

Dr. SANIGDHA ACHARYA

Professor

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EDUCATIONAL QUALIFICATIONS

❖ **Ph.D. (2020)**, (Chemical Engineering), University School of Chemical Technology, Guru Gobind Singh Indraprastha University (GGSIPU), Dwarka, Delhi.

Thesis title: Electrocoagulation Treatment of Groundwater

❖ **M.E. with distinction (2001)**, (Chemical Engineering), Department of Chemical Engineering & Technology, Panjab University, Chandigarh.

M.E. dissertation Topic: Determination of viscosity, Density, Ultrasonic Velocity, and excess properties of 3-Pentanone – Ethyl-benzene and 3-Pentanone – o-Xylene Systems at 293.15, 303.15, 313.15K

❖ **B. Tech, Silver Medal (1999)**, (Chemical & Bio Engineering), Department of Chemical & Bio Engineering, Regional Engineering College (Now NIT), Jalandhar.

Scholarship for merit in all the four years of college

Class X & XII with first division from A.P.J. School, Jalandhar.

EXPERIENCE

- **Guru Gobind Singh Indraprastha University, Dwarka, Delhi**

Associate Professor, University School of Chemical Technology (September, 2017- till date)

Assistant Professor, (earlier Lecturer) University School of Chemical Technology (August, 2003- September, 2017)

- **IITT College of Engineering, Nawanshahr, Punjab**

Lecturer in Chemical Engineering department (February, 2002 – July, 2003)

- **Shaheed Bhagat Singh College of Engineering & Technology, Ferozepur, Punjab**

Lecturer in Chemical Engineering department (August, 1999 - May, 2000)

Ph.D. SUPERVISION

1. **Mr. Sushant Sharma**, (Enrolment No: 01116190021), Study on dye wastewater treatment using Electrocoagulation process, (co-supervisor), ongoing
2. **Mr. Shakti Singh Chauhan, 2023**, (Enrolment No: 01416190023) (co-supervisor), ongoing
3. Appointed as **Member** of the **Doctoral Advisory Committee** in respect of **Mr. Amit Dhaundiyal** under the guidance of Aanchal Mittal in the School of Bio Sciences and Technology, Vellore Institute of Technology, Vellore, Tamil Nadu, India.

B. TECH & M. TECH SUPERVISION

Several B.Tech & M. Tech projects/theses have been guided to date.

M. Tech theses supervised are:

1. Metal extraction from e-waste and its treatment using electrocoagulation (Mansi Sati, 2024-25)
2. Electrocoagulation treatment of Dye solution (Amit Singh, 2021-22)
3. Removal of Phenolic Compound using Electrocoagulation (Anish Kumar, 2021-22)
4. Application of Electrocoagulation in heavy metal removal (Harshit Nanda, 2020-21)
5. Design of a continuous electrocoagulation reactor (Mohit Gupta, 2017-18)
6. Nitrates removal by electrocoagulation from groundwater (Darshan Shree, 2015-16)
7. Design and development of PVA membrane for pervaporation (Harpreet Kaur, 2008-09)
8. Arsenic removal from water using plant biomass (Sanjeev Kumar, 2005-06)
9. Hydrodynamics of trickle bed (Arun Gopinath, 2004-05)
10. Expansion behavior of fluidised beds using non-Newtonian and Newtonian fluids with single-particle and binary particles bed (Nitin Kumar Singh, 2003-04)

SPONSORED PROJECTS UNDER FRGS

S.No.	Title of the Project	Duration	Amount (lakh)	Funding organization
1	Comparative study of chemical coagulation and electrocoagulation for groundwater	2016-17	2.0	GGSIPIU, Delhi
2	Electrocoagulation process for removal of nitrates from aqueous solutions	2017-18	1.8	GGSIPIU, Delhi
3	Effect of co-existing ions on denitrification by electrocoagulation of groundwater	2018-19	2.0	GGSIPIU, Delhi

