

## ACHLESH DAVEREY, Ph.D

### Contact Information

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### Research Interests

- Biological wastewater treatment
- Biological Nitrogen Removal (Anammox Process)
- Bioremediation of contaminated soil and water
- Production of value added products (Bioenergy, Enzymes, Biosurfactants) from wastes
- Bioprocess design, optimization & kinetics

### Career Highlights

- *Assistant Professor*, School of Environment and Natural Resources, Doon University, Dehradun, India. (Jul 2015 – present)
- *Guest Faculty*, Department of Botany and Microbiology, Hemwati Nandan Bahuguna Garhwal University (a Central University), Srinagar (Garhwal), Uttarakhand, India. (2014 - 2015)
- *Postdoctoral Research Fellow*, Institute of Environmental Engineering, National Chiao Tung University (NCTU), Hsinchu, Taiwan. (2011 - 2014)
- *Faculty* (at the level of Assistant Professor), Centre for Biotechnology, School of Earth, Biological & Environmental Sciences, Central University of Bihar, India. (2010 - 2011)

### Education

- *Doctor of Philosophy* (Biotechnology), Indian Institute of Technology Guwahati (IITG), Guwahati, India, Jan, 2011.
- *Master of Technology* (Bioprocess Technology), Mumbai University Institute of Chemical Technology (Now ICT, Mumbai), Mumbai, India, 2006.
- *Bachelor of Pharmacy*, Hemwati Nandan Bahuguna Garhwal University, Srinagar, Garhwal, India, 2004.

### Awards/Scholarships/Academic Achievements

- Journal invited **Reviewer**- Bioresource Technology, International Journal of Hydrogen Energy, International Journal of Biological Macromolecules, Anaerobe, Applied Biochemistry and Biotechnology, Microbial Ecology, Water Air & Soil Pollution, Journal of Separation Science, etc.
- Awarded the **best poster award** under young scientist category in the 5<sup>th</sup> CESE conference held during 9-13<sup>th</sup> Sep, 2012, Melbourne, Australia.

- Contributed section 28.4 (*SNAD Process*) in the 3<sup>rd</sup> edition of “*Water and Wastewater Calculations Manual*” edited by Shun Dar Lin.
- Awarded *postdoctoral fellowship* from National Science Council (NSC), Taiwan and National Chiao Tung University, Taiwan (Jun 2011-Feb, 2014).
- Awarded with full financial support under the “ITS” scheme by the Department of Science and Technology (DST), India, for presenting research work in the “BioMicroWorld” Conference held at Lisbon, Portugal, in Dec 2009.

### **Invited Talks/Special Lectures Delivered**

- Delivered an invited lecture on “Anammox: Process Assessment and Applications in Treating Real Wastewaters” in the 2<sup>nd</sup> Symposium on “Biological Nitrogen Removal Mechanisms and Process Analysis” of Environmental Engineering Symposium Series at Institute of Environmental Engineering, NCTU, Taiwan, 14<sup>th</sup> Jan 2013.
- Delivered an invited lecture on “Nitrous oxide emission during biological nitrogen removal from wastewater” in the Symposium on sustainable wastewater treatment: microbes & environment at Institute of Environmental Engineering, NCTU, Taiwan, 2<sup>nd</sup> Nov 2011.
- Delivered a talk on “Commercial production of biosurfactants - obstacles and possible solutions” in a “Biotalk a lecture series” at Department of Biotechnology, IIT Guwahati, India, 11<sup>th</sup> Sep 2009.

