

# Dr. ALOKE KUMAR MUKHERJEE



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**Qualification:** M.Sc., Ph.D

**Designation:** Part-Time Teacher (SACT-I)

**Teaching Experience (in years):** UG: 2.5years PG: 9.5years (from 15 July, 2008)

**Research Experience (in years):** 12 years

**Date of Joining Present Institution:** 15 July, 2008

**Specialization:** Environmental Toxicology

**Research Interest:** Environmental Toxicology, Mine Water Chemistry, EIA, Biodiversity Analysis, Soil and Water analysis.

## Courses taught

	B.Com (Honours)	B. Com. (Program)	M.Sc
Semester-I	AECC-1 (ENVS)	AECC-1 (ENVS)	1. MSCCONBC-101(Use of Bioresources and Conservation Ethics) 2. MSCCONBC-102 (Ecotoxicology) 3. MSCCONBC-102 (Management of degraded nature/soil resources) 4. MSCCONBC-103 (Resources: concept and causes of depletion) 5. MSCCONBC-103 (use and over-exploitation of resources) 6. MSCCONBC-106 (Natural Interaction-PRACTICAL)
Semester-II			1. MSCCONBC-201 (Wastewater management) 2. MSCCONBC-201(solid waste management) 3. MSCCONBC-204 (chemistry of hydrosphere) 4. MSCCONBC-204 (chemistry of lithosphere) MSCCONBC-206 (chemistry of biosphere-Practical)
Semester-III			1. MSCCONBC-301 (wildlife ecotourism) 2. MSCCONBC-301 (environmental economics and impact assessment) 3. MSCCONBC-301 (ecosystem and social issues) 4. MSCCONBC-301 (biodiversity protection laws: National Legislations) 5. MSCCONBC-302 (Natural disaster and disaster management) 6. MSCCONBC- 304(Forest wealth)(silviculture and forest ecology) 7. MSCCONBC-304 (Wetland Conservation) (chemical transformations in wetlands) 8. MSCCONBC-306 (Forest wealth practical)

Semester-IV			1. MSCCONBC-401 (dissertation) 2. MSCCONBC-403 (principles of analytical methods) 3. MSCCONBC-404 (Forest wealth) (forest microbiology) 4. MSCCONBC-404 (Wetland conservation ) (wetland conservation laws and global efforts)
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## Online Mode of Teaching

Since our students come from varied economic background, online services like ZOOM or Google Meet are beyond their reach. The common denominator in this case was access to Email, WhatsApp, Google Classroom, YouTube etc.

I take most classes through sending study materials via WhatsApp and email, then hold verbal and written discussion on class timings using WhatsApp and Gmail-Hangout, as well as conference calling. Homework and other assignment are submitted timely through email.

Internal Assessment was held mostly using open book tests and MCQ test Thout mailing. Feedback for the same is provided within a week so that students can monitor their progress.

## Publications

### Journals:

1. Apurba Ratan Ghosh, Sandipan Pal, and **Aloke Kumar Mukherjee**. 2005: Sustainability Opportunity for Potential Aquaculture in OCPS as a Post-Mining Land use for Rural Economic Development in Raniganj Coalfield Areas. p.140-155. *In* D. Khare, S.K. Mishra, S.K. Tripathi, G. Chauhan and N. Sharma (ed) Recent advances in water resources development & management. Vol. I. Allied Publishers. New Delhi, India.
2. Apurba Ratan Ghosh, Sandipan Pal, and **Aloke Kumar Mukherjee**. 2006: Chemical Pollutants and Its Effect on Fish Physiology with Special Reference to Accumulation, Absorption and Excretion. *Journal of Environment and Sociobiology*, 4(1): 55-62. [ISSN: 0973-0834]
3. Sabyasachi Mukhopadhyay, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2009: Ambient air quality monitoring in opencast coal mining area of Bankola area (Under Eastern Coal Field Ltd) of Asansol Ranigang region. *The Ecosan*, 4(1): 01-05. . [ISSN: 0974-0376].
4. Amrita Bhowmick, Apurba Ratan Ghosh, Ruma Banerjee, **Aloke Kumar Mukherjee**, Sandipan Pal, and Tarakeshwar Senapati. 2010: Remediation of Cadmium toxicity caused by EDTA and *Echhiornia crassipes* in the different regions of the alimentary canal of *Anabas testudineus* (Bloch): A Scanning Electron Microscopic study. *Asian journal of Microbiology Biotechnology and Environmental Science*, 12(4): 835-843. [ISSN: 0972-3005]
5. Tarakeshwar Senapati, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2009: Observation on the effect of glyphosate based herbicide on ultra structure (SEM) and enzymatic activity in different regions of alimentary canal and gill of *Channa punctatus* (Bloch). *Journal of Crop and Weed*, 5 (1): 236 - 245. (S/IL/24559).[ISSN: 0974-6315]
6. Palas Samanta, Tarakeshwar Senapati, **Aloke Kumar Mukherjee**, Subinoy Mondal, Smaranya Haque, and Apurba Ratan Ghosh. 2010: Effectiveness of Almix in controlling aquatic weeds and fish growth and its consequent influence on water and sediment quality of a pond. *The Bioscan*, (Special Issue) 3: 691-700. [ISSN: 0973-7049]

