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Present position: Professor  
Affiliation: Department of Chemical Engineering  
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### **Personal Information**

Date of Birth: April 21, 1963  
Marital status: Married  
Address for Communication: Flat no. J-103, V. I. P Enclave  
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### **Educational qualification**

**Ph.D** ; Chemical Engineering ; University of Calcutta, 2006.  
Diploma in Operations Research; Indira Gandhi National Open University; 1994  
**M. Tech** ; Chemical Engineering ; University of Calcutta, 1989; 86.16% (1<sup>st</sup>. class, ranked 1<sup>st</sup>, Gold Medalist)  
Scored 87.57 percentile in **GATE 1988**  
**B. Tech.** ; Chemical Engineering ; University of Calcutta, 1987, 79.3% (1<sup>st</sup>. class)  
**B. Sc.**; Chemistry (Major), Physics and Mathematics; University of Calcutta, 1984; 60.1% (major, 1<sup>st</sup> class)  
65.5% (aggregate, 1<sup>st</sup> division)  
**Higher Secondary**; Science; Bethune College; West Bengal Council of Higher Secondary Education, 1981,  
71.6% (1<sup>st</sup> division)  
**Madhyamik**, Bethune Collegiate School; West Bengal Board of Secondary Education, 1979, 82% (distinction).  
National Scholar, ranked 39<sup>th</sup> in the state. Secured highest marks in Bengali first language in Madhyamik  
Examination 1979.

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### **Professional Experience**

As a permanent Faculty member: 2005 – till date  
As research scholar and part-time faculty member : 2000 – 2005  
As Project Engineer in Consultancy organizations in the field of water & wastewater treatment, Petrochemicals etc: 1989 – 2000

### **Summary of Professional Experience:**

(In reverse chronological order)

November 1994 to May 2000

As **Project Engineer** in Development Consultants Pvt Ltd, Kolkata. Worked in projects like Ethylene Plants of Haldia Petrochemicals Ltd, Haldia and Reliance India Ltd, Hazira.

September 1991 to November 1994

As **Assistant Project Engineer** in Krebs and Cie (I) Ltd, Kolkata. Worked in projects like Copper and Zinc refinery plants of Sterlite Industries Ltd and Binani Zinc Ltd.

April 1991 to September 1991

As **Senior Project Engineer** in Batliboi & Co. Ltd, Mumbai. Worked in turnkey projects of Air Pollution Control.

April 1990 to April 1991

As **Assistant Project Engineer** in Krebs and Cie (I) Ltd, Kolkata. Worked in projects like hydrogen generation plants of National Thermal Power Corporation (NTPC).

April 1989 to April 1990

As **Project Engineer** in Vinny Engineering Enterprises, Kolkata. Worked in turnkey projects of water and waste water treatment.

### **Research Interest**

- ✓ Advanced oxidation Processes – homogeneous and heterogeneous, for environmental remediation.
- ✓ Synthesis, characterization and photocatalytic application of metal oxide (especially zinc oxide) nanoparticles.
- ✓ Chemical and photocatalytic reduction of heavy metals (especially hexavalent chromium) in wastewater and utilization of chromium sludge as building materials.
- ✓ Photocatalytic oxidative degradation of plastic wastes (especially polyvinyl chloride)
- ✓ Smart fabric and paper using nanoparticles.

**Post-doctoral Research Experience:**

- One month with the Research Group of Prof. Mark T Swihart, Department of Chemical and Biological Engineering at the **State University of New York at Buffalo, USA** on the Synthesis and Characterization of Iron-doped Zinc Oxide Nanoparticles.
- One and half months with the Research Group of Prof. Pratim Biswas, Department of Energy, Environmental and Chemical Engineering, **Washington University in St. Louis, Missouri, USA** as a Visiting Scientist, worked on the graphene oxide-zinc oxide nanocomposites for environmental application.

Patent granted

**CERAMIC GLAZING PIGMENT FROM CHROME IRON SLUDGE – Indian Patent no. 300403** dated 19.6.2014 (Application no. 662/Kol/2014) granted in 2017

**A CONTINUOUS REACTOR SYSTEM FOR CONDUCTING SUNLIGHT ASSISTED OXIDATIVE DEGRADATION OF ORGANIC POLLUTANTS IN WASTEWATER- Indian Patent no. 328984** dated 31.3.2017 (Application no. 201731011606 dated 31.3.2017) granted in 2020

**Teaching**

*B. Tech level*

- Process heat transfer including heat exchangers
- Diffusional process- Molecular diffusion and Mass transfer coefficient
- Separation process – Adsorption, Chromatography and Membrane separation
- Process Calculation
- Petrochemicals and Petroleum Refinery Engineering
- Process Equipment Design
- Project Engineering

*M. Tech level*

- Solid waste treatment and management – Integrated solid waste management of Municipal Solid Waste. Management principles of E-waste, Biomedical Waste and Plastic waste.

Ph.D thesis supervision: 3 awarded 2 registered

M.Tech / M.Sc Thesis: 10

B.Tech project work: 22

### **Research grant**

- Completed All India Council of Technical Education (AICTE) sponsored project entitled '*Photocatalytic Degradation of Polyvinyl Chloride (PVC) using Zinc Oxide as Semiconductor Catalyst under Artificial / Solar UV Radiation*'. Grant received was **INR Four Hundred Ninety Four Thousand** for **2 years** (2006-2008).
- Received grant for a research project entitled '*Utilization of zinc oxide semiconductor nanoparticles for wastewater treatment in presence of sunlight*' by **Centre of Nanoscience & Nanotechnology, University of Calcutta, India**. Initially received **Rs. Two Hundred Thousand** and a fellow for **3 years**.
- Received grant for major research project entitled '*On the removal of hexavalent chromium from wastewater*' from University Grant Commission (UGC), **India**. Financial assistance received is **INR Nine Hundred Sixty Two Thousand**.
- Received grant for research project entitled '*Utilization of solar energy for degradation of refractory organic pollutants in wastewater by Photo-Fenton oxidation*' from the Department of Science & Technology, Govt. of West Bengal. Financial assistance received is **INR Six Hundred Forty Four Thousand**.
- Received funding for conducting/ supervising B.Tech project work (Mr. Somnath Chowdhury) entitled '*Solar photocatalytic cleaning and disinfection of cotton fabric with doped ZnO nanoparticles*' from Advanced Technical Cell of Defence Research and Development Organization and Advanced Technology Cell-Jadavpur University. Financial assistance received is **INR Ten Thousand**. Grant period 2011-2012 (6 months).
- Received funding for conducting/ supervising B.Tech project work (Ms. Sweta Ganguli) entitled : '*Sonochemical synthesis and characterization of the metal-doped zinc oxide nanoparticles*' from TEQIP-Phase II, FET, CU under student R&D programme. Financial assistance received is **INR Fifty Thousand**. Grant period 2013-2014 (6 months)
- Received funding for conducting/ supervising M.Tech project work (Mr. Argha Dey) entitled : '*Beneficial use of Chrome-Iron sludge*' from TEQIP-Phase II, FET, CU under student R&D programme. Financial assistance received is **INR Fifty Thousand**. Grant period 2013-2014 (6 months)
- Received grant for research project entitled '*Influence of precursor composition and temperature on the characteristics of sonochemically synthesized iron-doped zinc oxide nanoparticles*' from the TEQIP-Phase II, FET, CU under Faculty R& D Programme. Financial assistance received is **INR One lakh**. Grant period 2013-2014 (12 months).

