via Textural Image Analysis by SGLDM and GLRLM. In: accepted for oral presentation at the 17th International Federation of Automatic Control (IFAC) World Congress, July 6 - 11, 2008, Seoul, Korea.
109. Tontcheva,P., Asatekin,A., Mayes,A.M., Padmasiri,S.I., Raskin,L. and Morgenroth,E. (2008): Evaluation of antifouling ultrafiltration membranes containing PAN-g-PEO additive in anaerobic membrane bioreactors. In: Oral presentation at the ACS General Meeting, New Orleans, April 6 - 10, 2008..
110. Wichardt,N., Menniti,A. and Morgenroth,E. (2008): Are Microbial Floccs in Membrane Bioreactors More Sensitive to Nitrification Inhibition Compared to Floccs in Conventional Activated Sludge Systems? In: Poster presentation at the ACS General Meeting, New Orleans, April 6 - 10, 2008.
111. Boltz, J.P., Morgenroth, E., Brockmann, D., Bott, C., Gellner, J., Vanrolleghem, P.A., 2010. Critical Components of Biofilm Models, 2nd IWA/WEF Wastewater Treatment Modelling Seminar, Mont-Sainte-Anne QC, Canada, March 28-30, 2010.
112. Morgenroth, E. (2010) Neue Chancen für Biofilmreaktoren in der Abwasserreinigung. VSA-Hauptmitgliederversammlung, 30. April 2010, in Luzern.
113. Morgenroth, E. (2011) Abwasser wird wieder Trinkwasser. Treffpunkt Science City Science City, ETH Hönggerberg.
114. Morgenroth, E., 2010. Biofilm models for the practitioner, Workshop at the IWA World Congress, Montreal.
115. Morgenroth, E., 2010. Fundamentals of Biofilms and Biofilm Reactors (Workshop presentation), WEF/IWA Biofilm Conference, Portland, OR.
116. Morgenroth, E., 2010. Introduction to biofilm modelling, 2nd IWA/WEF Wastewater Treatment Modelling Seminar, Mont-Sainte-Anne QC, Canada, 28 - 20 March, 2010.
117. Morgenroth, E., 2010. Woher sollen wir unser Wasser nehmen?, Einführungsvorlesung, ETH Zürich.
118. Morgenroth, E., Bürgmann, H., Udert, K.M., 2010. Funktionelle Vielfalt in der Abwasserreinigung, Eawag Infotag, Dübendorf.
119. Morgenroth, E. (2011) Biofilmverfahren - Viele Prozesse auf engem Raum. Symposium zu Ehren von Prof. Willi Gujer Eawag.
120. Boltz, J.P., Morgenroth, E., Brockmann, D., Daigger, G.T., Henze, M., Rittmann, B.E., Sorensen, K., Takacs, I., Vanrolleghem, P. and van Loosdrecht, M.C.M. (2012) Framework for biofilm reactor model calibration. WWTmod2012 Mont-Sainte-Anne, Quebec, Canada.
121. Derlon, N., Mimoso, J., Peter-Varbanets, M., Kötzsch, S. and Morgenroth, E. (2014) Presence of biofilms on ultrafiltration membrane surfaces increases the quality of permeate. LET Conference Abu Dhabi.
122. Larsen, T.A., Gründl, H., Lüthi, C. and Morgenroth, E. RTTC project presentation: Advanced Toilet with On-Site Water Recovery embedded in a Concept of Transport Logistics and Treatment (Eawag). Bill and Melinda Gates Foundation, 13. - 16. Aug. 2012 Seattle, WA.
123. Larsen, T.A., Gebauer, H., Gründl, H., Künzle, R., Lüthi, C., Messmer, U., Morgenroth, E. and Ranner, B. (2012) Diversion for safe sanitation: A new approach to sanitation in informal settlements. Faecal Sludge Management Conference Durban.
124. Morgenroth, E. (2012) How to integrate UWM (Urban Water Management) into IWRM? WRHC Conference: New Perspectives in Integrated Monitoring, Assessment and Management in the Water Sector Berlin.
125. Morgenroth, E. (2013) How can we keep up with rapidly changing demands and opportunities in urban water management? Veolia's Intl. Workshop on Urban Water Systems in 2030 Session Nr. 3: Adaptability 4. + 5. July 2013 in Brussels.

