

## **BIO-DATA**

NAME: **Dr. SANJANA GHOSH**

DATE OF BIRTH: 21st January, 1993

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### **Education Profile:**

Ph.D. awarded in Microbiology, 2025 from St. Xavier's College Kolkata under the guidance of Dr. Arup Kumar Mitra, Dr. Sudeshna Shyam Choudhury, and Dr. Ayan Chandra.

Thesis title: "STUDY ON MICROBIAL SUCCESSION WITH RESPECT TO CROP PRODUCTIVITY IN RECLAIMED AGRICULTURAL SOIL OF EAST KOLKATA WETLANDS."

### **ACADEMIC DETAILS:**

| EXAM PASSED          | YEAR | MARKS(%) / CGPA | DIVISION | INSTITUTION STUDIED                         | BOARD / UNIVERSITY                                            |
|----------------------|------|-----------------|----------|---------------------------------------------|---------------------------------------------------------------|
| PhD                  | 2025 |                 |          | St. Xavier's College (Autonomous), Kolkata. | CALCUTTA UNIVERSITY                                           |
| B.Ed. (LIFE SCIENCE) | 2018 | 8.93            | I        | SAMMILANI TEACHERS' TRAINING COLLEGE        | WBUTTEPA                                                      |
| M.Sc. BOTANY         | 2016 | 7.47            | I        | SCOTTISH CHURCH COLLEGE                     | CALCUTTA UNIVERSITY                                           |
| B.Sc. BOTANY         | 2014 | 65.75%          | I        | SHRI SHIKSHAYATAN COLLEGE                   | CALCUTTA UNIVERSITY                                           |
| ISC                  | 2011 | 84.5%           | I        | G.D BIRLA CENTRE FOR EDUCATION              | Council for Indian School Certificate Examinations, New Delhi |
| ICSE                 | 2009 | 86.8%           | I        | G.D BIRLA CENTRE FOR EDUCATION              | Council for Indian School Certificate Examinations, New Delhi |

**Special paper (M.sc):** Cell biology, Molecular genetics and Plant biotechnology

**Dissertation topic (M.sc):** Study of callus induction media of few varieties of *Oryza Sativa*

### **TRAINING ACTIVITIES:**

1. Teachers training internship (B.Ed. 3<sup>rd</sup> semester) from Andrews High School, Kolkata
2. A 90 days project training during M.Sc. on PLANT TISSUE CULTURE under the guidance of Dr Aryadeep Roy Choudhury at St. Xavier's College, (Autonomous) Kolkata.
3. Basic computer course training from DOEACC SOCIETY publications.

### **WORK EXPERIENCE**

- Presently working as a Lecturer in the department of Environmental Studies, B. Com (Morning) department of St. Xavier's College (Autonomous) Kolkata, BMS department and St. Xavier's College (Autonomous) Kolkata, Raghampur Campus
- Worked as a guest lecturer in the department of Botany, Shri Shikshayatan College, from July 2018
- Worked as a resource person of the syllabus of Botany for the UGC Educational channel made by EMMRC, St. Xavier's College (Autonomous) Kolkata.

### **ORGANIZATION OF WORKSHOPS AND SEMINARS**

- Organized an International seminar in collaboration with ICEES,2025 and BSI at St.Xavier's College, Raghampur Campus on 10<sup>th</sup>-11<sup>th</sup> October, 2025
- Organization of one day seminar and workshop on Green Environment and Sustainability on 20<sup>th</sup> April,2023 in collaboration with Switch On Foundation.
- Organized an International Seminar titled International Conference on Climate Change: Global Cooperation organized by St. Xavier's College (Autonomous), Kolkata on 26<sup>th</sup> and 27<sup>th</sup> August,2022
- Organized an International Webinar on "Climate Change and Forced Movement" at St. Xavier's College (Autonomous), Kolkata in October,2021
- Participated in Faculty Development Program under DBT Star College Scheme of St. Xavier's College (Autonomous), Kolkata in September,2021
- Organized a webinar on "Wasteland to Productive Land through Organic Amendment" at St Xavier's College (Autonomous), Kolkata, Raghampur Campus in March,2021
- Organized a seminar and workshop on "Potential use of solid waste in agriculture" at St Xavier's College (Autonomous), Kolkata, Raghampur Campus in February,2020

- Organized a webinar titled “Revisiting Epidemics and pandemics in India,” at St Xavier’s College (Autonomous), Kolkata, Raghobpur Campus in July,2020
- Participated in workshop titled “Phenomenon of Religion,” conducted by Department of Inter religious studies (DIRS), St. Xavier’s College, Bombay, from 7th July -31st July, 2020