4	Statistical optimisation of electrocoagulation process for denitrification of groundwater	2019-20	1.75	GGSIPIU, Delhi
5	Combined electrocoagulation and membrane system for treatment of greywater	2020- 21	1.70	GGSIPIU, Delhi
6	Efficiency of zeolite as an adsorbent for removal of phenolic compounds from aqueous solution	2021-22	1.19	GGSIPIU, Delhi
7.	Adsorptive removal of phenolic compounds from aqueous solution	2022-23	2.0	GGSIPIU, Delhi
8	Remediation of Dye wastewater using Electrocoagulation technique	2023-24	1.73	GGSIPIU, Delhi
9	Application of electro-coagulated sludge as an adsorbent for dye removal	2024-ongoing	2.0	GGSIPIU, Delhi

PUBLICATIONS

Book Chapters

1. Nirbhay kumar, Vinita Khandegar, **Sanigdha Acharya**, 2021, “Optimization of Congo Red Dye by Iron Oxide@AC” in Artificial Intelligence and Sustainable Computing, Springer Nature, Singapore Pvt Ltd.
2. **Sanigdha Acharya**, Vinita Khandegar, Surendra Kumar Sharma, 2022, “Electrolyte role in Electrocoagulation process for Nitrates Removal from Groundwater” in Advances in Chemical, Bio And Environmental Engineering” In Book Series “Environmental Science And Engineering”, Springer

Journal Publications

1. Sushant Sharma, **Sanigdha Acharya**, S.K. Sharma, Vinita Khandegar, **2024** Feasibility and sludge analysis of electrocoagulation process for Direct Violet-35 dye remediation, Waste Management Bulletin, (Elsevier) 2,2,171-180
2. **Sanigdha Acharya**, Sonal Ranjan, Priyanshu k, Pratibha Chanana, Vinita Khandegar; Arinjay Kumar; Perminder Jit Kaur, **2024**, Biosynthesis and biosorption potential of AgNP's from A. indica extract for removal of Cr (VI), Journal of Hazardous, Toxic, and Radioactive Waste (American Society of Civil Engineers) 28, (4), 1-9

3. Anil Sharma, Pragya Pandit, Asha Attri, **Sanigdha Acharya**, 2024, Measurement of radon exhalation rate and radiation doses in fly ash samples, Radiation Protection Dosimetry(Oxford University Press) (IF: 1.0) (**Accepted** 4th April, 2024)
4. Garima Minocha, Vinita Khandegar, **Sanigdha Acharya**, 2024, Selection of Feasible Leaching Method for Recovery of Heavy Metals from E-waste using Analytic Hierarchy Approach, Journal of clinical toxicology (Longdom)14(1), 1-8(**IF: 5.72**)
5. Uplabdh Tyagi, Jatin Kuhar, Vinita Khandegar, **Sanigdha Acharya**, Neeru Anand, Arinjay Jain, 2024, Elimination of ciprofloxacin from aqueous solution by ultrasonic-assisted adsorption using chitosan crosslinked graphene oxide nanoparticles, Journal of Water Chemistry and Technology, (Springer) 46, (1) , 28–41(**IF: 0.6**).
6. **Sanigdha Acharya**, Vinita Khandegar, Surendra Kumar Sharma, 2024, Groundwater quality Assessment of newly developed dwarka region, New delhi, India, Journal of Hazardous, Toxic, and Radioactive Waste (American Society of Civil Engineers) 28(2)1-10 (**IF/IS: 2.442**)
7. Shweta Gupta, Amit Prajapati, Arinjay Kumar, **Sanigdha Acharya**, 2023, Synthesis of Silica aerogel and its application for removal of Crystal violet dye by adsorption, Watershed Ecology and the Environment (Elsevier), 5, 2023, Pages 241-254.
8. Siddharth Negi, Anish Kumar, **Sanigdha Acharya**, Vinita Khandegar, S.K. Sharma, 2023, RSM based electrochemical treatment for the removal of Endocrine Disrupting Chemicals (Bisphenol A), Journal of Hazardous, Toxic, and Radioactive Waste (American Society of Civil Engineers) (**IF/IS: 2.442**) DOI :10.1061/JHTRBP/HZENG-1271
9. **Sanigdha Acharya**, Vinita Khandegar, Surendra Kumar Sharma, Arinjay Kumar Jain, 2022, Nitrate removal from synthetic and real groundwater by electrocoagulation: Effect of operating parameters and electrolytes. International Journal of Environmental Analytical Chemistry, (Taylor And Francis) 1-19, (**IF/IS: 2.826**)
10. **Sanigdha Acharya**, Surendra Kumar Sharma, Vinita Khandegar, 2021, Nitrate Removal from Groundwater by Electrocoagulation:Process Optimization through Response Surface Method. Journal of Hazardous, Toxic, and Radioactive Waste, (American Society of Civil Engineers) , 25(3) 1-14 (**IF/IS: 2.442**).
11. **Sanigdha Acharya**, Surendra Kumar Sharma, Garima Chauhan, Darshan Shree, 2018. Statistical Optimisation of Electrocoagulation Process for Removal of Nitrates Using Response Surface Methodology. Indian Chemical Engineer, (Taylor And Francis) 60, 269–284. (**IF/IS: 1.867**)