### **List of Publications**

#### **(A) In International Journals**

1. A. Daverey, Y.C. Chen, K. Dutta, Y.T. Huang, J.G. Lin (2015). Start-up of simultaneous partial nitrification, anammox and denitrification (SNAD) process in sequencing batch biofilm reactor using novel biomass carriers. *Bioresource Technology*, 165: 105-110. (IF: 4.494)
2. A. Daverey, P. C. Chei, K. Dutta, J. G. Lin (2015). Statistical analysis to evaluate the effects of temperature and pH on anammox activity. *International Biodeterioration and Biodegradation*. 102: 89-93. (IF: 2.131)
3. A., Daverey, K. Pakshirajan (2015). Treatment of dairy wastewater containing high amount of fats and oils in a yeast bioreactor system under Batch, fed-batch and continuous operation. *Desalination and Water Treatment* (DOI:10.1080/19443994.2014.1003609). (IF: 1.173)
4. A., Daverey, Y.C., Chen, S., Sung, J.G., Lin (2014). Effect of zinc on anammox activity and performance of simultaneous partial nitrification, anammox and denitrification (SNAD) process. *Bioresource Technology*, 165: 105-110. (IF: 4.494; Citations: 5)
5. A., Daverey, Y.C., Chen, Y.C., Liang, J.G., Lin (2014). Short-term effects of monoethanolamine and copper on the activities of anammox bacteria. *Sustainable Environment Research*, 24 (5): 325-331. (Citations: 1)
6. K., Dutta, A., Daverey, J.G., Lin (2014). Evolution retrospective for alternative fuels: First to fourth generation. *Renewable Energy*, 69: 14-122. (IF: 3.476; Citations: 5)
7. A., Daverey, N.T. Hung, K. Dutta, J.G., Lin (2013). Ambient temperature SNAD process treating anaerobic digester liquor of swine wastewater. *Bioresource Technology*, 141: 191-198. (IF: 4.494; Citations: 14)
8. A., Daverey, S.H., Su, Y.T., Huang, S.S. Chen, S. Sung, J.G., Lin (2013). Partial nitrification and anammox process: A method for high strength optoelectronic industrial wastewater treatment. *Water Research*, 47: 2929-2937. (IF: 5.528; Citations: 28)

9. A., Daverey, S.H., Su, Y.T., Huang, J.G. Lin (2012). Nitrogen removal from opto-electronic wastewater using the simultaneous partial nitrification, anaerobic ammonium oxidation and denitrification (SNAD) in sequencing batch reactor. *Bioresource Technology*, 113:225-231. (IF: 4.494; Citations: 25)
10. L.A., Lu, Y.S., Ma, A., Daverey, J.G.. Lin (2012). Optimization of Photo-Fenton process parameters on carbofuran degradation using central composite design. *Journal of Environmental Science and Health-Part B*, 47 (6), 553-561. (IF: 1.202; Citations: 6)
11. A., Daverey, K., Pakshirajan, S., Sumalatha (2011). Sophorolipids production by *Candida bombicola* using dairy industry wastewater. *Clean Technologies and Environmental Policy*. 13 (3), 481-488. (IF: 1.934; Citations: 3)
12. A., Daverey. K., Pakshirajan (2011). Pretreatment of synthetic dairy wastewater using the sophorolipid-producing yeast *Candida bombicola*. *Applied Biochemistry and Biotechnology*, 163 (6), 720-728. (IF: 1.735; Citations: 11)
13. A., Daverey, K., Pakshirajan (2010). Sophorolipids from *Candida bombicola* using mixed hydrophilic substrates: production, purification and characterization. *Colloids and Surfaces B: Biointerfaces*, 79 (1), 246-253. (IF: 4.152; Citations: 46)
14. S. Singh, K. Pakshirajan, A. Daverey (2010). Enhanced decolourization of Direct Red – 80 dye by the white rot fungi *Phanerochaete chrysosporium* employing sequential design of experiments. *Biodegradation*, 21 (4), 501-511. (IF: 2.336; Citations: 16)
15. S., Singh, K., Pakshirajan, A., Daverey (2010). Screening and optimization of media constituents for decolourization of Mordant Blue-9 dye by *Phanerochaete chrysosporium*. *Clean Technologies and Environmental Policy*, 12 (3), 313-323. (IF: 1.934; Citations: 8)
16. A., Daverey. K., Pakshirajan (2010). Effect of different oils and media constituents on the production of sophorolipids by *Wickerhamiella domercqiae*. *International Journal of Microbes and Environmental Management*, 1 (1), 11-15.
17. A., Daverey, K., Pakshirajan (2010). Kinetics of growth and enhanced sophorolipids production by *Candida bombicola* using a low cost fermentative medium. *Applied Biochemistry and Biotechnology*, 160 (7), 2090 – 2101. (IF: 1.735; Citations: 28)
18. A., Daverey, K., Pakshirajan, P., Sangeetha (2009). Sophorolipids production by *Candida bombicola* using synthetic dairy wastewater. *International Journal of Environmental Science and Engineering*, 1 (4), 173 – 175. (Citations: 9)
19. A., Daverey, K., Pakshirajan (2009). Production, characterization, and properties of sophorolipids from the yeast *Candida bombicola* using a low-cost fermentative medium. *Applied Biochemistry and Biotechnology*, 158, (3), 663-674. (IF: 1.735; Citations: 54)
20. A., Daverey, K., Pakshirajan (2009). Production of sophorolipids by the yeast *Candida bombicola* using simple and low cost fermentative media. *Food Research International*, 42, (4), 499 – 504. (IF: 2.818; Citations: 31)