### **Paper Presentation**

- Presented a paper entitled Agriculture post India’s Independence: A journey towards self-sufficiency at Maulana Abul Kalam Azad Institute of Asian Studies (MAKAIS) on 14<sup>th</sup> August,2022.
- Isolation and characterization of lead tolerant pgp bacteria from rhizosphere of *Cucurbita maxima* of reclaimed wetland soil at Neotia University on April,2022
- Presented a poster entitled MICROBIAL METAGENOME ANALYSIS OF *Cucurbita* sp RHIZOSPHERE FOR A SUSTAINABLE AGRICULTURE IN EAST KOLKATA WETLANDS in an International Seminar titled International Conference on Climate Change: Global Cooperation organized by St. Xavier’s College (Autonomous),Kolkata on 26<sup>th</sup> and 27<sup>th</sup> August,2022
- Presented a paper entitled “Invincible duo in mitigation of lead in the *Cucurbita maxima* rhizosphere in east kolkata wetland backdrop” in Bangladesh on 19<sup>th</sup> and 20<sup>th</sup> October, organized by Khulna University, Bangladesh.
- Presented a paper entitled “COMPARATIVE METAGENOMIC ANALYSIS OF *Cucurbita maxima* and *Zea mays* in RECLAIMED WETLAND SOIL OF EAST KOLKATA WETLAND” in Calcutta University on 28<sup>th</sup> and 29<sup>th</sup> December,2022,
- Presented a paper entitled “LINGERING EFFECT OF PGPR AND NUTRIENT RECYCLING IN AGRICULTURAL CONGENIALITY OF EAST KOLKATA WETLANDS” in Indian Science Congress on 2<sup>nd</sup>-5<sup>th</sup> Jauary,2023.
- Presented a paper entitled “ISOLATION OF A NOVEL BACTERIAL STRAIN AND ITS CORRELATION WITH COVID DISSEMINATION IN EAST KOLKATA WETLANDS” in Botanical Science Congress on 23<sup>rd</sup>-25<sup>th</sup> March,2023, organized by Calcutta University.
- Presented a paper entitled “Deterministic plant growth activities of keystone microbes in reclaimed agricultural regions of East Kolkata Wetlands” at 6<sup>th</sup> International Conference on Strategies and Challenges in Agricultural Life Science for Food Security and Sustainable Environment (SCALFE-2023) on 28<sup>th</sup> and 29<sup>th</sup> April,2023.
- Presented by paper entitled “BIOREMEDIATION OF LEAD USING THE PGPR OF MAIZE RHIZOSPHERE IN EAST KOLKATA WETLANDS.” At Biospectrum, UEM.
- Presented a paper entitled: A solution to lead Pollution: Wetland Story” at Regional State Science Congress on 22<sup>nd</sup> December,2023.

- Presented a paper entitled: A solution to lead Pollution: Wetland Story” at State Science Congress on 28<sup>th</sup> and 29<sup>th</sup> February,2024.
- Presented a paper entitled “NOVEL PGPR FOR UNLEADED AGRICULTURE IN THE RECLAIMED SOIL OF EAST KOLKATA WETLANDS” at ICEES, Ranchi on 21<sup>st</sup> and 22<sup>nd</sup> October,2024.
- Presented a paper entitled “ROLE OF PGP IN UNLEADED AGRICULTURE IN THE RECLAIMED SOIL OF EAST KOLKATA WETLANDS” at Ram Krishna Mission, Kolkata on ,2024
- Presented a paper at International Conference on Plant Biotechnology for Sustainable Future,2025 held at St. Xavier’s Burdwan,2025
- Presented a paper entitled SOLUTION TO LEAD POLLUTION: MICROBIAL SUSTENANCE at International Conference, CRISEA held at Goa University from 25<sup>th</sup>-27<sup>th</sup> February,2025
- Presented a paper at National Conference, organized by Department of Botany, Vishwa Bharati University from 7<sup>th</sup>-8<sup>th</sup> March,2025
- Presented a paper in the Young Scientist Category at ICEES, 2025 on 10<sup>th</sup>-11<sup>th</sup> October,2025 held at St. Xavier’s College, Raghbapur Campus
- Presented a paper in Research Scholar category at IMS, Kalimpong,2025 on 15<sup>th</sup>-16<sup>th</sup> November, 2025.
- Presented a poster at ISI, on 25<sup>th</sup>-27<sup>th</sup> February,2026.