12. **Sanigdha Acharya**, Vinita Khandegar, Surendra Kumar Sharma, **2018**. Assessment of groundwater quality by water quality indices for irrigation and drinking in South West Delhi, India. Data In Brief, Elsevier. 18, 2019–2028. **(IF/IS: 1.379)**
13. **Sanigdha Acharya**, Vinita Khandegar, Surendra Kumar Sharma, **2018**. Assessment and hydro-geochemical characterisation for evaluation of corrosion and scaling potential of groundwater in South West Delhi, India. Data In Brief, Elsevier. 18, 928–938. **(IF/IS: 1.379)**
14. Rachna Sinha, Garima Chauhan, Azad Singh, Arinjay Kumar Jain, **Sanigdha Acharya**, **2018**. A novel eco-friendly hybrid approach for recovery and reuse of copper from electronic waste. Journal of Environmental Chemical Engineering, Elsevier. 6, 1053–1061. **(IF: 7.968)**
15. **Sanigdha Acharya**, Surendra Kumar Sharma, Vinita Khandegar, **2018**. Hydrogeochemical Assessment of Groundwater Quality in Vicinity of Dwarka, Delhi. Pollution Research, EM International. 37, 209–220. **(IF: 0.32)**
16. Vinita Khandegar, **Sanigdha Acharya**, Arinjay Kumar Jain, **2018**. Data on treatment of sewage wastewater by electrocoagulation using punched aluminum electrode and characterisation of generated sludge. Data In Brief, Elsevier 18, 1229–1238. **(IF: 1.379)**
17. Ashish Kumar, Vinita Khandegar, **Sanigdha Acharya**, **2017**. Study on Removal of Phenol Using Adsorption Process. Asian Journal of Science and Technology, 8, 6165–6172.
18. **Sanigdha Acharya**, Surendra Kumar Sharma, **2016**. Groundwater assessment and its electrochemical treatment. International Journal of Advanced Technology in Engineering and Science, A R Research Publication. 4, 21–30.
19. R.C. Katyal, S, Singh, V.K. Rattan, Pawan Kanda, **Sanigdha Acharya**, 2003. Viscosities, densities, and ultrasonic velocities of 3-pentanone + ethylbenzene and 3-pentanone + o-xylene at (293.15, 303.15, and 313.15) K. Journal of Chemical & Engineering Data, (American chemical society) 48, 1262–1265. **(IF: 3.119)**

PAPER PRESENTATION/ CONFERENCES ATTENDED

1. Sushant Sharma, **Sanigdha Acharya**, SK Sharma, Vinita Khandegar, Comparison of electrode materials for treatment of Direct violet-35 dye solution using electrocoagulation process in Recent Advances in Waste Minimization and Utilization 2024, April 23-24, LPU, Jalandhar, India.