### **Courses / workshops**

1. Attended a **short course** on '*Advances in application for renewable energy sources*' organized by Department of Power Engineering, **Jadavpur University** in February- March 2006.

2. Attended a **short course** on ‘*Advanced techniques for materials characterization: microscopy and diffraction (ATMC-07)*’ organized by Materials Research Society of India at **Central Glass and Ceramic Research Institute**, Kolkata in October – November 2007.
3. Attended a **Refresher Course** on ‘*Environmental Studies*’ organized by UGC-Academic Staff College, **University of Calcutta** in February – March 2008.

### Publications- summary

|                           |      |                                  |
|---------------------------|------|----------------------------------|
| Total:                    | 85   | (SINCE 2004)                     |
| Conference Papers:        | 37   |                                  |
| International journals:   | 33   |                                  |
| National journal:         | 05   |                                  |
| Book chapter              | 05   |                                  |
| Book                      | 05   |                                  |
| Total Citation till date: | 1987 | (Google Scholar, September 2020) |
| h-index:                  | 13   |                                  |
| i10-index:                | 16   |                                  |

### International peer reviewed journals

1. **Sampa Chakrabarti** and B. K. Dutta, Photocatalytic Degradation of Model Textile Dyes in Wastewater Using ZnO as Semiconductor Catalyst, **J of Hazardous Materials** B112 (2004), 269 -278.
2. **Sampa Chakrabarti**, Basab Chaudhuri, and B. K. Dutta, Adsorption of Model Textile Dyes Using Agricultural Wastes as Adsorbents: Equilibrium, Kinetics and Fixed Bed Column Study, **International Journal of Environment and Pollution**, Special issue entitled ‘*Application of biosorbents in wastewater treatment*’ 2008, Vol.33, No.1-4, 261-274.
3. **Sampa Chakrabarti** and B. K. Dutta, On the adsorption and diffusion of Methylene Blue on Glass Fibers, **J. of Colloid and Interface Science** 286 (2005), 807-811.
4. **Sampa Chakrabarti** and B. K. Dutta, Dye-sensitized photocatalytic degradation of PVC-ZnO composite film, **International Journal of Environmental Technology and Management**, special issue entitled ‘*Advanced technology in environmental remediation*, 2008, Vol.9, No.1, 33-46
5. **Sampa Chakrabarti**, Smritikana Banerjee, Basab Chaudhuri, Sekhar Bhattacharjee and B. K. Dutta, Application of Biodegradable Natural Polymers for Flocculated Sedimentation of Clay-Slurry, **Bioresource Technology**, Vol. 99, Issue 8 (2008), 3313 – 3317.
6. Arunava Sinha, **Sampa Chakrabarti**, Basab Chaudhuri, Sekhar Bhattacharjee, Parthasarathi Ray and Saswati Bandyopadhyay Ray, On the oxidative degradation of acetic acid liquor in wastewater emanating from hazardous industries, **Industrial and Engineering Chemistry Research**, 46, 2007, 3101 – 3107.
7. **Sampa Chakrabarti** Basab Chaudhuri, Paramita Das, Sekhar Bhattacharjee and B. K. Dutta, Degradation mechanism and kinetic model for photocatalytic oxidation of PVC-ZnO composite film in

- presence of a sensitizing dye and UV radiation, **Journal of Hazardous Materials**, 2008, Vol. 154, Issues 1 – 3, 230 – 236.
8. Debashis Sarkar, **Sampa Chakrabarti** and B.K. Dutta, Application of Shrinking Core Model to the adsorption of Methylene Blue on glass fiber, **Applied Mathematical Modeling**, 2009, 33, 2874–2881.
  9. Ratnadeepa Dutta, Saker Mohammad, **Sampa Chakrabarti**, Basab Chaudhuri, Sekhar Bhattacharjee and Binay K. Dutta, Reduction Of Hexavalent Chromium In Aqueous Medium With Zerovalent Iron, **Water Environ. Res.**, **82** (2009) 134 - 146.
  10. **Sampa Chakrabarti**, Basab Chaudhuri, Sekhar Bhattacharjee, Ajay K Ray and Binay K Dutta; Photoreduction of hexavalent chromium in aqueous solution in presence of zinc oxide as semiconductor catalyst; **Chemical Engineering Journal**, 153 (2009) 86-93 (Impact Factor: 2.813, 2008)
  11. **Sampa Chakrabarti**, Binay K Dutta, Resat Apak; Active manganese oxide: a novel adsorbent for treatment of wastewater containing azo dyes; **Water Science & Technology**, WST (2009), 60.12, 3017 - 3024
  12. **Sampa Chakrabarti**, Devika Sil, Photocatalytic degradation of PVC-ZnO composite film under tropical sunlight and artificial UV radiation: a comparative study, **Solar Energy** 84 (2010) 476-485.
  13. Sabtanti Harimurti, Binay K. Dutta, I. Fauzi B. M. Ariff, **Sampa Chakrabarti**, Davide Vione; Degradation of Monoethanolamine in Aqueous Solution by Fenton's Reagent with Biological Post-treatment, **Water Air Soil Pollution**, (2010) 211: 273-286
  14. Binay K Dutta, Sabtanti Harimurti, Idzham F. M. Ariff, **Sampa Chakrabarti**, Davide Vione; Degradation of diethanolamine by Fenton's reagent combined with biological post-treatment, **Desalination and Water Treatment**, 19 (2010) 286 – 293.
  15. Arghya Banerjee, Sriparna Panda, Monojit Sidhanta, **Sampa Chakrabarti**, Basab Chaudhuri and Sekhar Bhattacharjee; Utilisation of eggshell membrane as an adsorbent for carbon dioxide. **International Journal of Global Warming**, 2010; 2 (3): 252
  16. Pallavi Mitra, **Sampa Chakrabarti**, Debashis Sarkar and Binay K Dutta, Reduction of hexa-valent chromium with zero-valent iron: Batch kinetic studies and rate model; **Chemical Engineering Journal** 171 (2011) 54–60.
  17. Prantik Banerjee, **Sampa Chakrabarti**, Saikat Maitra, Binay K. Dutta, Zinc oxide nano-particles – Sonochemical synthesis, characterization and application for photo-remediation of heavy metal, **Ultrasonics Sonochemistry**; 19 (2012) 85–93.
  18. Isita Nandi, Pallavi Mitra, Prantik Banerjee, Anirban Chakrabarti, Mahua Ghosh, **Sampa Chakrabarti**, Ecotoxicological impact of sunlight assisted photoreduction of hexavalent chromium present in wastewater with zinc oxide nanoparticles on common *Anabaena flos-aquae*; Frontier Article, **Ecotoxicology and Environmental Safety** 86 (2012) 7–12.

