

# CURRICULUM VITAE

**Dr. Chapol Kumar Roy**

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## **Educational Qualifications**

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**Ph.D.** in Engineering, **March 2022**

Department of Biological Functional Engineering, Kyushu Institute of Technology, Japan

**Thesis:** EFFECT OF MICROBIOTA-MODULATING AGENTS ON ANAEROBIC DIGESTION OF WASTE SEWAGE SLUDGE

**Masters of Science** in Plant Biotechnology, **May 2006 (Held in 2008)**

Results: First Class (6<sup>th</sup> position), Department of Botany, University of Rajshahi, Bangladesh

**Bachelor of Science in Botany (4 years), August 2004 (Held in 2005)**

Results: First Class, Department of Botany, University of Rajshahi, Bangladesh

## **Professional Experience**

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**Senior Scientific Officer July 2017- To date**

Applied Botany Section, BCSIR Dhaka Laboratories,  
Bangladesh Council of Scientific and Industrial Research

**Scientific Officer December 2009 - July 2017**

Applied Botany Section, BCSIR Dhaka Laboratories,  
Bangladesh Council of Scientific and Industrial Research

## **Technical Skills and Competence**

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- **Bio-energy production from anaerobic digestion:** Methane, Hydrogen, carbon-dioxide, H<sub>2</sub>S analysis, quantification, concentration analysis.
- **Anaerobic bacteria culture, Identification and Characterization:** Anaerobic bacteria and archaea isolation and characterization from biomass under anaerobic chamber.
- **Microalgae isolation from lakeside:** Microalgae isolation by agar media with BG11.
- **Molecular Techniques:** RNA/DNA Extraction, PCR, qPCR, Sequencing, Molecular Cloning, Primer Design

- **Genomics & Sequencing:** NGS Library Prep (Illumina platforms), Whole Genome Sequencing (WGS), Target Enrichment.

## **Computational Skill**

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Operating System: Windows

## **Research Grants (Selected)**

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**Principal investigator:** Effect of Sodium Tungstate on Bioenergy Production Using Food Waste through Anaerobic digestion, Ministry of Science and Technology, Bangladesh (Project ID: SRG 231177)

**Principal investigator:** Effect of Sodium Molybdate on Bioenergy Production Using Household Waste through Anaerobic Digestion, Ministry of Science and Technology, Bangladesh (Project ID: SRG 221137)

## **Training Experiences**

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1. Participation in the training course on “**Polymerase Chain Reaction (PCR)**” 28 December 2025-01 January 2026, Organized by Planning & Development, BCSIR, Bangladesh
2. Participation in the training course on “**Understanding of ISO 17025:2017- for Laboratory Accreditation**” 27 May 2025, Organized by BCSIR Laboratories Dhaka, BCSIR, Bangladesh
3. Participation in the training course on “**Basic principle, maintenance and troubleshooting of XRD, FTIR and Raman**” 21 May 2025, Organized by BCSIR Laboratories Dhaka, BCSIR, Bangladesh
4. Participation in the training course on “**Real Time-Polymerase Chain Reaction (RT-PCR)**” 04<sup>th</sup> -08<sup>th</sup> February, 2024, Organized by Planning & Development, BCSIR, Bangladesh
5. Participation in the training course on “**Inductively coupled Plasma Mass Spectrometry (ICPMS)**” 12<sup>th</sup> -16<sup>th</sup> February, 2023, Organized by Planning & Development, BCSIR, Bangladesh

## **Publications (Selected)**

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1. Tabassum A, Hasan MM, Islam SM, Al Mamun MZU, **Roy CK**, Roy NR, Hassan MT. Evaluation of Aflatoxins and Heavy Metals Exposure in the Local Feeds of Fish and Shrimp

in Bangladesh. *Biol Trace Elem Res.* 2025 Feb;203(2):1129-1141. doi: 10.1007/s12011-024-04235-z. Epub 2024 May 23. PMID: 38780856.