### **Resource Person**

- Presented a paper entitled Agriculture post India’s Independence: A journey towards self-sufficiency at Maulana Abul Kalam Azad Institute of Asian Studies (MAKAIS) on 14<sup>th</sup> August,2022.
- Delivered MOOC Lectures on Environment Sociology seminar,2023
- Worked as a resource person in DST Nidhi sponsored program (Technology Entrepreneurship Development Program)
- Delivered a lecture on the principles and practices of Organic farming at DPS Barasat, July 2024
- Delivered a lecture and demonstration on soil analysis at New Alipore College, Kolkata,2025

### **PUBLICATIONS**

1. Ghosh Sanjana, Biswas,Soumyadip, Baruah,Stootee, Mitra,Arup, Choudhury Sudeshna Shyam, Chandra, Ayan(2026)Phylogenetic History of Vegan Homo sapiens to

Omnivores " in the book titled " Vegan Gastronomy and sustainable health" published by Apple Academic Press with E-book ISBN 9781998511891.

2. Ghosh Sanjana, Bage Faith, Chowdhury Srijonee, Das Anuja, Mitra Arup (2026) Efficacy of Salt Tolerant Microbial Consortia for sustainable agriculture. Journal Of Mycopathological Research. doi 10.57023/JMycR.64.2.2026.343
3. Ghosh, Sanjana & Bhowmick, Teesta & Basu, Ritojo & Dey, Mouli & Mitra, Arup & Choudhury, Sudeshna & Chandra, Ayan. (2026). Harnessing the microbiome: Innovative solutions for water contamination remediation. 10.1016/B978-0-443-36552-2.00009-3.
4. Maitra, Debapriya & Roy, Bedaprana & Ghosh, Sanjana & Lahiri, Sanjana & Guha, Gorky & Choudhury, Sudeshna & Mitra, Arup. (2025). Autotrophic nitrogen removal technology: A boon for Kolkata Ramsar sites. 10.1016/B978-0-443-19209-8.00009-0.
5. Ghosh, Sanjana, Chatterjee, Bidisha, Maitra, Debapriya, Roy, Bedaprana, Choudhury, Sudeshna Shyam, Chandra, Ayan and Mitra, Arup Kumar (2025). "Chapter 11 An insight to microbial metagenome in wetland ecosystem". BAND Bacterial Metagenomics: In Industrial Wastewater Treatment, edited by Maulin P. Shah and Sumira Malik, De Gruyter, pp. 181-200. <https://doi.org/10.1515/9783110793635-011>
6. Ghosh, S., Teesta Bhowmick, Jagrita Paul, Aniksha Mazumder, Sushmita Shaw, Arup Kumar Mitra, Sudeshna Shyam Choudhury & Ayan Chandra (2025). Concealed Prebiosis in Human Gut Microflora. Pp.283-321 In: Sarkar, T., Lahiri, D., Nag, M. (eds) Extracellular Polysaccharides. Springer, Cham. [https://doi.org/10.1007/978-3-031-94472-7\\_12](https://doi.org/10.1007/978-3-031-94472-7_12).
7. Swapneel Saha, Sanjana Ghosh, Ashim Chandra Roy, Krishna Ray, Sandip Kumar Basak, Rabishankar Sengupta, Bikram Dhara, Arup Kumar Mitra & Ilora Ghosh (2025) Potential of Lasiodiplodia theobromae in mitigating Polyalthia suberosa invasion in a semi-urban sanctuary. Plant Biosystems. Official Journal of the Societa Botanica Italiana. <https://doi.org/10.1080/11263504.2025.2500387> IF.1.6
8. Sanjana Ghosh, Stoottee Baruah, Suranjana Ray Chaudhuri, Shoham Ghosh, Arup Kumar Mitra, and Sudeshna Shyam Choudhury (2025) A Holistic Treatise on Nature Driven Solution to Cancer. P.261-296. In Bioactive Ingredients for Healthcare Industry Volume 2: Advances in Therapeutic Applications. Eds. Dibyajit Lahiri • Moupriya Nag Debasmita Bhattacharya Siddhartha Pati • Tanmay Sarkar. Springer. Singapore. Pp. 321 ISBN 978-981-96-4378-3 <https://doi.org/10.1007/978-981-96-4379-0>.
9. Sanjana Ghosh<sup>1</sup> · Rahul Rautela<sup>2,3</sup> · Arup Kumar Mitra<sup>1</sup> · Sudeshna Shyam Choudhury<sup>1</sup> · Ayan Chandra<sup>4</sup> · Sunil Kumar<sup>2</sup> · Bikram Dhara (2024) Exploring soil fertility dynamics and microbial flora in the east kolkata wetlands: implications for sustainable agriculture and ecosystem conservation. Vegetos. <https://doi.org/10.1007/s42535-024-01079-9>. I.F. 2.0