19. Anirban Chakraborty, **Sampa Chakrabarti**, Basab Chaudhuri, and Sekhar Bhattacharjee; Spectroscopic Estimation of Chloroauric Acid During Synthesis of Gold Nanoparticles by Citrate Reduction Method, **Advanced Science, Engineering and Medicine**, Vol. 4, pp. 128–131, 2012, ISSN: 2164-6627 (print); EISSN: 2164-6635 (online).
20. Pallavi Mitra, Prantik Banerjee, **Sampa Chakrabarti**, Sekhar Bhattacharjee, Utilization of solar energy for photoreduction of industrial wastewater containing hexavalent chromium with zinc oxide semiconductor catalyst, **Desalination and Water Treatment**, (2013)1 -9.
21. Pallavi Mitra, Prantik Banerjee, Debasish Sarkar, **Sampa Chakrabarti**; Commercial steel wool for reduction of hexavalent chromium in wastewater – batch kinetic studies and rate model; **International Journal of Environmental Science and Technology**, Springer, 2013. (Impact Factor: 1.84) Published online in March 2013. DOI 10.1007/s13762-013-0219-y [**Article 20**: Volume 11, Issue 2, March 2014, Pages 449-460 (**12**)]
22. **Sampa Chakrabarti**, Xin Liu, Changning Li, Prantik Banerjee, Saikat Maitra, and Mark T Swihart, Single-pot heating method for synthesis of iron-doped zinc oxide nanoparticles: Influence of precursor composition and temperature –**International Journal of Materials Engineering and Innovation**, Inderscience Publications-Vol 6, No.1, 2015.
23. Prantik Banerjee, Dipesh Das, Pallavi Mitra, Mahuya Sinha, Sanjit Dey and **Sampa Chakrabarti**, Solar photocatalytic treatment of wastewater with zinc oxide nanoparticles and its ecotoxicological impact on *Channa punctatus* –a freshwater fish, **J. Mater. Environ. Sci.** (ISSN : 2028-2508, IF 1.09) 5 (4) (2014) 1206-1213
24. Amrita Dutta, Prantik Banerjee, Debasish Sarkar, Sekhar Bhattacharjee, **Sampa Chakrabarti**, Degradation of Trypan Blue in wastewater by sunlight assisted modified photo-Fenton reaction, **Desalination and Water Treatment T&F** (IF 0.852) (2014) 1-9.
25. **Sampa Chakrabarti**, Prantik Banerjee, Preparation and characterization of multifunctional cotton fabric by coating with sonochemically synthesized zinc oxide nanoparticle-flakes and a novel approach to monitor its self-cleaning property, **Journal of the Textile Institute**; (ISSN 0040-5000, IF: 0.775) DOI 10.1080/00405000.2014.955962; (2014)
26. Amrita Dutta, Ishita Chakraborty Debasish Sarkar, **Sampa Chakrabarti**, Sunlight-Assisted Photo-Fenton Degradation of Pesticide in Wastewater: Ecotoxicological Impact on *Nostoc* sp. Algae, **Water Air Soil Pollut** (2015) 226:398; DOI 10.1007/s11270-015-2661-6
27. Anirban Roy, Saikat Maitra, Sobhan Ghosh, **Sampa Chakrabarti**, Sonochemically synthesized iron-doped zinc oxide nanoparticles: Influence of precursor composition on characteristics, **Materials Research Bulletin** 74 (2016)414–420. DOI 10.1016/j.materresbull.2015.11.006.

28. Paramita Das, Anirban Roy, **Sampa Chakrabarti**, Photocatalytic degradation of the nanocomposite film comprising polyvinyl chloride (PVC) and sonochemically synthesized iron-doped zinc oxide: a comparative study of performances between sunlight and UV radiation; (2017) **Journal of Polymer and the Environment**; Vol 24, No.4, page 102-112
29. Suchismita Majumdar, Anirban Roy, Ishita Nandi, Prantik Banerjee, Swapna Banerjee, Mahua Ghosh, **Sampa Chakrabarti**; Paper Coated with Sonochemically Synthesized ZnO Nanoparticles: Enhancement of Properties for Preservation of Documents; **TAPPI Journal**; January 2017, Vol 16, No.1, Page 25-33
30. Ramesh Raliya, Caroline Avery, **Sampa Chakrabarti**, Pratim Biswas; Photocatalytic degradation of methyl orange dye by pristine titanium dioxide, zinc oxide, and graphene oxide nanostructures and their composites under visible light irradiation, **Appl Nanosci** (2017) Volume 7, Issue 5, pp 253–259 (DOI 10.1007/s13204-017-0565-z)
31. Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**, “Sonochemical syntheses of iron doped zinc oxide nanoparticles at different sonication powers and temperatures with their application for photocatalytic degradation of PVC-ZnO composite film” **Int. J. Nanoparticles**, 2018, Vol. 10, No. 3,
32. Amrita Dutta, Nayan Das, Debasish Sarkar, **Sampa Chakrabarti**; Development and characterization of a continuous solar-collector-reactor for wastewater treatment by photo-Fenton process; **Solar Energy** 177 (2019) 364–373 (Elsevier, IF 4.37)
33. Mahjabeen Akram, **Sampa Chakrabarti**; Mechanism and Kinetic Model of the Oxidative Degradation of Rhodamine B Dye in Aqueous Solution by Ultrasound-assisted Fenton’s Process; *In Press* with **Int. J. of Environment and Waste Management**; Inderscience Publishers (ISSN 1478-9868/9876)

