

# SHYAMA PROSAD MOULICK

[moulik.shyama@bcsir.gov.bd](mailto:moulik.shyama@bcsir.gov.bd); [moulik.shyama@gmail.com](mailto:moulik.shyama@gmail.com); Mobile: +88-01923722052  
<https://scholar.google.com/citations?user=RzbwWkAAAAAJ&hl=en&oi=ao>

Office: Chemical Research Division, BCSIR Dhaka Laboratories  
Bangladesh Council of Scientific & Industrial Research (BCSIR)  
Dr. Qudrat-I-Khuda Road, Dhaka-1205, Bangladesh

## Education

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M. Sc. in Chemistry University of Dhaka	2014
B. Sc. (Hons.) in Chemistry University of Dhaka	2013

## Professional Experience

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### Senior Scientific Officer

Chemical Research Division, BCSIR Dhaka Laboratories  
Bangladesh Council of Scientific & Industrial Research (BCSIR) Aug. 2025 to Present

### Scientific Officer

Chemical Research Division, BCSIR Dhaka Laboratories  
Bangladesh Council of Scientific & Industrial Research (BCSIR) Nov. 2021 to Aug. 2025

### Scientific Officer

BCSIR Rajshahi Laboratories  
Bangladesh Council of Scientific & Industrial Research (BCSIR) Oct. 2018 to Nov. 2021

## Technical Skill and Competences

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Capable of operating some Advanced instruments like Gas Chromatography (GC), High-Performance Liquid Chromatography (HPLC), Preparative HPLC, Ion Chromatography (IC), Liquid Chromatography- Mass Spectrometry (LC-MS), Gas Chromatography-Mass Spectrometry (GC-MS), Nuclear Magnetic Resonance (NMR), Ultraviolet, Visible, Near-Infrared Spectrophotometers (UV-Visible-NIR), Fluorescence spectrophotometer. Fourier-transform infrared spectroscopy (FTIR), Flame Photometry, Atomic Absorption Spectrometry (AAS), XPS, TGA, Freeze Dryer, Amino acid analyzer, Rotary Evaporator, etc.

## Research Grants (Selected)

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- Research and Development (R&D) Grant by Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh. Project Title: Extraction, Purification, and Characterization of Natural Food Colorant from Different Fruits and Vegetables (Project duration: July 2019 to June 2022; Role: Project Leader).
- Research and Development (R&D) Grant by Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh. Project Title: Preparation of activated carbon from *Albizia lebbbeck* for the removal of antibiotics in wastewater (Project duration: July 2024 to June 2025; Role: Project Leader).
- Research and Development (R&D) Grant by Bangladesh Council of Scientific and Industrial Research (BCSIR), Dhaka, Bangladesh. Project Title: Development of cost-effective technology for the isolation of aleuretic acid from Lac (Project duration: July 2020 to June 2022; Role: Project Associate).

## Publications (Selected)

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- **Shyama Prosad Moulick**, Md Sahadat Hossain, Md Zia Uddin Al Mamun, Farhana Jahan, Md Farid Ahmed, Rahima Akter Sathee, Md Sujan Hossen, Md Ashraful Alam, Md Sha Alam, and Faridul Islam. "Characterization of waste fish bones (*Heteropneustes fossilis* and *Otolithoides pama*) for photocatalytic degradation of Congo red dye." *Results in Engineering* 20 (2023): 101418.
- **Shyama Prosad Moulick**, Mahci Al Basherah, Farhana Jahan, Najem Uddin, GM Masud Rana, Md Badrul Islam, Faridul Islam, Md Sabbir Hasan, and Sabbir Ahmed. "Turmeric (*Curcuma longa* L.) extract in different solvents: A Comparative Study of Curcuminoid Content, Volatile Compounds, and Antimicrobial Activity with Molecular Docking Insights." *Food Chemistry Advances* (2025): 101074.
- **Shyama Prosad Moulick**, Farhana Jahan, Md Badrul Islam, Mahci Al Basherah, Md Sabbir Hasan, Md Jahidul Islam, Sabbir Ahmed et al. "Nutritional characteristics and antiradical activity of turmeric (*Curcuma longa* L.), beetroot (*Beta vulgaris* L.), and carrot (*Daucus carota* L.) grown in Bangladesh." *Heliyon* 9, no. 11 (2023).
- **Shyama Prosad Moulick**, Farhana Jahan, Md Zia Uddin Al Mamun, Md Imam Sohel Hossain, Khondoker Shahin Ahmed, Md Alamgir Kabir, Md Mamunur Rashid, Rahima Akter Sathee, and Muhammad Mahfuz Hasan. "Boerhavia diffusa and Coccinia grandis: Two indigenous vegetables as a source of essential minerals, vitamins, amino acids, and fatty acids." *Applied Food Research* 4, no. 2 (2024): 100494.
- **Shyama Prosad Moulick**, Farhana Jahan, Md Zia Uddin Al Mamun, Md Imam Sohel Hossain, Md Waliullah, and Rahima Akter Sathee. "Analysis of indigenous spices widely consumed in Bangladesh: An assessment to explore its proximate contents, minerals, phytochemical compositions, and antioxidant activities." *Journal of Agriculture and Food Research* 14 (2023): 100720.
- Mahci Al Basherah, **Shyama Prosad Moulick**, Md Badrul Islam, Farhana Jahan, Md Najem Uddin, GM Masud Rana, Md Sabbir Hasan et al. "Antimicrobial and antioxidant properties of Oldenlandia corymbosa L. ethanolic extract: A comprehensive study with molecular docking and GC-MS analysis." *Heliyon* 11, no. 5 (2025).

