CURRICULUM VITAE

Dr. Snigdha Khuntia

SEAS Ahmedabad University

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Academic Qualification

PhD (June 2015)	Chemical Engineering, Indian Institute of Technology Guwahati (IITG), Assam.
M.Tech (2011)	Chemical Engineering, Indian Institute of Technology Guwahati (IITG), Assam.
B.Tech (2009)	Chemical Engineering, IGIT Sarang, BPUT, Orissa.

Professional Experience

Organization	School of Engineering and Applied Science, Ahmedabad University
Date of Joining	13-April-2015
Years of experience	5 years
Designation	Assistant Professor
Courses Taught	• UG Core Courses Power plant and Mechanical Operation, Heat Transfer, Fluid mechanics, Instrumentation and Process control, Process design and Economics • Elective (UG and PG) Membrane Science and Technology (UG Elective) • UG Lab courses Chemical Engineering Lab I, Heat Transfer lab • Foundation Program-Water Studio
ISP Course Taught	Window to the World of Water (WWW) Winter Semester 2018
BTP and UGRP	• Two groups (04 students) in BTP 2018 • Four groups (12 students) in BTP 2019 • Two groups (06 students) in BTP 2020 • Two group (09 students) in UGRP 2017-2019
Laboratory Design	Chemical Engineering Lab 1, Heat Transfer Lab, Fluid Mechanics Lab
Other Roles in the Institute	• Major Course Advisor of Chemical Engineering • Member of Ingenium 2018-2020 organizing committee. • Initiated the AIChE Ahmedabad University Student Chapter as the Faculty

coordinator

- Faculty advisor in Circle of care for 14 students

RESEARCH HIGHLIGHTS

Current Interests

- Ozone based water/wastewater treatment
- Heavy metal removal from wastewater by chemical process
- Removal of Gaseous pollutants
- Development of photo-catalytic reactor
- Study of interfacial properties at the gas-liquid and liquid-liquid interface

M.Tech *Thesis Title*: Reduction of hexavalent chromium using *Spirilina* sp. Biomass (Adviser: Dr. A. K. Golder).

Ph.D. *Thesis Title*: Removal of ammonia, arsenic and dyestuff from water by ozone microbubbles (Adviser/s: Prof. Pallab Ghosh and Dr. Subrata K. Majumder).

FUNDED RESEARCH GRANTS

Sanctioned Research Grants

- Khuntia, S., Simultaneous removal of NO_X and SO_2 from the flue gas: A low temperature ozone based process, Proposal submitted to DST-SERB under Early Career Research, Proposal ID ECR/2017/001475 (42 Lakhs INR Approximately).
- Khuntia, S., Peroxone Mineralization of Dyes and Intermediates from Secondary Effluents, 2016, Funded by Ahmedabad University for one year under seed grant (2 Lakhs INR).
- Khuntia, S., Microbubble enhanced absorption and conversion of NOx in water, 2020, Funded by Ahmedabad University for one year under seed grant (2 Lakhs INR).

Research Proposal Submitted

- Use of Antioxidant Nanozymes to Reduce the Free Radical Levels in Cigarette Smoke, **PI. Dr Sanjay Singh, Co-PI Dr. Snigdha Khuntia**, submitted to SERB DST under Core Research Grant on 9th March 2020, 32 Lakhs INR.
- Magnetic Graphene stabilized ozone microbubbles for enhanced treatment of recalcitrant pollutants found in wastewater submitted to DST under WTI on 13 May 2019, **PI. Dr. Snigdha Khuntia, Co-PI Dr. Sameer Dalvi**, IIT Gandhinagar, 72 Lakhs INR (**Presented on 29th April, Waiting for the Result)**
- Development of an integrated NO_X removal process from flue gas, Submitted to DST under ITISE on 25rd April 2020, **PI Dr. Snigdha Khuntia, Co-PI Dr. M.K Sinha, Dr. Nitin Banker, Dr. A. Yadav**, 137 Lakhs INR.

