CURRICULUM-VITAE

SHINA GAUTAM

Educational Qualifications

Degree name	Subject	University	Duration
Ph.D.	Chemical Engineering	University of Newcastle, Australia	May 2009 - Oct 2013
M.Tech.	Chemical Engineering (Process Engineering and Design)	Indian Institute of Technology Delhi, India	Jul 2006 - Jun 2008
B.Tech.	Chemical Engineering	Uttar Pradesh Technical University, India	Nov 2000 - Jun 2004

Thesis Title

PhD : Detachment of particles from bubbles in a turbulent flow under guidance of Laureate Prof Graeme J Jameson.

M.Tech. : Extraction of metals from the spent primary reforming catalyst by chelation technology.

Work Experience

Organization / Institute	Duration	Post / Position held
Noida Institute of Engineering and Technology, Greater Noida, India	9/08/04 to 25/07/05	Lecturer
Meerut Institute of Engineering and Technology, Meerut, India	7/08/05 to 24/07/06	Lecturer
University of Newcastle, Callaghan, NSW, Australia	14/08/08 to 30/04/09	Occupational Research Trainee
ITM University, Gwalior India	18/02/13 to 15/06/13	Assistant Professor
Jaypee University of Engineering and Technology, Guna, M.P.	01/07/13 to 20/6/15	Assistant Professor (SG)

Shroff S.R. Rotary Institute of Chemical Technology, Ankleshwar, Gujarat	29/6/15 to 28/2/2023	Associate Professor
Shroff S.R. Rotary Institute of Chemical Technology, UPL University of Sustainable Technology, Ankleshwar, Gujarat	1/3/2023 to 13/10/2023	Professor
Garcourt Butler Technical University Kanpur	16/10/2023 to continue	Associate Professor

Peer Reviewed Publications (SCI/SCIE/Scopus)

(1) **Shina Goel**, K.K. Pant, K.D.P. Nigam, Extraction of nickel from spent catalyst using fresh and recovered EDTA, Journal of Hazardous Materials, 171, 2009, 253-261. **(Impact Factor: 13.6) Q1**

(2) **Shina Goel**, Alok Gautam, Effect of chelating agents on mobilization of metal from waste catalyst, Hydrometallurgy, 101, 2010, 120-125. **(Impact Factor: 4.7) Q1**

(3) **Shina Goel**, Graeme J. Jameson, Detachment of particles from bubbles in stirred vessel, Publication of the Australasian Institute of Mining and Metallurgy, 7, 2010, 1891-1897.

(4) **Shina Goel**, Graeme J. Jameson, Detachment of particles from bubbles in an agitated vessel, Minerals Engineering, 34-36, 2012, 324-330. **(Impact Factor: 4.8) Q1**

(5) Twinkle Singh, Aishwarya Awasthi, Pranjal Tripathi, **Shina Gautam**, Alok Gautam, Grinding analysis of indian coal using response surface methodology, International Journal of Coal Science & Technology, 3(2), 2016, 184–190. **(Impact Factor: 8.3)**

(6) Suraj Singh**, Shina Gautam**, Alok Gautam, An experimental investigation on isothermal pyrolysis of soyabean husk, Journal of Engineering Research, 5(4) 2017,19-30. **(Impact Factor: 1) Q4**

(7) **Shina Gautam**, Alok Gautam, Biopolymer- A beginning towards back to nature, IOP Conf. Series: Materials Science and Engineering, 369 (2018) 012009.

(8) **Shina Gautam, Graeme Jameson,** The detachment of particles from bubbles at various locations in a turbulent flotation cell, Minerals Engineering, 132 (2019) 316-325. **(Impact Factor: 4.8) Q1**

(9) Sushmita Sharma, Alok Gautam, **Shina Gautam**, A Greener Approach to Extract Copper from Fertilizer Industry Spent Catalyst, Arabian Journal of Science and Engineering, (2020) 45:7529–7538. **(Impact Factor: 2.9) Q2**

(10) Sourav Choubey, Prerna Goswami, Shina Gautam, Recovery of Copper from Waste PCB Boards using Electrolysis, Materials Today: Proceedings (2021) 42:2656-2659.

(11) Shina Gautam, Alok Gautam, Mihir Patel, Harikrushna Parmar, Kashyap Patel, A Statistical Analysis and Optimization of Indian Coal Grinding in a Laboratory Ball Mill: Dry & Wet Method, Bulgarian Chemical Communications, 53 (D) 2021, 51-61. **(Impact Factor: 0.349)**

(12) **Shina Gautam** Alok Gautam Bhavik Mahant, A Statistical Optimization of Convective Drying of Corn Kernels in a Fluidized Bed Dryer**,** Journal of Engineering Research, 11 (1A), 2023, 30-40. **(Impact Factor: 1) Q4**

(13) Vaibhav Pandere, Alok Gautam, Shina Gautam, Catalytic Pyrolysis of metal free PCBs with ZSM-5 and $Ca(OH)_2$, Chemical and Process Engineering, 43 (2) 2022, 1–12. **(Impact Factor: 0.679)Q4**

