



# AISSMS

## COLLEGE OF ENGINEERING

ज्ञानम् सकलजनहिताय  
Accredited by NAAC with "A+" Grade



## Department of Chemical Engineering

### Faculty Profile

#### Ms. Barnali Banerjee

PhD Thesis Submitted (Chemical Engineering)

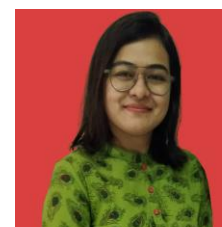
Assistant Professor

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🔗 [https://scholar.google.co.in/citations?user=bDom\\_UcAAAAJ&hl=en](https://scholar.google.co.in/citations?user=bDom_UcAAAAJ&hl=en)

🔗 <https://www.linkedin.com/in/barnali-banerjee-4718a488/>



#### Research Areas / Areas of Interest

Cavitation Method for Wastewater treatment, Colloid and Interface Science and Engineering, Rheology, Nanotechnology

#### Personal Details

**Date of Birth :** 05 / 03 / 1990

**Domicile:** West Bengal

**Gender :** Female

**Blood Group:** A+ve

**Contact Details: Permanent:** Br. Panchanantalla Road, Khardah, Kolkata-700116

**Current:** B-901, Anandtara Whitefield Residences, Keshav  
Nagar, Mundhwa, Pune-411036

## Academic Background

| S. NO. | Qualification            | Specialization       | University                                | Class/Grade     | Year of Passing |
|--------|--------------------------|----------------------|---|-----------------|-----------------|
| 1      | Ph.D.                    | Chemical Engineering | National Institute of Technology Rourkela | --              | Dec 2023        |
| 2      | M.Tech.(PhD Intergrated) | Chemical Engineering | National Institute of Technology Rourkela | I <sup>st</sup> | July 2016       |
| 3      | B.E.                     | Chemical Engineering | University of Pune                        | I <sup>st</sup> | July 2012       |

## Work Experience

| S. No.       | Type of Experience                                     | Years     | Months    |
|--------------|--|-----------|-----------|
| 1            | Teaching   | 00        | 08        |
| 2            | Research   | 00        | 08        |
| 3            | Industry   | 00        | 00        |
| 4.           | Others ( <b>Industry sponsored PhD research work</b> ) | 04        | 05        |
| <b>Total</b> |  | <b>05</b> | <b>09</b> |

## Subjects / Courses Taught

| S. No. | Subject                 | UG/PG | Class (FE/SE/TE/BE/ME) | No of times Subject Taught |
|--------|-------------------------|-------|------------------------|----------------------------|
| 1      | Food Tech. (Elective-I) | UG    | TE                     | 1                          |
| 2      | CPS (Elective-IV)       | UG    | BE                     | 1                          |

## Research Publications

|                    | National | International | State | SCI/<br>Scopus<br>Indexed | UGC<br>Approved |
|--------------------|----------|---------------|-------|---------------------------|-----------------|
| <b>Journals</b>    | 01       | 12            | 00    | 10                        | 00              |
| <b>Conferences</b> | 01       | 03            | 00    | 00                        | --              |

## Publication Details (Journals)

| S. No | Document Details   | Authors  | Year | Source Details   | ISBN/ISSN              | Publisher                                 |
|-------|--|--|------|--|------------------------|---|
| 1.    | Effect of Electrolytes on Solution and Interfacial Behaviors of Double Chain Cationic-Nonionic Surfactant Mixtures for Hydrophobic Surface Wetting and O/W Emulsion Stability Applications | <b>Barnali Banerjee,</b><br>Santanu Paria  | 2021 | Langmuir<br>37, 10560  | ISSN:<br>1520-<br>5827 | American<br>Chemical<br>Society<br>(ACS)  |
| 2.    | Natural Surfactants-based Ag Nanofluids for Enhanced Wettability on Hair Surface   | <b>Barnali Banerjee,</b><br>Santosh Deb<br>Barma<br>Krishnendu<br>Chatterjee,<br>Santanu Paria | 2018 | ACS<br>Sustainable<br>Chemistry and<br>Engineering<br>6(3), 3615 | ISSN:<br>2168-<br>0485 | American<br>Chemical<br>Society<br>(ACS)  |
| 3.    | Nanotexturing of PC/n-HA Nanocomposites by Innovative and Advanced Spray Technique   | <b>Barnali S. Banerjee,</b><br>Balasubramanian<br>K.   | 2015 | RSC<br>Advances<br>5, 13653                                      | ISSN:<br>2046-<br>2069 | Royal<br>Society of<br>Chemistry<br>(RSC) |