2. Sushant Sharma, **Sanigdha Acharya**, SK Sharma, Vinita Khandegar, “Removal of crystal violet dye using electrocoagulation process” in Chandigarh Science Congress (CHASCON) October 12-14, 2023, Panjab University, Chandigarh, India
3. Anil Sharma, Pragya Pandit, Asha Attri, **Sanigdha Acharya** “Measurement of Radon exhalation rate, natural radioactivity and radiation doses in Fly Ash samples” in 15th National Symposium on Radiation and Photochemistry, January 5-7, 2023, Birla Institute of Technology & Science, Pilani K K Birla Goa Campus, Goa, India.
4. Sushant Sharma, **Sanigdha Acharya**, SK Sharma, Vinita Khandegar, “A review on electrocoagulation process for removal of pollutant”(Poster) in International conference on sustainability in chemical processes through digitalization of artificial intelligence and green chemistry, 75th Annual session of Indian institute of chemical engineers (CHEMCON–2022), December 27-30, 2022, Harcourt Butler technical university, Kanpur, Uttar Pradesh, India.
5. Manyata Gupta, Perminder Jit Kaur, **Sanigdha Acharya**, Arinjay Jain “Removal of Contaminants from Air and Water using Bamboo-based Green Adsorbents” in National Conference on Sustainable Environment: Challenges and Opportunities (SECO-2021), September 9-10, **2021**, Centre for Continuing Education, National Institute of Technology, Jalandhar, Punjab, India.
6. **Sanigdha Acharya** presented paper “Electrolyte role in Electrocoagulation process for Nitrates Removal from Groundwater” in 2nd International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021) (online), August 20-22, **2021**, National Institute of Technology, Jalandhar, Punjab, India.
7. Garima Minocha, Vinita Khandegar, **Sanigdha Acharya**, presented paper (online) “Selection of feasible leaching method for recovery of heavy metals from E-waste using Analytic Hierarchy Approach” in the 2nd International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021), August 20-22, **2021**, National Institute of Technology, Jalandhar, Punjab, India.
8. Harshit Nanda, **Sanigdha Acharya**, Vinita Khandegar, presented paper “Electrocoagulation: A century old technique with future possibilities in agricultural sector” Virtual National Conference on The Innovative Development in Chemical Technology themed, Role of Chemical Technology: Aatmanirbhar Bharat Mission, March 19- 20, **2021**, University School of Chemical Technology, GGSIP University, Dwarka, Delhi, India.
9. **Sanigdha Acharya** Presented paper (online) “Parametric study on denitrification using electrocoagulation process” in National Conference on Sustainable Research in Energy and

Environment (SREE-2021), January 15-16, **2021**, National institute of technology, Jalandhar, Punjab, India.

10. **Sanigdha Acharya** Presented paper (online) “Electrocoagulation treatment of groundwater and its comparison with Chemical Coagulation” in International Conference on water: From pollution to purification (ICW 2020), December 12-14, **2020**, Mahatma Gandhi University, Kottayam, Kerala, India.

11. **Sanigdha Acharya** Presented paper (through skype) “Electrochemical treatment for removal of antibiotics from pharmaceutical effluent” in International conference on sustainable and innovative solutions for current challenges in engineering & technology (ICSISCET-2019), November 02-03, **2019**, Madhav Institute of Technology & Science, Gwalior, Madhya Pradesh, India.

12. **Sanigdha Acharya** Presented paper “Nitrates removal from groundwater using electrocoagulation” at National conference on clean & green energy: The chemical & environmental aspects (NCGE–2019), September 26–27, **2019**, Bhaskaracharya College of Applied Sciences, Delhi, India.

13. **Sanigdha Acharya** Presented paper “Nitrates removal from groundwater by electrocoagulation process” at National conference Advances in chemical and environmental engineering, March 23-24, **2019**, National institute of technology, Jalandhar, Punjab, India.

14. **Sanigdha Acharya** Presented *poster* “Electrochemical denitrification using response surface methodology” at International conference on recent developments in chemical Research (RDCR- 2019), February 1- 2, **2019**, IIS University, Jaipur, Rajasthan, India.

15. **Sanigdha Acharya** Presented *poster* “Hardness removal from groundwater by electrochemical technique” at 71st Annual session of Indian institute of chemical engineers (CHEMCON–2018) on seamless chemical engineering in service of humanity: innovations, opportunities & challenges, December 27–30, **2018**, National Institute of Technology, Jalandhar, Punjab, India.