(14) Jignesh Joshi, Alok Gautam, Shina Gautam, Isolation and Purification of ST from stevia leaves, Chemical and Process Engineering, 43 (2) 2022, 1–10. **(Impact Factor: 0.679)Q4**

(15) Sonalben Prajapati, Alok Gautam, Shina Gautam, Co-pyrolysis of PCB and Cotton Stalk: Towards Enhanced Phenol Production and debromination of Pyrolysis Oil, Chemical and Process Engineering, 43 (2) 2022, 1–14. **(Impact Factor: 0.679)Q4**

(16) Vaibhav Pandere, Alok Gautam, Shina Gautam, A Kinetic Study of Thermal Degradation of Non-Metallic Part of Printed Circuit Boards for Combined Effect of Particle Size and Catalyst, Indian Chemical Engineer, 65, 2, 114–124, 2023. **(Impact Factor: 1.5) Q3**

(17) Sonalben Prajapati, Alok Gautam, Shina Gautam, Debromination and Improved Phenol Content in Fuel Oil Generated from Co-Pyrolysis of Non-Metallic PCB and Biomass, Biomass Conversion and Biorefinery, 2022. https://doi.org/10.1007/s13399-022-03139-z **(Impact Factor: 4.05) Q2**

(18) Sonalben Prajapati, Alok Gautam, Shina Gautam, The Effect of Cotton Stalk Concentration on Morphology and Fixing Bromine Content in Char while Co-Pyrolysis with Non-Metal Fractions of PCB, Biomass, Biomass Conversion and Biorefinery, 13, 9397–9409, 2023. **(Impact Factor: 4.05) Q2**

(19) Sonalben Prajapati, Alok Gautam, Shina Gautam, Non Isothermal Reaction Kinetics for Thermal Degradation of Non-Metallic Fractions of Printed Circuit Boards and Cotton Stalk, Biomass and Bioenergy 172, 106746, 1-12, 2023. **(Impact Factor: 6) Q1**

(20) Rekha Kanzariya, Alok Gautam, Sachin Parikh, Shina Gautam, Kinetics of biomass and Polyhydroxyalkanoates synthesis using sugar industry waste as carbon substrate by *Alcaligenes sp. NCIM 5085*, Journal of Environmental Biology, 44, 4/5, 1-11, 2023. **(Impact Factor: 0.781)**

(21) Sonalben Prajapati, Alok Gautam, Shina Gautam, Zhitong Yao, Fiseha Tesfaye, Xiaoshu Lü, Co-Pyrolysis Behavior, Kinetic and Mechanism of Waste-Printed Circuit Board with Biomass, Processes 11, 229, 2023. **(Impact Factor: 3.5) Q2**

(22) Rekha Kanzariya, Alok Gautam, Sachin Parikh, Maulin Shah, Shina Gautam, Formation of Polyhydroxyalkanoates Using Agro and Industrial Waste as a Substrate- A Review, Biotechnology and Genetic Engineering Reviews, doi:10.1080/02648725.2023.2165222, 2023. **(Impact Factor: 4.2) Q1**

(23) Sourav Choubey, Prerna Goswami, Shina Gautam, An Energy Efficient Electrochemical process for Extraction of Copper from Scrap Electrical and Electronic Circuit, Journal of Pharmaceutical Negative Results, 14 (01) 2023, 113-120. **(Impact Factor: 0.654)**

(24) Sivasankar Kakku, Sowkhya Naidu, Mukesh Bhatt, Anand Chakinala, Jyeshtharaj Joshi, Shina Gautam, Gaurav Kataria, Abhishek Sharma, Pyrolytic conversion of agricultural residue using continuous auger reactor for resource recovery, Journal of Analytical and Applied Pyrolysis, 2023. https://doi.org/10.1016/j.jaap.2023.105951. **(Impact Factor: 6) Q1**

(25) Rekha Kanzariya, Alok Gautam, Sachin Parikh, Maulin Shah, Shina Gautam, Structure Analysis and Thermal Stability of PHB Recovered from Sugar Industry Waste, Biotechnology and Genetic Engineering Reviews, 2023, DOI: 10.1080/02648725.2023.2192076. **(Impact Factor: 4.2) Q1**

(26) Shina Gautam, Juily Pawaday, Maulin Shah, Alok Gautam, Current Status and Challenges in Production of Polyhydroxyalkanoates Commercially: A Review, Biotechnology and Genetic Engineering Reviews, accepted, 2023. **(Impact Factor: 4.2) Q1**

(27) Shina Gautam, Juily Pawaday, Alok Gautam, Extraction and characterization of PHA from secondary treatment sludge of common effluent treatment plant, in review 2023.

(28) Sonal Prajapati, Alok Gautam, Shina Gautam, Printed circuit boards: Co-pyrolysis of Printed Circuit Boards (PCBs): A Review on Current Research and Future Prospects, Materials Today: Proceedings, accepted 2023, https://doi.org/10.1016/j.matpr.2023.10.127.

