

**Dr. Moumita Gangopadhyay, M. SC, M. TECH, MBA (Executive), Ph. D**

1. Name and full correspondence address: Dr. Moumita Gangopadhyay
2. Email(s) and contact number(s): gangopadhyaymoumita75@gmail.com, +91-7980739755/9830854626
3. Institution: Associate Professor, Department of Biotechnology, Coordinator, Agrotechnology and Rural Development Centre, Adamas University, Barasat, West Bengal, India.
4. Date of Birth: 19.11.1978
5. **Academic Qualification**

Name of the Degree exam	University/ Institution/ Board	Year of Passing	Subjects	Specialization(if any)
B.Sc.	University of Calcutta	1999	Honors: Botany; Pass: Zoology & Chemistry	NA
M.Sc.	University of Calcutta	2001	Agriculture	Genetics and Plant Breeding
M. Tech	Jadavpur University	2004	Biotechnology	Plant molecular Biotechnology
Ph. D. (Through NET)	Bose Institute Registration: Jadavpur University	2009	Plant Biotechnology	Plant metabolic engineering and conservation
MBA (Executive) by Distance learning	ISBM (Indian School of Business Management and Administration)	2018	Common courses for MBA	Agriculture and Rural management

Title of Thesis		Name of the University / Year of Award	Name of Supervisor
Ph.D. through NET	“Studies on a rare medicinal plant <i>Plumbago indica</i> (syn <i>rosea</i> ) Linn: Rapid multiplication, conservation and establishment of an in vitro source of plumbagin by Hairy root culture	Medicinal Plant Laboratory, Bose Institute, Kolkata, WB -2009	Prof. Sabita Bhattacharya

**6. Work Experience**

1	Associate Professor	Department of Biotechnology, Adamas University, Barasat, WB, India	2019	2022
2	Assistant Professor	Department of Biotechnology, Adamas University, Barasat, WB, India	.2018	2019
3	Assistant Professor	Department of Biotechnology, Adamas University, Barasat, WB, India	2017	2018
4	Senior Scientist	Krishi Rasayan Private, Limited, WB, India	2015	2017
5	Senior Research Officer (Biotechnology)	PAN Seeds Private, Limited, WB, India	2014	2015
6	Senior Research Associate	Saha Institute of Nuclear Physics, Biophysics and Structural Genomics Division; Kolkata, India	2013	2014
7	Endeavour Postdoctoral Fellow	Gene ecology group, University of the Sunshine Coast, Queensland, Australia	24.5.12	23.11.12
8	FCT project Fellowship	Genomics of Plant Stress Laboratory, ITQB, UNL, Oeiras, Portugal	2011	2012
9	Research Associate	Department of Pharmaceutical Technology, Jadavpur University, Kolkata, WB	2010	2011
10	Guest Lecturer	School of Agriculture and Rural development Ramakrishna Mission Vivekananda University, WB	2008	2012
11	Senior Research Fellow (post PhD tenure after thesis submission)	Medicinal Plant Laboratory, Dept. of Botany Bose Institute	2009	2010
12	Senior Research Fellow (PhD scholar)	Medicinal Plant Laboratory, Dept. of Botany Bose Institute	2007	2009
13	Junior Research Fellow (PhD scholar)	Medicinal Plant Laboratory, Dept. of Botany Bose Institute	2005	2007

14	Senior Research Fellow (ICAR)	Central Research Institute of jute and allied fibers, ICAR	2005	2005
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<b>7.Academic Distinctions (Award/Scholarship/Rank, etc.)</b>				
<b>Senior Research Associate ship, Department of Atomic Energy, India, 2013.</b>				
Endeavour Research Fellowship, Australia, 2012				
FCT project Fellowship, FCT Portugal, 2011				
DAAD postdoctoral Fellowship, DAAD Germany, 2010				
CSIR Research Associateship, CSIR, Govt. of India, 2010				
Institutional scholarship (Bose Institute) for perusing PhD and Post PhD, 2005-2010 (NET)				
Senior Research Fellowship ICAR, Project, 2005				
International travel grant award, Phytochemical society of Europe, Young Scientist Meeting, 2009; DST, India, 2009; CSIR, India, 2009.				
The International Best Research Awards on sustainable agriculture and food systems, International Conference on Sustainable Agriculture and Food Systems 2023				
Delivered talk as key note speaker International Experts Summit on Traditional and Alternative Medicine (IESTAM2023) Dubai, UAE, GSTAM, JAPAN, 2022, GPB, 2024, Rome, Alumni Affairs & German Studies (DAAD) for Web Talk on SDG, 2022.				
Advisor, Hi-Tech potato seed production, Govt. WB; Honorary guest faculty Institute of Astronomy Space and Earth Science.				
Invited Lecture, On line training program on Hi-Tech potato seed production, Govt. WB, 2020				
Editorial board member, PLOS ONE, Reviewer of more than 12 high impacted journals.				
Invited speaker in training program Organized by Quality Improvement Program (QIP), Nodal Cell, Department of Pharmaceutical Technology, Kolkata, India New insights into diseases and recent therapeutic approaches, 2014				
Invited speaker in training program Organized by Quality Improvement Program (QIP), Nodal Cell, Department of Pharmaceutical Technology, Kolkata, India. Innovation and Excellence in Pharmaceutical Sciences), 2013				
1st Best poster Award, Organizer - International Symposium on Jute and Allied Fibers Production, Utilization and Marketing, Indian Fiber Society, Kolkata, India, 2008				
2nd Best poster Award, Organizer - Plant Tissue Culture and Biotechnology Conference, Dhaka, Bangladesh, 2008				
3rd Best poster Award, Organizer - National Symposium on Medicinal plants: Role of Biotechnology and Bioinformatics, Birla Institute of Technology, Meshra, India, 2006				
2nd Best poster Award, Organizer - Forest Biodiversity Resources: - Exploitation, conservation and Management, Madurai Kamaraj University, Tamil Nādu, India, 2006.				