### **Indian Journal**

1. **Sampa Chakrabarti**, Devika Sil, Basab Chaudhuri, Sekhar Bhattacharjee, Comparison of the photocatalytic degradation of polyvinyl chloride and polystyrene with zinc oxide semiconductor catalyst under tropical sunlight, **Chemical Technology – an Indian Journal** published by Trade Science Inc, India.(ISSN 0974-7443)(2011) Vol 6, Issue 1, p58-64
2. Pallavi Mitra, Sandeep Karmakar, Debasish Sarkar, **Sampa Chakrabarti**, Chemical Reduction of hexavalent chromium in wastewater - effect of pH and dosing of Mohr salt, Journal of the Leather Technologists Association (**JILTA**), Vol 3, May 2011,
3. Mandip Saha Roy, Pallavi Mitra, Debasish Sarkar, **Sampa Chakrabarti**, Removal of hexavalent chromium from wastewater by reduction with zerovalent iron and subsequent precipitation by alkali, Journal of the Leather Technologists Association (**JILTA**), Vol 3, March 2011, 165-172

4. Prantik Banerjee, Pallavi Mitra, **Sampa Chakrabarti**, Sekhar Bhattacharjee, Zinc oxide nanoparticles for the photocatalytic reduction of hexavalent chromium in wastewater under sunlight, **Environmental Science :An Indian Journal**; published by Trade Science Inc, India, Accepted in August 2012.
5. Mahjabeen Akram, Anirban Chowdhury, **Sampa Chakrabarti**, Removal of Rhodamine B Dye from Wastewater by Ultrasound-Assisted Fenton Process: A Comparison between Bath and Probe Type Sonicators; **Environmental Science: An Indian Journal**; Environ Sci Ind J. 2016;12(9):115

### **Conference papers/abstracts**

1. **Sampa Chakrabarti** and B. K. Dutta, Photocatalytic oxidative degradation of PVC-ZnO composite films in the presence of a dye sensitizer, was presented in International Conference on Environment 2006 (**ICENV 2006**) Nov. 13-15, 2006 at Penang, **Malaysia**.
2. **Sampa Chakrabarti**, K. Ariffin and B. K. Dutta, Adsorption of an azo-dye on active manganese oxide, Presented in **9<sup>th</sup> Fundamentals of Adsorption (FOA9) Conference, 2007** organized by Italian Association of Chemical Engineers (AIDIC), on behalf of International Adsorption Society(IAS) at Giardini Naxos, Sicily, **Italy**, May 20-25, 2007
3. **Sampa Chakrabarti** and B. K. Dutta, Sedimentation of clay slurry using biodegradable polysaccharides as flocculant, was presented in **Water Malaysia 2007**, Kuala Lumpur, **Malaysia**, in May 2007.
4. Amit Kumar Das, Rajib Kumar Das, **Sampa Chakrabarti** and B. K. Dutta, Photocatalytic reduction of hexavalent chromium in aqueous medium using Zinc Oxide as semiconductor catalyst, presented in **CHEMCON 2007**, Kolkata, **India** in December 2007
5. **Sampa Chakrabarti**, Basab Chaudhuri, Sekhar Bhattacharjee and Binay K. Dutta; On the removal of hexavalent chromium from wastewater: a comparative study between photocatalytic and chemical reduction processes; was presented in regular session in **WSEAS Environment, Ecosystem and Development (EED08)** conference held in Cairo, **Egypt** in December 2008.
6. Devika Sarkar, Sukamal Das, Aritra Chakrabarti, **Sampa Chakrabarti**, Basab Chaudhuri, Sekhar Bhattacharjee, Debabrata Chakrabarti, Utilization of Solar Energy for the Treatment of Waste Plastics: Photo catalytic degradation of Polyvinyl Chloride (PVC) with Zinc Oxide and Sunlight, was presented in **CHEMCON 2008** (held during Dec 27-30, 2008 in Chandigarh, **India**)
7. **Sampa Chakrabarti**, Pallavi Mitra , Debasish Sarkar and Sekhar Bhattacharjee, Removal of Hexavalent Chromium from Wastewater by Reduction with Steel Wool and Subsequent Precipitation, was presented in **ICEST 2010** held during April 23-25, 2010 in Bangkok, **Thailand**.
8. **Sampa Chakrabarti**, Prantik Banerjee, Saikat Maitra and Sekhar Bhattacharjee, Comparison of the photocatalytic oxidation of an azo dye using Zinc Oxide nanoparticles under artificial and solar radiation' presented and published in the proceedings of **ICFANT 2010** held in **Kolkata**.

10. **Sampa Chakrabarti**, Prantik Banerjee; Sonochemical synthesis and characterization of zinc oxide nanoparticles using different solvents and study of its efficacy as a semiconductor photocatalyst for reducing hexavalent chromium in wastewater under tropical sunlight; presented and published in the proceedings of **Nanotech 2010** conference held in **Kochi**, Kerala, India during December 19-21, 2010
11. Prantik Banerjee, **Sampa Chakrabarti**, Sekhar Bhattacharjee; Utilization of solar energy for photocatalytic oxidative degradation of azo dye in wastewater using zinc oxide nanoparticles; was presented in **ICENV 2010** conference held in **Penang**, Malaysia during December 13 – 15, 2010.
12. **Sampa Chakrabarti**, Pallavi Mitra, Prantik Banerjee, Kaberi Tah and Saikat Pal, Oxidative Degradation of Eosin Y dye in water with Fenton's Reagent and Comparison with Photo-Fenton and Sono- Fenton Degradation' in **AOP 2010** (International conference on advanced oxidation processes) held at **Kottayam**, Kerala, India during September 18 -21, 2010.
13. Pallavi Mitra, Prantik Banerjee, **Sampa Chakrabarti**, Debasish Sarkar and Sekhar Bhattacharjee, Solar photo reduction of hexavalent chromium in wastewater with zinc oxide semiconductor catalyst, was presented in **ICENV 2010** conference held in **Penang**, Malaysia during December 13 – 15, 2010.
14. Pallavi Mitra, Sandeep Karmakar, Debasish Sarkar, **Sampa Chakrabarti**, Chemical Reduction of hexavalent chromium in wastewater - effect of pH and dosing of Mohr salt, was presented in **AIPTC** conference organized by **FOSET** during February 12- 1, 2011 in Kolkata.
15. Mandip Saha Roy, Pallavi Mitra, Debasish Sarkar, **Sampa Chakrabarti**, Removal of hexavalent chromium from wastewater by reduction with zerovalent iron and subsequent precipitation by alkali, was presented in **AIPTC** conference organized by **FOSET** during February 12- 1, 2011 in Kolkata.
16. Prantik Banerjee, Indranil Nag, Somnath Chowdhury and Sampa Chakrabarti, Self-cleaning cotton fabric using sonochemically synthesized zinc oxide nanoparticles, has been selected for oral presentation in **NANOSIM 2012** conference (AICTE sponsored national conference) organized by **JIS**, Kalyani, West Bengal.
17. Prantik Banerjee, Saikat Maitra, Sekhar Bhattacharjee, **Sampa Chakrabarti**; Photocatalytic degradation of azo-dye under sunlight with different types of sonochemically synthesized ZnO nanoparticles – A comparative study ; Hydrology: Current Research, Volume 3 Issue 4, Special Issue: Proceedings of **Hydrology 2012 conference**, San Antonio, Texas USA
18. Pallavi Mitra, Prantik Banerjee, Debashis Sarkar, **Sampa Chakrabarti**; Reduction of hexavalent chromium in wastewater using hydrogen peroxide, Hydrology: Current Research, Volume 3 Issue 4, Special Issue: Proceedings of **Hydrology 2012 conference**, San Antonio, Texas USA
19. Argha Dey, Pallavi Mitra, **Sampa Chakrabarti**, Saikat Maitra, Beneficial use of chrome-iron sludge; was presented in the **Environment: Pollution and Protection (EPP-2014)** national conference held at NIT, Durgapur during January 31-February 2, 2014.