|    |   |  |      |   |                 |                                      |
|----|---|--|------|---|-----------------|--------------------------------------|
| 4. | Thin film Encapsulation of Nanocomposites of Polycarbonate (PC) for Thermal Management System                           | <b>Barnali S. Banerjee</b> , Sukhmeet S. Khaira, Balasubramanian K.  | 2014 | RSC Advances 4, 63380                           | ISSN: 2046-2069 | Royal Society of Chemistry (RSC)     |
| 5. | Sonochemical decolorization of wastewaters containing Rhodamine 6G using ultrasonic bath at an operating capacity of 2L | <b>Barnali S. Banerjee</b> , Archana V. Khode, Amit P. Patil, Ashish V. Mohod, Parag R. Gogate                                 | 2013 | Desalination and Water Treatment 52(7-9), 1378  | ISSN: 1944-3986 | Taylor & Francis                     |
| 6. | Tailored Non-Woven Electrospun Mesh of Poly-Ethyleneoxide-Keratin for Radioactive Metal Ion Sorption                    | Balasubramanian K., S. Sharma, <b>Barnali S. Banerjee</b>  | 2015 | J. Green Science and Technology, 2(1), 10       | ISSN: 2164-7585 | American Scientific Publishers (ASP) |
| 7. | Spider web textured Electrospun composite of Graphene for sorption of Hg (II) ion                                       | Parth D. Bhalara, Balasubramanian K., <b>Barnali S. Banerjee</b>   | 2015 | Materials Focus, 4(2), 154                      | ISSN: 2169-4303 | American Scientific Publishers (ASP) |
| 8. | Degradation of patent blue V dye using modified photocatalytic reactor based on solar and UV irradiations               | Rachana R. Dalbhanjan, Nishantbhaskar S. Pande, <b>Barnali S. Banerjee</b> , Shruti P. Hinge, Ashish V. Mohod, Parag R. Gogate | 2015 | Desalination and Water Treatment 57 (39), 18217 | ISSN: 1944-3986 | Taylor & Francis                     |
| 9. | Removal of patent blue V dye using air bubble – induced oxidation based on small glass balls:                           | Deepika D. Mahale, Nilesh N. Patil, Diksha S. Zodge, Priyanka D. Gaikwad,  | 2015 | Desalination and Water Treatment 57 (34), 15900 | ISSN: 1944-3986 | Taylor & Francis                     |

|     |   |   |      |   |                 |                      |
|-----|---|---|------|---|-----------------|----------------------|
|     | intensification studies   | <b>Barnali S. Banerjee</b> ,<br>Kanchan N. Bawankar,<br>Ashish V. Mohod, Parag R. Gogate  |      |   |                 |                      |
| 10. | Removal of Rhodamine 6G from wastewater using solar irradiations in the presence of different additives | Nishant S. Bhaskar, Akshay D. Kadam, Jay J. Biwal, Pankaj M. Diwate, Rachana R. Dalbhanjan, Deepika D. Mahale, Shruti P. Hinge, <b>Barnali S. Banerjee</b> , Ashish V. Mohod, Parag R. Gogate | 2015 | Desalination and Water Treatment<br>57(39), 18275                 | ISSN: 1944-3986 | Taylor & Francis     |
| 11. | Ultrasound based treatment approaches for intrinsic viscosity reduction of polyvinyl pyrrolidone (PVP)  | Indrajeet Pawar, Prathmesh Joshi, Akshay Kadam, Nishant Pande, Priyanka Kamble, Shruti Hinge, <b>Barnali S. Banerjee</b> , Ashish V Mohod, Parag R Gogate                                     | 2013 | Ultrasonic Sonochemistry<br>21, 1108                              | ISSN: 1350-4177 | Elsevier             |
| 12. | Sonocatalytic and sonophotocatalytic degradation of Rhodamine 6G containing wastewaters                 | Nileema Bokhale, Snehal Bomble, Rachana Dalbhanjan, Deepika Mahale, Shruti Hinge, <b>Barnali S. Banerjee</b> , Ashish Mohod, Parag Gogate   | 2014 | Ultrasonic Sonochemistry<br>21, 1797                              | ISSN: 1350-4177 | Elsevier             |
| 13. | Experimental investigation of preparation of grease and metallic soap from neem oil                     | Dinesh Mahale, Rachana Dalbhanjan, <b>Barnali Banerjee</b> , Shruti   | 2017 | Journal of Chemical Engineering and its Application<br>2 (3), 1-9 | NA              | MANTECH Publications |

|  |                 |                        |  |  |  |  |
|--|-----------------|------------------------|--|--|--|--|
|  | and Karanja oil | Hinge, Ashish V. Mohod |  |  |  |  |
|--|-----------------|------------------------|--|--|--|--|