126. Derlon, N., Mimoso, J., Peter-Varbanets, M., Köttsch, S. and Morgenroth, E. (2014) Presence of biofilms on ultrafiltration membrane surfaces increases the quality of permeate. LET Conference Abu Dhabi.
127. Morgenroth, E. (2014) Need for innovative approaches in Process Engineering in Urban Water Management. Partnership Council "Nachhaltiges Bauen" ETH.
128. Weissbrodt, D.G., Derlon, N., Wagner, J., Holliger, C. and Morgenroth, E. (2014) A consolidated approach of flocculent and granular sludge systems under the perspective of bacterial resource management. WEFTEC New Orleans, 27.9-1.10.
129. Weissbrodt, D.G., Wells, G.F., Johnson, D.R., Bürgmann, H., Joss, A., Laureni, M. and Morgenroth, E. (2014) Towards community systems microbiology for the optimization of aerobic-anaerobic ammonium oxidation processes. WEFTEC New Orleans, 27.9-1.10.
130. Weissbrodt, D.G., Neu, T.R., Derlon, N., Szivak, I., Kuhlicke, U., Morgenroth, E. and Holliger, C. (2014) Fluorescence lectin-binding analysis reveals the complexity of extracellular glycoconjugate matrices in aerobic granular sludge biofilms. IWA EPS Conference - the perfect slime Essen, Germany.
131. Weissbrodt, D.G., Morgenroth, E., Wells, G.F., Goel, R.K., Nielsen, P.H. and van Loosdrecht, M.C.M. (2015) Process Ecogenomics (Microbial Ecology 5.0) - How far can genetic signatures be used to anticipate and trigger the behavior of environmental biotechnology systems in the water engineering domain? WEFTEC Chicago.
132. Morgenroth, E. and Derlon, N. (2016) How is modeling granular sludge different from “normal biofilm” modeling? Granular sludge reactor modeling workshop at WWTMod 2016 France.
133. Morgenroth, E. and Derlon, N. (2016) Next generation water and wastewater treatment – Making use of heterogeneous biofilm structure. Biofilms7 Porto.

Invited Lectures

1. Morgenroth, E. (2001): Modeling of Water and Wastewater processes. Lecturer for a short course at the Danish Summer University taught together with Erik Arvin, 18. – 27. July, 2001.
2. Morgenroth, E. (2001): The influence of detachment on the microbial ecology of biofilms. Presentation at the University of Wisconsin – Madison, November 5, 2001.
3. Lopez, C., Miyake, H., and Morgenroth, E. (2002): Decay of polyphosphate accumulating organisms (PAOs) under different redox conditions. Presentation at the Research Showcase of the Advanced Wastewater Management Center at the University of Queensland, Brisbane, 16. August 2002.
4. Lopez, C., Miyake, H., and Morgenroth, E. (2002): Potentials of bioaugmentation to optimize Enhanced Biological Phosphorous Removal (EBPR) under dynamic loading conditions. Presentation at AusBiotech 2002, Melbourne 18-21 August 2002.
5. Morgenroth, E. (2002): Biological aggregates: Detachment and attachment processes. Presentation at the University of Braunschweig, Germany, January 7, 2002.
6. Morgenroth, E. (2002): Current needs and future directions in biological wastewater treatment. Presentation at the Annual Conference of the Illinois Association of Wastewater Agencies, Sep 18, 2002.
7. Morgenroth, E. (2003): Challenging Illinois – Biological processes for wastewater and drinking water treatment. Presentation at the Laboratory for Microbial Ecology and Technology (LabMET), Faculty Agricultural & Applied Biological Sciences, Gent University (Prof. Willi Verstraete), 3. June 2003.
8. Morgenroth, E. (2003): Competition between perchlorate reducing bacteria and other heterotrophs under perchlorate limiting conditions. Presentation in the session on “Getting More Information Out of Complex Systems: Mathematical Modeling of Community Interactions” at the ASM General Meeting in Washington D.C., May 19, 2003.
9. Morgenroth, E. (2003): Fate of particulate organic matter in aerobic wastewater treatment. Invited presentation at the Conference on the Roles of Colloids and Particles in Water Technology – Natural Waters and Water Technology organized by the European Science Foundation, 4. – 9. October, 2003 in Acquafredda di Maratea.