20. Amrita Dutta, **Sampa Chakrabarti**, Debasish Sarkar, Degradation of Trypan Blue dye in aqueous solution by photo-Fenton reaction: comparison between two sources of light; was presented in the **Environment: Pollution and Protection (EPP-2014)** national conference held at NIT, Durgapur during January 31-February 2, 2014.
21. **Sampa Chakrabarti**, Pallavi Mitra, Prantik Banerjee, Debasish Sarkar, Reduction of hexavalent chromium present in wastewater by steel wool in a continuous flow system  
APCBEEES procedia (proceedings of **ICESD 2014**, Singapore) (ISSN: 2212-6708), 10, 59 – 63.
22. Amrita Dutta, Anirban Roy, Debasish Sarkar, **Sampa Chakrabarti**; Solar photo-Fenton oxidative degradation of a dye-pollutant in wastewater using a novel continuous flow reactor; was presented and published in the proceedings of the **30<sup>th</sup> National Convention of Chemical Engineers** on the theme 'Recent trends in research, development and innovations in chemical industries' during September 6-7, 2014, Agartala, Tripura, India.
23. Anirban Roy, Sobhan Ghosh, Saikat Maitra, **Sampa Chakrabarti**; Sonochemical synthesis and characterization of iron(Fe)-doped zinc oxide(ZnO) nanoparticles; was presented in the National Conference on Nanoscience and Nanotechnology (**NS&NT-2014**) during September 18-19, 2014 at CRNN, University of Calcutta, Kolkata, India.
24. Anirban Roy, Arnab Bhattacharya, Saikat Maitra, **Sampa Chakrabarti**; Solar photocatalytic degradation of dye pollutant using sonochemically synthesized iron-doped and undoped zinc oxide nanoparticles; was presented at International conference on water: from pollution to purification (**ICW-2015**), during January 23-26, 2015 at Kottayam, Kerala, India
25. Amrita Dutta, Debasish Sarkar, Sampa Chakrabarti; Continuous oxidative degradation of insecticide in wastewater by solar photo-Fenton process using a plug-flow reactor; was presented at International conference on water: from pollution to purification (**ICW-2015**), during January 23-26, 2015 at Kottayam, Kerala, India
26. Arnab Bhattacharya, Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**; Sonochemical synthesis, characterization and photocatalytic application of iron doped zinc oxide nanoparticles under UV and solar radiation; was presented in **10<sup>th</sup> All India People's Technology Congress (AIPTC-FOSET)** during February 6-7, 2015 in Kolkata, India
27. Arnab Bhattacharya, Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**; Sonochemically synthesized iron-doped zinc oxide nanoparticle: influence of varying sonication power, was presented at **6<sup>th</sup> All India Inter Engineering College Academic Meet 2015** on April 26, 2015 in Kolkata, India (**Best paper award**)
28. Soumyadip Paul, Anirban Roy, **Sampa Chakrabarti**; *Utilization of sonochemically synthesized iron-doped zinc oxide nanoparticles for photocatalytic degradation of PVC-composite film under UV*

- radiation*: 7th All India Inter Engineering College Academic Meet - 2016 & Innovative Model Competition for a Sustainable Society, 13th March, 2016 Organized by Forum of Scientists, Engineers & Technologists (FOSET) Mankundu, Hooghly – 712139. (Best Paper Award)
29. Anirban Chowdhury, Mahjabeen Akram, **Sampa Chakrabarti**: *Oxidative degradation of Rhodamine-B dye in wastewater using ultrasound-assisted Fenton's reaction: a comparison between bath and probe type sonicators*: 7th All India Inter Engineering College Academic Meet - 2016 & Innovative Model Competition for a Sustainable Society, 13th March, 2016 Organized by Forum of Scientists, Engineers & Technologists (FOSET) Mankundu, Hooghly – 712139. (2<sup>nd</sup> Best Paper).
30. Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**: *Solar photocatalytic degradation of PVC by sonochemically synthesized iron-doped zinc oxide nanoparticles*: National Conference on Nanotechnology: Materials and Applications: (NCoN:M&A) 2016 organized by School of Materials Science and Nanotechnology, Jadavpur University, Kolkata, 16th-17th June, 2016, Jadavpur University, Kolkata.
31. Deepangsu Chatterjee, Anirban Roy, **Sampa Chakrabarti**: *Solar photocatalytic degradation of Methylene Blue dye in water using sonochemically synthesised iron-doped zinc oxide nanoparticles immobilized in polyvinyl chloride film*: 8<sup>th</sup> All India Inter Engineering College Academic Meet- 2017 & Innovative Model Competition for a Sustainable Society organized by Forum of Scientists, Engineers & Technologists (FOSET), 19th March, 2017, Panihati, Kolkata, West Bengal.
32. Bipasha Das, Anirban Roy, **Sampa Chakrabarti**: *Iron-doped zinc oxide nanoparticles: Sonochemical synthesis at different input powers and use in UV-assisted photocatalytic degradation of PVC nanocomposite film*: 9<sup>th</sup> All India Inter Engineering College Academic Meet- 2018 & Innovative Model Competition for a Sustainable Society organized by Forum of Scientists, Engineers & Technologists (FOSET), 25th March, 2018, Serampore, Hooghly, West Bengal.
33. Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**; *Solar photocatalytic degradation of PVC film with Fe-doped ZnO nanoparticles having different dopant concentrations; (presented by Sampa Chakrabarti)* 10th European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (**SPEA10**) conference organized by Solar Energy Research Centre and University Of Almeria held in **Almeria, Spain** during June 4-8, 2018.
34. Anirban Roy, Sampa Chakrabarti, *Floating composite film of PVC and iron-doped ZnO nanoparticles for conservation and photocatalytic treatment of water under sunlight*; in 12th All India Peoples' Technology Congress 2019 organized by FOSET, Kolkata 16-17<sup>th</sup> February, 2019
35. Parbatee Nag, Aniruddha Mukhopadhyay, Amrita Debnath, Anirban Roy , Sampa Chakrabarti; *Degradable plastic composite film – a comparison between photocatalytic and biodegradation*; in 2<sup>nd</sup>