- Md Zia Uddin Al Mamun, Md Sahadat Hossain, **Shyama Prosad Moulick**, Mohajira Begum, Rahima Akter Sathee, Md Sujun Hossen, Farhana Jahan et al. "Nano-crystallite bones of *Oreochromis niloticus* and *Katsuwonus pelamis* for the photocatalytic degradation of Congo red dye." *Heliyon* 9, no. 7 (2023).
- Tamanna Fariha Mitu, Saiful Islam, Shamima Akther, AHM Shofiul Islam Molla Jamal, **Shyama Prosad Moulick**, Md Najem Uddin, Md Aftab Ali Shaikh, and Pradip K. Bakshi. "Synthesis and Characterization of Mn (II), Ni (II), and Cu (II) Complexes Derived From Sulfonamide and o-Vanillin-Based Schiff Base and Their Antimicrobial, Antioxidant, and Cytotoxic Properties." *Applied Organometallic Chemistry* 39, no. 6 (2025): e70203.
- Saima Alam, Md Masudur Rahman Rahat, Nusrat Jahan Upoma, Chandan Halder, **Shyama Prosad Moulick**, Md Monarul Islam, Wenben Liu, and Ahsan Habib. "Assessment of quality of commercial hand sanitizers using Fourier transform infrared spectroscopy and gas chromatography." *MethodsX* 11 (2023): 102274.
- Innaz Fargul Chowdhury, **Shyama Prosad Moulick**, Md Al-Amin, Md Tanzil Ahamed Shawon, Sarker Kamruzzaman, Zuwu Tang, and Ajoy Kanti Mondal. "A sustainable approach for harnessing the synergy between lignosulfonate and hemicellulose: Towards next-generation bio-derived flexible electronics." *International Journal of Biological Macromolecules* (2025): 147985.
- Riadul Rumman, Md Rezaul Haq, Md Masudur Rahman Rahat, Farhana Jahan, **Shyama Prosad Moulick**, Refayat Nigar, Chandan Halder, Wenbin Liu, Farhana Khanam Ferdousi, and Ahsan Habib. "Water-Soluble Inorganic Anions in Fine Particulate Matter (PM<sub>2.5</sub>) in Dhaka, Bangladesh: Source Apportionment." *Journal of Chemistry* 2024, no. 1 (2024): 1296699.
- Monarul Islam, Khondoker Shahin Ahmed, Rezaul Karim, Bikash Dev Nath, **Shyama Prosad Moulick**, Rashedul Islam, Sharkar Md Mahmudul Hassan et al. "Alcohol-based Hand Sanitizers amid COVID-19: Chemical Formulation, Analysis, Safety." *ChemistrySelect* 7, no. 45 (2022): e202203290.
- Farhana Jahan, Md Badrul Islam, **Shyama Prosad Moulick**, Mahci Al Bashera, Md Sabbir Hasan, Nishat Tasnim, Trissa Saha et al. "Nutritional characterization and antioxidant properties of various edible portions of *Cucurbita maxima*: A potential source of nutraceuticals." *Heliyon* 9, no. 6 (2023).
- Trissa Saha, Muhammad Mahfuz Hasan, Sujit Kumar Banik, Md Zia Uddin Al Mamun, Farhana Jahan, Mehedi Hasan, SM Rashedul Islam, Farhana Boby, Mahchi Al Bashera, and **Shyama Prosad Moulick**. "A Comprehensive Nutritional Profiling of Rubber Seed Powder: Evaluating the Impact of Shell Inclusion and Implications for Future Dietary Applications." *Applied Food Research* (2025): 101295.
- Subarna Sandhani Dey, Mahci Al Bashera, **Shyama Prosad Moulick**, Firoz Ahmed, Md Zafar As Sadiq, Mst Sarmina Yeasmin, GM Masud Rana, Trissa Saha, Musharrat Jahan Prima, and Md Murshed Hasan Sarkar. "Comparative analysis of four different solvent extracts of *Annona muricata* bark based on bioactive compounds and antibacterial effectiveness." *Heliyon* 11, no. 4 (2025).