(29) Gunjan Gupta, Alok Gautam, Shina Gautam, Current Status of Solar Power its Waste Generation, Recycling and Challenges" Energy and Fuels, under review, 2023. **(Impact Factor: 4.654)**

(30) Pandere V, Gautam A, Gautam S., Kinetic parameters analysis of catalytic pyrolysis of WPCBs in presence of $Ca(OH)_2$ and ZSM-5 catalyst- Under Review

(31) Pandere V, Gautam A, Gautam S., Catalytic pyrolysis of waste printed circuit boards with ZSM-5 for improved phenolic content and fuel properties of pyrolysis oil- Under review

(32) Pandere V, Gautam A, Gautam S., Debromination, furans removal and phenolic content improvement in pyrolysis oil of waste printed circuit boards by catalytic pyrolysis with $Ca(OH)_2$ and ZSM-5- Under review

(33) Rekha Kanzariya, Alok Gautam, Sachin Parikh, Thermally Stable PHB Synthesis by co-culture of *Alcaligenes sp. NCIM 5085* and *Bacillus subtilis* and Cane Molasses as Carbon Source, under review.

(34) Shina Gautam, Juily Pawaday, Alok Gautam, Effect of parameters and solubility of PHA for extraction from cocktail of process industries in a eco-friendly manner for circular economy, under review.

Peer Reviewed Publications (UGC approved SCI Journals)

(1) Sneh Patel, Rushabh Patel, Alok Gautam**, Shina Gautam,** Influence of Oxidizing Agent on Recovery of Metals Including Gold and Silver from Printed Circuit Boards, International Research Journal of Engineering and Technology, 4 (1), 2017, 830-834. **(Impact Factor: 7.529)**

(2) Nisha Ojha, **Shina Gautam**, Silver nanoparticle loaded pomegranate peels adsorbent for waste water treatment, International Journal of innovative research in Technology, 4(11) 1253-1257, 2018. **(Impact Factor: 7.376)**

(3) Ravi Soni, **Shina Gautam,** Study on Treatment of Leachate from Landfill, International Journal of Engineering Research and Application, 8 (3), 22-26, 2018. **(Impact Factor: 6.46)**

(4) Jayraj Padshala, **Shina Gautam**, Selective Separation of Fe(III) and Cr(III) from acidic waste water, International Journal of innovative research in Technology, 4(12) 153-160, 2018. **(Impact Factor: 7.376)**

(5) Mihir Chauhan, **Shina Gautam**, Extraction of Polyhydroxyalkanoate from Waste Water A Review, International Journal of innovative research in Technology, 4(11) 1907-1913, 2018. **(Impact Factor: 7.376)**

(6) Mihir Chauhan, **Shina Gautam**, Extraction of Polyhydroxyalkanoate from Waste Water, International Journal of innovative research in Technology, 4(11) 878-881, 2018. **(Impact Factor: 7.376)**

(7) Kuruvesh Patel, **Shina Gautam**, Recovery of heavy metals from waste printed circuit board, International Journal of innovative research in Technology, 4(11) 1920-1928, 2018. **(Impact Factor: 7.376)**

Papers Presented in International Conferences

(1) **Shina Goel**, Graeme J. Jameson, An experimental study of the behavior of bubble- particle aggregates in turbulent mixing, 7th European congress of chemical engineering, 19th International congress of chemical and process engineering, Prague, Czech Republic, 28 August -1 September 2010.

(2) **Shina Goel**, Graeme J. Jameson, Coarse particles flotation in turbulent flow, Flotation ‘11, Cape Town, South Africa, 14-17 November 2011.

(3) S. Sharma, A. Gautam, **S. Gautam**, Leaching of copper and kinetic study of spent fertilizer catalyst, International conference on Advanced Chemical Engineering, National Institute of Technology, Surathkal, India 21-22 December 2015.

(4) N. K. Singh, A. Gautam, **S. Gautam**, Extraction of multiple metals from waste printed circuit boards, International conference on Advanced Chemical Engineering, National Institute of Technology, Surathkal, India 21-22 December 2015.

(5) Renu Juneja , **Shina Gautam** , Alok Gautam and Sachin Parikh, Modeling and Simulation of Shrinking Core Particle with Variable Size to Analyze Dissolution, International Conference on "Paradigm shift in Chemical Engineering education, processes and technology", 16-17 September 2017, Ahmedabad, India.

(6) **Shina Gautam**, Alok Gautam, Biopolymer- A beginning towards back to nature, 5th Global Conference on Polymer and Composites, Kitakyushu Japan during 10-13 April 2018.

(7) Sourav Choubey, Prerna Goswami, **Shina Gautam**, Sustainable Approach for Metal Extraction from E Waste: A Comprehensive literature review, Proceedings of the Third International Conference on Intelligent Sustainable Systems [ICISS 2020], Dec 3-5, 2020.

(8) Sivasankar Kakku, Abhishek Sharma, Gaurav Kataria, Jyeshtharaj Joshi, **Shina Gautam,** Conversion of agricultural residue using advanced thermochemical process into value added products, International Conference on Recent Innovations in Cleaner Technologies (RICT-2021), March 8th-9th, 2021.

