

## **Dr. Sheeja Jagadevan**

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### **EDUCATION**

#### **Ph.D. (Engineering Science) – 2011**

University of Oxford, UK

Thesis: Hybrid technologies for remediation of recalcitrant industrial wastewater

#### **M.Tech. (Environmental Science and Engineering)- 2002**

Indian Institute of Technology, Bombay

Thesis: Evaluation of Arabian Sea sediment cultures for oil bioremediation

#### **M.Sc. (Environmental Science) - 1998**

Andhra University, Visakhapatnam

Thesis: Pollution associated with open cast mining-Mahanadi Coalfields Ltd.

### **PROFESSIONAL EXPERIENCE**

#### **Assistant Professor**

Department of Environmental Science and Engineering  
Indian School of Mines  
Dhanbad

**Sept. 2014- Present**

#### **Post-doctoral Research Fellow**

Department of Civil and Environmental Engineering,  
University of Michigan, Ann Arbor, USA  
Research Interest: Metal uptake systems in aerobic methanotrophs

**Jan 2012-Feb 2013**

#### **University Lecturer**

School of Biotechnology and Chemical Engineering  
Vellore Institute of Technology, India

**July 2004-Nov 2006**

#### **Research Fellow**

National Institute for Interdisciplinary Science and Technology (CSIR),  
Trivandrum, India.  
Research Interests: Anaerobic treatment of coconut husk retting leachates

**July 2002- June 2004**

## RESEARCH INTERESTS

- Treatment of industrial wastewater using a combination of physico-chemical and biological processes.
- Advanced oxidation processes for the removal of recalcitrant compounds from industrial wastewater.
- Biological wastewater treatment
- Remediation of heavy metals.
- Role of methanobactin made by different methanotrophs in controlling the bioavailability of heavy metals in polluted sites.

## AWARDS/DISTINCTIONS

- Awarded IIT Bombay Research Paper Award 2011
- Received Faculty for the Future Fellowship - 2010 and 2011
- Awarded Rajit Bhagwati Memorial Gold Medal, IIT, Bombay- 2002.
- Qualified Graduate Aptitude Test in Engineering (GATE-99) in Life Sciences (Score of 98.67, All India Rank-19).
- Qualified NET (for Lecturership / Assistant Professorship) conducted by ASRB (ICAR)-2001.
- Andhra University topper, M Sc. (Environmental Sciences), 1998.

## AFFILIATIONS

Member, Society for Environmental Toxicology and Chemistry (SETAC)

Associate member, The Institution of Chemical Engineers (ICHEM)

Life-member, Biotech Research Society of India.

## PUBLICATIONS

1. "Genomic and transcriptomic analyses of the facultative methanotroph *Methylocystis* sp. Strain SB2 grown on methane or ethanol", 2014, A. Vorobev, **S. Jagadevan**, S. Jain, K. Anantharaman, G. Dick, S. Vuilleumier and J.D. Semrau. Applied and Environmental Microbiology, 80 (10), pp 3044-3052 (IF= 3.952).
2. "Extraction of pectin from passion fruit peel (*Passiflora edulis* f. *flavicarpa*) by microwave-induced heating", 2014, F. Seixas, D. Fukuda, F Turbiani, P.S. Garcia, C. Petkowicz, **S. Jagadevan**, M. Gimenes. Food Hydrocolloids, 38, pp 186-192 (IF= 4.280).
3. "Treatment of waste metalworking fluid by a hybrid ozone-biological process", 2013, **Sheeja Jagadevan**, Nigel Graham, Ian Thompson, Journal of Hazardous Materials, 244-245, pp 394-402 (IF=4.331).
4. "Detoxification of mercury by methanobactin from *Methylosinus trichosporium* OB3b", 2013, A. Vorobev, **S. Jagadevan**, B. Baral, A. DiSpirito, B. Freemeier, B. Bergman, N. Bandow, and J. Semrau, Applied and Environmental Microbiology, 79 (19), pp 5918- 5926 (IF=3.952).
5. "Extraction of passion fruit seed oil using supercritical carbon dioxide: a study of mass transfer and rheological property by Bayesian inference", 2013, R.C. Oliveira, R.M. Rossi, M.L. Gimenes, **S. Jagadevan**, W.M. Giufrida, S.T.D. Barros. Grasas Y Aceites, 64 (4), pp 400-406 (IF=1.080).
6. "Methanobactin and MmoD work in concert to act as the "copper switch" in methanotrophs", 2013, J. D. Semrau, **S. Jagadevan**, A. DiSpirito, J. Scanlan, A. Khalifa, B.H. Bergman, B.C.