#### **8.Research area:**

Plant secondary metabolism, Exploring the antitoxic potentials of phytochemicals cellular intoxication, In vitro conservation of endangered and economically important plants and soil less crop production using aeroponics and hydroponics system.

#### **9.Publications: Total H-index: 20; Total i-10 index: 26; Citations:- 2050**

CAR T cells: engineered immune cells to treat brain cancers and beyond. *Molecular Cancer* (2023) 22:22. IF-37.3

Tumor-derived small extracellular vesicles in cancer invasion and metastasis: molecular mechanisms, and clinical significance. 23(1). 18. 2024. IF-37.3

Screening of Varietal Adaptation Under Soilless Hydroponics System of *Abelmoschus Esculentum (L.) Moench* (2023) *Journal of Survey in Fisheries Sciences*. 10(1S) 7004-7007.

Evaluation of Differential Response of Herbal Priming for Augmenting Drought Tolerant Potentiality in Few Commercially Important Indian Rice Varieties (*Oryza Sativa* L, Var Indica). *Journal of Survey in Fisheries Sciences* 10(1S) 7041-7044 (2023).

Design and Development of a Non-invasive Opto-Electronic Sensor for Blood Glucose Monitoring Using a Visible Light Source. 16(5). e60745. 2024. IF-1.6

Evaluation of growth response for mass production and accumulation of 2- hydroxy-4- methoxybenzaldehyde in endangered *Hemidesmus indicus* by an aeroponic system. 172: 114072. IF-5.6

The Emerging role of HDACs: Pathology and Therapeutic targets in Diabetes Mellitus. *Cells*. 10(6).1340(2021). IF-7.6

Black Fungus: A New Threat Under the Shadow of COVID-19. *Acta Scientific Clinical Case Reports*. Volume 2. Issue 11. November: 25-27 (2021)

Medicinal Plant Extract Mediated Green Synthesis of Metallic Nanoparticles: A Mini Review *International Journal of Plant and Environment*. Volume 7. Issue 2: 1-14 (2021). IF-1.8

Virus like Particles (VLPs) based Vaccine Production: A Potentially Safe Candidate Vaccine against Worldwide COVID-19 Pandemic". (2020) *Acta Scientific Clinical Case Reports* 1(7).

An efficient ex plant sterilization for reducing microbial contamination of *Solanum tuberosum* cv. Kufri Joyti for micropopagation in rainy season. *J Bas Appl Pl Sci*. 1(2):1 08 ISSN 2574- 3449 (2017)

Natural Products as Alternative Choices for P- Glycoprotein (P-gp) Inhibition. *Molecules*.22(6):871(2017) IF-4.9

UVC-priming mediated modulation of forskolin biosynthesis key genes against *Macrophomina* root rot of *Coleus forskohlii*-a tissue culture based sustainable approach. *Phytochemistry Letters*.17:36-4(2016) IF-1.8

Ameliorative effect of water spinach, *Ipomea aquatica* (Convolvulaceae), against experimentally induced arsenic toxicity. *Journal of Translational Medicine*.13.81(2015) IF-8.44

*Abroma augusta* L. (Malvaceae) leaf extract attenuates diabetes induced nephropathy and cardiomyopathy via inhibition of oxidative stress and inflammatory response. *Journal of Translational Medicine*.13.6(2015). IF-8.44