## Conference Presentations (Selected)

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- Oral presentation on "Phytochemical and antioxidant studies of leaves of *Polyalthia suberosa*" at the International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021) held on 11-13 March 2021

- Oral presentation on “Method validation protocol for analysis of methanol in solvents by GC-FID” at `The International Conference on Environmental Protection for Sustainable Development (ICEPSD)-2022` held on 02-04 September 2022.
- Oral presentation on “Preparation of chitosan-based biodegradable films for food packaging applications” at BCSIR Congress-2022 held on 01-03 December 2022.
- Poster presentation on “Synthesis of nano-crystallite hydroxyapatite from waste fishbone: A potential source of photocatalytic degradation of textile dye (Congo red)” at BCSIR Congress-2023 held on 08-10 March 2024.

## Thesis Supervision

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- Student Supervision: Thesis title: Eco-Friendly Synthesis of Zinc Oxide Nanoparticles Using *Dillenia indica* Leaf Extract: Characterization and Evaluation of Biological and Photocatalytic Properties. (Role: Co-supervisor)
- Student Supervision: Thesis title: Green Synthesis and characterization of Copper Oxide (CuO) Nanoparticles Using *Mesua ferrea* Leaf Extract and Evaluation of Biological and Photocatalytic Activities (Role: Co-supervisor)

## Professional Trainings (Selected)

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- Training program on “Research Methodology and Publication” at BCSIR Laboratories Dhaka, BCSIR (26 May 2025).
- Training program on “How to write a Research Paper” at BCSIR Laboratories Dhaka, BCSIR (07 Nov 2023).
- Training program on “Research Methodology and Publication”, BCSIR Laboratories Dhaka, BCSIR (26 May 2025).
- Training Course on Operating and Maintenance of Raman Spectrophotometer, at CARF of BCSIR (18-22 Oct 2022).
- Training Course on Operating and Maintenance of UV-Vis-NIR Spectrophotometer at IERD, BCSIR (12-16 Sep 2021).
- Training on Thermo-gravimetric and Differential Thermal Analyzer (TG/DTA) at PP&PDC, BCSIR, Bangladesh (05-09 Dec 2021)
- Training on Gas Chromatograph-Mass Spectrometer (GC-MS) at CARF, BCSIR, Bangladesh (14-18 Nov 2021).
- Training Course on Operating and Maintenance of Nuclear Magnetic Resonance (NMR) at INARS, BCSIR by NITUB (19 - 23 Dec 2021).
- Training Course on Operating and Maintenance of Atomic Absorption Spectrometer at BCSIR Chittagang Laboratories, BCSIR (12-16 Sep 2021).
- Training Course on Basic Principle, Application and Maintenance of FTIR at BCSIR Laboratories

Dhaka , BCSIR (13 Dec 2022).

- Training Course on Operating and Maintenance of Preparative HPLC at BCSIR Chittagang Laboratories, BCSIR (23-27 June 2024).
- Training Course on Basic Principle, Application and Maintenance of HPLC at BCSIR Laboratories Dhaka, BCSIR (29 May 2024).
- Training Program on “Introduction to Python: Basic Programming and Data Analysis” at BCSIR Laboratories Dhaka, BCSIR (05 Nov 2024).
- Training Program on “Learning Session on Patent drafting and Industrial Process” at BCSIR Laboratories Dhaka, BCSIR (24 May 2023).
- Training Program on “BET Sorptometer” at CARF, BCSIR (18-22 May 2025).
- Training Program on “X-Ray Photoelectron Spectrometer (XPS)” at CARF, BCSIR (21-25 Sep 2025).

## References

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Available up on request

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