### Publication Details (Conferences)

| S. No | Document Details  | Authors   | Year | Conference Details  | ISBN | Organised By  |
|-------|---|---|------|---|------|---|
| 1.    | Fundamental investigations of mixed surfactant systems on bituminous based products for oil-water emulsion stability  | Barnali Banerjee, S. Paria                                    | 2019 | 8th Asian Conference of Colloid and Interface Science (ACCIS 2019), Kathmandu.                  |      | Asian Society of Colloid and Surface Science (ASCSS), Japan ( 24-27 September 2019) |
| 2.    | Effect of electrolyte on the interfacial behavior of different polyoxyethylene (EO-9 and EO-40) systems with double tailed cationic surfactants at n-dodecane-water interface | Barnali Banerjee, S. Paria                                    | 2018 | Elsevier's 8th International Colloid Conference 2018, Shanghai                                  |      | Fudan University, Shanghai, China ( 10-13 June 2018)                                |
| 3.    | Degradation of Rhodamine 6G at Pilot Scale Capacity using Hybrid Techniques based on Cavitation   | Barnali Banerjee, Archana Khode, Ashish V Mohod               | 2013 | Conference of R&D Projects under Grant-in-Aid Scheme, The Institution of Engineers, IEI (India) |      | IEI Kolkata   |
| 4.    | Sonophotocatalytic degradation of Rhodamine 6 G using ultrasonic bath   | Barnali Banerjee, Shruti Hinge, Priyanka Kamble, Ashish Mohod | 2012 | Indian Chemical Engineering Congress CHEMCON - 2012   |      | NIT Jalandhar, Punjab (27-30 Dec. 2012)   |

### PhD / ME / BE Student Guided for Project

|                              |              |                  |                  |
|------------------------------|--------------|------------------|------------------|
| <b>Level</b>                 | <b>Ph.D.</b> | <b>M.E. (PG)</b> | <b>B.E. (UG)</b> |
| <b>No. of Student guided</b> | -            | 00               | 00               |

### Professional Memberships

| <b>Professional Body</b> | <b>Level ( National/ International)</b> | <b>Type (Fellow/Life/Annual)</b> | <b>Membership No.</b> |
|--------------------------|---|----------------------------------|-----------------------|
|                          |   |                                  |                       |

### Patents / IPR Filed / Granted

| <b>S. No</b> | <b>Investigator Details</b>  | <b>Title</b>   | <b>Year</b> | <b>Status (Filed/Granted)</b> | <b>Details</b>   |
|--------------|--|--|-------------|-------------------------------|--|
| 1.           | BS Banerjee, AV Mohod, MV Bagal, VD Karpe, AM Shaikh, VG Desai, SP Hinge | CONTINUOUS FLOW WITH VISIBLE LIGHT INDUCED REACTOR USING NANOPARTICLES                     | 2019        | Published                     | The patent invention describes an effluent remediation in a continuous flow process with visible light induced reactor containing various additives and catalysts. New AOP method with continuous operation is the novelty. The major advantage of this apparatus is easy assembly, for maintenance and operation. |
| 2.           | BS Banerjee, AV Mohod, PR Goagte, DD Mahale, NN Patil, YS                | TREATMENT OF WASTE WATER EFFLUENT ON A CONTINUOUS MODE USING PHOTO-OXIDATION MARBLE COLUMN | 2016        | Published                     | The patent invention describes the combination of designing Air-Marble cavitation and  |

|    |  |  |      |           |  |
|----|--|--|------|-----------|--|
|    | Karnjekar,<br>NS Pandey  |  |      |           | photocatalytic oxidation method for waste water treatment.   |
| 3. | BS Banerjee,<br>AV Mohod,<br>PR Goagte,<br>DD Mahale,<br>NN Patil, YS Karnjekar,<br>RM Dinde,<br>NS Pandey | AN IMPROVED ADVANCED OXIDATION PROCESS FOR THE TREATMENT OF WASTE WATER CONTAINING DYES USING WASTE DRY BATTERY/CELL AS A CATALYST | 2016 | Published | The patent invention provides a novel process of creating OH radicals for treating wastewater using discarded battery catalysts like TiO <sub>2</sub> , H <sub>2</sub> O <sub>2</sub> , FeSO <sub>4</sub> .xH <sub>2</sub> O |

### Books Published

| S. No | Title | Name of the Publisher | ISBN/ISSN Number |
|-------|-------|-----------------------|------------------|
|       |       |                       |                  |