(9) Vaibhav Pandere, **Shina Gautam**, Dr. Alok Gautam, Pyrolysis of metal free-shredded WPCBs in fixed cum fluidized bed pyrolyser, ICON GSTD-2021.

(10) Endrick Contractor, Harsh Patel, **Shina Gautam**, Alok Gautam, Gasification of High Calorific Content in MSW, ICON GSTD-2021.

(11) Jignesh Joshi, Alok Gautam, **Shina Gautam** "Isolation and Purification of Stevioside from stevia leaves" International Chemical Engineering Conference 2021.

(12) Vaibhav Pandere, Alok Gautam, **Shina Gautam**, CATALYTIC PYROLYSIS OF METAL FREE PCBS WITH ZSM-5 AND Ca(OH)2, International Chemical Engineering Conference 2021.

(13) Sonal Prajapati**,** Alok Gautam, **Shina Gautam**, Co-pyrolysis of PCB and Cotton Stalk: Towards Enhanced Phenol Production and debromination of Pyrolysis Oil" International Chemical Engineering Conference 2021.

(14) Shraddha Pandya, Ankita Modi, Alok Gautam, **Shina Gautam**, Modeling And Optimization Of Parameters Affecting Drying Of Corn Kernels (Zea Mays), International Chemical Engineering Conference 2021.

(15) Vaibhav Pandere, Alok Gautam, **Shina Gautam** A Kinetic Study of Thermal Degradation of Non-Metallic Part of Printed Circuit Boards for Combined Effect of Particle Size and Catalyst, Advances in Chemical and Material Sciences 2022.

(16) Rekha Kanzariya, Alok Gautam, Sachin Parikh, **Shina Gautam**, Polyhydroxyalkanoates Formation with Pretreated Cane Molasses, Advances in Chemical and Material Sciences 2022.

Papers Presented in National Conferences

(1) **S. Gautam**, A. Gautam, Kinetic extraction of nickel from primary reforming spent catalyst by aminopolycarboxylic acids, Environmental Sustainability and Society: The growing paradigm shift (ESS- 2013), 30-31 March 2013, Guna, M.P. India.

(2) T. Singh, A. Awasthi, P. Tripathi, **S. Gautam**, A. Gautam, Response surface methodology for Indian coal grinding, 67th Annual Session of IIChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IIChE and Dr, SSB University Institute of Chemical Engineering & Technology, Chandigarh, 396-397, 27-30 December 2014.

(3) S. Sharma, A. Gautam, **S. Gautam**, The dissolution of copper from spent low temperature shift catalyst using chelating agent, 67th Annual Session of IIChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IIChE and Dr, SSB University Institute of Chemical Engineering & Technology, Chandigarh, 832-833, 27-30 December 2014.

(4) N. K. Singh, **S. Gautam**, A. Gautam, Numerical simulation of the attachment of an infinitely extended particle to a bubble, 67th Annual Session of IIChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IIChE and Dr, SSB University Institute of Chemical Engineering & Technology, Chandigarh, 1367-1368, 27-30 December 2014.

(5) S. Kumar, Shivam Agrawal, **S. Gautam**, A. Gautam, S. Agrawal, Experimental study for the drying kinetics of pumpkin, 67th Annual Session of IIChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IIChE and Dr, SSB University Institute of Chemical Engineering & Technology, Chandigarh, 736-737, 27-30 December 2014.

(6) A. Maheshwari, S. Bajpai, **S. Gautam**, A. Gautam, S. Agrawal, Application of Box-Behnken design for pumpkin drying, 67th Annual Session of IIChE (CHEMCON-2014) and Indo-Japanese Symposium, jointly organized by Chandigarh Regional Center, IIChE and Dr, SSB University Institute of Chemical Engineering & Technology, Chandigarh, 734-735, 27-30 December 2014.

(7) V. Manojkumar Danak, **S. Gautam**, Energy conservation through ATR and MTS catalyst, SCHEMCON 2015, 11th Annual Student Chemical Engineering Congress, Pune, 12-13 September 2015.

(8) S. Sharma, A. Gautam, **S. Gautam**, Removal of copper from spent low temperature shift catalyst by recoverable solvent, 68th Annual Session of IIChE (CHEMCON-2015), Indian Institute of Technology Guwahati, 27-30 December 2015.

(9) N. K. Singh, A. Gautam, **S. Gautam**, Stagewise leaching from waste printed circuit boards, 68th Annual Session of IIChE (CHEMCON-2015), Indian Institute of Technology Guwahati, 27-30 December 2015.

(10) K. Rana, M. Shah, B.S. Solanki, A. Gautam, **S. Gautam**, and S. V. Dharwadkar, A kinetic study of soya bean husk pyrolysis, 68th Annual Session of IIChE (CHEMCON-2015), Indian Institute of Technology Guwahati, 27-30 December 2015.

