SUDHA GOEL, Ph.D.

Current mailing address: Civil Engineering Department, IIT Kharagpur, Kharagpur 721 302

Email: sudhagoel@civil.iitkgp.ernet.in **Phone:** 03222-283436

EDUCATION

Ph. D. (Environmental Engineering) The Johns Hopkins University, Baltimore, MD, USA. **Nov 1996**
M. S. E. (Environmental Engineering) The Johns Hopkins University, Baltimore, MD, USA **May 1992**
B. E. (Environmental Engineering) L.D. College of Engineering, Gujarat University, Ahmedabad, India. **June 1990**
Ph.D. Thesis; *Advisor: Prof. E J Bouwer, JHU*
Factors influencing NOM biodegradability and growth and disinfection of *K. pneumoniae* in drinking waters

AWARDS

2015 Best Paper Award *for* 'The water – energy nexus in drinking water treatment plants in West Bengal and Orissa' at GCCT-2015, MNNIT Allahabad.

2014 Wiley Discover Research Online Quiz by Wiley Publishers.

2010 Prof. RC Singh Award for *best paper in Journal of Environmental Engineering, The Institution of Engineers (India),* 'Dolo AL and Goel S (2010) Effect of electrode combinations, pH and current density on Arsenic removal from drinking water using electrocoagulation', 90(2): 21-25.

1996 Best Student Paper award for talk on 'Effect of Nutrient Availability on Bacterial Disinfection' at CSAWWA conference in Ocean City, MD, September 1996.

1990 P. P. Oza Gold Medal in Environmental Engineering, Gujarat University, India.

PROFESSIONAL EXPERIENCE

Indian Institute of Technology Kharagpur (IITKgp), Kharagpur
Associate Professor, EEM, Civil Engineering Department *5 June 2013 - currently*
Assistant Professor, EEM, Civil Engineering Department *10 Dec 2003 - 5 June 2013*

Indian Institute of Technology Kanpur, Kanpur
Visiting Faculty, EEM, Civil Engineering Department *Nov 2002 - Dec 2003*

L. D. College of Engineering (LDCE), Ahmedabad, India
Visiting Faculty, Department of Environmental Engineering *Aug 2002 - Nov 2002*

Consulting (India, US, Canada) *July 1997 - Feb 2002*

Centre for Environmental Planning and Technology (CEPT), Ahmedabad, India
Assistant Professor, School of Planning *Aug 1999 - Sep 2000*

The Johns Hopkins University (JHU), Baltimore, MD, USA
Instructor, Master's Degree Program, Part-time School of Engineering *Three semesters, 1994 - 1997*

The Johns Hopkins University (JHU), Baltimore, MD, USA
Graduate Research Assistant, Dept. of Geography and Environmental Engineering Sep *1990 - Aug 1996*

PUBLICATIONS

Peer-reviewed publications

1. Apshanker KR and S Goel [2016] Removal efficiency and energy consumption for defluoridation of groundwater using Fe-electrodes in electrocoagulation-filtration. *ASCE JEE online.*
2. Mohanta, T and S Goel [2016] Statistical analysis of water quality and antibiotic-resistant bacteria in three aquatic environments over three seasons. *Pollution Research*, 35(1): 107-122, *SJR H Index = 19.*
3. Tibrewal D and Goel S [2015] The water – energy nexus in drinking water treatment plants in West Bengal and Orissa, *Discovery*, 41(188): 79-85.
4. Goel S [2015] Antibiotics in the environment – a review. Book chapter 2 in *Emerging Micro-Pollutants in the Environment,* American Chemical Society Books.
5. Mohanta, T and S Goel [2015] Water quality and antibiotic-resistant bacteria in three aquatic environments over three seasons. Submitted to *Pollution Research*. *SJR H Index = 19*
6. Jena SK and S Goel [2014] E-waste generation in an academic campus: IIT Kharagpur as a case study. *Pollution Research*, 34(2): 315-320. *SJR H Index = 19*
7. Hazra T, Goel S, and Maitra B [2014] Willingness-to-Pay and Preference Heterogeneity for Service Attributes of Solid Waste Management in Kolkata, India. *Global Network of Environmental Science and Technology Journal (Global NEST Journal),* 17(1): 82-92. *JIF = 0.66*
8. Sharma A, Adapureddy S, S Goel [2014] Arsenic removal from aqueous samples in batch electrocoagulation studies. *NEERI JESE,* 56(2): 185-190. *SJR H Index = 11*