International Conference on the Bioprocess Engineering and Technology, (ICABET 2020), January 20 – 22, 2020 at Heritage Institute of Technology, Kolkata, India. (selected for a chapter of a book to be published by Springer-Nature)

36. Parbatee Nag, Aniruddha Mukhopadhyay, Amrita Debnath, Anirban Roy, Sampa Chakrabarti; *Plastic-Semiconductor Composite Films: Solar Photocatalytic and Microbial Degradations in Series*; in 9th International Conference on Sustainable Waste Management towards Circular Economy (9<sup>th</sup> IconSWM-CE 2019; November 27 - 30, 2019 at KIIT (Kalinga Institute of Industrial Technology), Bhubaneswar, Odisha, India) (selected for a chapter of a book to be published from the conference)
37. Mahjabeen Akram, Sampa Chakrabarti; *Oxidative degradation of Rhodamine B dye in water - comparison of UV and sunlight-assisted Fenton processes*; in 9th International Conference on Sustainable Waste Management towards Circular Economy (9<sup>th</sup> IconSWM-CE 2019; November 27 - 30, 2019 at KIIT (Kalinga Institute of Industrial Technology), Bhubaneswar, Odisha, India) (selected for a chapter of a book to be published from the conference)

### **Book Chapters**

1. Amrita Dutta, **Sampa Chakrabarti**, Debasish Sarkar, *Degradation of Trypan Blue dye in aqueous solution by photo-Fenton reaction: comparison between two sources of light*; in **Environmental Pollution and Protection : Present Scenario**(ISBN 978-81-8487-4105) Ed. Dr. Kalyan Adhikari et al, NIT, Durgapur published by *Narosa Publishers*, New Delhi, India.
2. **Sampa Chakrabarti** and Basab Chaudhuri, *Removal of brominated flame retardants present in water: a short review*; in **Environica**, Vol 1, 2014 (ISBN 978-93-84106-14-0) Ed. Prof. J.K. Datta et al. published by *Levant Books* and *The University of Burdwan*
3. **Sampa Chakrabarti**, Prantik Banerjee, Pallavi Mitra; *Solar photocatalytic reduction of hexavalent chromium in wastewater using zinc oxide semiconductor catalyst : a comparison of performances between micro and nanoparticles*; in a book entitled: **Physical Chemical and Biological Treatment Processes for Water and Wastewater** (Ed. Dr. Tushar Kanti Sen, Curtin University, Australia) published by *Nova Science Publishers, Inc* NY 11788-3619, USA. 2015 (ISBN 978-1-63483-396-7)
4. Anirban Roy, Sobhan Ghosh, Saikat Maitra, **Sampa Chakrabarti**; *Sonochemical synthesis and characterization of iron(Fe)-doped zinc oxide(ZnO) nanoparticles* in **Nanospectrum: A Current Scenario** – Conference proceedings - Published by Allied Publications Pvt Ltd New Delhi, (2016) on behalf of CRNN, University of Calcutta (ISBN 978-93-85926-06-8)

5. Sampa Chakrabarti, Prantik Banerjee, Pallavi Mitra, Anirban Roy; *Zinc oxide based nanomaterials for environmental applications* (Chapter 5) in **Handbook of Smart Photocatalytic Materials: Environment, Energy, Emerging Applications and Sustainability**; ISBN 9780128190494; Editor: Chaudhery Mustansar Hussain & Ajay Kumar Mishra, Elsevier, USA, 2020

### **Book / Editing**

1. Edited conference proceeding: **Nanospectrum: A Current Scenario** – Conference proceedings - Published by Allied Publications Pvt Ltd New Delhi, (2016) on behalf of CRNN, University of Calcutta (ISBN 978-93-85926-06-8)
2. Single authored book: **Solar Photocatalysis for Environmental Remediation – TERI Press (New Delhi, India); 2018**, ISBN 978-81-7993-660-3
3. **Solar Photocatalysis for Environmental Remediation** – Reprinted internationally by **CRC Press (T&F group)** in December **2018** (in collaboration with TERI Press); ISBN 9780367178970 - CAT# K416004
4. **Associate Editor – Journal of The Institute of Engineers (India): Series E** –(Journal no. 40034 of **Springer Nature**) – since September 2018
5. Single authored book –পরিবেশ ও বিজ্ঞান - প্রাণিত প্রবন্ধমালা; পশ্চিমবঙ্গ রাজ্য পুস্তক পর্ষদ; ২০১৯- ISBN 978-81-247-0771-5
6. Single authored book **Treatment of Urban Solid Waste – Engineering and Integrated Management**; TERI Press (New Delhi, India); 2019; ISBN 977-81-7993-658-0

### **Other Publications:**

- সৌরকরোজ্জ্বল – **শম্পা চক্রবর্তী** ও বাসব চৌধুরী- আন্তর্জাতিক পাঠশালা (ISBN2230-9594) – ২০১১
- পরিবেশ নারীবাদ বা Ecofeminism তত্ত্ব, তথ্য ও ভাবনা- **শম্পা চক্রবর্তী**- আন্তর্জাতিক পাঠশালা (ISBN2230-9594) – ২০১২
- জীবনবিজ্ঞানী রবীন্দ্রনাথ-**শম্পা চক্রবর্তী**- আন্তর্জাতিক পাঠশালা (ISBN2230-9594) – ২০১২
- অমৃতের সন্ধানে একটি Transhumanist বা পরামনুষ্যত্ববাদী যাত্রা – **শম্পা চক্রবর্তী**- আন্তর্জাতিক পাঠশালা (ISBN2230-9594) – ২০১৩
- পরিবেশদূষণে শব্দের ভূমিকা – **শম্পা চক্রবর্তী**- আন্তর্জাতিক পাঠশালা (ISBN2230-9594)- ২০১৪
- বৈদ্যুতিন বর্জ্য ব্যবস্থাপনা-প্রযুক্তি বনাম সচেতনতা –**শম্পা চক্রবর্তী**- আন্তর্জাতিক পাঠশালা (ISBN2230-9594)- ২০১৫

