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Professor

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II. Education and Training

Registered Professional Engineer, California: C 52669, Illinois: 062-054771

Ph.D., Civil/Environmental Engineering, **University of California**, Berkeley, CA

M.S., Civil/Environmental Engineering, **University of Oklahoma**, Norman, OK

B.E., Civil Engineering, **Osmania University**, Hyderabad, India

III. Professional Experience

2007 - present	Professor , Department of Civil, Architectural and Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois
2001 - 2007	Associate Professor , Department of Chemical and Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois
2003	Visiting Professor , Kluyver Laboratory of Biotechnology, Technical University of Delft, Delft, The Netherlands
1995 - 2001	Assistant Professor , Department of Chemical and Environmental Engineering, Illinois Institute of Technology, Chicago, Illinois.
1991- 1994	Assistant Civil Engineer , County of Sacramento Regional Wastewater Treatment Plant, Elk Grove, California
1987 - 1991	Post-Graduate Researcher and Graduate Assistant , University of California at Berkeley and University of Oklahoma at Norman

IV. Publications and Presentations

A. Peer-Reviewed Publications

1. Pagilla, K.R., Urgun-Demirtas, M., Czerwionka, K., Makinia, J. (2008) Nitrogen Speciation in the Wastewater Treatment Plant Influent and Effluents - the US and Polish Case Studies, Water Sci. Tech., **57**(10), 1511-1517.
2. Urgun-Demirtas, M., Pagilla, K.R., Kunetz, T.E., Sobanski, J.P., Law, K.P. (2008) Nutrient Removal Process Selection for Planning and Design of Large Wastewater Treatment Plants' Upgrade Needs, Water Sci. Tech., **57**(9), 1345-1348.
3. Su, Y., Makinia, J., and Pagilla, K.R. (2008) The Maximum Specific Growth Rate of Autotrophs – A Critical Design Parameter for Biological Nutrient Removal WWTPs, Water Env. Res., **80**(4), 355-366.
4. Stark, B. C., Urgun-Demirtas, M., and Pagilla, K.R. (2008) Role of Hemoglobin in Improving Biodegradation of Aromatic Contaminants Under Hypoxic Conditions, J. Molecular Microbiol. Biotechnol., **15**(2-3), in press.
5. Urgun-Demirtas, M., Sattayatewa, C., and Pagilla, K.R. (2008) Bioavailability of Dissolved Organic Nitrogen in Effluents, Water Env. Res., **80**(5), 397-406.
6. Baek, S.H., and Pagilla, K.R. (2008) Simultaneous Nitrification and Denitrification in Aerobic Membrane Bioreactor, Water Env. Res., **80**(2), 109-117.