2. NN Haque, MA Alam, **CK Roy**, M Zenat, E Akther, JL Munshi. "Cyanobacteria mediated CO<sub>2</sub> segregation: A promising alternative method for sustainable bioremediation and biomass production." *Asian Journal of Research in Biochemistry* 13.3 (2023): 28-43.
3. **Roy, C.K.**, Toya, S., Hoshiko, Y., Sabidi, S., Mustapha, N.A., Miyazaki, T., and Maeda, T. (2022) Effect of sodium tungstate on anaerobic digestion of waste sewage sludge: Enhanced methane production via increased acetoclastic methanogens. *J Environ Chem Eng* **10**: 107524. <https://doi.org/10.1016/j.jece.2022.107524>
4. **Roy, C.K.**, Hoshiko, Y., Toya, S., and Maeda, T. (2022) Effect of different concentrations of sodium selenite on anaerobic digestion of waste sewage sludge. *Environ Technol Innov* **27**: 102403. <https://doi.org/10.1016/j.eti.2022.102403>
5. Begum, N., Zenat, E.A., Sarkar, M.K.I., **K. Roy, C.**, Munshi, J.L., and A. Jahan, M.A. (2019) In vitro Micro Propagation of Soybean (*Glycine max*) BARI-5 Variety. *Open Microbiol J* **13**: 177–187. <https://doi.org/10.2174/1874285801913010177>
6. **Roy, C.K.**, Jahan, M.A.A., and Rahman, S.S. (2018) Characterization and Treatment of Textile Wastewater by Aquatic Plants (Macrophytes) and Algae. *Eur J Sustain Dev Res* **2**. <https://doi.org/10.20897/ejosdr/85933>
7. Bhuiya, M., Sarkar, M.K.I., Sohag, M.H., Ali, H., **Roy, C.K.**, Akther, L., and Sarker, A.F. (2018) Enumerating Antibiotic Susceptibility Patterns of *Pseudomonas aeruginosa* Isolated from Different Sources in Dhaka City. *Open Microbiol J* **12**: 172–180. <https://doi.org/10.2174/1874285801812010172>
8. Ahmed, K., **Roy, C.**, Munshi, J., Zenat, E., and Ghose, S. (2018) Host acceptance and oviposition behaviour of solitary wasp, *Anisopteromalus calandrae* (Howard) (Hymenoptera: Pteromalidae), A parasitoid of stored grain pests. *Bangladesh J Zool* **46**: 205–216. <https://doi.org/10.3329/bjz.v46i2.39054>
9. **Roy, C.K.**, Jahan, M.A.A., and Rahman, S.S. (2018) Characterization and Treatment of Textile Wastewater by Aquatic Plants (Macrophytes) and Algae. *Eur J Sustain Dev Res* **2**: <https://doi.org/10.3329/bjsir.v49i4.22626>
10. Hassan, A., **Roy, C.**, Sultana, R., and Khatun, R. (2013) Callus induction and plant regeneration of *Paederia foetida* L., a widely used medicinal vine in Bangladesh. *Bangladesh J Sci Ind Res* **47**: 373–378. <https://doi.org/10.3329/bjsir.v47i4.14066>

11. **Roy, C.K.**, Munshia, J.L., Begum, N., Khatun, R., and Hassanb, A.S. (2012) In vitro plant regeneration of *Coccinea cordifolia* (Linn.) Cogn., an anti-diabetic medicinal plant. *Bangladesh J Sci Ind Res* **47**: 187–190. <https://doi.org/10.3329/bjsir.v47i2.11450>

## **Conference Presentation**

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1. Attended and delivered oral presentation in the International Conference on Environmental Protection for sustainable Development (ICEPSD)-2022, held On 2-4 September, 2022
2. Attended and delivered oral presentation in the 1st International Conference on Nano-bio and Advanced Materials Engineering (NAME-2023), held on 7-8 January, 2023
3. Participated in “International Conference on Smart Bangladesh of Tomorrow is the Science of Today-2023” organized by the BCSIR, Dhaka, Bangladesh held on 08-10 March, 2024 as an oral presenter on “Effect of sodium tungstate on anaerobic digestion of food waste”.
4. Dr. Chapol Kumar Roy\*, Session Co-Chair, Waste Management. BCSIR Congress, 10 March 2024, Dhaka, Bangladesh

## **Thesis Supervision**

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Supervised more than 6 MS thesis students at different field of Botany, Biotechnology, Microbiology etc.

## **Awards**

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1. Obtained Ph.D. degree from Department of Biological Functions and Engineering, Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan (March, 2022)