10. Morgenroth, E. (2004): Biologische Verfahren zur Wasser und Abwasserbehandlung (In German: Biological processes for the treatment of water and wastewater). Presentation at the Umwelt Forschungszentrum (UFZ) in Magdeburg (Germany), 5. Jan 2004.
11. Morgenroth, E. (2004): Reuse and removal of nutrients from wastewater – Improved understanding and novel approaches. Presentation at the University of Tokyo (Prof. Mino), 17. May 2004.
12. Morgenroth, E. (2004) Recovery of energy and nutrients from animal residuals using anaerobic digestion. Presentation at the University of Minnesota (UMN), Department of Animal Sciences, 15. November 2004.
13. Morgenroth, E. (2004): The influence of erythromycin on the biological treatment of pharmaceutical wastewaters. Presentation for the Abbott Engineering Seminar, Abbott Laboratories, Chicago, IL, 19. Nov 2004.
14. Morgenroth, E. (2005): Predicting biofilm reactor performance. Presentation at the University of Michigan, 15. December 2005.
15. Morgenroth, E. (2005): Evaluation of biofilm reactors using experimental and mathematical models. Presentation at the University of Notre Dame, 21. April 2005.
16. Morgenroth, E. (2005): The removal of xenobiotic compounds from water and wastewater using biofilm reactors. Presentation at the University of Missouri, Rolla, 9. April 2005.
17. Morgenroth, E. (2007): Environmental Engineering and Science Education-an International Perspective, Keynote lecture at AEESP Education and Research Conference, Blacksburg, VA, 2007, July 27 – August 1, 2007.
18. Morgenroth, E. (2007): Forests, trees, and biofilms: Application of quantitative texture analysis to describe spatial organization. In: Invited presentation at the National University of Singapore, 7. June 2007.
19. Morgenroth, E. (2008): Waste water treatment – status and future in America. In: Invited presentation at the 1st Transatlantic Water Symposium organized by the Consortium of Germany's Ruhr Universities (ConRuhr), the Center for Microscale Ecosystems (CME), Germany, and Louisiana State University (LSU), USA, March 31 & April 1, 2008, Louisiana State University, Baton Rouge.
20. Morgenroth, E., Wastewater technology – Current status and future directions, Invited presentation at the Danish Technical University, Lyngby, Denmark, 14. August 2008.
21. Morgenroth, E., 2009. How to monitor and model heterogeneous biofilms/biofilm reactors, Invited presentation, UNESCO IHE Delft, Netherlands, 6. January 2009.
22. Morgenroth, E., 2009. From biofilm reactors to mathematical models and back again: Microscale and macro scale biofilm heterogeneities, Invited presentation, University of California, Davis, 15. April 2009.
23. Morgenroth, E., 2009. Modeling spatial heterogeneity in biofilms – How much we know and how much we don't!, Invited presentation at the EPFL Lausanne, Switzerland, 23. November 2009.
24. Morgenroth, E., 2010. Neue Chancen für Biofilmreaktoren in der Abwasserreinigung. VSA-Hauptmitgliederversammlung, 30. April 2010, in Luzern
25. Morgenroth, E., 2010. Consequences of mass transport limitations in biofilms – Benefits and drawbacks (Keynote lecture), WEF/IWA Biofilm Reactor Technology Conference, Portland, Oregon.
26. Morgenroth, E., 2010. Large-scale and long-term biofilm dynamics (keynote lecture), Water Research Conference, Lisbon.
27. Morgenroth, E. (2011) Mathematical modeling of biofilm reactors – Certainties and uncertainties (Invited keynote lecture). IWA Biofilm Conference 2011: Processes in Biofilms Tongji University, Shanghai, China.
28. Morgenroth, E. (2012) How to integrate UWM (Urban Water Management) into IWRM? WRHC Conference on New Perspectives in Integrated Monitoring, Assessment and Management in the Water Sector, 10. and 11. July 2012 in Berlin.
29. Morgenroth, E. (2012) Regelungstechnik in der Abwasserreinigung. 72. VSA-Fortbildungskurs: Messen – Regeln – Überwachen in der Abwasserreinigung. 31. Oct. – 2. Nov. 2012 in Emmetten.
30. Morgenroth, E. (2012) Regelungstechnik in der Abwasserreinigung. 72. VSA-Fortbildungskurs: Messen – Regeln – Überwachen in der Abwasserreinigung. 5. – 7. Dec. 2012 in Emmetten.