7. Chandrasekaran, P. and Pagilla, K.R. (2007) High Ammonium Centrate Treatment in a Membrane Bioreactor, Water Env. Res., **79**(11), 2352-2362.
8. Pagilla, K.R. (2007) University-Utility Collaborative Applied Research – A Win-Win Combination, Editorial, Water Env. Res., **79**(6), 579-580.
9. Urgun-Demirtas, M., Singh, D., and Pagilla, K.R. (2007) Anaerobic Biodegradation of Polyurethane Foam under Accelerated Conditions, J. Polymer Degradation and Stability, **92**, 1599-1610.
10. Urgun-Demirtas, M., Stark, B.C., and Pagilla, K.R. (2006) Comparison of 2-Chlorobenzoic Acid Biodegradation in a Membrane Bioreactor by Untransformed and Recombinant *B. cepacia*, Water Res., **40**, pp. 3123-3130.
11. Urgun-Demirtas, M., Stark, B.C., and Pagilla, K.R. (2006) Use of Genetically Engineered Microorganisms (GEMs) for the Bioremediation of Contaminants, Crit. Rev. Biotechnol., **26**, pp. 145-164.
12. Dogan, I., Pagilla, K.R., Webster, D.A., Stark, B.C. (2006) Expression of *Vitreoscilla* Hemoglobin in *Gordonia amarae* Enhances Biosurfactant Production, J. Ind. Microbiol. Biotechnol., **33**, pp. 693-700.
13. Jiradecha, C., Urgun-Demirtas, M., and Pagilla, K.R. (2006) Enhanced Electrokinetic Dissolution of Naphthalene and 2, 4-DNT from Contaminated Soils, J. Hazardous Materials, **136**, pp. 61-67.
14. Pagilla, K.R., Urgun-Demirtas, M., and Ramani, R. (2006) Low Effluent Nutrient Technologies for Wastewater Treatment, Water Sci. Tech., **53**(3), pp. 165-172.
15. Baek, S. and Pagilla, K.R. (2006) Anaerobic and Aerobic Membrane Bioreactors for Dilute Municipal Wastewater Treatment, Water Environ. Res., **78**(2), pp. 133-140.
16. Pagilla, K.R., Urgun-Demirtas, M., and Ramani, R. (2005) Achieving Limit of Treatment Effluent Nutrient Levels, Nutrient Management in Wastewater Treatment Processes and Recycle Streams, Proc. IWA Specialized Conference, Krakow, Poland, 19-21 September.
17. Urgun-Demirtas, M., Stark, B.C., and Pagilla, K.R. (2005) 2-Chlorobenzoate Biodegradation By Recombinant *Burkholderia Cepacia* Under Hypoxic Conditions in a Membrane Bioreactor, Water Environ. Res., **77**(5), pp. 511-518.
18. Urgun-Demirtas, M., Stark, B.C., and Pagilla, K.R. (2004) Enhanced Kinetics of Genetically Engineered *Burkholderia cepacia*: The Role of *vgb* in the Hypoxic Cometabolism of 2-CBA, Biotech. Bioeng., **87**(1), pp. 110-118.
19. So, J., Stark, B.C., and Webster, D.A., and Pagilla, K.R. (2004) Enhancement of 2,4-Dinitrotoluene Biodegradation by *Burkholderia* sp. in Sand Bioreactors Using Bacterial Hemoglobin Technology, Biodegradation, **15**, pp 161-171.
20. Stark, B.C., Webster, D.A., and Pagilla, K.R. (2004) Engineering of Bacteria Using the *Vitreoscilla* Hemoglobin Gene to Enhance Bioremediation of Aromatic Compounds, *Environmental Microbiology: Methods and Protocols*, Ed. J.F.T. Spencer and A.L. Ragout de Spencer, Humana Press, **16**, 379-388.
21. Martins, M.P., Pagilla, K.R., Heijnen, J.J., and van Loosdrecht M.C.M. (2004) Bulking Filamentous Sludge– A Critical Review, Water Res., **38**, pp 793-817.
22. Pagilla, K.R., and Nouri, J. (2004) Energy Management in Wastewater Treatment Plants: Optimization of Energy Production, Res. J. Chem. Environ., **8**(2), pp 26-33.
23. Pagilla, K.R. and Kim, H. (2003) Competitive Growth of *Gordonia* and *Acinetobacter* in Continuous Flow Aerobic and Anaerobic/Aerobic Reactors. J. Biosci. Bioeng., **95**(6), pp. 577-582.
24. Urgun-Demirtas, M., Pagilla, K.R., Stark, B.C., and Webster, D.A., (2003) Biodegradation of 2-Chlorobenzoate by Recombinant *Burkholderia cepacia* Expressing *Vitreoscilla* Hemoglobin under Hypoxic Conditions. Biodegradation, **14**, pp 357-365.
25. Moschandreas, D.J., Pagilla, K.R., and Storino, L.V. (2003) Time and Space Uniformity of Indoor Bacteria Concentrations in Chicago Area Residences. Aerosol Sci. Technol., **37**, pp. 899-906.
26. Lai, M.H., Moschandreas, D.J., and Pagilla, K.R. (2003) Airborne Bacteria Control Under Chamber and Test-Home Conditions, ASCE J. Environ. Eng., **129**(3), pp. 202-209.
27. Pagilla, K.R., Kim, H. and Sood, A. (2002) *Gordonia amarae* foaming due to biosurfactant production, Water Sci. Technol., **46**(1-2), pp. 519-524.
28. Kim, H., Song, C., Kim, D.W., and Pagilla, K.R. (2001). The Effect of Enzyme/Microbial Additive on Anaerobic Digestion of Primary Sludge, Environ. Sciences, **10**(S-1), pp. 35-40.
29. Chung, J.W., Webster, D.A., Pagilla, K.R. and Stark, B.C. (2001) Chromosomal Integration of the *Vitreoscilla* Hemoglobin Gene in *Burkholderia* and *Psuedomonas* for the Purpose of Producing Stable

Engineered Strains with Enhanced Bioremediating Ability, J. Indust. Microbiol. Biotechnol., **27**(1), pp. 27-33.

30. Pagilla, K.R., Kim, H. and Cheunbarn, T. (2000) Aerobic Thermophilic and Anaerobic Mesophilic Treatment of Swine Waste, Water Res., **34**(10), p 2747.

31. Rao, A., Wagh, A., and Pagilla, K.R. (2000) Stabilization and Solidification of Soil and Ash Wastes by Compaction Using Phosphate Binder, J. Air Waste Mgmt. Assoc., **50**(9), p 174.

32. Kim, H., and Pagilla, K.R. (2000) Competitive Growth of *Nocardia* and *Acinetobacter* under Anaerobic/Aerobic Batch Operation, Water Res., **34**(10), p 2667.

33. Cheunbarn, T., and Pagilla, K.R. (2000). Anaerobic Thermophilic and Anaerobic Mesophilic Treatment of Sludge, ASCE J. Environ. Eng., **126**(9), p 790.

34. Cheunbarn, T., and Pagilla, K.R. (2000). Aerobic Thermophilic and Anaerobic Mesophilic Treatment of Sludge, ASCE J. Environ. Eng., **126**(9), p 796.