**Membership of Learned Societies:**

Indian Institute of Chemical Engineers (IChE), Forum of Scientists, Engineers and Technologists (FOSET), Society for Environmental Chemistry and Allied Sciences (SECAS), People's Association for Science and Environment (PASE)

**Fellow of the Institute of Engineers, India (F-1263621)**

**Invited lectures delivered :**

- **Women empowerment for technological advancement;** Panel discussion at Platinum Jubilee Celebration of Govt. College of Engineering and Ceramic Technology, Kolkata, April 2016
- **Water-energy nexus: interruption with solar energy;** FOSET Calcutta University Chapter; June 2014
- **Sunlight for water:** World Environment Day lecture organized by Science Association of Bengal, June 2014
- **Removal of hexavalent chromium from wastewater by reduction with zerovalent iron and subsequent precipitation by alkali;** 62<sup>nd</sup> Anniversary Day Celebration – ILTA; Indian Leather Technologists Association; August 2012
- **Sustainable Development;** UGC-sponsored National Seminar on Sustainable Development; Uluberia College – Department of Education; November 2011
- **Advanced oxidation processes as pre-treatment of biological treatment of wastewater** in a National workshop - Tripura University on Biological Treatment of Wastewater in September 2017
- **Sunlight for Remediation of Polluted Environment** – in 66<sup>th</sup> Orientation Programme by UGC-HRDC of Jadavpur University, Kolkata
- **Developing a simple continuous solar reactor for wastewater treatment** – in 12<sup>th</sup> All India Peoples' Technology Congress 2019 organized by FOSET, Kolkata

**Awards :**

- Received *Invention Award* (Invention no. 810510) from ***Intellectual Venture, India*** for invention of 'Sunlight degradable composite film of Polyvinyl Chloride (PVC) and Zinc oxide (ZnO)' in October 2010.
- Received *Invention Award* (IN-84226) from ***Intellectual Venture, India*** for invention of "Self-cleaning cotton textile with surface modified by zinc oxide nanoparticle" in November 2012.
- Mandip Saha Roy, Pallavi Mitra, Debasish Sarkar, **Sampa Chakrabarti**, Removal of hexavalent chromium from wastewater by reduction with zerovalent iron and subsequent precipitation by alkali,

Journal of the Leather Technologists Association (**JILTA**), Vol 3, March 2011, 165-172 – has been selected as the **Best Paper in 2011** of the journal and won **J.SinhaRoy Memorial Award**.

- Soumyadip Paul, Anirban Roy, **Sampa Chakrabarti**: *Utilization of sonochemically synthesized iron-doped zinc oxide nanoparticles for photocatalytic degradation of PVC-composite film under UV radiation*: 7th All India Inter Engineering College Academic Meet - 2016 & Innovative Model Competition for a Sustainable Society, 13th March, 2016 Organized by Forum of Scientists, Engineers & Technologists (FOSET) Mankundu, Hooghly – 712139 – **Won 1<sup>st</sup> prize** in Chemical and Environmental Engineering group
- Anirban Chowdhury, Mahjabeen Akram, **Sampa Chakrabarti**: *Oxidative degradation of Rhodamine-B dye in wastewater using ultrasound-assisted Fenton's reaction: a comparison between bath and probe type sonicators*: 7th All India Inter Engineering College Academic Meet - 2016 & Innovative Model Competition for a Sustainable Society, 13th March, 2016 Organized by Forum of Scientists, Engineers & Technologists (FOSET) Mankundu, Hooghly – 712139 – **won 2<sup>nd</sup> prize** in Chemical and Environmental Engineering group
- **Anupama Samman-2017** for women empowerment by Turnstone-Global and BCW-Cell CU

#### **Experience as Conference Speaker**

- Presented a paper entitled '*Adsorption of an azo dye on active manganese oxide*' in **FOA9** Conference in **Sicily, Italy** organized jointly by **International Adsorption Society** and Italian Association of Chemical Engineering in May 2007.
- Presented a paper entitled '*Photocatalytic reduction of hexavalent chromium in aqueous medium using Zinc Oxide as semiconductor catalyst*' in Indian Chemical Engineering Congress (**CHEMCON 2007**) held in Kolkata in December 2007.
- Presented a paper entitled '*On the removal of hexavalent chromium from wastewater: a comparative study between photocatalytic and chemical reduction processes*' in the general technical session of the **WSEAS Environment, Ecosystem and Development (EED08)** conference held in Cairo, **Egypt** in December 2008.
- Presented a paper entitled '*Removal of Hexavalent Chromium from Wastewater by Reduction with Steel Wool and Subsequent Precipitation*', in **ICEST 2010** (International Conference on environmental Science and Technology) held during April 23-25, 2010 in Bangkok, **Thailand**.
- Presented a paper entitled '*Oxidative Degradation of Eosin Y dye in water with Fenton's Reagent and Comparison with Photo-Fenton and Sono- Fenton Degradation*' in **AOP 2010** (International conference on advanced oxidation processes) held at Kottayam, Kerala, **India** during September 18 -21, 2010.

- Presented a paper entitled ‘*Comparison of the photocatalytic oxidation of an azo dye using Zinc Oxide nanoparticles under artificial and solar radiation*’ in **ICFANT 2010** (International Conference of fundamentals and applications of nanotechnology) in Kolkata, **India** during December 9-11, 2010.
- Amrita Dutta, Sanjukta Datta, Mahua Ghosh, Debasish Sarkar, **Sampa Chakrabarti** *Sunlight–assisted photo-Fenton process for removal of insecticide from agricultural wastewater*, has been presented (ORAL) in the 1<sup>st</sup> International Forum on Asian Water Environment Technology –**IFAWET 2013** in **New Delhi**, during 18-20 December 2013.
- **Sampa Chakrabarti**, Pallavi Mitra, Prantik Banerjee, Debasish Sarkar, *Reduction of hexavalent chromium present in wastewater by steel wool in a continuous flow system* was presented in the 5<sup>th</sup> International Conference on Environmental Science and Development-**ICESD-2014** held in **Singapore** during February 19-21, 2014.
- Anirban Roy, Saikat Maitra, **Sampa Chakrabarti**; Solar photocatalytic degradation of PVC film with Fe-doped ZnO nanoparticles having different dopant concentrations; (presented by Sampa Chakrabarti) 10<sup>th</sup> European meeting on Solar Chemistry and Photocatalysis: Environmental Applications (**SPEA10**) conference organized by Solar Energy Research Centre and University Of Almeria held in **Almeria, Spain** during June 4-8, 2018.

