Dr. Maumita Bandyopadhyay

Designation: Assistant Professor

Department: Department of Botany

Organization/Institution name: University of Calcutta

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Date of birth: 11/03/1975 **Sex (M/F):** F **Category (Gen/SC/ST/OBC):** Gen

Academics

Sl No.	Institution Place	Degree Awarded	Year	Field of Study
1	Lady Brabourne College, University of Calcutta	BSc	1996	Botany (Honors) with Chemistry and Zoology (Pass), English (Selective language)
2	University of Calcutta	MSc	1998	Botany (Specialization in Cell Biology, Molecular Genetics and Plant Tissue Culture)
3	University of Calcutta	PhD	2005	"*Tissue Culture and Agrobacterium Mediated Transformation in Medicinal Plants*".

Position and Employment (Starting with the most recent employment)

Sl. No.	Institution Place	Position	From (Date)	To (date)
1	Department of Botany, University of Calcutta	Assistant professor	July, 2006	Present

Publications

1. **Bandyopadhyay, Maumita** and Jha, Sumita, 2003, Withania species-a review, Journal of Tropical Medicinal Plants,4(2): 273-284.
2. Jha, Sumita and **Bandyopadhyay, Maumita** and Chaudhuri, Kuntal Narayan and Ghosh, Seemanti and Ghosh, Biswajit, 2005, Biotechnological approaches for the production of forskolin, withanolides, colchicine and tylophorine, Plant Genetic Resources, 3(2):101-115. ISSN 1479-2621 **Impact Factor: 0.712**
3. **Bandyopadhyay, Maumita** and Jha, Sumita and Tepfer, David, 2007, Changes in morphological phenotypes and withanolide composition of Ri-transformed roots of Withania somnifera, Plant Cell Reports,26(5):599-609. DOI 10.1007/s00299-006-0260-0 **Impact Factor: 3.071**
4. Chaudhuri, Kuntal and Das, Sudripta and **Bandyopadhyay, Moumita** and Zalar, Andreja and Kollmann, Albert and Jha, Sumita and Tepfer, David, 2009, Transgenic mimicry of pathogen attack stimulates growth and secondary metabolite accumulation, Transgenic Research, 18(1):121-134. doi: 10.1007/s11248-008-9201-8 **Impact Factor: 2.197**
5. Ghosh, Manosij and **Bandyopadhyay, Maumita** and Mukherjee, Anita, 2010, Genotoxicity of titanium dioxide (TiO2) nanoparticles at two trophic levels: plant and human lymphocytes, Chemosphere 81(10):1253-1262. doi:10.1016/j.chemosphere.2010.09.022 **Impact Factor: 4.427**
6. Ghosh, Manosij and Chakraborty, Anirban and **Bandyopadhyay, Maumita** and Mukherjee, Anita, 2011, Multi-walled carbon nanotubes (MWCNT): induction of DNA damage in plant and mammalian cells, Journal of Hazardous Materials, 197:327-336. doi:10.1016/j.jhazmat.2011.09.090 **Impact Factor: 6.434**
7. Ghosh, Manosij and Manivannan, J and Sinha, Sonali and Chakraborty, Anirban and Mallick, Sanjaya Kumar and **Bandyopadhyay, Maumita** and Mukherjee, Anita, 2012, In vitro and in vivo genotoxicity of silver nanoparticles, Mutation Research/Genetic Toxicology and Environmental Mutagenesis,749(1):60-69 ISSN: 1383-5718 **Impact Factor: 3.680**
8. Das, Sayantani and **Bandyopadhyay, Maumita** and Bera, Subir, 2012, Optimization of protocol for isolation of genomic DNA from leaves of Selaginella species suitable for RAPD analysis and study of their genetic variation, American Fern Journal, 102(1):47-54. DOI: 10.1640/0002-8444-102.1.47. **Impact Factor: 0.676**
9. Nag, Anish and **Bandyopadhyay, Maumita** and Mukherjee, Anita, 2013, Antioxidant activities and cytotoxicity of Zingiber zerumbet (L.) Smith rhizome, J Pharmacogn Phytochem.,2(3):102-108. ISSN 2278-4136
10. Bhadra, Sreetama and Ghosh, Manosij and Mukherjee, Anita and **Bandyopadhyay, Maumita,** 2013, Vivipary in Hedychium elatum (Zingiberaceae), Phytotaxa, 130(1):55-59. http://dx.doi.org/10.11646/phytotaxa.130.1.7. **Impact Factor: 1.797**
11. Dutta, Mou and **Bandyopadhyay, Maumita**, 2014, Comparative karyomorphological studies of three edible locally important species of *Allium* from India, The Nucleus, 57(1): 25-31. DOI 10.1007/s13237-014-0106-z