9. Mohanta T and Goel S [2014] Prevalence of antibiotic resistant bacteria in three different aquatic environments over three seasons. *Environmental Monitoring and Assessment*, 186: 5089-5100. *JIF = 1.68*
10. Ghosh P, and Goel S [2014] Sequential Extraction Procedure and TCLP for evaluating environmental impacts of wet dumping of pond ash from thermal power plants, *IOSR Journal of Mechanical and Civil Engineering*, 21-26.
11. Ghosh P, and Goel S [2014] Physical and chemical characterization of flyash. *International Journal of Environmental Research and Development,* 4(2): 129-134.
12. Jangala MB, and S Goel [2013] Defluoridation of drinking water in batch and continuous-flow electrocoagulation systems, *Pollution Research*, 32(4): 29-38. *SJR H Index = 18*
13. Taudia D, and Goel S [2013] Rapid environmental impact assessment using remote sensing and geographic information systems – A case study of river Ib Barrage, Odisha. *Journal of Geomatics,* 7(1): 47-55.
14. Kandakatla P, Mahto B and Goel S [2012] Extent and rate of biodegradation of different organic components in municipal solid waste, *Int. J. Environment and Waste Management,* 11(4): 350-365. *SJR H Index = 9*
15. Hazra T, Goel S, and Maitra B [2012] Willingness-to-pay for solid waste management service attributes: Kolkata Municipal Corporation area, India, as a case study. *Int. J. Environment and Waste Management, 12(4): 406-421. SJR H Index = 9*
16. Narayan S, and Goel S [2011] Enhanced coagulation for turbidity and total organic carbon (TOC) removal from River Kansawati water. *NEERI JESE*: 53(1): 39-44. *SJR H Index = 11*
17. Dolo AL and Goel S [2010] Effect of electrode combinations, pH and current density on Arsenic removal from drinking water using electrocoagulation. *Journal of Environmental Engineering, The Institution of Engineers (India),* 90(2): 21-25.
18. N. Sanjeev Kumar and S Goel [2010] Factors influencing arsenic and nitrate removal from drinking water in a continuous flow electrocoagulation (EC) process. *Journal of Hazardous Materials*, 173: 528-533. *JIF = 4.53.*
19. Sharma RN, Mahto B and Goel S [2009] Disinfection by-products in chlorinated drinking water and their adverse health effects: a review, *Journal of Environmental Research and Development*, 3(3): 893-921.
20. Naresh K. Katakam, and Goel S [2009] Characterization of Municipal Solid Waste (MSW) and a proposed management plan for Kharagpur, West Bengal, India. *Resources, Conservation and Recycling, 53(3):166-174. JIF = 2.56*
21. Hazra T and Goel S [2009] Solid Waste Management in Kolkata, India: Practices and challenges. *Waste Management,* 29: 470-478. *JIF = 3.22*
22. Goel S [2008] Municipal Solid Waste Management (MSWM) in India: A Critical Review. *NEERI JESE,* 50(4): 319-328. *SJR H Index = 11*
23. Goel S [2008] Impact of chlorination on the incidence of cancers and miscarriages in two different campus communities in India. *NEERI JESE:* 50(3):175-178. *SJR H Index = 11*
24. Mahto B and Goel S [2008] Bacterial survival and regrowth in drinking water systems. NEERI *JESE,* 50(1): 33-40. *SJR H Index = 11*
25. Sharma RN and Goel S [2007] Chlorinated drinking water and the incidence of cancers and adverse health outcomes in Gangtok, Sikkim, India. NEERI *JESE,* 49(4): 247-254. *SJR H Index = 11*
26. Goel S [2006] Women in Engineering in India. *International Journal of Interdisciplinary Social Sciences,* 1(6):49-56. *SJR H Index = 7*
27. Goel S [2006] Health Risk Assessment for a contaminated site: A case study. *ASCE Practice Periodical for Hazardous, Toxic and Radioactive Waste Management,* 10(4): 216-225.
28. Goel S, and Bouwer EJ [2004] Factors influencing inactivation of *Klebsiella pneumoniae* by chlorine and chloramine. *Water Research;* 38(2): 301-308. *JIF = 5.53*
29. Hozalski RM, Bouwer EJ and Goel S [1999] Removal of Natural Organic Matter (NOM) from Drinking Water Supplies by Ozone-Biofiltration. *Water Science and Technology*, 40(9):157-163. *JIF = 1.11*
30. Goel S, Hozalski RM and Bouwer EJ [1995] Biodegradation of Natural Organic Matter: Effect of NOM source and Ozone dose. *Jour. of American Water Works Association*, 87(1): 90-105. *JIF = 0.52*
31. Hozalski RM, Goel S and Bouwer EJ [1995] TOC Removal in Biologically Active Sand Filters: Effect of NOM source and EBCT. *Jour. of American Water Works Association*, 87(12): 40-54. *JIF = 0.52*
32. Hozalski RM, Goel S, and Bouwer EJ [1992] Use of Biofiltration for the Removal of Natural Organic Matter to Achieve Biologically Stable Drinking Water, *Water Science and Technology*, 26(9-11): 2011-2014. *JIF = 1.11*