#### **(B) In Book as Chapter**

21. A., Daverey, K., Pakshirajan (2011). Recent advances in bioremediation of contaminated soil and water using microbial surfactants. *In: Microbes and Microbial Technology*. Publisher: Springer, p. 207 - 228. (Citations: 3)

#### **(C) Conference Proceedings**

22. S.H. Su, A. Daverey, J.G. Lin, D.M. Lee (2013). Application of simultaneous partial nitrification and anammox process for treatment of high strength nitrogen containing optoelectronic wastewater. In the

### List of conferences

#### Abstract/Extended abstracts in Conference Proceedings

1. A. Daverey, P.C. Chei, K. Dutta, J.G. Lin. Statistical analysis to evaluate the effects of temperature and pH on Anammox activity. CESE-2014, 7<sup>th</sup> International Conference on Challenges in Environmental Sciences and Engineering, Johor Bahru, **Malaysia** 12-16 Oct., 2014.
2. A. Daverey, Y.C. Chen, K. Dutta, Y.T. Huang, J.G. Lin. Fast Start-up of Simultaneous Partial Nitrification, Anammox and Denitrification (SNAD) Process in Sequencing Batch Biofilm Reactor. CESE-2014, 7<sup>th</sup> International Conference on Challenges in Environmental Sciences and Engineering, Johor Bahru, **Malaysia** 12-16 Oct., 2014.
3. A. Daverey, Y.C. Liang, S. Sung, J.G. Lin. Nitrogen removal from Tetramethylammonium hydroxide (TMAH) containing wastewater by CANON process. CESE-2013, Daegu, **S. Korea**, 29 Oct-02 Nov., 2013, pp 59.
4. A. Daverey, Y.C. Chen, S. Sung, J.G. Lin. Effect of zinc on anammox activity and performance of simultaneous partial nitrification, anammox and denitrification (SNAD) process. CESE-2013, Daegu, **S. Korea**, 29 Oct-02 Nov., 2013, pp 60.
5. S.H. Su, A. Daverey, J.G. Lin,\* D.M. Lee. Application of simultaneous partial nitrification and anammox process for treatment of high strength nitrogen containing optoelectronic wastewater, Weftec, 2013, Chicago, Illinois, **USA**, 05 - 09 Oct., 2013.
6. A. Daverey, Y.C. Chen,\* Y.C Liang, J. Bae, J.G. Lin. Short-term effects of monoethanolamine and copper on the activities of anammox bacteria, International Conference on Sustainable Environmental Technologies, Manila, **Philippines**, 30 Sep. - 01 Nov., 2013, pp 98-99.
7. A. Daverey, Y.C. Liang, J.G. Lin\*. Application of CANON process to treat semiconductor wastewater, ICoN3, 3<sup>rd</sup> International Conference on Nitrification, Tokyo, **Japan**, 2-5 Sep. 2013, pp 83.
8. A. Daverey, J.G. Lin\*. Anammox in Taiwan: First Observation to Applications. The Second International Anammox Symposium, IANAS 2013, Seoul, **Korea**, 11-12 Jun. 2013, pp 23-24.
9. A. Daverey, Y.C., Chen\*, J. Bae, J.G. Lin. Fast start-up of simultaneous partial nitrification, anammox and denitrification (SNAD) process in sequencing batch biofilm reactor. The Second International Anammox Symposium, IANAS 2013, Seoul, **Korea**, 11-12 Jun. 2013, pp 46.
10. A., Daverey, S.H., Su, Y.T., Huang, J.G., Lin\*. Anammox based single reactor systems for nitrogen removal from optoelectronic wastewaters. 17th European Nitrogen Cycle Meeting, **Oslo**, 26-28 Sep., 2012, pp 29.
11. N.T. Hung, A. Daverey,\* J.G. Lin. Treatment of anaerobically digested liquor of swine wastewater by simultaneous partial nitrification, anaerobic ammonium oxidation and denitrification (SNAD) process under ambient temperature. CESE-2012, Melbourne, **Australia**, 9-13 Sep., 2012, pp 20.

