

Md Arafat Islam

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● ABOUT ME

My research interests span Environmental Microbiology, Synthetic Biology, Soil Microbiology, Microbes-Host Interactions, and Food Microbiology. I am committed to exploring microbial systems to address global challenges in health, agriculture, and sustainability, and I thrive in interdisciplinary environments that foster innovation and collaboration.

● EDUCATION AND TRAINING

02/03/2016 – 21/02/2018 Cheongju, South Korea

MASTER OF SCIENCE Chungbuk National University

- Cultivation of ammonia oxidizing archaea (AOA) & bacteria (AOB), *Pseudomonas*, *Bradyrhizobium*.
- Cryopreservation and reactivation of microbial cells.
- DNA extraction, DNA purification, PCR, qPCR, gel electrophoresis, analyzing sequenced DNA.
- Microbial community analysis from soil samples, phylogenetic tree analysis.
- Microbial substrate utilization test, co-culture (bacteria & ammonia oxidizing archaea).
- Determination of concentration of NH₄⁺, NO₂⁻, NO₃⁻, and pyruvate.

Website <https://www.cbnu.ac.kr> | **Field of study** Microbiology and Biotechnology | **Final grade** 3.60 |

Thesis Characterization of an ammonia oxidizing archaeon of group 1.1a isolated from an agricultural soil

01/01/2009 – 31/12/2012 Jashore, Bangladesh

BACHELOR OF SCIENCE Jashore University of Science & Technology

Website <https://just.edu.bd/> | **Field of study** Microbiology

20/08/2024 – 20/12/2024 Dhaka, Bangladesh

DATA SCIENCE & MACHINE LEARNING WITH PYTHON OSTAD

Website <https://ostad.app/> |

Field of study python programming fundamentals, numpy and pandas, basic statistics, SQL fundamentals

17/08/2017 – 18/08/2017 Sangju-si, South Korea

STATISTICAL DATA ANALYSES BASED ON R LANGUAGE National Nakdong River Biological Resource Center

Field of study Data science, Data visualization

● PUBLICATIONS

2024

[Role and importance of national and international agencies in quality control regulation.](#)

"Role and Importance of National and International Agencies in Quality Control Regulation" is chapter-3 based on the book *Quality Control and Regulatory Aspects for Biologicals*, edited by Dr. Gauri Misra.

Authors: Md. Arafat Islam | **Volume, Issue and Pages:** p29-46 | **Publisher:** CRC Press

2016

[A physiologically, genetically, and morphologically novel isolated ammonia-oxidizing archaeon, Nitrosocosmus oleophilus, from terrestrial sediment.](#)

Authors: Man-Young Jung, Heeji Hong, Eugene L Madsen, Md Arafat Islam, Sung-Keun Rhee | **Journal Name:** International Meeting of the Microbiological Society of Korea

2018

Nitrosarchaeum koreense gen. nov., sp. nov., an aerobic and mesophilic, ammonia-oxidizing archaeon member of the phylum Thaumarchaeota isolated from agricultural soil

Authors: Man-Young Jung, Md. Arafat Islam, Joo-Han Gwak, Jong-Geol Kim, Sung-Keun Rhee | **Journal Name:** International Journal of Systematic and Evolutionary Microbiology | **Volume, Issue and Pages:** 68,10,3084-3095 | **Publisher:** Microbiology Society

2016

Physiological properties of bacterioplankton during phaeocystis Bloom in polynya of amundsen sea, western antarctica.

Authors: So-Jeong Kim, Jong-Geol Kim, Joo-Han Gwak, Hee-Ji Hong, Woon-Jong Yu, Md Arafat Islam, Soo-Je Park, Sung-Keun Rhee | **Journal Name:** The Microbiological Society of Korea. | **Volume, Issue and Pages:** p21-21

2016

Genome reconstruction for prediction of metabolic potential of subsurface Archaea in intertidal mud flat sediment.