(11) Sneh Patel, Rushabh Patel, **Shina Gautam**, Alok Gautam, Leaching of gold and silver from printed circuit boards,12th Annual Students Chemical Engineering Congress (SCHEMCON-2016) 10-11 September 2016, Hyderabad.

(12) Bhavik Mahant, Prafull Vasava, Alok Gautam, **Shina Gautam**, Analysis of corn drying in fluidized bed dryer by response surface methodology, 12th Annual Students Chemical Engineering Congress (SCHEMCON-2016) 10-11 September 2016, Hyderabad.

(13) Bansari Joshi, Snehal Prajapati, **Shina Gautam**, An experimental investigation of cooling tower performance, 12th Annual Students Chemical Engineering Congress (SCHEMCON-2016) 10-11 September 2016, Hyderabad.

(14) Mihir patel, Bhaumil Patel, Siddharth Parmar, **Shina Gautam**, Analysis of milling of indian coal in lab scale ball mill, 12th Annual Students Chemical Engineering Congress (SCHEMCON-2016) 10-11 September 2016, Hyderabad.

(15) Bhavik Mahant, Prafull Vasava, Alok Gautam, **Shina Gautam**, Optimization of parameters for corn kernels drying in fluidized bed dryer by response surface methodology, 69th Annual Session of IIChE (CHEMCON-2016), 27-30 December 2016, Chennai Regional Centre Chennai.

(16) Shraddha Pandya, Hiral Parmar, Ankita Modi, Dr. **Shina Gautam**, Selective separation of Cu and Zn from waste water by Reactive Extraction, SCHEMCON 2017, NIT Rourkela, 7-8 October 2017.

(17) Rushil Modi, Deepak Prajapati, Harit Dave, C. Almquist, **Shina Gautam**, Study of adsorption kinetics of Copper on keratin based material, SCHEMCON 2017, NIT Rourkela, 7-8 October 2017.

(18) Vaibhav Pandere, Alok Gautam, **Shina Gautam**, Fuel oil production from waste electrical and electronic equipment, CHEMCON 2017, HIT Haldia, 27-30 December 2017.

(19) Ravi Soni, Alok Gautam, **Shina Gautam**, Leachate treatment with advanced Fenton process, CHEMCON 2017, HIT Haldia, 27-30 December 2017.

(20) Rekha Kanzariya, Shina Gautam, Alok Gautam, Sachin Parikh, Sugar cane molasses: a promising and abundant carbon source for polyhydroxyalkanoates production, SCHEMCON 2019 at SRICT.

(21) Sonal B Prajapati, Shina Gautam, Pyrolysis of e-waste to generate fuel oil: a review, SCHEMCON 2019 at SRICT Ankleshwar.

(22) Vaibhav Pandere, Shina Gautam, Alok Gautam, Development of fluidized bed pyrolyser for pyrolysis of WEEE, SCHEMCON 2019 at SRICT Ankleshwar.

(23) Shraddha Pandya, Shina Gautam, Alok Gautam, Optimization of corn drying using RSM and ANN, SCHEMCON 2019 at SRICT Ankleshwar.

(24) Krunal S Ramanandi, Shina Gautam, A review on coagulation as a treatment method for industrial landfill leachate, SCHEMCON 2019 at SRICT Ankleshwar.

(25) Sourav Choubey, Prerna Goshwami, Shina Gautam, Literature review on recycling of electrical and electronic waste using electrowinning, SCHEMCON 2019 at SRICT Ankleshwar.

(26) Bhavin Kabariya, Alok Gautam, Shina Gautam**,** Recovery and recycle of cod test reagent from wastewater, SCHEMCON 2019 at SRICT Ankleshwar.

(27) Sonal Prajapati**,** Alok Gautam, **Shina Gautam,** Co-pyrolysis of printed circuit boards and cotton stalks: Production of value added oil, gas and char, 4th National conference on Advances in Chemical Engineering and Science, 31 March – 1 April 2023, IISER Bhopal.

Others

Shina Goel, Detachment of particles in a flotation cell, University of Cape Town, Student Research day, 18 November, 2011, Cape Town, South Africa, poster presentation.

Shina Goel, Application of chelating agents on spent catalyst. *SciTopics*. Retrieved March 18, 2010, from http://www.scitopics.com/.

Book Chapter

(1) **Shina Goel**, Alok Gautam, Chapter 5, Extraction of metals from spent catalyst using fresh and recovered chelating agents. Applications of Chelating Agents for Land Decontamination Technologies, Virginia: Environmental and Water Resources Institute, American Society of Civil Engineers, 2012, 109-135. ISBN: 978-0-7844-1218-3

(2) **Shina Goel**, Graeme J. Jameson, New approaches to particle attachment and Detachment in flotation, Society for mining, metallurgy and Exploration Inc. (SME Meeting), "Separation Technologies on Mineral Coal and Earth Resources", 2012, 437-446, edited by Courtney A. Young, and Gerald H. Luttrell. ISBN: 978-0-87335-339-7

M.Tech. Thesis Supervision

(1) Sushmita Sharma, Extraction of copper from low temperature shift catalyst, Jaypee University of Engineering and Technology, Guna, 2015.