10. Sanjana Ghosh<sup>1</sup> Arup Kumar Mitra<sup>1</sup> Sudeshna Shyam Choudhury<sup>1</sup> Ayan Chandra<sup>2</sup> (2024) Unleashed agriculture: Myth to reality by wetland microbial flora. *Env. Qual. Management*. Wiley online. DOI: 10.1002/tqem.22259. If. 1.09.
11. Sanjana Ghosh, Debalina Saha, Stootee Baruah, Aniket Mookerjee, Arup Kumar Mitra, Sudeshna Shyam Choudhury, Ayan Chandra (2024) Harnessing Carbon Nanomaterials: Applications and Innovations. (Pp.1-36) In *Carbon-Based Materials and Environmental Remediation: Graphene, Biochar, and More*. Ed. N. Nirmala, Jayaseelan Arun, S. S. Dawn. Pp. 434 IGI Global. DOI: 10.4018/979-8-3693-8257-8.ch001. ISBN13: 9798369382578|ISBN13 Softcover: 9798369382585
12. Basu, Riddhi, Ghosh, Sanjana, Dhara, Bikram, Roy, Ishita, Basumatary, Elizabeth, Paul, Supriti and Kumar Mitra, Arup .(2023) "Extremophilic pigments in eukaryotic microbes: a tool for survivability". *Extremophiles: A Paradox of Nature with Biotechnological Implications*, edited by Maulin P. Shah and Satarupa Dey, Berlin, Boston: De Gruyter, pp. 149-170. <https://doi.org/10.1515/9783110788488-008>
13. Juhita Dhar, Anupriya Das, Soumyadip Biswas, Talaha Nishat Ahmed, Sanjana Ghosh and Arup Kumar Mitra (2023) Strategies to reduce microbial biofilm in medical prosthesis and other devices. Pp.289-314. In *Microbial Biofilms Challenges and Advances in Metabolomic Study*. P.434 Eds. Sanket Joshi, Dibyajit Lahiri, Rina Rani Ray and Mubarakali Davoodbasha. In the Series *Advances in Biotechnology and Bioengineering*. Series Editor. Hemen Sarma. Published by Elsevier, Academic Press, U.K. ISBN-978-0-323-95715-1
14. Communicated a paper entitled "Microbial metagenome analysis of *Cucurbita* sp rhizosphere for a sustainable agriculture in EAST KOLKATA WETLANDS"
15. Communicated a paper entitled "*Bacillus amyloliquefaciens*, a bacterial marvel from East Kolkata Wetlands with uses from bioremediation to aquafeed."
16. Communicated a paper entitled "Contamination to Cultivation: Understanding Lead dynamics and remediation in East Kolkata Wetlands."

#### **Sequences submitted to NCBI**

1. Soil sample Metagenome of *Zea mays* (Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB10393473, BIOPROJECT ID: PRJNA764188, BIOSAMPLE: SAMN21474479, SRA: SRR15931637, SRX: 12221735, Published on: 16/10/2021

2. Soil Sample Metagenome of *Cucurbita maxima* (Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB10889729, BIOPROJECT ID: PRJNA793422, BIOSAMPLE: SAMN24537899, EXP.: SRR17395637, Release date: 31/01/2022.
3. Soil sample Metagenome of *Zea mays* (Intercrop) (Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB11488432, BIOPROJECT ID: PRJNA838768, BIOSAMPLE: SAMN28462514, SRA: SRR19239528. Published on 17/5/2022.
4. Soil Sample Metagenome of *Cucurbita maxima* (Peak) (Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB11494487, BIOPROJECT ID: PRJNA839190, BIOSAMPLE: SAMN24537899, EXP.: SRR19261839, Published on: 18/5/2022
5. Soil sample Metagenome of *Zea mays* (Peak) (Year 2)(Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB12099395, BIOPROJECT ID: PRJNA884094, BIOSAMPLE: SAMN31008114, SRA: SRR21700514. Published on 27/9/2022
6. Soil sample Metagenome of *Zea mays* (Intercrop) (Year 2)(Reclaimed Wetland of East Kolkata) Soil Metagenome, Submission Id: SUB12099435, BIOPROJECT ID: PRJNA884095, BIOSAMPLE: SAMN31008163, SRA: SRR21700543. Published on 27/9/2022
7. *Bacillus velezensis* strain DPPB\_SGAM\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION ON384543. Published on 30/4/2022
8. *Cupriavidus necator* strain DCPA\_SGAM\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION ON384541. Published on : 30/4/2022
9. *Bacillus velezensis* clone SH-3\_SAASSERBSB\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR554389. Published on:15/9/2023
10. *Bacillus amyloliquefaciens* clone SH-5\_SAASSERBSB\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR554391. Published on:15/9/2023
11. *Bacillus subtilis* strain MP\_3 SAASS\_SXC 16S ribosomal RNA gene,
  - a. partial sequence. ACCESSION OR632649. Published on:9/10/2023
12. *Bacillus velezensis* strain NMP\_2 SAASS\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR632694. Published on:9/10/2023
13. *Bacillus licheniformis* strain NMP\_3 SAASS\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR632713. Published on:9/10/2023
14. *Bacillus altitudinis* strain NMP\_6 SAASS\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR632997. Published on:9/10/2023