12. C.S. Lu, A. Daverey,\* J.G. Lin. Simultaneous anaerobic removal of sulfate and ammonium from the synthetic wastewater. CESE-2012, Melbourne, **Australia**, 9-13 Sep., 2012, 95.
13. Y-C. Liang, K. Dutta, A. Daverey, J.G. Lin\*. A pilot study of wastewater treatment by partial nitrification and anammox process. CESE-2012, Melbourne, **Australia**, 9-13 Sep., 2012, pp 6.
14. K. Dutta\*, A. Daverey, J.G. Lin. Alternative fuel different options: progression from first generation to fourth generation. CESE-2012, Melbourne, **Australia**, 9-13 Sep., 2012, pp 95.
15. A. Daverey\*, K. Pakshirajan, S. Sumanlatha. Utilization and pretreatment of dairy industry wastewater by *Candida bombicola* for the production of sophorolipids. III International Conference on Environmental, Industrial and Applied Microbiology, "BioMicroWorld", December 2 – 4, 2009, Lisbon, **Portugal**.
16. A. Daverey, K. Pakshirajan\*. Utilization of agricultural wastes for the production of sophorolipids by *Candida bombicola*. 1<sup>st</sup> International conference on Recycling and Reuse of Materials, "ICRM 2009", July 17 – 19, 2009, Kottayam, **India**.
17. A. Daverey\*, K. Pakshirajan, P. Sangeetha. Sophorolipids production by *Candida bombicola* using synthetic dairy wastewater. International Conference on Energy and Environment, "Enviro-Energy 2009", March 19 – 29, 2009, Chandigarh, **India**.
18. A. Daverey, K. Pakshirajan\*. Production of sophorolipids by the yeast *Candida bombicola* using simple and low cost fermentative media. International Congress on Bioprocesses in Food Industries & 5<sup>th</sup> BRSI Convention of the Biotech Research Society, November 6-8, 2008, Hyderabad, **India**.
19. A. Daverey,\* K. Pakshirajan. Production and characterization of sophorolipid by *Wickerhamiella domercqiae* NRRL Y-6992 grown on a synthetic medium. Chemference-2008, July 5-6, 2008, Kanpur, **India**.
20. A. Daverey,\* K. Pakshirajan. Screening of media constituents for sophorolipid production using *Wickerhamiella domercqiae* by Plackett-Burman design technique. 48th Association of Microbiologists of India Annual conference, December 18-21, 2007, Chennai, **India**.
21. B. Baburajan\*, A. Daverey, S. Chettiar, V. N. Telvekar. Development of Process for Preparing Chiral Drug Intermediate: Butyrolactone. International Conference on Advances in Drug Discovery Research 11<sup>th</sup> ISCBC, February 24 – 26, 2007, Aurangabad, **India**.
22. A. Daverey,\* V. N. Telvekar. Synthesis of new chemical entities from carbohydrate and activity testing. XX Carbohydrate Conference November 24 – 26, 2005, Lucknow, **India**.

**\*presenting author**