PUBLICATIONS

I. Articles in Refereed Journals

Journals published after joining Ahmedabad University (all are International Journals)

- Saini, B., Vaghani, D., **Khuntia, S.**, Sinha, M. K., Patel, A., Pindoria, R., **2020**. A novel stimuli-responsive and fouling resistant PVDF ultrafiltration membrane prepared by using amphiphilic copolymer of poly(vinylidene fluoride) and Poly(2-N-morpholino)ethyl methacrylate, Journal of Membrane Science, 603, 118047.
- **Khuntia, S.**, Sinha M.K., Saini, B., **2020**. Conversion of NO_2 through Ozonation and Peroxone Process in Gas and Aqueous Phase: Finding the Suitable Process through Experimental Route, Chemical Engineering Journal, 124082.
- **Khuntia, S.**, Sinha, M.K., Singh, P. **2019**. Theoretical and Experimental Investigation of the Mechanism of the Catalytic Ozonation Process by using a Manganese Based Catalyst, Environmental Technology, 1-8.
- Saini, B., **Khuntia, S.**, Sinha, M.K., **2019**. Incorporation of cross-linked poly(AA-co-ACMO) copolymer with pH responsive and hydrophilic properties to polysulfone ultrafiltration membrane for the mitigation of fouling behavior, Journal of Membrane Science, 572, 184–197.
- **Khuntia, S.**, Sinha, M.K., Saini, B. **2018**. An approach to minimize the ozone loss in a series reactor: A case of peroxone process, Journal of Environmental Chemical Engineering 6, 6916–6922.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2016**. Catalytic ozonation of dye in a microbubble system: Hydroxyl radical contribution and effect of salt. J. Environ. Chem. Eng. 4, 2250–2258.

Journals published before joining Ahmedabad University (all are International Journals)

- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2016**. Adsorption of As(V) on zirconium based adsorbents. Desalin. Water Treat. 57, 1766 –1778.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2015**. Quantitative prediction of generation of hydroxyl radicals from ozone microbubbles. Chem. Eng. Res. Des, 98, 231–239.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P. **2014**. Oxidation of As(III) to As(V) using ozone microbubbles. Chemosphere 97, 120–124.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2014**. A pilot plant study of the degradation of Brilliant Green dye using ozone microbubbles: mechanism and kinetics of reaction. Environ. Technol. 36, 336–347.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2013**. Removal of ammonia from water by ozone microbubbles. Ind. Eng. Chem. Res. 52, 318–326.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., **2012**. Microbubble-aided water and wastewater purification: a

review. Rev. Chem. Eng. 28, 191–221.

II. International Conference/Presentations

- Singh, P., **Khuntia, S.**, 2019 Investigation of the kinetics of catalytic ozone reaction using a manganese catalyst, Royal Society of Chemistry India West Chapter Symposium and Research Scholar Meet-2019, FEBURARY 22-23, UKA Tarsadia University, Surat, Gujarat
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., 2017. Oxidation of Arsenic (III) in Ozone Assisted Microbubble System, 7th IWA Aspire conference 2017, Kuala Lumpur, Malaysia, **11–14 September**, **2017**.
- **Khuntia**, **S.,** Sinha, M.K., Majumder S.K., Ghosh, P., Calculation of hydroxyl radical concentration-An indirect method, International Conference on Advances in Chemical Engineering (ICACE-**2015**), NITK Surathkal, Karnataka, India, **20–22 December, 2015.**
- Sinha, M.K., **Khuntia**, **S.,** Purkait, M.K., Preparation of Thermo Responsive PSF Ultrafiltration Membrane, with Cross Linked PVCL-co-PSF Copolymer for Easy Cleaning, International Conference on Advances in Chemical Engineering (ICACE-2015), NITK Surathkal, Karnataka, India, **20–22 December, 2015.**
- **Khuntia, S.** and Golder, A. K., Hexavalent chromium reduction by immobilized green microalgae in continuous treatment, 2nd International Conference on Algal Biorefinery (ICAB-2014): A potential source of food, feed, biochemicals, biofuels and biofertilizers, Technical University of Denmark, Lybgby, Denmark, **August 27–29**, **2014**.
- **Khuntia, S.**, Majumder, S.K., Ghosh, P., Enhanced oxidation of ammonia using ozone microbubbles, International Conference on Frontiers in Chemical Engineering (ICFCE-2013), NIT Rourkela, Odisha, India, 351–356, ISBN 978-93-80813-24-0, **09–11 December, 2013**.
- **Khuntia, S.**, Gagrai, M. K., Das C. and Golder, A. K., Effect of background ions on reduction of Cr (VI) to Cr (III) using saline water algae, Res. J. Chem. Environ., 15, 450–453 (**2011**).