7. Sarani Bhaumik and **Aloke Kumar Mukherjee**. 2011: Environmental Violence on the Coastal Regulation Zone and Possible Tourism Threats at Sea-Coast of Mandaramoni, East-Midnapore, West Bengal. *Tourism: Theory and Practice*. 9(2): 57-70. [ISSN: 0973-6611]
8. Tarakeshwar Senapati, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2012: Observations on the effect of almix-20<sup>WP</sup> herbicide on ultra structure (SEM) in different regions of alimentary canal of *Anabas testudineus* (Cuvier). *International Journal of Food, Agriculture and Veterinary Sciences*. 2(1): 32-39. [ISSN: 2277-209X (Online)]
9. Smaranya Haque, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2012: Histopathological and ultramicroscopic changes induced by fluoride in soft tissue organs of the air-breathing teleost, *Channa punctatus* (Bloch). *Fluoride*, 45(3 Pt 2): 263-273. [ISSN: 0015-4725]
10. Subhamita Chatterjee., Munmun Chhatri, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2013: Study of physicochemical conditions of discarded diesel contaminated Locoshed pond near Burdwan Locomotives of Burdwan, West Bengal. *International Journal of Environmental Sciences* (Online), 3(5): 1446-1456. [ISSN 0976-4402].
11. Palas Samanta, **Aloke Kumar Mukherjee**, Sandipan Pal, Tarakeshwar Senapati, Subinoy Mondal, and Apurba Ratan Ghosh. 2013: Major ion chemistry and water quality assessment of waterbodies at Golapbag area under Barddhaman Municipality of Burdwan District, West Bengal, India. *International Journal of Environmental Sciences* (Online), 3(6):1954-1972. [ISSN 0976 - 4402].
12. **Aloke Kumar Mukherjee**, Sandipan Pal, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2013: Ecofriendly technology for pisciculture in abandoned OCP- lakes at RCF Area, West Bengal, India. In: Food and Environment Security Imperatives of Indigenous Knowledge Systems (D. Das Ed.) *Agrobios (India)*: 149-160. [ISBN (13): 978-81-7754-509-8].
13. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2013: Evaluation of enzymatic activities in liver of three teleostean fishes exposed to commercial herbicide, Almix 20 WP. *Proceedings of the Zoological Society*. 1-5. 68(1): 9-13. [DOI 10.1007/s12595-013-0086-z].[ISSN 0373-5893 (Online)].
14. Sandipan Pal, **Mukherjee, A.K**, Tarakeshwar Senapati, Palas Samanta, Subinoy Mondal, and Apurba Ratan Ghosh. 2013: Surface water quality assessment of abandoned opencast coal pit-lakes in Raniganj coalfields area, India. *The Ecoscan* (Special Issue), Vol.IV. 175-188. [ISSN: 0974 - 0376].
15. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2014: Effects of Almix herbicide on metabolic enzymes in different tissues of three teleostean fishes *Anabas testudineus*, *Heteropneustes fossilis* and *Oreochromis niloticus*. *International Journal of Scientific Research in Environmental Sciences*, 2(5): 156-163. [DOI: <http://dx.doi.org/10.12983/ijres-2014-p0156-0163>] [ISSN: 2322-4983]
16. Sandipan Pal, **Aloke Kumar Mukherjee**., Tarakeshwar Senapati, Palas Samanta., Subinoy Mondal., and Apurba Ratan Ghosh. 2014: Study on littoral zone sediment quality and aquatic macrophyte diversity of opencast coal pit-lakes in Raniganj Coal Field, West Bengal, India. *International Journal of Environmental Sciences*. 01/2014; 4(4):575-588. [ISSN: 0976-4402]
17. Palas Samanta, Sandipan Pal., **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2014: Biochemical effects of glyphosate based herbicide, Excel Mera 71 on enzyme activities of acetylcholinesterase (AChE), lipid peroxidation (LPO), catalase (CAT), glutathione-S-transferase (GST) and protein content on teleostean fishes. *Ecotoxicology and Environmental Safety*, 107: 120-125. [ISSN: 0147-6513]
18. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2014: Evaluation of Metabolic Enzymes in Response to Excel Mera 71, a Glyphosate-Based Herbicide, and Recovery Pattern in Freshwater Teleostean Fishes. *BioMed Research International*. Article ID 425159, 6 pages. [<http://dx.doi.org/10.1155/2014/425159>]

19. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Debraj Kole., and Apurba Ratan Ghosh. 2014: Effects of almix herbicide on profile of digestive enzymes of three freshwater teleostean fishes in rice field condition. *Toxicology Reports*, 1 (2014) 379-384. [<http://dx.doi.org/10.1016/j.toxrep.2014.07.001>] [ISSN: 2214-7500]
20. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Debraj Kole, and Apurba Ratan Ghosh. 2014: Effects of almix herbicide on alanine aminotransferase (ALT), aspartate aminotransferase (AST) and alkaline phosphatase (ALP) of three teleostean fishes in rice field condition. *The Global Journal of Environmental Science & Research*, 1(1): 1-9. [ISSN-2349-7335]
21. Debraj Kole, Palas Samanta, Apurba Ratan Ghosh, Sandipan Pal, and **Aloke Kumar Mukherjee**. 2014: Limnobiological status of hospital waste-fed pond within the burdwan medical college and hospital premises at burdwan town, W.B. *The Ecoscan*, 8(1&2): 11-16. [ISSN: 0974-0376]
22. Subinoy Mondal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Smaranya Haque, and Apurba Ratan Ghosh. 2014: Interrelationship between TOC, IC, TC and DO, BOD, COD of water in regard to stratification of an abandoned OCP at Raniganj coal field area, Burdwan, West Bengal. Paper published at “*HydroMedit 2014: 1<sup>st</sup> International Conference of Applied Ichthyology and Aquatic Environment*”, November 13-15, 2014, Volos, Greece. Pp 25-29.
23. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2014: Biochemical effects of Almix herbicide in three freshwater teleostean fishes. Paper published at “*HydroMedit 2014: 1<sup>st</sup> International Conference of Applied Ichthyology and Aquatic Environment*”, November 13-15, 2014, Volos, Greece. Pp 162-167.
24. Debraj Kole, Sandipan Pal, **Aloke Kumar Mukherjee**, Palas Samanta, and Apurba Ratan Ghosh. 2014: effects of chromium on tissue-specific biochemical parameters in freshwater catfish, *Anabas testudineus* (Bloch). Paper published at “*HydroMedit 2014: 1<sup>st</sup> International Conference of Applied Ichthyology and Aquatic Environment*”, November 13-15, 2014, Volos, Greece. Pp 168-174.
25. Palas Samanta, Namita Bandyopadhyay, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2015: Histopathological and ultramicroscopical changes in gill, liver and kidney of *Anabas testudineus* (Bloch) after chronic intoxication of almix (metsulfuron methyl 10.1% + chlorimuron ethyl 10.1%) herbicide. *Ecotoxicology and Environmental Safety*, 122: 360-367. [DOI: 10.1016/j.ecoenv.2015.08.022.]. [ISSN: 0147-6513]
26. Subinoy Mondal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Sandipan Pal, Smaranya Haque, and Apurba Ratan Ghosh. 2015: Stratification and water quality of an abandoned opencast coal pit lake at Raniganj Coalfield Area, West Bengal, India. *Lakes and Reservoirs: Research and Management*, 20: 85-100. [DOI: 10.1111/lre.12090] [Online ISSN: 1440-1770]
27. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2016: Effects of Almix Herbicide on histopathological and ultrastructural alterations in freshwater fish, *Heteropneustes fossilis*: A Comparative Study. *Annals of Biological Research*, 7 (2):24-32. [ISSN 0976-1233].
28. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Debraj Kole, and Apurba Ratan Ghosh. 2016: Effects of Almix® Herbicide on oxidative stress parameters in three freshwater Teleostean fishes in natural condition. *Biochemistry and Pharmacology (Open Access)*, 5(3), 209: 1-6. [DOI: 10.4172/2167-0501.1000209] [Online ISSN: 2167-0501 BCPC]
29. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2016: Histopathological and ultrastructural alterations in *Anabas testudineus* exposed to glyphosate-based herbicide, Excel Mera 71 under Field and laboratory conditions. *Journal of Aquaculture Research and Development*, 7(7):436 [Open Access: doi:10.4172/2155-9546.1000436] [ISSN: 2155-9546].