12. Dutta, Mou and **Bandyopadhyay, Maumita**, 2014, Karyomorphological study and report of B chromosome in *Allium griffithianum* Boiss. from India, The Nucleus, 57(3): 209-213. DOI 10.1007/s13237-014-0119-7
13. Ray, Smita and Majumder, Anrini and **Bandyopadhyay, Maumita** and Jha, Sumita, 2014, Genetic transformation of sarpagandha (*Rauvolfia serpentina*) with *Agrobacterium rhizogenes* for identification of high alkaloid yielding lines, Acta Physiologiae Plantarum, 36(6):1599-1605. DOI 10.1007/s11738-014-1536-6. **Impact Factor: 1.438**
14. Ray, Smita and Samanta, Tundra and Majumder, Anrini and **Bandyopadhyay, Maumita** and Jha, Sumita, 2014, Cytogenetic characterization of *Agrobacterium rhizogenes* transformed root lines of *Rauvolfia serpentina*, The Nucleus, 57(2):105-112. DOI 10.1007/s13237-014-0112-1
15. Ghosh, Manosij and Bhadra, Sreetama and Adegoke, Aremu and **Bandyopadhyay, Maumita** and Mukherjee, Anita, 2015, MWCNT uptake in Allium cepa root cells induces cytotoxic and genotoxic responses and results in DNA hyper-methylation, Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis,774: 49-58. DOI: 10.1016/j.mrfmmm.2015.03.004. **Impact Factor: 3.680**
16. Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2015, Karyomorphological investigations on some economically important members of Zingiberaceae from Eastern India, Caryologia, 68(3):184-192. doi: 10.1080/00087114.2015.1032607. **Impact Factor: 0.608**
17. Dutta, Mou and Negi, Kuldeep Singh and **Bandyopadhyay, Maumita**, 2015, Novel cytogenetic resources of wild *Allium* (Amaryllidaceae) from India, The Nucleus, 58(1):15-21. DOI: 10.1007/s13237-015-0130-7
18. Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2015, A fast and reliable method for DNA extraction from different plant parts of Zingiberaceae, Journal of the Botanical Society of Bengal,69(2): 91—98. ISSN 0971-2976
19. Dutta M, **Bandyopadhyay M** (2015) Numerical taxonomic studies on Indian *Allium* species. J Botan Soc Bengal 69(2):119–126. ISSN 0971-2976
20. Das D, **Bandyopadhyay M** (2015) Tissue organization is necessary for accumulation of andrographolide in *in vitro* cultures of *Andrographis paniculata* (Burm. f.) Wall. ex Nees. J Botan Soc Bengal 69(1):27–34. ISSN 0971-2976
21. Manna I, **Bandyopadhyay M** (2015) DNA methylation and demethylation: Boon or bane for plants. J Botan Soc Bengal 69(1):1–9. ISSN 0971-2976
22. Ghosh, Rajyasri and Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2016, Morphological and molecular characterization of *Colletotrichum capsic*i causing leaf-spot of soybean, Tropical Plant Research, 3(3): 481--490. ISSN (E): 2349 – 1183.
23. Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2016, Notes on some Zingibers from West Bengal and Meghalaya, India, Pleione 10(2): 310 - 322. ISSN 0973-9467
24. Sadhu, Abhishek and Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2016, Novel nuclei isolation buffer for flow cytometric genome size estimation of Zingiberaceae: a comparison with common isolation buffers, Annals of Botany, 118(6): 1057—1070. DOI 10.1093/aob/mcw173. **Impact Factor: 4.041**
25. Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2016, New chromosome number counts and karyotype analyses in three important genera of Zingiberaceae, The Nucleus, 59(1):35-40.DOI 10.1007/s13237-016-0162-7
26. Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2017, A new distribution report of the Critically Endangered *Amomum kingii* Baker (Zingiberaceae) outside Sikkim, India,Journal of Threatened Taxa,9(10):10835-10838. ISSN 0974-7907(Online)
27. Manna, Indrani and **Bandyopadhyay, Maumita**, 2017, Engineered Nickel Oxide Nanoparticle Causes Substantial Physicochemical Perturbation in Plants, Frontiers in Chemistry,5:92. DOI 10.3389/fchem.2017.00092. **Impact Factor: 3.994.**
28. Manna, Indrani and **Bandyopadhyay, Maumita**, 2017, Engineered nickel oxide nanoparticles affect genome stability in *Allium cepa* (L.), Plant Physiology and Biochemistry,121: 206-215. DOI 10.1016/j.plaphy.2017.11.003. **Impact Factor: 2.718.**