PROJECTS

No.	Project Name	Sponsor	Budget, Rs Lakhs	Duration	Title
11	Modelling and fate of environmental pollutants	GIAN-MHRD	USD 12,000	Oct-15	Course coordinator
10	Pilot plant study for solid waste treatment for IIT Kharagpur	MHRD	79.12	1/23/2014 to 1/22/2019	Principal Investigator
9	Ganga River Basin – Environmental Management Plan	MoEF	10.00	7/6/2010 TO 12/31/2013	Co-investigator
8	Developing web-based course content for a course "Water and wastewater engineering' as part of a large National Mission project titled 'Developing suitable pedagogical methods for various classes, intellectual calibers and research in e-learning'	MHRD	8	01-Aug-09	Course developer
7	Electrocoagulation in continuous-flow systems for removal of drinking water contaminants	DST-WTI	35.9	June 2010-June 2013	Principal Investigator
6	Water quality factors influencing microbial growth and disinfection response	DST - Fast Track	9.48	Nov 2005 to Dec 2009	Principal Investigator
5	Water quality and health assessment	IIT Kharagpur-SRIC	3	Apr 2004 to Aug 2006	Principal Investigator
4	Water quality and health assessment for IIT Kanpur	IIT Kanpur	1	Apr 2003 to Dec 2003	Principal Investigator
3	Factors Influencing Growth and Disinfection of *Klebsiella* in the Water Supplies of the Washington Suburban Commission	Washington Suburban Sanitary Commission (WSSC), Washington DC, USA	USD 200,000	Jun 1995-Aug 1996	Ph.D student
2	Effect of Phosphate-based Corrosion Inhibitors and other Nutrients on the growth and disinfection of *Klebsiella* in treated WSSC water.	Washington Suburban Sanitary Commission (WSSC), Washington DC, USA	USD 100,000	Jun 1993- May 1994	Ph.D student
1	Use of Biofiltration for the Removal of Natural Organic Matter to Achieve Biologically Stable Drinking Water	American Water Works Association Research Foundation, US	USD 500,000	Sept 1990 – Aug 1993	Ph.D student

Courses taught

- Advanced Water and Wastewater Treatment *[IITKgp, M.Tech. - Env. Eng. and Ph.D. students]*
- Engineering Drawing and Computer Graphics *[IITKgp, 1st year - B.Tech. (all)]*
- Environmental Engineering *[IITKgp, 3rd year, B.Tech. - Civil Eng.]*
- Environmental Science *[IITKgp, 2nd and 3rd year, B.Tech. (all)]*
- Environmental Microbiology *[IITKgp, M.Tech. - Env. Eng. and Ph.D. students]*
- Hazardous Waste Management *[IITKgp, M.Tech. - Env. Eng. and Ph.D. students]*
- Industrial Water Pollution Control *[IITKgp, 3rd & 4th yr, B.Tech., and Ph.D. students]*
- Water and Wastewater Engineering *[IITKgp, 3rd year - B.Tech. - Civil Eng.]*
- Solid Waste Management *[LDCE, IITKgp, M.Tech.- Env. Eng. and Ph.D. students]*
- Environmental Engineering – 1 *[IITK, B.Tech. - Civil Eng.]*
- Ecological and microbiological principles and processes *[IITK, M.Tech - Env. Eng. and Management]*
- Thesis Writing Workshops for *M.Tech. (Civil Eng.), IITK* students (2 semesters)
- Introduction to Environmental Engineering and Science *[PTE-JHU, MSE students]*
- Biological Processes for Water and Wastewater Treatment *[PTE-JHU, MSE students].*