Freemeier, B.S. Baral, N.L. Bandow, A. Vorobev, D. H. Haft, S. Vuilleumier, and J.C. Murrell, Environmental Microbiology, DOI: 10.1111/1462-2920.12150 (IF=6.24).

7. "Priority pollutant degradation by the facultative methanotroph, *Methylocystis* strain SB2", 2013, **Sheeja Jagadevan** and Jeremy Semrau, Applied Microbiology and Biotechnology, 97 (11), pp 5089-5096 (IF=3.811).

8. "A novel hybrid nano zerovalent iron initiated oxidation-biological degradation approach for remediation of recalcitrant waste metalworking fluids", 2012, **Sheeja Jagadevan**, Manickam Jayamurthy, Peter Dobson, Ian Thompson, Water Research, 46(7), pp 2395-2404 (IF=5.323).

9. "Harmonisation of chemical and biological process in development of a hybrid technology for treatment of recalcitrant metalworking fluid", 2011, **Sheeja Jagadevan**, Peter Dobson, Ian Thompson, Bioresource Technology, pp 8783-8789 (IF=5.039).

10. "Successful in situ oil bioremediation programmes-Key parameters", 2004, **Sheeja Jagadevan** and Suparna Mukherji, Indian Journal of Biotechnology, Vol 3, pp 495-501 (IF=0.510).

11. "Biodegradation of diesel oil by an Arabian Sea sediment culture isolated from the vicinity of an oil field", 2004, S. Mukherji, **S. Jagadevan**, G. Mohapatra, A. Vijay, Bioresource Technology, 95, pp 281-286 (IF=5.039).

Cumulative impact factor = **43.557**

## **CONFERENCES AND PRESENTATIONS**

1. **Sheeja Jagadevan**, Invited talk, "Zerovalent Iron mediated remediation- An emerging water treatment technology", 33rd Annual Conference, Indian Council of Chemists, 2014.

2. **Sheeja Jagadevan**, Alexey Vorobev, Jeongdae Im, Jeremy Semrau "Pollutant degradation by the facultative methanotroph *Methylocystis* strain SB2 grown on ethanol" Gordon Research Conference, Molecular basis of microbial one-carbon metabolism, Bates College, Lewiston, Maine, USA, August 5-10, 2012.

3. **Sheeja Jagadevan**, Manickam Jayamurthy, Ashok Bhattacharya, Peter Dobson, Ian Thompson "Nano-Catalysts In Remediation Of Recalcitrant Industrial Wastewater " Second IJAS Conference, Harvard University, Boston, May 29-June 2, 2011.

4. **Sheeja Jagadevan**, Peter Dobson, Ian Thompson "Optimization of Fenton reagents using central composite design for hybrid treatment of recalcitrant metal-working fluid wastewater" SETAC Europe 21<sup>st</sup> Annual Meeting, Milan, Italy, 15-19 May 2011.

5. V.B. Manilal, Y Shibu Vardhanan, **Sheeja Jagadevan**, Ajith Haridas "Coconut husk retting for coir extraction- anaerobic treatment of soaked liquor", National Conference on Biological Treatment of Wastewater and Waste Air, Regional Research Laboratory (CSIR), Trivandrum, 28-29 August 2003, pp 133-143.

6. V.B. Manilal, **Sheeja Jagadevan**, Y Shibu Vardhanan, Ajith Haridas, "Closed coconut husk retting- a novel approach", National Conference on Biological Treatment of Wastewater and Waste Air, Regional Research Laboratory (CSIR), Trivandrum, 28-29 August 2003 pp 127-132.

7. **Sheeja Jagadevan**, Suparna Mukherji, "Microbial decontamination of oil in the environment", National Seminar on Energy and Environment, Anand Engineering College, Agra, 21-22 December

2001.