35. Kim, H., Cheunbarn, T., and Pagilla, K.R. (1999) Anaerobic Treatment of Swine Waste With and Without Bioaugmentation, Environ. Eng. Res., **4**(4), p 269.

36. Cheunbarn, T., and Pagilla, K.R. (1999). Influence of Temperature and SRT on Aerobic Thermophilic Pretreatment of Municipal Sludge, ASCE J. Environ. Eng., **125**(7), p 626.

37. Fainsod, A., Pagilla, K.R., Jenkins, D., Pitt, P.A., and Mamais, D. (1999) Effect of Anaerobic Selectors on Nocardioform Organism Growth in Activated Sludge, Water Environ. Res., **71**(5), p 1151.

38. Pagilla, K.R., Jenkins, D., and Kido, W.H. (1998). *Nocardia* Effects in Waste Activated Sludge, Water Sci. Tech., **38**(2), p 49.

39. Pagilla, K.R., and Canter, L.W. (1998). Laboratory Studies on Remediation of Chromium-Contaminated Soils, ASCE J. Environ. Eng., **125**, p 243.

40. Pagilla, K.R., Craney, K.C., and Kido, W.H. (1997). Causes and Effects of Foaming in Anaerobic Sludge Digesters, Water Sci. Tech., **36**(6-7), p 463.

41. K.R. Pagilla, Kido, W.H., and Jenkins, D. (1996). *Nocardia* Control in Activated Sludge by Classifying Selectors, Water Environ. Res., **68**(2), p 235.

42. Pagilla, K.R., Craney, K.C., and Kido, W.H. (1996) Aerobic Thermophilic Pretreatment of Mixed Sludge for Pathogen Reduction and *Nocardia* Control, Water Environ. Res., **68**(7), p 1093.

43. Reddy, M.P., Pagilla, K.R., Senthilnathan, P.R., Johnson, H.W., and Golla, P.S. (1994) Estimation of Biomass Concentration and Population Dynamics in a Captor Activated Sludge System, Water Sci. Tech., **29**(7), p 149.

B. Chapters in Books

44. Hermanowicz, S., and Pagilla, K.R. (1998) Chemical Phosphorus Removal, In Biological and Chemical Systems for Nutrient Removal, Water Environment Federation Press, Alexandria, VA.

45. Pagilla, K.R. and Barnard, J.L. (2005) Combined Nitrogen and Phosphorus Removal (Chapter 5), Biological Nutrient Removal Operation in Wastewater Treatment Plants, WEF/ASCE Manual of Practice, McGraw-Hill, New York.

46. Powers, S., and Pagilla, K.R. (2001) Environmental Engineering Laboratory Processes Manual, Editor, Association of Environmental Engineering and Science Professors, Champaign, IL, USA.

V. Research Program

A. Current Research Funding

Project: Odor Control and Monitoring Program Study at the Stickney Water Reclamation Plant

Funding: Metropolitan Water Reclamation District of Greater Chicago, PI (\$794K, 2008-10) with Co-PIs, Demetrios Moschandreas and Ken Noll

Project: Nitrogen Speciation and Bioavailability in Effluents (2007-08)

Funding: Hazen & Sawyer, New York, PI (\$60K)

Project: Treatment of Pesticide Wastewater Using Nanofiltration and Advanced Oxidation (2007-09)
Funding: US-Egypt Science and Technology Fund, US Department of Agriculture, PI (\$30 K)

Project: Investigation of Technologies for Achieving Class A Biosolids (2007-08)
Funding: Metropolitan Water Reclamation District of Greater Chicago, PI (\$64K)

VI. Societies and Professional Service

Editor, Water Environment Research, Journal Published by the Water Environment Federation

Water Environment Federation, Technical Program Committee (**1994-2002; 2007-present**); Steering Committee (**1999-2002**); Nutrient Control Committee - **Contributing Author and Reviewer**; Nutrient Control Manual, Contributing Author; Municipal Wastewater Symposia - **Vice-Chair (1997-99), Chair (1999-2002)**; and Coordinator of Lab Demonstrations for Science Teachers Workshop (WEF Teach) at WEFTEC in Chicago.

Association of Environmental Engineering and Science Professors
Editor, Biological Processes, AEESP Environmental Processes Laboratory Manual

Standard Methods for the Examination of Water and Wastewater
Standard Methods Committee, Section 9110, Molecular Methods

International Water Association
Activated Sludge Population Dynamics Specialist Group
Anaerobic Digestion Specialist Group
Program Committee, Leading Edge Technology Conference

Environmental Center for Livestock Waste Management, International Technical Advisory Committee Member, National Pingtung University of Science and Technology, Pingtung, Taiwan.
A USAID/USAEP funded project. Invited speaker in '97, '98, and '99.

Reviewer: Proposals, Papers, and Abstracts for NSF, US EPA, Water Environment Federation, Water Research, American Chemical Society, ASCE/JEE, and Environmental Pollution.