(2) Nitin Singh, Multiple Stage Extraction of metals from printed circuit boards by single and multistage leaching, Jaypee University of Engineering and Technology, Guna, 2015.

(3) Nisha Ojha, Application of silver nanoparticles loaded Prunica Granatum Peels adsorbent as an antibacterial in wastewater, Shroff S R Rotary Institute of Chemical Technology, 2018.

(4) Vaibhav Pandere, Managing E waste through Pyrolysis, Shroff S R Rotary Institute of Chemical Technology, 2018.

(5) Jayaraj Padshala, Selective separation of Cr and Fe from acidic wastewater Shroff S R Rotary Institute of Chemical Technology, 2018.

(6) Renu Juneja, Theoretical and experimental analysis of shrinking particle, L D College of Engineering Ahmedabad, Gujarat, 2018.

(7) Hannan Vora, Studies on Pyrolysis of e waste, Shroff S R Rotary Institute of Chemical Technology, 2019.

(8) Noopur Pancholi, Improvement and optimization of e waste Pyrolysis process, L D College of Engineering Ahmedabad, Gujarat, 2019.

(9) Bhavin Kbariya, Recovery and recycle of COD test reagent from wastewater, Shroff S R Rotary Institute of Chemical Technology, 2020.

(10) Prathyusha Nair, Extraction of PHA from molasses, Shroff S R Rotary Institute of Chemical Technology, 2021.

(11) Darpan Patel, Extraction of phenol and phenolic compounds from co pyrolytic oil from cotton stalk and e waste, Shroff S R Rotary Institute of Chemical Technology, 2023.

PhD Thesis Supervision

(1) Sonal Prajapati, Co-pyrolysis of e waste and biomass for fuel oil, Completed on 5/4/2023, Gujarat Technological University.

(2) Sourav Choubey, Eletrochemical extraction of metals recovery from e waste, Ongoing from ICT (formerly UICT) Mumbai, submitted thesis.

(3) Rekha Kanzariya, Nanocomposite polyhydroxylalkanoate film synthesis for packaging application, Gujarat Technological University, registered 2017, Thesis Submitted.

(4) Gunjan Gupta, End-of-life solar PV modules: formulation of technically, economically and environmentally feasible recycling framework, Ongoing from GTU registered 2020.

(5) Priyesh Nath, Study and formulation of alternative fuel by co-pyrolysis of biomass and polymer waste, Ongoing from GTU registered 2020.

(6) Sivasankar Kakku, Valorization of solid waste from MSW through fractionation after pyrolysis, Ongoing from Manipal University Jaipur registered 2021.

Consultancy and Sponsored Research Projects

(1) Precious Metals Recovery from Electronic Waste sponsored by Bharuch Enviro and Infrastructure Limited, Bharuch, Gujarat, 42 Lacs from July 2015 to March 2022 and can be extended for next year based upon the progress report.

(2) Recovery of Silver, mercury from COD test wastewater sponsored by Enviro Tech Ltd. Ankleshwar. 36 Lacs from July 2016 to March 2022. Completed.

(3) Biopolymer from effluent treatment plant sludge and wastewater sponsored by Enviro Tech Ltd. Ankleshwar. 12 Lacs from July 2016 to March 2018. Completed.

(4) Managing E waste through pyrolysis sponsored by Institution of Engineers India of 0.75 Lac from May 2017 to March 2018. Completed.

(5) Bio-medical waste inventory in Bharuch district sponsored by Gujarat Environment and Management Institute of 4.57 Lacs from 9 Mar 2018-30 Sep 2018. Completed.

(6) Thermal catalytic degradation of e-waste for fuel-oil production sponsored by Gujarat Environment and Management Institute of 9.9 Lacs from 23 February 2018 -2020. Completed

(7) Conversion of urban solid waste at distributed level into value added products, sponsored by Department of Science and Technology, New Delhi from 2020- 2023, sanctioned amount 82.94 Lakhs. Completed in June 2023.

(8) Utilization of Sludge from Common Effluent Treatment Plant for Extraction of Polyhydroxyalkanoates (PHA) sponsored by Department of Science and Technology, New Delhi from 2021- 2023, sanctioned amount 56.3 Lakhs. Completed in August 2023.

(9) Converting organic waste into valuable metals and oil by pyrolysis, Lanxess Jhagadia Gujarat, 21.5 Lakhs for 6 months April 2023-Dec 2023. Ongoing

Process Safety Consequence analysis Consultancy Project

(1) Consequence Analysis using FLACS software & Risk Analysis Studies for CNCl Pilot plant set up for UPL unit 12 Dahej, Gujarat, 3.2 Lakh, April 2022. Completed

(2) Consequence Analysis using FLACS software & Risk Analysis Studies for Storage chemicals such as toluene, methyl chloride, hydrogen, carbon di sulphide, tetrahydrofuran, phosphorous tetra chloride, chlorine and ammonia for UPL unit 5 Jhagadia Gujarat, 32 Lakhs Nov- March 2023. Completed.