29. Sadhu, Abhishek and Bhadra, Sreetama and **Bandyopadhyay, Maumita**, 2018, Characterization of Tulbaghia violacea (Tulbaghieae, Allioideae, Amaryllidaceae) from India: a cytogenetic and molecular approach, The Nucleus, 61(1): 29-34. doi: 10.1007/s13237-017-0202-y.
30. Sadhu, Abhishek and Ghosh, Ilika and Moriyasu, Yuji and Mukherjee, Anita and **Bandyopadhyay, Maumita**, 2018, Role of cerium oxide nanoparticle-induced autophagy as a safeguard to exogenous H2O2-mediated DNA damage in tobacco BY-2 cells, Mutagenesis:33(2): 161-177. doi:10.1093/mutage/gey004. **Impact Factor: 2.840**
31. Bhadra, Sreetama and Maity, Debabrata and **Bandyopadhyay, Maumita**, 2018, Correlating karyomorphology and molecular marker analyses in turmeric: a case study, Journal of Crop Improvement, 32(5): 657-680. DOI: 10.1080/15427528.2018.1487354.
32. Das, Prabal and Manna, Indrani and Biswas, Asok K and **Bandyopadhyay, Maumita**, 2018, Exogenous silicon alters ascorbate-glutathione cycle in two salt-stressed indica rice cultivars (MTU 1010 and Nonabokra), Environmental Science and Pollution Research, 25(6):26625-26642. DOI doi: 10.1007/s11356-018-2659-x. **Impact Factor: 2.8**
33. Das D, **Bandyopadhyay M** (2018) Tissue organization is necessary for accumulation of andrographolide in *in vitro* cultures of *Andrographis paniculata* (Burm. f.) Wall. ex Nees. J Botan Soc Bengal 72(1,2): 79–88.
34. Das P, Manna I, Sil P, **Bandyopadhyay M**, Biswas A K. (2019) Exogenous silicon alters organic acid production and enzymatic activity of TCA cycle in two NaCl stressed indica rice cultivars, Plant Physiology and Biochemistry, 136:76-91, **Impact Factor 2.7**
35. Manna I. and **Bandyopadhyay M.** (2019) A review on the biotechnological aspects of utilizing engineered nanoparticles as delivery systems in plants, Plant Gene 17:100167.
36. Ghosh, I., Sadhu, A., Moriyasu, Y., **Bandyopadhyay, M.** & Mukherjee, Anita. (2019). Manganese oxide nanoparticles induce genotoxicity and DNA hypomethylation in the moss *Physcomitrella patens*. Mutation Research/Genetic Toxicology and Environmental Mutagenesis. 10.1016/j.mrgentox.2018.12.006. **Impact Factor 2.404**
37. Ghosh, I., Sadhu, A., Moriyasu, Y., **Bandyopadhyay, M.** & Mukherjee, Anita. (2019). Genotoxicity of nanoscale zerovalent iron particles in tobacco BY-2 cells. The Nucleus. 62. 10.1007/s13237-019-00294-z.
38. Sadhu, A., Moriyasu, Y., Acharya, K., **Bandyopadhyay, M**. (2019). Nitric oxide and ROS mediate autophagy and regulate Alternaria alternata toxin-induced cell death in tobacco BY-2 cells. Scientific Reports. 9. 10.1038/s41598-019-45470-y. **Impact Factor 3.998**
39. Das, Debalina & **Bandyopadhyay, M**. (2020). Novel approaches towards over-production of andrographolide in vitro seedling cultures of *Andrographis paniculata*. South African Journal of Botany. 128. 77-86. 10.1016/j.sajb.2019.10.015. **Impact Factor 1.792**
40. Bhadra, Sreetama & Mondal, Sejuty & **Bandyopadhyay, M**. (2020). An empirical study on the underutilized medicinal genus Kaempferia from India revealed cytological and genetic variability. Nucleus (India). 10.1007/s13237-020-00338-9.