### Administration

- Worked as **Convener** of the Technical and Publication subcommittee of Indian Chemical Engineering Congress (**CHEMCON 2007**) held in Kolkata in December 2007.
- Worked as **Joint Coordinator** in the orientation programme (**OP-67**) for the college-teachers organized by UGC-Academic Staff College, University of Calcutta in July – August 2006.
- Organized workshop on ‘Application of Hysys for design and simulation of process plants’ for the Department of Chemical Engineering and TEQIP, University of Calcutta in two phases, in October 2008 and January 2009.
- Working as **Faculty-in-charge** for **in-plant summer training** of the 5<sup>th</sup> semester students since 2005. Released a manual for training.
- Worked as **joint coordinator** for the **Ph.D-coursework** on Research Methodology and Computer Applications under the Faculty of Engineering and Technology, University of Calcutta during March-April and July-August 2011.
- Worked as a member (University-nominated) of the **Arsenic Task Force** of the Department of Public Health Engineering, Govt. of West Bengal

- Working as a member of the **Research & Development** Committee of the **West Bengal Pollution Control Board**.
- Worked as joint co-ordinator of **OP-96** (for the College-teachers by UGC-Academic Staff College, CU) in July-August 2012.
- Was a member of the Science Communicators' Meet sub-committee and Member of the Editorial Board of the Newsletter of **100<sup>th</sup> Indian Science Congress** in Kolkata in January 2013.
- Working as a member of **TEQIP-Phase-II** in the University of Calcutta
- Worked as a joint co-ordinator for **Refresher Course** in Environmental Studies-2014 organized by Academic Staff College, University of Calcutta for college teachers.
- Worked as **Head of the Department of Chemical Engineering**, University of Calcutta during 2016-2017
- Worked as joint co-ordinator in **EDP-2016** (Entrepreneurship Development Programme) in the Department of Chemical Engineering, University of Calcutta
- Worked as co-ordinator of **Start-up and Entrepreneurship programme** at Indira Gandhi Institute of Technology, Sarang, Orissa on behalf of TEQIP-III, University of Calcutta
- Selected as member of the **State Level Environment Impact Assessment Authority, West Bengal** by the **Ministry of Environment, Forest and Climate Change, Govt. of India**

### Others

- Worked as a **reviewer** for peer-reviewed journals including *Water Environmental Research*, *Journal of Hazardous Materials* and *Journal of Chemical Technology and Biotechnology*, *Chemical Engineering Journal*, *Journal of Material Science*.
- Received *Invention Award* (Invention no. 810510) from **Intellectual Venture, India** for invention of 'Sunlight degradable composite film of Polyvinyl Chloride (PVC) and Zinc oxide (ZnO)' in October 2010.
- Received *Invention Award* (IN-84226) from **Intellectual Venture, India** for invention of "Self-cleaning cotton textile with surface modified by zinc oxide nanoparticle" in November 2012.
- Submitted an application to **National Research Development Corporation** (NRDC) for filing patent in India on *Ceramic glazing pigment from chrome-iron sludge* (application number IPR/FA/13048/2014).
- Reports have been published based on our articles of 'Bioresource Technology' and 'Journal of Hazardous Materials' in '**Down to Earth**', a renowned popular-science journal in November 2007.

- Reports has been published based on our article in ‘*International Journal of Global Warming*’ in *Science Daily*, a renowned popular-science journal in October 2010
- Editorial Board Member – **Advances in Chemical Engineering Science** (ACES) Journal published by Scientific Research Publication Inc.(scrip) USA.
- Our paper entitled ‘Reduction of Hexavalent Chromium in Aqueous Medium With Zerovalent Iron’ (Water Environ. Res., 82 (2009) 134 – 146) was among the 30 **Fast Track articles** of WER in 2009.
- Our paper entitled ‘Application of Biodegradable Natural Polymers for Flocculated Sedimentation of Clay-Slurry, (Bioresource Technology, Vol. 99, Issue 8 (2008), 3313 – 3317) was among the **top 10 articles** published in the same domain as surveyed by *BiomedLib* till September 2010.
- Our paper entitled ‘On the adsorption and diffusion of Methylene Blue in glass fibers (J Colloid Interface Sci; 2005 Jun 15;286(2):807-11) (Chakrabarti S, Dutta BK) was among the **top 10 articles** published in the same domain since 2005 as surveyed by *BiomedLib*.
- Our papers entitled **Degradation mechanism and kinetic model for photocatalytic oxidation of PVC-ZnO composite film in presence of a sensitizing dye and UV radiation.** *J Hazard Mater*; 2008 Jun 15;154(1-3):230-6 (Chakrabarti S, Chaudhuri B, Bhattacharjee S, Das P, Dutta BK) and **Photocatalytic degradation of model textile dyes in wastewater using ZnO as semiconductor catalyst.** *J Hazard Mater*; 2004 Aug 30;112(3):269-78 (Chakrabarti S, Dutta BK) were among the top 10 articles published on the same topic since 2004 as surveyed by *BiomedLib*.
- Our paper entitled Zinc oxide nano-particles – **Sonochemical synthesis, characterization and application for photo-remediation of heavy metal**, *Ultrasonics Sonochemistry*; 19 (2012) 85–93 (Prantik Banerjee, Sampa Chakrabarti, Saikat Maitra, Binay K. Dutta,) has been among the most read 20 articles.
- Attended **Workshop on Accreditation** in Gurugram in March 2016

#### **Collaboration/Relation with Outside world:**

International Collaboration: Post-doc research as stated earlier, papers as described

National Collaboration: Papers with faculty members of other departments and institutes in India

External Examiner: Indian Institute of Technology, Kharagpur

Interdepartmental Ph.D supervision: Environmental Science and Library and Information Science, University of Calcutta

#### **Social contribution:**

Contributed popular science articles in Bengali to little magazines and magazines for children.

Founder member of PASE(Peoples Association for Science and Environment) – an organization for popularizing science and environmental awareness