31. Morgenroth, E. (2013) Modeling biofilm reactors - finding good parameters and good questions. Workshop on biofilm modeling Paris, 27 May 2013.
32. Morgenroth, E. (2013) How can we keep up with rapidly changing demands and opportunities in urban water management? Veolia's Intl. Workshop on Urban Water Systems in 2030 Session Nr. 3: Adaptability 4. + 5. July 2013 in Brussels.
33. Morgenroth, E. (2014) 100 Jahre Wandel in der Abwasserreinigung. VSA-Jahresanlass am 19. September 2014 Winterthur.
34. Morgenroth, E. (2014) Bakterien in Biofilmen reinigen Wasser auf engstem Raum. Vortrag bei der Naturforschenden Gesellschaft in Basel, 25. Juni 2014.
35. Morgenroth, E. (2015) Beneficial use of biofilms for water and wastewater treatment - linking heterogeneous biofilm structure to diverse function. 6th Swiss Microbial Ecology Meeting. Monte Verità, Ascona, Switzerland on 10-12 September, 2015.
36. Morgenroth, E. (2015) Linking biofilm with ultrafiltration – a partnership with benefits. Invited presentation at Hong Kong University of Science and Technology (15. January 2015).
37. Morgenroth, E. and Derlon, N. (2015) Scale-up, scale-down, and time constants - Linking urban water management, biofilms and environmental engineering. Advanced Course on Environmental Biotechnology at TU Delft, June 12, 2015 TU Delft.
38. Morgenroth, E., Derlon, N., Pronk, W. and Larsen, T.A. (2015) Von der Grundlagenforschung zur Anwendung: Trinkwasseraufbereitung und Sanitärversorgung. 48. Essener Tagung für Wasser- und Abfallwirtschaft "Forschung trifft Praxis" Eurogress Aachen.

Graduate Students

of

Dr.-Ing. Eberhard Morgenroth

I have had the pleasure to advise the following graduate students:

Year Granted or Anticipated	MS Thesis Student (only TU Munich and UIUC)	Current affiliation
Technical University of Munich, Technical University of Denmark		
1996	Arnz, Patrik: <i>Vergleich der biologischen Phosphorelimination im Belebtschlamm und Biofilm Sequencing Batch Reactor (in German: Comparison of biological phosphorus removal in activated sludge and biofilm systems)</i> . Advised together with Peter Wilderer.	
1997	Arnold, Eva: <i>Experimental Investigation of the Biological Phosphorus Uptake under Anoxic Conditions Treating Municipal Wastewater</i> . Advised together with Steven Isaacs and Peter Wilderer	
1997	Meintzinger, Thomas: <i>Biologische Phosphorelimination im Sequencing Batch Biofilm Reactor (SBBR) – Einfluß verschiedener Betriebsparameter</i> . Advised together with Peter Wilderer.	
1998	Obermayer, Andreas: <i>Einfluß von längeren Stillstandsphasen auf die Leistungsfähigkeit der Nitrifikation in einer SBR-Anlage (in German: Influence of long term idle phases on the nitrification capacity in a SBR)</i> . Advised together with Peter Wilderer.	
1999	Ransborg, Pia: <i>Biodegradation of methyl tert-butyl ether in a gas phase reactor</i> . Advised together with Erik Arvin.	
2000	Bleisteiner, Stefan: <i>Hydrolysis of particulate organic matter in biofilm reactors</i> . Advised together with Poul Harremoës and Peter Wilderer.	
2000	Medrano Gener, Asunción: <i>Biodegradation of methyl tert-butyl ether by a mixed bacterial culture</i> . Advised together with Erik Arvin.	
University of Illinois		
2000-2002	Haruo Miyake, “Optimization of Enhanced Biological Phosphorus Removal after Periods of Low Loading,” now with Japan Sewage Works Agency	