16. **Sanigdha Acharya** Presented paper “Effect of co-existing ions on denitrification by electrocoagulation of groundwater” at International Research Symposium on Engineering and Technology (IRSET-2018), August 28-30, **2018**, Novotel, Singapore, Clarke Quay, Singapore.

17. **Sanigdha Acharya** Presented paper “Optimisation of electrolyte concentration on nitrates removal from simulated groundwater using electrocoagulation” at International conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering (EGRWSE-2018), March 29-31, **2018**, National Institute of Technology, Jalandhar, Punjab, India.

18. **Sanigdha Acharya** Presented paper “Parametric studies on removal of nitrates using electrocoagulation” at National Conference on Clean & Green Energy: the chemical and environmental aspects (NCGE-2017), February 16-17, **2017**, Bhaskaracharya College of Applied Sciences, Dwarka, Delh, India.
19. Darshan Shri, **Sanigdha Acharya**, S.K, Sharma “Quality assessment of groundwater- Dwarka, Delhi” presented at 2nd International Conference on Recent Advances in Bio-energy Research, (ICRABR-2016), February 25-27, **2016**, SSS National institute of Bio-Energy, Kapurthala, Punjab, India.
20. Harpreet Kaur, U. K Mandal, **Sanigdha Acharya**, “Development of PVA membrane for pervaporation separation process”, presented at Conference on Advances in Chemical Engineering, February 27-28, **2009**, department of chemical engineering, Thapar University, Patiala, Punjab, India.
21. U K Mandal, Munish Kumar Sharma and **Sanigdha Acharya**, “Modelling and simulation of PVA based pervaporation membrane separation process”, presented at National conference on Chemical Engineering and Environment - current trends and issues, November 3-4, **2006.**, department of chemical engineering, IPS and IES, Indore,MP, India.
22. **Sanigdha Acharya** Presented paper, “PVA Membrane based pervaporation separation process - A review” at National conference on Chemical Engineering and Environment- current trends and issues, November 3-4, **2006.**, department of chemical engineering, IPS and IES, Indore, MP, India.

REFRESHER/WORKSHOP/FDP/SEMINAR ATTENDED

1. Attended FDP (online) on Enabling Entrepreneurship, Start-up, Incubation & Innovation Mindset by Association of Indian universities and Guru Gobind Singh Indraprastha University, June 12-16, 2023
2. Attended National Workshop (online) on Solid Waste Management organized by Delhi Research Implementation and Innovation, IIT Delhi, July 30-31, 2021
3. Participated and successfully completed a 5-day online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE), May 24 -28, 2021.
4. Participated in the TEQIP-III sponsored webinar “Heavy Crude Oil Production Technologies-Practical Approach” NIT Jalandhar held on August 08, 2020 (one day)

5. Online Short-Term Course on “Trends and prospects in Bio refinery” NIT Jalandhar June 10-14, 2020 (one week)
6. Online Faculty Development Programme on “Design and Development of MOOC’s and e-learning Technologies”, USE, GGSIPU, Delhi, May10-16, 2020 (one week)
7. Refresher course on “Research methodology and data analysis” USMS, GGSIPU, Delhi, December 4-17, 2019 (Two weeks)
8. Workshop on “Research methodology and data analysis” USMS, GGSIPU, Delhi, December 16– 29, 2016 (Two weeks)
9. Workshop on “Intellectual property rights: culmination of research” Bhaskaracharya College of Applied Sciences, Dwarka, Delhi, September 23-24, 2016 (Two days)
10. Short Term Course on “Water quality management” June 20-24, 2016 at NIT Jalandhar (One week)
11. Faculty development programme on “Multidisciplinary approach to research, innovation and development” USLLS, GGSIPU, Delhi, May 13- June 7, 2015 (Three weeks)
12. National seminar on “Sustainability of engineering education” NIT, Jalandhar, March 26-27, 2015 (Two days)
13. Workshop on “Service matters–ccs conduct rules” GGSIPU, Delhi, April 24-25, 2014 (Two days)
14. Staff development program on “Disaster Management and Mitigation” Thapar university, Patiala, May 28 – June 8, 2012 (Two weeks)
15. Staff development program on “Design & Analysis of Algorithm” Thapar University, Patiala, May 25 – June 6, 2008 (Two weeks)
16. National Workshop on “Global Opportunities for Chemical Engineers in chemical and allied industries” GGSIPU, Delhi, April 18, 2007 (One day)
17. QIP Short term course on “Hydrocarbon Eng. and Management”, REC Jalandhar, November 22-26, 2007 (One week)
18. ISTE short term course on “Computational Fluid Flow and Heat Transfer”, Pune Institute of Engineering and Technology, Pune, January 3-15, 2005 (Two weeks)

