Rakesh Bajpai

Professor of Chemical Engineering

Engineering Eminent Scholar Trust Fund in Manufacturing

Ph.D., Chemical Engineering, Indian Institute of Technology, Kampur, India, 1976

Publications

- "Screening for ?1-Hydroxy Fatty Acid Over-producing Mutants for Bioconversion of Oleic Acid by Combining General Mutagenesis and Specific Selection", Z.-F. Wu, R. K. Bajpai, and W. Yan. Biocatalysis and BioTransformation, Accepted for Publication, 2008.
- "Aerobic Biodegradation of Dinitrotoluenes in Batch Systems by Pure and Mixed Cultures". J. Paca, M. Helecky, T. Hudcova, and R. K. Bajpai. Folia Microbiol., 53(2), 105-109, 2008.
- "Continuous Aerobic Biodegradation of Dinitrotoluenes by Immobilized Mixed Microbial Population", J. Paca, M. Helecky, and R. Bajpai. New Trends in Research of Energetic Materials, p. 254-260, 2008, Proceedings of the 11th Seminar on New Trends in Research of Energetic Materials, April 9-11, Pardubice, Czech Republic.
- "Mineralization and Uptake of TNT by Microorganisms: Effect of Pretreatment by Alkali", S. Hermann, M. K. Popovic, J. Paca, M. Helecky, and R. K. Bajpai. Central European Journal of Energetic Materials, 4(4), 45-58, 2007.
- "Drift Flux Distribution Parameter in Three Phase Air-Lift Reactors", M. K. Popovic, C. Wulfes, and R. K. Bajpai. Chem. Biochem. Eng. Q., 21(4), 435-437, 2007.
- "Applications of pH and pO2 probes during Bacillus caldolyticus Fermentation: An Additional Approach for Improving a Feeding Strategy", J. Bader, K. Schwab, M. K Popovic, R. Bajpai, and B. Neumann. Chem. Biochem. Eng. Q., 21 (4) 315-320, 2007.
- "Aerobic Biodegradation of Dinitrotoluenes by Free Cells in Batch Systems", Jan Paca, Martin Halecky, and Rakesh Bajpai, New Trends in Research of Energetic Materials, p. 286-292, 2007, Proceedigns of the 10th Seminar on New Trends in Research of Energetic Materials, April 25-27, Pardubice, Czech Republic.
- "?-Amylase Production in Fed-Batch Cultivation of Bacillus caldolyticus: An Interpretation of Fermentation Course Using 2-D Gel Electrophoresis". Bader, J., Newmann, B., Schwab, K., Popovic, M. K., Scheler, C., and Bajpai, R. Chemical and Biochemical Engineering Quarterly. 20(4) (2006).
- "Effect of Nitrate on Biodegradation of Mononitrotoluenes (MNTs) by Several Pure Microbial Strains in Submerged Aerobic Cultures". Paca, J., Halecky, M., Barta, J., Paca, J. Jr., Stiborova, M., and Bajpai, R. Central European Journal of Energetic Materials. 3(3): 65-78 (2006).
- "Biodegradation of Mononitrotoluenes (MNTs) by Pure Microbial Strains in Submerged Aerobic Cultures". Jan Paca, Martin Halecky, and Rakesh Bajpai. Paper presented at the 16th Annual West Coast Conference on Soil, Sediments, and Water, March 13-16, 2006, San Diego, CA.
- "Aerobic Nitrotoluene Degradation from Simulated Water". Jan Paca, Martin Halecky, Alena Kosteckova and Rakesh Bajpai. Paper presented at the 16th Annual West Coast Conference on Soil, Sediments, and Water, March 13-16, 2006, San Diego, CA.
- "Comparison of Dinitrotoluene Degradation by a Mixed Culture in Aqueous Batch System", J. Paca, J. Barta, R. Bajpai, Contasminated Soils, 9(Contaminated Soil, Sediments and Water): 91-104 (2005).

- "Aerobic Nitrification-Denitrification by Heterophilic Bacillus Strains". Kim, J. K., Park, K. J., Cho, K. S., Nam, S.-W., Park, T.-J., and Bajpai, R. Bioresource Technology. 96(17):1897-1906 (2005).
- "Aerobic Biodegradation of Mononitrotoluenes in Batch and Continuous Reactor Systems". Paca, J., Barta, J., and Bajpai, R. Soil & Sediment Contamination, 14(3):261-279 (2005).
- "Theoretical Predictions of Chemical Degradation Reaction Mechanisms of RDX and Other Cyclic Nitramines Derived from Their Molecular Structures". Qasim, M., Fredrickson, H., McGrath, C., Furey, J., Bajpai, R. SAR and QSAR in Environmental Research, 16(3): 203-218 (2005).
- "Alpha-Amylase Production in Fed-Batch Cultivation of Bacillus Caldolyticus". Bader, J., Neumann, B, Schwab, K., Popovic, M., Scheler, C., and Bajpai, R. Chemie Ingenieur Technik. 77(8):1199-1200 (2005).
- "Preliminary Investigation: Interpretation of a Two-Component Feeding Strategy with the Help of 2-D Gel Electrophoresis". Bader, J., Neumann, B., Schwab, K., Popovic, M. K., Scheler, C., and Bajpai, R. K. Poster paper presented at the 12th European Congress on Biotechnology. August 21-24, 2005. Copenhagen, Denmark.
- "Application of pH and pO2 probes during Bacillus caldolyticus fermentation: An additional approach in improving a feeding strategy", J. Bader, B. Neumann, K. Schwab, M. K. Popovic, C. Scheler, and R. K. Bajpai. Poster paper at the 12th European Congress on Biotechnology, August 21-24, 2005, Copenhagen, Denmark.

Grants and Contracts

- *Ecological Modeling of College Drinking,* Co-investigator, National Institute of Health, 2005-2008 ($791,902), (with R. Scribner (PI), N. Simonsen, B. Fitzpatrick, J. Jacquez, W. DeJong)

- *UBM* : *Training Undergraduate Students in Mathematical Biology,* Principal Investigator, National Science Foundation, Supplement Award to *Collaborative Research: Nonlinear Nonlocal First Order Hyperbolic Problems in Population Models*, 2003-2005 ($75,625).

- *Collaborative Research: Nonlinear Nonlocal First Order Hyperbolic Problems in Population Models*, Principal Investigator, National Science Foundation, 2002-2005 ($118,157). This is a collaborative grant with a total funding of ($205,021).

Organized Conferences And Workshops

- CPERC – Governor's Energy Initiative through BoR
- LBoR-ITRS – Development of Novel Feedstocks for Supporting Lipid-Based Chemical Production in Louisiana
- ULS Service Learning Project – Energy from Waste : A New Paradigm for Louisiana Poultry Growers

Offices, Awards and Honors

- Associate Director, Bioprocessing Laboratory
- Director, Environmental Engineering Laboratory