List book/book chapter (if any)

1. **Bandyopadhyay M** and Jha S, 2008, "*High Efficiency Transfomation in* Artemisia annua *with* Agrobacterium tumefaciens*"*, Recent advances in Plant Biotechnology ans Its applications: Prof. Dr. Karl_hermann Neumann Commemorative Volume, Eds. Prof. Ashwani Kumar and Dr. Sudhir K Sopory, Ch. 16:pp 257-277; Publisher:IK International Pvt. Ltd., ISBN 8189866095.
2. Manna I. and **Bandyopadhyay M**. (2019) Physicochemical Perturbation of Plants on Exposure to Metal Oxide Nanoparticle, Chapter 16, pp: 323-352, In: Nanomaterials in Plants, Algae, and Microorganisms: Concepts and Controversies, Volume 2 (Elsevier Acadaemic Press), Eds. DK Tripathi et al. https://doi.org/10.1016/B978-0-12-811488-9.00016-0
3. Manna, Indrani & Das, Debalina & Mondal, Sejuty & **Bandyopadhyay, M**. (2020). Potential Pharmacotherapeutic Phytochemicals from Zingiberaceae for Cancer Prevention. 10.1007/978-981-15-5999-0_10.

Extramural Research Grant:

Sl	Title	Funding Agency	Period
1	Plant Chromosome Information Centre as part of BRIC-V under establishment of Portal for Indian Bio resource Information Network(IBIN) (Co-Investigator)	DBT(GOI)	2011-2016
2	A Molecular Phylogenetic Investigation of the Indian *Allium l.* with special emphasis on the Eastern Indian populations	SERB (GOI) Under Fast Track Scheme for Young Scientists	2012-2015
3	Evaluation of cytogenetic diversity in some genera of Cucurbitaceae and characterization of sex-linked genes in Coccinia through SCAR approach (Co-Investigator)	DBT(GOI)	2013-2016
4	Network Programme for Enrichment and Update of Plant Chromosome Database for Spermatophytes and Archegoniates (Co-Investigator)	DBT(GOI)	2015-2018
5	Modern Biology: Group-Al: Phytochemical prospecting and Drug Development (Co-Investigator)	UGC UPE II	2016-2019
6	Elucidation of the mechanisms of programmed cell death induced by fungal toxin and hydrogen peroxide in tobacco BY-2 cells and *Physcomitrella* protonemal cells	Indo-Japan Cooperative Science programme-2016 (IJCSP) JSPS-DST	2017-18
7	Biochemical and Molecular Characterization of Cyanobacteria and Algal resources of West Bengal for development of Algal Repository with potent Biotechnological Exploitation	Science & Technology and Biotechnology Department of the Government of West Bengal	2019-2021

List of Honours/Awards

Prof H.L. Chakraborty Memorial Award (1st Class, First, M.Sc.) by the Botanical society of Bengal, 2001

Foreign visit

Visited Saitama University in March 2018, as part of the Indo-Japan Cooperative Science rogramme-2016 (IJCSP), JSPS-DST project

Membership in scientific bodies

- Life member- All India Congress of Cytology and Genetics
- Life member- Botanical Society of Bengal
- Life member- East Himalayan Society for Spermatophyte Taxonomy
- Life member- P. Chatterjee Research Foundation
- Life Member- Indian Society of Spices
- Life Member- Archana Sharma & AK Sharma Foundation of Kolkata