### Research Grants Received

| S. No | Program   | Duration            | Funding Agency  | Grant Amount (INR) |
|-------|---|---------------------|---|--------------------|
| 1.    | Industry-Institute MOU fund (Shell Technology Center Bangalore- NIT Rourkela collaboration Research Project Grant)                                    | 4 years (2015-2019) | Shell India Markets Pvt. Ltd.                           | 25,00,000          |
| 2.    | Prime Minister Fellowship award for Research Scholar, by Department of Science & Technology (DST), SERB & Confederation of Indian Industry (CII), GOI | 4 years (2016-2020) | DST, SERB & Confederation of Indian Industry (CII), GOI | 16,80,000          |
| 3.    | Short Term Scholarship for PhD under TEQUIP-III, Centre of Excellence on  | 3 months (April-    | TEQUIP-III, Centre of Excellence on Renewable Energy    | 1,05,000           |



|    |   |                     |   |        |
|----|---|---------------------|---|--------|
|    | Renewable Energy System, National Institute of Technology Rourkela (NITR)                       | June, 2021)         | System, NIT Rourkela                      |        |
| 4. | Undergraduate R&D Projects under Grant-in-Aid Scheme, The Institution of Engineers, IEI (India) | 1 year (AY 2011-12) | The Institution of Engineers, IEI (India) | 20,000 |

### Details of Workshop / STTP / FDP / Seminar / Conferences Organized

| S. No | Title | Type | Duration | Level (State/National/International) | Sponsoring Agency |
|-------|-------|------|----------|--------------------------------------|-------------------|
| 01    |       |      |          |                                      |                   |

### Contribution as Resource Person

| S. No. | Place/ Organization | Topic | Level(National/Int/State/Regional) | Date |
|--------|---------------------|-------|------------------------------------|------|
|        |                     |       |                                    |      |

### Details of Workshop / STTP / FDP / Conferences Attended

| S. N | Title | Type | Duration | Organizer | Sponsoring Agency |
|------|-------|------|----------|-----------|-------------------|
| 1    |       |      |          |           |                   |

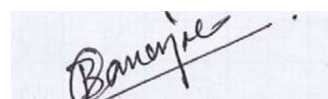
### Major Professional Responsibilities Handled

| S. No. | Role and Responsibilities   |
|--------|---|
| 1.     | Prime Minister's Doctoral Research Fellow by DST, SERB and CII (GOI) in collaboration with Shell Technology Center Bengaluru (STCB) |

## Awards Received

| S. No. | Awards  | Year                  |
|--------|---|-----------------------|
| 1      | <b>Prime Minister Fellowship award</b> for Research Scholar, by <b>Department of Science &amp; Technology (DST), SERB &amp; Confederation of Indian Industry (CII)</b>  | May 2016 – April 2020 |
| 2      | Short Term Scholarship for PhD under <b>TEQUIP-III, Centre of Excellence on Renewable Energy System</b> , National Institute of Technology Rourkela (NITR)  | March 2021            |
| 3      | <b>Best Poster Presentation award</b> at 8th Asian Conference of Colloid and Interface Science ( <b>ACCIS 2019</b> ), Kathmandu, Asian Society of Colloid and Surface Science (ASCSS), Japan                                  | September 2019        |
| 4      | Best Research Scholar (1st position), <b>Chemical Engineering Department, Research Scholar Week (RSW 2019)</b> , National Institute of Technology Rourkela (NITR)   | April 2019            |
| 5      | <b>Best Research Scholar (4th position)</b> , Top 5 Research Scholar at NITR Inter Departmental Competition, Research Scholar Week (RSW 2019), <b>National Institute of Technology Rourkela (NITR)</b>                        | April 2019            |
| 6      | <b>Best Student Organizer and Volunteer</b> , SCHEMCON 2017 by <b>NIT Rourkela</b>  | April 2017            |
| 7      | <b>Grant-in-Aid for R&amp;D</b> awarded for B.E. project “Degradation of Rhodamine-6G at Pilot Scale Capacity using Hybrid Technique based on Cavitation” by <b>Institution of Engineers, India</b>                           | September 2012        |
| 8      | <b>Second position in National level Technical Poster Presentation</b> , Biotechnological advancement from natural resource i.e., Chitin degraded by genetically modified Tricoderma fungus” in <b>ENGINEERING TODAY-2012</b> | April 2012            |

**Declaration:** I hereby declare that all the statement made above are correct to the best of my knowledge and belief.



**Ms. Barnali Banerjee**

(Name with Signature)