III. Book Chapters

- **Khuntia**, **S.,** Sinha, M.K., Majumder S.K., Ghosh, P., Calculation of Hydroxyl Radical Concentration Using an Indirect Method-Effect of pH and Carbonate Ion, in **Recent Advances in Chemical Engineering.**

IV. Monographs

- **Khuntia, S.**, Majumder, S.K., Ghosh, P., 2015, Removal of Ammonia, Arsenic and Dyes from water by Ozone Microbubbles, ISBN: 978-3-659-77877-3.

OTHER RESEARCH AND TEACHING CONTRIBUTIONS

International Journal Reviewer

- Journal of Environmental Chemical Engineering (Elsevier)
- Environmental Chemistry Letters (Springer)
- Chemosphere (Elsevier)
- New Journal of Chemistry (RSC)
- Process Safety and Environmental Protection (Elsevier)
- Industrial and Engineering Chemistry Research (ACS)

Professional Membership

- Member of American Institute of Chemical Engineers (AIChE) [Member ID 009902450981]

B.Tech Project Supervised

- Removal of dyestuffs from wastewater by using peroxone process, 2019, three Students.
- Design and fabrication of reactor for the removal of SO_2 and NO_2: the study of flow parameters, 2019, two Students.
- Investigation of photocatalytic method for removal of dioxin/difurans, 2019, three students.
- Finding a suitable and cost effective method for detection of ozone concentration in water, 2019, Four Students.
- Kinetics and process control of Peroxone mineralization of organic pollutant in secondary effluents, 2018, two students.
- Development of Novel catalyst to elevate the ozonation based water treatment, 2018, two students.

Other Technical Skills

Equipment Operational Skills	Atomic absorption spectrophotometer (AAS), GC–MS, HPLC, BET, FTIR, UV-Vis Spectrometer, Zeta potentiometer, Interfacial Rheometer.
Software Skills	MATLAB, Polymath, C++

Selected Awards and Recognitions

- Invited as guest speaker at Shroff S.R. Rotary Institute of Chemical Technology, Ankleshwar, Gujarat, 04 May 2016.
- Invited as guest speaker at Marwadi Education Foundation Group of Institutes, Rajkot, Gujarat, 16 September 2016.
- **Khuntia, S.**, Majumder, S. K., and Ghosh, P., Microbubble-aided water and wastewater purification: a review, *Rev. Chem. Eng.*, 28, 191–221 (**2012**), has been included in one of the most downloaded article.
- MHRD Govt. of India scholarship for Ph.D work from July 2011 to June 2015.
- MHRD Govt. of India scholarship for M. Tech course from August 2009 to May 2011.

- Qualified GATE-2009 and secured all India rank of 438 in Chemical engineering.

PERSONAL INFORMATION

Date of Birth	29-05-1987
Gender	Female
Marital status	Married
Nationality	Indian
Religion	Hindu
Permanent Address	D/O: Mr. Hrushikes Khuntia, AT/PO: Sarang, Dist: Dhenkanal, Odisha, India, 759146

REFERENCES

Prof. Pallab Ghosh	Department of Chemical Engineering, IIT Guwahati, Assam, India–781039, E-mail: pallabg@iitg.ernet.in; Phone: +913612582253; Fax: +913612582291
Dr. Subrata K Majumder	Department of Chemical Engineering, IIT Guwahati, Assam, India–781039, E-mail: skmaju@iitg.ernet.in; Phone: + 913612582265; Fax: + 913612582291
Dr. Animes Kumar Golder	Department of Chemical Engineering, IIT Guwahati, Assam, India–781039, E-mail: animes@iitg.ac.in, Phone: +913612582269; Fax: +913612582291