2000-2002	Cholnatee Sophonsiri, “Wastewater Characterization: Particle Size Distribution and Organic Composition,” now an environmental officer of the Marine Department in the Federal Government of Thailand.	
2000-2002	Carlos Lopez, “Effects of Long-term Starvation on Enhanced Biological Phosphorus Removal in Activated Sludge,” Completing his Ph.D. dissertation, now with Carollo Engineers	Carollo Engineers, Phoenix, AZ (USA)
2001-2004	Rachel Michaud (Dimock), “The Influence of Particle Size on Microbial Hydrolysis of Particulate Organic Matter”	
2002-2004	Richard Lin, co-advisor with L. Raskin, Bacterial community analysis and optimization of biologically active carbon filters used to remove perchlorate from groundwater, Engineer with Montgomery, Watson & Harza consulting.	
2002-2005	Nicole Monteith, co-advisor L. Raskin, “Inhibition and Antibiotic Resistance in Nitrifying Bacteria Caused by Erythromycin,” placement unknown	
2003-2005	Deborah Elenter, “Influence of Detachment on the Competition Between Autotrophic and Heterotrophic Organisms in a Biofilm,” now with CH2M Hill	
2002-2005	Jiangzhao Zhang (Amily), co-advisor L. Raskin, “Effect of Shear on Membrane Fouling in Anaerobic Membrane Bioreactors Treating Swine Waste,” now with Carollo Engineers	
2004-2006	Makoto Jingu, “Influence of Protozoan Predation on Sludge Production and Decay in Activated Sludge Systems,” now with Japan Sewage Works Agency	
2005-2007	Petia Tontcheva, “Membrane Fouling and Cleaning in Anaerobic Membrane Bioreactors”	
2006-2008	Blake Anderson, “Nitrification of the Swine Manure in a Sequencing Batch Reactor”	
2006-2008	Jin Woo Lee, “Biological Reduction of Perchlorate and RDX in a Hydrogen Based Gas Lift Reactor”	
2006-2008	Deepa Vasoya, “Mathematical Modeling of Biological Perchlorate Reduction in a Pilot-scale Biologically Active Carbon Filter Used for Drinking Water Treatment”	
2006-2008	Nicolas Wiehardt, “Influence of Floc Structure on the Inhibition of Nitrification in Membrane Bioreactors”	
2008-2010	Ana María Duque, “Aerobic granulation in a membrane bioreactor”	

Year Granted or Anticipated	PhD Thesis Student	
University of Illinois		
2000-2005	Young Chul Choi, co-advisor L. Raskin, "Microbial Reduction of Perchlorate in Fixed Bed Biofilm Reactors for Water Treatment"	RTI International (USA)
2002-2007	Kim Milferstedt, "Dynamics of Biofilm Structure"	INRA, Laboratoire de Biotechnologie de l'Environnement, Narbonne (France)
2002-2007	Toshio Shimada B., co-advisor with L. Raskin and J. Zilles, "Effects of Macrolide Antimicrobials on Anaerobic Treatment Systems"	Carollo Engineers, Dallas, TX (USA)
2002-2007	Sudini Padmasiri, co-advisor with L. Raskin, "Effect of Shear on Anaerobic Digestion in an Anaerobic Membrane Bioreactor (AnMBR) Treating High Strength Wastewater"	Research scientist with Shell Oil in Houston, TX (USA)
2002-2008	Carlos Lopez, "Endogenous Processes in Activated Sludge Performing Enhanced Biological Phosphorus Removal During Short and Long-term Starvation"	Carollo Engineers in Phoenix, AZ
2002-2008	Xu Li , co-advisor with L. Raskin, co-advising him at the University of Michigan since 2005, "Engineering and Microbiological Aspects of Biological Treatment of Perchlorate Contaminated Drinking Water"	Assistant professor at the University of Nebraska-Lincoln
2003-2008	Adrienne Menniti, "The Influence of Shear on Membrane Fouling, Microbial Floc Structure, and the Production of Extracellular Polymeric Substances"	Cleanwaterservices, Hillsboro, Oregon
2008-2012	Bin Guo, "Thermochemical conversion of cellulosic biomass as feedstock for biological fermentation"	
2008-2012	Xinyu Zhang, "Mixed culture fermentation of glucose to ethanol"	
ETH/Eawag		
2009-2015	Sarina Jenni (Advisors: Morgenroth and Udert): "Decentralised urine treatment with the nitrification/anammox process"	AWEL Amt für Abfall, Wasser, Energie und Luft, Zürich (Switzerland)
2010-2015	Christoph Egger (Advisors: Morgenroth and Maurer): "Sewer rehabilitation planning under uncertainty"	
2011-2015	Anna Chomiak (Advisors: Morgenroth and Derlon): "Influence of inorganic and organic matter in gravity driven membrane ultrafiltration"	