15. *Rosellomorea vietnamensis* strain MP\_6 SAASS\_SXC 16S ribosomal RNA gene, partial sequence. ACCESSION OR633210. Published on: 9/10/2023.
16. *Bacillus licheniformis*. Str. SGAKMRBAMAC\_AC1. Accession No. PB658431.1. Date of Publication: 20.04.24.
17. *Alcaligenes faecalis*. Str. SGAKMRBAMAC\_AC2. Accession No. PB658432.1. Date of Publication: 20.04.24.
18. *Bacillus subtilis*. Str. SGAKMRBAMAC\_AM\_N\_SXC. Accession No. PB658445.1. Date of Publication: 20.04.24.
19. *Brucella pseudintermedia*. Str. SGAKMRBAMAC\_AM\_N2\_SXC. Accession No. PB658447.1. Date of Publication: 20.04.24.
20. *Peribacillus frigiditolerans*. Str. SH2\_SGAKMAC\_SXC. Accession No. PB907788.1. Date of Publication: 19.06.2024.
21. *Bacillus pseudomycoides*. Str. SH1\_SGAKMAC\_SXC. Accession No. PB907755.1. Date of Publication: 19.06.2024.

## **PATENTS**

- PATENT PUBLISHED: No. 202431016997. Date: 10.05.2024. Subject: A Bio-active Mechanized Aerobic Composter. Name of Inventor: Agnik Ghosh, Arup Kumar Mitra, Bikram Dhara, Sanjana Ghosh, Debapriya Maitra, Bedaprana Roy, Rishab Dugar, Sahil Choudhury, Prashant Toshniwal.
- PATENT PUBLISHED: No. 202531068085. Date: 25.07.25. Subject: A method for identification and formulation of bacteria for degradation of Plastic. Name of Inventor: Sanjana Ghosh, Shoham Ghosh and Arup Kumar Mitra.
- PATENT PUBLISHED: No. 202431101754. Date: 08.08.25. Subject: A probiotic formulation for enhancing immunity. Name of Inventor: St. Xavier's College, Soumyajit Modak, Arunabha Pal, Adrish Sil, Srinjoy Maitra, Sanjana Ghosh, Bedaprana Roy, Ansh Arya, Aarav Mittal, Vedant Saboo, Aditi Sanki and Arup Kumar Mitra.

## **AWARDS**

1. Won the best paper presentation award in Research scholar category in Khulna University, Bangladesh.
2. Won the best paper award in Calcutta University, 2022



3. Won the best paper award in Microbiology section of 1<sup>st</sup> Botanical Congress, held at Calcutta University, 2023
4. Won the second prize in oral presentation at SCALFE, Himachal Pradesh University, 2023
5. Won the best paper award at Biospectrum, UEM, 2023.
6. Won the best paper award at Regional State Science Congress, 2023 in Environmental Science Section.
7. Won the best paper award in Research Scholar category at ICEEA, Ranchi, 2024
8. Won the second prize in oral presentation in Ram Krishna Mission, 2024
9. Won the best paper Award in International Conference on Plant Biotechnology for Sustainable Future, 2025 held at St. Xavier's Burdwan, 2025.
10. Won the best paper Award at CRISEA, Goa University, February 2025.
11. Won the Young Scientist Award in ICEES 2025
12. Won the second prize in oral presentation in IMS, Kalimpong, 2025
13. Won a prize sum of Rs 25,000 at SOMS, Gandhinagar at SOMS Thesis Showdown Event.

#### **ACHIEVEMENTS:**

- Qualified RET Examination, 2020 conducted by St. Xavier's College (Autonomous), Kolkata
- First class first in M.Sc. in 3<sup>rd</sup> semester and overall 2<sup>nd</sup> in rank
- Received medal and certificate of merit from Shri Shikshayatan College
- Several subject awards in school.