Signal transducer and oxidative stress mediated modulation of phenylpropanoid pathway to enhance rosmarinic acid biosynthesis in fungi elicited whole plant culture of *Solenostemon scutellarioides*. *Enzyme and Microbial Technology*.66.1-9. 2014. IF-3.7

Enhanced rosmarinic acid biosynthesis in *Solenostemon scutellarioides* culture: a precursor feeding strategy. *Natural Product Research*-28.1691-1698. 2014. IF-1.8

Continued foliar herbivory by the red spider mite *Tetranychus macfarleni* on *Plumbago zeylanica* severely reduces the levels of a

medicinally important metabolite in the root. Journal of Plant Interactions.9.529-538.2014. IF-3.7

Bioautography and its scope in the field of natural product chemistry. Journal of Pharmaceutical Analysis.5.75-84.2014. IF-4.7

Elicitor induced rosmarinic acid accumulation and secondary metabolism enzyme activities in *Solenostemon scutellarioides*. Acta Physiologia Plantarum.5.1473-1481.2013. IF-1.8

Bioproduction and optimization of Rosmarinic acid production in *Solenostemon scutellarioides* and conservation of high yielding clone via encapsulation. Natural Product Communications.9.1275-1278.2013. IF-0.98

Cadmium induced pathophysiology: Prophylactic role of edible jute (*Corchorus olitorius*) leaves with special emphasis on oxidative stress and mitochondrial involvement. Food and Chemical Toxicology.60.188-198.2013. IF-5.5

Toxic effects of lead exposure in Wistar rats: Involvement of oxidative stress and the beneficial role of edible jute (*Corchorus olitorius*) leave. Food and Chemical Toxicology.55.78-91.2013. IF-5.5

Dereplication coupled with in vitro antioxidant assay identified of two flavonoid glycosides *Diospyros peregrina* fruit Natural Product Research.5.454-459.2012. IF-2.4

Role of exogenous phytohormones on growth and plumbagin accumulation in *Plumbago indica* hairy roots and conservation of elite root clones via synthetic seeds. Industrial Crops and Products.33.445-450.2011. IF-6.6

Enhanced plumbagin production in elicited *Plumbago indica* hairy root cultures. Journal of Bioscience and Bioengineering.11.706-710.2011. IF-3.1

Establishment of a rapid multiplication protocol of *Coleus forskohlii* Briq and in vitro conservation by reduced growth. Indian Journal of Biotechnology.10.228-231.2011. IF-0.32

Multimodal approaches of the hydroalcoholic extract of *Diospyros peregrina* fruits in diabetic therapy. Natural Product Research. 25.827-833.2011. IF-2.4

Regeneration of transformed plants from hairy roots of *Plumbago indica*. Plant Cell Tissue and Organ Culture.102.109-114.2010. IF-2.7

Effect of different strains of *Agrobacterium rhizogenes* and nature of explants on *Plumbago indica* hairy root culture with special emphasis to plumbagin production. Natural Product Communications.5.1913-1916.2010. IF-0.98

Clonal propagation of zephyr lily (*Zephyranthes grandiflora*) using bulbs as the source of ex plant. Biologia Plantarum.54.793-797. 2010. IF-1.2

Encapsulation and regeneration of in vitro derived *Zephyranthes grandiflora*: an effective way exchange of germplasm. Natural Product Communications.5.1273-1276.2010. IF-0.98

Arsenic-induced myocardial injury: Protective role of *Corchorus olitorius* leaves. Food and Chemical Toxicology.48.1210-1217. 2010.

Protective effect of *Corchorus olitorius* leaves against arsenic induced oxidative stress in rat brain. Environmental Toxicology and Pharmacology.29.64-69.2010. IF-5.4

Protective effect of *Corchorus olitorius* leaves on sodium arsenite induced toxicity in experimental rats. Food and Chemical Toxicology.48.326-335.2010. IF-5.5

Antidiabetic activity of *Diospyros peregrina* fruit: Effect on hyperglycemia, hyperlipidemia and augmented oxidative stress in experimental type 2 diabetes. Food and Chemical Toxicology.47.2679-2685.2009. IF-5.5

Hairy root culture of *Plumbago indica* a potent source for harvesting plumbagin. Biologia Plantarum.52.533-537.2008. IF-1.2

In vitro conservation of *Plumbago indica*- A rare medicinal plant. Plant Cell Biotechnology and Molecular Biology.8.39-46.2007. IF-0.26

#### 10. Detail of patents.

S. No	Patent Title	Name Of Applicant(S)	Patent No.	Country	Status
1	An Iot Enabled Aeroponics System	Moumita Gangopadhyay & Moumita Mukherjee	Patent Application No.202431001915	National	Published 19.3.2024
2	Vertical Aeroponics Planter	Moumita Gangopadhyay & Moumita Mukherjee	Design No.: 395453-001	National	Granted
3	UV Sanitizer Device	Moumita Gangopadhyay & Moumita Mukherjee	Indianpatentappln.No.2020310272 04	National	Granted 2.2.2024