30. Palas Samanta, **Aloke Kumar Mukherjee**, Sandipan Pal, Debraj Kole, and Apurba Ratan Ghosh. 2016: Toxic effects of glyphosate-based herbicide, Excel Mera 71 on gill, liver, and kidney of *Heteropneustes fossilis* under laboratory and field conditions. *Journal of Microscopy and Ultrastructure*. 4(3):147-155 [Open Access: DOI.org/10.1016/j.jmau.2016.01.002] [ISSN: 2213-879X]
31. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2016: Cytopathological Effects of Almix Herbicide on gill, liver and kidney of *Oreochromis niloticus* under field and laboratory conditions. *Toxicology: Open Access*, 2(1):112.
32. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Debraj Kole, and Apurba Ratan Ghosh. 2016. Histopathological Study in Stomach and Intestine of *Anabas testudineus* (Bloch, 1792) under Almix Exposure. *Fisheries and Aquaculture Journal*, 7(3):179 [ISSN: 2150-3508] [Open Access : DOI: 10.4172/2150-3508.1000179].
33. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, Debraj Kole, and Apurba Ratan Ghosh. 2016. Gastrointestinal pathology in freshwater fish, *Oreochromis niloticus* (Linnaeus) under Almix exposure. *Journal of Environmental and Analytical Toxicology*, 6(5): 399. [ISSN: 2161-0525] [Open Access: DOI: 10.4172/2161-0525.1000399].
34. Amina Khatun, Sandipan Pal, **Aloke Kumar Mukherjee**, Palas Samanta, Subinoy Mondal, Debraj Kole, Priyanka Chandra, and Apurba Ratan Ghosh. 2016: Evaluation of metal contamination and phytoremediation potential of aquatic macrophytes of East Kolkata Wetlands, India. *Environmental Health and Toxicology*, 31. [eISSN: 2233-6567 ] [Open Access: <https://doi.org/10.5620/eht.e2016021>].
35. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2016. Pathological (Histological and Ultrastructural) Study in Stomach and Intestine of *Heteropneustes fossilis* (Bloch) to Excel Mera 71, a Glyphosate-Based Herbicide. *Journal of Gastrointestinal and Digestive System*, 6(6):479 [an open access journal; ISSN: 2161-069X] [DOI: 10.4172/2161-069X.1000479].
36. Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Tarakeshwar Senapati, and Apurba Ratan Ghosh. 2016: Alterations in digestive enzymes of three freshwater teleostean fishes by Almix herbicide: A comparative study. *Proceedings of the Zoological Society*. 69(1).61-66 [ISSN 0373-5893] [(Online: DOI 10.1007/s12595-014-0122-7)].
37. Sukhendu Dey, Palas Samanta, Sandipan Pal, **Aloke Kumar Mukherjee**, Debraj Kole, and Apurba Ratan Ghosh. 2016: Integrative assessment of biomarker responses in teleostean fishes exposed to glyphosate-based herbicide (Excel Mera 71). *Emerging Contaminants*. 2(4). 191-203. [ISSN: 2405-6650] [http://dx.doi.org/10.1016/j.emcon.2016.12.002].
38. Palas Samant., Pragya Kumari, Sandipan Pal, **Aloke Kumar Mukherjee**, and Apurba Ratan Ghosh. 2017: Histopathological and ultrastructural alterations in some organs of *Oreochromis niloticus* exposed to glyphosate-based herbicide, Excel Mera 71. *Journal of Microscopy and Ultrastructure*.6(1). 35-43. [ISSN: 2213-879X] [doi. 10.4103/JMAU.JMAU\_8\_18]

### Guidance of M.Sc. Projects

1. Indrani Biswas (2013-2014, Durgapur Government College): Physicochemical study of different springs of Bakreshwar, Birbhum, West bengal, in two consecutive Winter and Summer Seasons.  
(Co-Guide: Sanghamitra Sanyal)
2. Abhijan Panja (2014-2015, Durgapur Government College): Seasonal variation of physicochemical parameters of rice mill effluent affected water bodies of Rasulpur, Burdwan, West Bengal, in two consecutive post-winter and summer seasons.