2011-2015	Hanspeter Zöllig (Advisors: Morgenroth and Udert): "Electrolysis for the Treatment of Stored Source-Separated Urine"	Post-doc (Eawag)
2011-2015	Dario Del Giudice (Advisors: Morgenroth and Rieckermann): "Improving output and input statistical error descriptions in urban hydrological modeling"	Post-doc (Stanford University)
2011-2016	Jonathan Habermacher (Advisors: Morgenroth and Derlon): "Degradation of activated sludge under different redox conditions and degradability of endogenous residues for sludge reduction"	
2012-2015	Basilius Thalmann (Advisors: Morgenroth and Kaegi): "Transformations of Silver Nanoparticles in Urban Wastewater and Water Systems"	Post-doc (Eawag)
2011-2015	Alexandra Hug (Advisors: Morgenroth and Udert): Nitrification of urine as pretreatment for nutrient recovery	
2012-2017	Michele Laurenzi (Advisors: Morgenroth and Joss): Autotrophic nitrogen removal from municipal wastewater based on anammox	Post-doc (TU Delft)
2013-2017	Ann-Kathrin McCall (Advisors: Morgenroth and Ort): The role of in-sewer transformation on illicit target drug residues to estimate community drug abuse through wastewater analysis	
2014- (2018)	Peter Desmond (Advisors: Morgenroth and Derlon)	
2015- (2019)	Christian Thürlimann (Advisors: Morgenroth and Villez)	
2016- (2020)	Manuel Layer (Advisors: Morgenroth and Derlon)	
2017 – (2021)	Angelika Hess (Advisor: Morgenroth)	

Visiting Researchers

I have had the pleasure to work with the following visiting researchers:

Harald Horn (August 2001 - January 2002, October 2004), professor at the FH Magdeburg, now TU Munich (Germany) on sabbatical leave. Topics: Mathematical modeling of biofilms, microelectrode measurement of oxygen and flow in a biofilm reactor.

Ulla Telgmann (August 2001 - January 2002), visiting researcher from the University in Kassel (Germany). Topic: Detachment in a tubular biofilm reactor.

Sebastien Le Bonte (October 2002 - January 2003), visiting Ph.D. student at CNRS-ENSIC-INPL Nancy (France). Topics: Rapid methods for dynamic characterization of municipal and industrial wastewaters. Respirometric evaluation of nitrification inhibition.

Marie-Noelle Pons (November 2002 - December 2002, April - May 2004, November - December 2004, November - December 2005), professor at CNRS Nancy (France). Topic: Image analysis of activated sludge using epifluorescence, confocal laser, and two-photon excitation microscopy.

Mark Fitch (August 2003 – May 2004), associate professor at the University of Missouri at Rolla. Topics: Membrane bioreactors.

Mohammed Amin (April - December 2004), visiting Ph.D. student from Isfahan University; most of the research leading toward his Ph.D. dissertation was performed in my research group. Topic: Influence of antibiotics on anaerobic digestion.

Doris Brockmann (June - September 2004, August 2005, November 2006 – October 2008), visiting Ph.D. student from the University of Hanover, Germany, now post-doctoral researcher. Topic: Mathematical modeling of deammonification via nitrite in biofilms.

Ebru Dulekgurgen (March - August 2004), visiting Ph.D. student from the Istanbul University, Turkey. Topic: Enhanced biological phosphorus removal using granular sludge.

Francisco Osorio (June - September 2004), assistant professor at the University of Granada, Spain. Topic: Biofilm detachment in a fixed bed biofilm reactor.

Sang Hyung Lee (June 2005 - 2009), post-doctoral researcher. Topic: Hydrogen enhanced removal of perchlorate and RDX.

Lance Schideman (August 2006 – 2007), post-doctoral researcher. Topic: Membrane fouling and cleaning in a hydrogen based membrane bioreactor. Now: Assistant professor at the University of Illinois.

George Wells (2011 - 2013), post-doctoral researcher. Topic: Mass Transport Limitations, Microbial Diversity, and Nitrous Oxide Production in Anammox Nutrient Removal Processes. Now: Assistant professor at Northwestern University

Yijing Shi (2011 – 2013), visiting PhD student. Topic: Microbial communities and activities in flocs and granules in an anammox process.

Kristin Torgersen Ravndal (2013), visiting PhD student, Topic: Hydrolysis of particulate organic matter in a gravity driven membrane reactor for grey water treatment

Jamile Wagner (2013 - 2014), visiting PhD student, Topic: Aerobic granular sludge

Antonio Benetti (2013 – 2014), professor at Federal University of Rio Grande do Sul (Brazil). Topic: EPS characterization in activated sludge and biofilms.

David Weissbrodt (2013 – 2014), post-doctoral researcher. Topic: Microbial diversity and gene expression in anammox nutrient removal processes. Now: Post-doc at TU Delft and Aalborg University.

Ramesh Goel (June – December 2014), visiting professor University of Utah. Topic: Gene expression in ammonia oxidation and anammox.

Kerry Howe (August – October 2016), visiting professor, University of University of New Mexico. Topic: Comparing hollow fiber and flat sheet membranes for gravity driven ultrafiltration.

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