(3) 3D CFD Consequence & Risk Analysis, H_2S and SO_2 for UPL unit 5 Jhagadia Gujarat, 3.25 Lakhs, Dec 2022. Completed.

(4) 3D CFD Consequence & Risk Analysis, Gas Dispersion Modeling for HCl gas, SO_2 and Cyclohexane oxide for UPL unit 12 Dahej, Gujarat, 5.25 Lakhs, Feb 2023. Completed.

(5) 3D CFD Consequence & Risk Analysis, Gas Dispersion Modeling for ethyl chloride gas for UPL unit 5 Jhagadia Gujarat, 2.75 Lakhs, March 2023. Completed.

(6) 3D CFD Consequence & Risk Analysis, Gas Dispersion Modeling for CO from stack for UPL unit 12 Dahej, Gujarat, 5.25 Lakhs, Jan 2023. Completed.

Other Consultancy Work

(1) Training for industry executives "Chemical Engineering for non-Chemical Engineers" for UPL, Gujarat 2016.

(2) Training for industry executives "Chemical Engineering for non-Chemical Engineers" for Zydus Lifescience, Ankleswar Gujarat 2017.

(3) Training for industry executives "Chemical Engineering for non-Chemical Engineers" for Coromandel, Ankleswar Gujarat 2018.

(4) Training for industry executives "Drying" for Heubach, Ankleswar Gujarat 2017.

(5) Training for industry executives "Chemical Engineering for non-Chemical Engineers" for Zydus Lifescience, Ankleswar Gujarat 2022-2023.

Pilot Scale Set up and Studies

(1) A Pilot scale set up is designed, fabricated for 50 *l*/day treatment of wastewater for recovery of silver and mercury, project is sponsored by Enviro Tech Ltd. Silver ad mercury recovered from wastewater is converted again in chemical such as silver sulphate and mercury sulphate to be utilize for COD test.

(2) A Pilot scale plant set up is designed, fabricated for processing 5 kg/ day of secondary treatment sludge to extract polyhydroxyalkanoates which is a biopolymer. The project is jointly sponsored by DST and Enviro Tech Ltd, Ankleshwar Gujarat.

Student start up India grant for students (SSIP)

Supervisor for UG students titled "Application of pyrolysis char in wastewater treatment", granted for 65,000 rupees in 2020.

Awards and Scholarships

(1) UNIPRS, University of Newcastle International Postgraduate research Scholarship (2009-2012).

(2) UNRSC50:50 CENTRAL, University of Newcastle Research Scholarship centrally funded (2009-2012).

(3) UNIPRSE, University of Newcastle International Postgraduate research Scholarship external (2009-2012).

(4) Best oral paper award for Energy conservation through ATR and MTS catalyst, SCHEMCON 2015, 11th Annual Student Chemical Engineering Congress, Pune, 12-13 September 2015, India.

(5) Best oral paper award in CHEMCON 2016, India for paper "Optimization of parameters for corn kernels drying in fluidized bed dryer by response surface methodology" in RSM category.

(6) Best oral paper award in SCHEMCON 2017, India for paper "Selective separation of Cu and Zn from waste water by Reactive Extraction".

(7) IIChE best student chapter award in 2017, 2018, 2019, 2020, 2022 to Shroff S R Rotary Institute of Chemical Technology, I am coordinator of the chapter.

(8) Best oral paper award in SCHEMCON 2019, India for paper "Optimization of corn drying using RSM and ANN".

(9) Received Guru-Tech award from Hon. Education Minister of Gujarat on 5 Sep 2019 for patent granted on Silver and mercury removal from wastewater.

(10) Awarded the certification of FLACS Foundations for two years by GEXCON Norway, qualified on 17 Sep 2020.

(11) Second prize awarded for Best Chemical Engineer conducted by IIChE Ankleshwar Regional Centre 2021.

Patents

(1) Process for recovery of silver chloride and mercury sulphide nanoparticles from chemical oxygen demand test wastewater. Granted Indian Patent in 2019 and International Patent WO 2019/082200 A1.

(2) "Process for conversion of silver chloride from chemical oxygen demand test wastewater into silver sulphate", Indian Patent Application No. 202221028542 filed on 18th May, 2022, granted on 12th October, 2023.

(3) "A process for extraction of polyhydroxyalkanoates (PHA) from secondary treatment wastewater sludge". Published in the Official Journal of the Patent Office on 1st July, 2022, Indian Patent Application No. 202221026715 filed on 9th May, 2022, First examination report is filed in Sep 2022.

(4) "Process for recovery of mercury sulphate from wastewater" Patent application number 202321072946 filed on 26th October 2023.

Invited Lectures/speech

(1) 5th Global Conference on Polymer and Composites, The title of presentation is "Biopolymer-A beginning towards back to nature", held in Kitakyushu Japan during 10-13 April 2018.

(2) Precious metals recovery from laboratory wastewater, presented at the event Wealth from Waste organized by ICC at Ankleshwar on 27 April 2018.