Authors: So-Jeong Kim, Jong-Geol Kim, Joo-Han Gwak, Hee-Ji Hong, Woon-Jong Yu, Md. Arafat Islam, Soo-Je Park, Sung-Keun Rhee | **Journal Name:** International Meeting of the Microbiological Society of Korea-2016 | **Volume, Issue and Pages:** p21-21 | **Publisher:** The Microbiology Society of Korea

CONFERENCES AND SEMINARS

20/04/2016 – 22/04/2016 Kimdaejong Convention Center, Gwangju, South Korea

International meeting of the microbiological society of Korea

09/01/2015 – 10/01/2015 Nabab Nawab Ali Chowdhury Senate Bhaban, University of Dhaka, Bangladesh.

International conference of biotechnology in health and agriculture (ICBHA)

27/04/2014 – 27/04/2014 Microbiology Department, University of Dhaka

The 27th annual conference of the Bangladesh society of microbiologists

WORK EXPERIENCE

THE ACME LABORATORIES LIMITED – DHAKA, BANGLADESH

SENIOR EXECUTIVE, MICROBIOLOGY DEPARTMENT – 03/07/2018 – CURRENT

- Led the team for different laboratory activities including field sample management (sample collection, processing, and preservation), cell culture techniques (culture maintenance and storage of different microbial cultures), document preparation (protocol and procedures), report writing (process and method validation reports, batch reports).
- Analytical method development for suitable microbial recovery from medicines.
- Prepared & reviewed laboratory protocols and laboratory test reports.
- Collaborated and coordinated with interdisciplinary teams of the industry.
- Training management: conducting training on new analytical procedures, coordinating job readiness training for new joiners.

THE ACME LABORATORIES LIMITED – DHAKA, BANGLADESH

EXECUTIVE, MICROBIOLOGY DEPARTMENT – 03/07/2018 – 31/12/2022

- Applied microbiological methods: microbial enumeration tests (pour plate, spread plate & membrane filtration), efficacy test of antimicrobial agents against pathogenic bacteria & fungi, recovery of microorganism from swab samples.
- Isolated and identified microorganisms from water & environmental samples by using gram staining, microscopic observation & BD phoenix identification system.
- Prepared microbial culture media: agar media (CET, MSA, R2A, SDA, TSA, VRBGA, XLD) & liquid media (BSCPS, EEBM, MCB, RV, TSB).
- Data analyses and data management by using Microsoft excel.
- Laboratory housekeeping to ensure regulatory inspection readiness.

LANGUAGE SKILLS

Mother tongue(s): **BENGALI**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Computational

Advanced ICT skills (Microsoft Word, Excel, PowerPoint) | Python (computer programming) | R

Bioinformatics

Bioinformatics(BioEdit& MEGA7)

HONOURS AND AWARDS

Outstanding performance award 2024 – The ACME Laboratories Limited, Dhaka, Bangladesh

Recognized for the hard work & passion in 4th quarter of the year 2024

Promotion from executive to senior executive 2023 – The ACME Laboratories Limited, Dhaka, Bangladesh

Awarded man of the match in the Final Game 2022 – The ACME Laboratories Limited, Dhaka, Bangladesh

Recognized for outstanding performance and contribution to team success during the championship match.

BK21 plus & fresher student scholarship 2016 – Chungbuk National University, South Korea

Best performance award - international culture festival 2017 – Chungbuk National University, South Korea

Played a key role in conceptualizing the storyline, guiding the team, and delivering a standout performance.

Special performance award - international culture festival 2016 – Chungbuk National University, South Korea

Recognized for outstanding team contribution and collaboration during a globally attended cultural event.

Champion Team – inter-department debating competition 2011 – Jashore University of Science & Technology, Bangladesh

Played key role through strategic argumentation, critical thinking, and effective communication.

CERTIFICATIONS

British Council, 07/09/2025

IELTS

IELTS Score 7.0- Listening 7.5, Reading 7.0, Writing 6.5, Speaking 6.5

OSTAD, 12/2024

Data Science & Machine Learning with Python

Mode of learning: Online