3. Rounaq Ghosh, (2015-2016, Durgapur Government College): physicochemical study of different water bodies of Asansol Municipal Area, Burdwan, West Bengal.  
(Co-Guide: Sanghamitra Sanyal)
4. Priyanka Mukherjee, (2015-2016, Durgapur Government College): physicochemical conditions of water bodies of Sainthia Municipal Area, Birbhum, West Bengal.  
(Co-Guide: Sanghamitra Sanyal)
5. Pavel Ghosh, (2016-2017, Durgapur Government College): A comparative assessment of macrophytic vegetation in two abandoned mine sites of Raniganj Coalfields, with Durgapur Government College campus and its surroundings, Durgapur, West Bengal.  
(Co-Guide: Sanghamitra Sanyal)
6. Morali Biswas, (2017-2018, Durgapur Government College), Seasonal Study of Physicochemical conditions and, Algal and cyanobacterial Diversity of different hot springs of Bakreshwar, Birbhum, West Bengal  
(Co-Guide: Sanghamitra Sanyal)
7. Pourani Ghosh, (2017-2018, Durgapur Government College), Seasonal study of physicochemical conditions of different hot springs of Bakreshwar, Birbhum, West Bengal  
(Co-Guide: Sanghamitra Sanyal)
8. Poulami Sengupta, (2017-2018, Durgapur Government College), Ethnomedicinal Knowledge and Uses of Plants in Barjora Block and Sonamukhi Block, West Bengal, India  
(Co-Guide: Sanghamitra Sanyal)
9. Pallabi Maity, (2019-2020, Durgapur Government College), Consequences of idol immersion in festive season in water bodies of Durgapur Industrial City, Paschim Bardhaman, West Bengal  
(Co-Guide: Sanghamitra Sanyal)
10. (Co-Guide: Sanghamitra Sanyal)

#### **Paper Presentation in seminar/conference/symposium/workshop/discussion meeting**

1. Oral presentation on " Histopathological and Ultramicroscopial Alterations Induce by Sodium Fluoride in the Different Tissues of an Air-breathing Teleost, *Channa punctatus* (Bloch)" in the International Conference (2007) on Ecotoxicology & Environmental Sciences: Place: Institute of Ecotoxicology and Environmental Sciences, Kolkata, India
2. Oral presentation on "*Metanil Yellow- A food additive induce the responses at cellular and sub-cellular organizations in Heteropneustes fossilis (Bloch).*" In the International conference (2007) on Ecotoxicology & Environmental sciences: Place: Institute of Ecotoxicology and Environmental Sciences, Kolkata, India

#### **Organization of events (Durgapur Government College)**

1. Wetlands: A biological supermarket; organized by P. G. Dept. of Conservation Biology, Durgapur Govt. College, on Nov. 16, 2017 (Member, Organizing committee, Dept. of Conservation Biology)
2. Present Status and Conservation measures of threatened animals in India; organized by P. G. Dept. of Conservation Biology, Durgapur Govt. College, on Sept. 26, 2018 (Member, Organizing committee, Dept. of Conservation Biology)

3. 3. One day zonal level seminar on “Nooks and perils of Conservation Biology” organized by P.G. Dept. of Conservation Biology, Durgapur Govt. College, on Oct. 10, 2018 (Member, Organizing committee, Dept. of Conservation Biology)
4. One day state level seminar on “Conservation efforts of Fishing cat, West Bengal” organized by P. G. Dept. of Conservation Biology, Durgapur Govt. College, on Nov. 20, 2018 (Member, Organizing committee, Dept. of Conservation Biology)
5. Two days department level workshop on “Practical applications of STELLA in ecological modelling” organized by P. G. Dept. of Conservation Biology, Durgapur Govt. College, on Jan. 2 -3, 2019 (Member, Dept. of Conservation Biology)
6. Two days National level seminar on “Contemporary Era of Sciences: Biological and Chemical interface” organized by P. G. Dept. of Conservation Biology in collaboration with Dept of Botany, Dept of Chemistry and Dept of Zoology, Durgapur Govt. College, on Mar. 26 -27, 2019 (Member, Poster committee, Dept. of Conservation Biology)
7. One day National level seminar on “Modern Era of Biological Science: Lab to Land” organized by P. G. Dept. of Conservation Biology in collaboration with Dept. of Zoology, Durgapur Govt. College, on Dec. 12, 2019 (Member, organizing committee, Dept. of Conservation Biology)
8. One day Students interactive program on Visual aids in Biodiversity Conservation: organized by P. G. Dept. of Conservation Biology, Durgapur Govt. College, on Feb. 12, 2020 (Member Dept. of Conservation Biology)

#### **Participation in committees of Durgapur Government College since 2017**

1. Golden Jubilee Celebration of College (Refreshment Committee, 2018-19)