Conferences/workshop organized

- Co-Coordinator of one day refresher course on Conventional and Advanced Extraction Processes organized on 12th August 2017.
- Co-Coordinator of one day refresher course on Drying in Process Industries organized on 24th November 2017.
- Co-Coordinator of the workshop organized on 27-28 September 2018 on "Process Modelling and simulation using MATLAB and DWSIM" sponsored by GUJCOST for 35,000 rupees.
- Successfully organized national conference SCHEMCON 2019, 17-18 October 2019 as an organizing secretary.
- One day workshop on Process Safety was organized on 10th October 2022 as coordinator.

Professional Bodies Membership

- IIChE Life member LM- 60226
- IEI Life Member - M-157766-7

Industrial Training

(1) Organization : Oil and Natural Gas Co- operation, Mumbai region, Uran plant Raigad, Maharashtra, India
Duration : 6 Weeks 2003.
Project : Hydrogen sulfide removal from natural gas

(2) Organization : Enviro Tech Ltd, Ankleshwar
Duration : 1 Weeks 2018.
Project : Recovery of silver and mercury from laboratory wastewater

(3) Organization : UPL 5 Jhagadia Gujarat
Duration : 2 Weeks 2022.
Project : Purity enhancement of magnesium chloride from waste stream.

Software Skills

Softwares Known **:** C, C++, MATLAB, FLACS, RISK and EFFECT (Process Safety software)

Area of Research

- Valorization of solid and liquid waste.
- Biopolymer extraction from industrial waste.
- Valuable heavy metals recovery and synthesize new materials for further applications.
- Pyrolysis of e-waste and biomasses and recovery of valuable chemicals and fuels.

Short Term Training Programme attended

(1) 'Numerical methods for scientists & engineers using MATLAB & C', Indian Institute of Technology, Delhi, India, one week, July 2005.

(2) 'Application of fluid mechanics in chemical and allied industries', National Institute of Technical Teachers Training and Research, Chandigarh, India, one week, December 2005.

(3) 'Advanced Coal and Mineral Processing', School of Engineering, University of Newcastle, Australia, one week, August 2008.

(4) 'Particle Processing II', School of Engineering, University of Newcastle, Australia, one week, March 2009.

(5) One week faculty industrial training in Enviro Tech Ltd Ankleshwar India, 29 May-3 June 2017.

(6) One week FDP on 'Recent Trends in Energy and Environment' at NIT Surat from 6-11 January 2020.

(7) One week FDP on 'Waste to Wealth' at ATAL portal organised by BMS College, Karnataka, from 23-28 Nov 2020.

(8) Two days workshop on NIRF awareness organised by IAE Hyderabad, 18-19 January 2021.

(9) One week FDP on ‘Waste to Wealth’ at ATAL portal organised by GEC Bharuch, from 20-24 Dec 2021.

(10) 12 weeks FDP cum course on ‘Post Harvest Operations for Fruits, vegetables, spices and plantation crops’ by NPTEL 2022, completed as topper among 1800 candidates.

(11) 2 weeks industrial training from 5-17 December 2022 in UPL 5 Jhagadia, Gujarat.

Occupational Training Project

Worked on the project of formation of micro bubble in flotation cell, from August 2008 to April 2009 at University of Newcastle, Australia.

Administrative Experience

(1) Faculty Advisor - Chemical Engineering Society, Jaypee University of Engineering and Technology, Guna.

(2) Research and Development coordinator, Shroff S R Rotary Institute of Chemical Technology, Ankleshwar Gujarat 2016 to 2020.

(3) Coordinator of DSIR application procedure two times and filing. Institute got recognition for five years.

(4) Co-coordinator of one day refresher course on Conventional and Advanced Extraction Processes organized on 12th August 2017.

(5) Co-coordinator of one day refresher course on Drying in Process Industries organized on 24th November 2017.

(6) Facilitate collaboration with University of Newcastle Australia and signed MOU in 2017 for 5 years.

(7) Facilitate collaboration with Gujarat Environment Management Institute and signed MOU in 2017 for 5 years.

(8) Indian Institute of Chemical Engineers student chapter faculty coordinator at Shroff S R Rotary Institute of Chemical Technology, Ankleshwar India since 2017 to now.

(9) Member of Board of Studies from 2018-2021 in Gujarat Technological University for Chemical Engineering and Chemical Technology.

(10) Coordinator for industry training programs and conducted six courses for UPL, Zydus, Coromandel, Heubach, 2017-2020 .

(11) Apart from these arranged several industrial visits and expert talks from industry personnels. Arranged several placements for UG and PG in core Chemical industries.

References

1. Dr. Graeme J. Jameson
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2. Dr Hari Mahalingham
   Associate Professor
   NIT Surathkal,
   Karnataka.
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Declaration

I hereby declare that all the information provided is correct and that I solely bear all the responsibilities and consequences resulting from the information provided in the document.

Date: 2/11/2023
Place: Ankleshwar, Gujarat. **SHINA GAUTAM**