#### 11. Books/Reports/Chapters/General articles etc.

SL. No	Title	Author's Name	Publisher	Year of Publication
1	Enhancing Therapeutic Potential of Medicinal Plants via <i>Agrobacterium rhizogenes</i> -Mediated Genetic Transformation for Anti-Allergen Compounds	Moumita Gangopadhyay, Sayani Sanyamat and Saikat Dewanjee	Biotechnology of Medicinal Plants with Antiallergy Properties-Research Trends and Prospects - Springer	Accepted
2	Water Spinach ( <i>Ipomoea aquatica</i> Forsk.) Breeding Vegetable Crops,	Moumita Gangopadhyay, Anup Kumar Das, Subhendu Bandyopadhyay, and Samanwita Das	Advances in Plant Breeding Strategies,.M. Al-Khayri, ain and D.V. Johnson (Editors) Springer <a href="https://doi.org/10.1007/978-3-030-66969-0_5">https://doi.org/10.1007/978-3-030-66969-0_5</a>	2021
3	Hairy root culture an indispensable source for harvesting secondary	Gangopadhyay M and Bhattacharya, S.	In: All of you should know about Medicinal Plants, Subhash C. Mandal (Ed), New Central Book Agency,	2010

	metabolites without sacrificing natural habitat		Kolkata. Chapter 28: pp 451- 459.	
4	Plant tissue culture: A source of secondary metabolites and conservation of natural germplasm	Dewanjee, S., Gangopadhyay, M., Sahu, R.	Proceedings of national workshop on Botanical identification and evaluation of Indian medicinal plants, Kolkata, India	2013
5	Hairy Root Culture of <i>Coleus forskohlii</i> - Sustainable management of root specific metabolite forskolin.	Gangopadhyay M., Chaterjee, J., Sahu, R., Bhattacharya, S.	In: Bio-prospecting and application of Medicinal Plants in common ailments, Publication Secretary, Norendrapore Ramkrishna Mission, Norendrapore, India. 51-62	2009
6	<i>Plumbago indica</i> transgenic <i>Agrobacterium rhizogenes</i> RolB gene.	Gangopadhyay, M., Chakraborty, D., Bhattacharyya, S., Bhattacharya, S.	GenBank Accession EU917070	2008
7	Protocol for tissue culture of Jute ( <i>Corchorus capsularis</i> )	Sinha M.K., Nandy S., Mitra S., Chakraborty S., Gangopadhyay M.	Bulletin No. 1, NATP-RRPS- 27 (Technical Bulletin)	2005

## 12. Details of Projects under implementation and completed

S. No	Title	Cost in Lakh	Duration	Role as	Agency
1	Aeroponics assisted AI enabled microgravity plant growth for space crop production chamber	5 Lakh	2024-2025	PI	IIT, KGP Research Foundation Park
2	Assessment of growth parameters and nutraceutical value of commercially important selected crops	6 Lakh	2023 NOV-2025 NOV	PI	Debgiri Agro products Private Limited
3	Nutri Grow Barasat: Empowering women and combating malnutrition with low-cost Hydroponic kitchen gardens for enhanced vegetable production	2 Lakh	2023 OCT-2024 OCT	PI	Adamas University, Seed Fund
4	Development of source material for disease free breeder seed production in potato ( <i>Solanum tuberosum</i> L)".	3 Lakh	Completed 2020	PI	Bhadeshwar Agro Pvt. Ltd
5	Artificial intelligence coupled with aeroponics establishment of endangered plant <i>Hemidesmus Indicus</i> for superior quality root development"	1 Lakh (Industrial Crops and Products. Vol 172, IF 5.6)	Completed 2023	PI	Adamas University, Seed Fund
6	"LOW COST IOT DRIVEN SMART AGRO-DRONE FOR EARLY DETECTION OF LATE BLIGHT DISEASE OF POTATO"	70,000 INR	Completed 2022	COPI	Adamas University, Seed Fund
7	"3 D Printed Micro waste composter for smart home gardening"	70,000 INR	Completed 2022	COPI	Adamas University, Seed Fund

**Professional Memberships:** Phytochemical Society of Europe (PSE), Asian Federation of Biotechnology, The Indian Society of Vegetable Science

**Post graduate dissertation supervision:** 5 completed;

**Under graduate degree dissertation:** 10 completed

**Doctoral thesis supervision:** Ongoing 5 (supervisor) 1 (Co supervisor)

*Moumita Gangopadhyay*