MEMBER OF VARIOUS SCHOOL/UNIVERSITY COMMITTEES

1. Convener, **JAC team**, for inspection of affiliated institutes (2023, 2024)
2. School coordinator, **Alumni Association**, USCT (2006-2018, 2019-till date)
3. Member and Convener, **Board of Studies**, USCT (2019-21, 2021- till date)

4. **Coordinator**, B. Tech (final year) (2018-19, 2019-till date)
5. **School training and placement coordinator**, USCT (2019-21)
6. **Coordinator**, Syllabus modification committee (2017-18, 2018-19)
7. Member, Syllabus modification committee (2019- till date)
8. Member, Biochemical Engineering Lab Development committee (2017-2019)
9. **Member** of task force for **safety of women** on campus (2016-2019)
10. **School Returning officer** for student election (2016-17, 17-18, 18-19, 20-21, 22-23)
11. Member, **School Research Committee**, USCT (2013-14. 2020-till date)
12. Member, Attendance record, Lab & Website updation Committee (2016-18)
13. **University Representative**, CET and end-term exams
14. **University Observer**, CET and end-term exams

COURSES/ WORKSHOPS/ SEMINAR/ LECTURES ORGANISED

1. **Coordinator**, five-day value-added workshop: “Beyond Industry 4.0: Energy and Environment”, University School of Chemical Technology, GGSIPU, 25 -29 July 2022
2. **Coordinator**, online event on “Defence Services as a viable career”, which focused on preparing students for defence services, 19 September, 2021
3. **Convener, National Conference** on Innovative Development in Chemical Technology (IDCT-2021), University School of Chemical Technology, 19-20 March, 2021
4. **Coordinated** one-week online lecture series “Webinar on innovation and revolution in process industries” 18-22 May 2020
5. **Organised** distinguished alumni talk by alumni Deepak Pandey on 21 April, 2022
6. **Organised** distinguished alumni talk by Aakash Kulshreshtha, Process engineer, Ramboll, New York, USA, 21 March, 2022

INVITED LECTURES DELIVERED

1. **Delivered lecture** as a **guest of honor** on the topic “**water treatment techniques**” at Mission Life Awareness Programme “Save the Water... Save our Planet” at Fairfield Institute of Management and Technology, Affiliated to GGSIP University, Delhi on 28 March, 2024
2. **Delivered an invited lecture** on the topic “**Electrocoagulation Technique for Wastewater Treatment**” in one week online short-term course on “Novel Approaches in Wastewater Treatment (NAWT 2022)” held at Motilal Nehru National Institute of Technology (MNNIT), Allahabad, 01 -05 February, 2022

3. **Delivered an invited lecture** on the topic “**Water Quality Indices as a Parameter of Water Audit**” in skill enhancement program on “Industry 4.0”, held by University School of chemical technology, GGSIPU, 27 -31 December 2021
4. Invited **Technical Session chair** at National Conference on Sustainable Research in Energy and Environment (SREE-2021) National Institute of technology, Jalandhar, 15-16 January, 2021

REVIEWER/EDITOR OF JOURNALS/NEWSLETTER

Reviewer

Clean Soil, Air, Water, Wiley

Groundwater for Sustainable Development, Elsevier

International Journal of Environmental Analytical Chemistry, Taylor and Francis

Editor

Editor in chief of the newsletter of USCT and USCT Alumni Association

MEMBERSHIP OF SCIENTIFIC/ ENGINEERING BODIES

Life member (LM 42051), **Indian Society for Technical Education (ISTE)**

Life member (LM 55550), **Indian Institute of Chemical Engineers (IChE)**