

Debajyoti Deb

PhD Student, Civil & Environmental Engineering
Louisiana State University, Baton Rouge, LA, USA

Website: debajyotideb.com
Email: debajyotideb.che.buet@gmail.com
Scholar: Debajyoti Deb LinkedIn: deb-debajyoti

EDUCATION

- Louisiana State University** Baton Rouge, Louisiana, USA
Doctor of Philosophy in Civil & Environmental Engineering August 2023 - Present
 - Research Area:** Biological waste treatment — microbial treatment of wastewater
 - Advisor:** Dr. William M. Moe, Marvin Rex Clemmons Professor in the College of Engineering
- Bangladesh University of Engineering and Technology (BUET)** Dhaka, Bangladesh
Bachelor of Science in Chemical Engineering February 2017 - May 2022

PUBLICATIONS

- W. M. Moe, L. Albuquerque, **D. Deb** (2025). Complete genome sequence of the type strain *Ampullimonas aquatilis* LMG 28208^T. *Microbiology Resource Announcements* 14(8), e00384-25. doi:10.1128/mra.00384-25
- D. Deb**, W. M. Moe (2025). Complete genome sequence of the type strain *Piscinibacterium candidicorallinum* LMG 29480. *Microbiology Resource Announcements* 14(5), e00139-25. doi:10.1128/mra.00139-25

RESEARCH EXPERIENCE

- Louisiana State University** Baton Rouge, Louisiana, USA
Graduate Research Assistant August 2023 - Present
 - Focus:** Doctoral research in biological waste treatment under Dr. William M. Moe, on bacteria relevant to biological nitrogen removal in wastewater treatment systems
 - Cultivation:** Preparing cultures and subcultures for the isolation and maintenance of bacterial strains under aseptic conditions
 - Molecular Characterisation:** DNA extraction, PCR and gel electrophoresis; sequence inspection and alignment in BioEdit
 - Taxonomic Characterisation:** Gram staining, light microscopy and associated wet-lab assays used to describe and classify bacterial strains
 - Output:** Contributed to two complete reference genome announcements for bacterial type strains associated with treatment systems; first author on one
 - Funding:** Work supported by the Governor's Biotechnology Initiative of the Louisiana Board of Regents, through the LSU Hazardous Substance Research Center Environmental Biotechnology Initiative

RESEARCH INTEREST

- Biological Waste Treatment
- Microbial Genomics
- Water Treatment
- Environmental Microbiology
- Biological Nitrogen Removal
- Sustainability

SKILLSET

- Microbiology:** Bacterial culturing and subculturing, aseptic technique, isolation and maintenance of strains, Gram staining, light microscopy, autoclaving, taxonomic characterisation assays
- Molecular Biology:** DNA extraction, PCR, gel electrophoresis
- Software:** BioEdit (sequence alignment and editing), Aspen HYSYS, MATLAB, AutoCAD (2D), Microsoft Office
- Languages:** Bangla (native), English (full professional proficiency)

GRADUATE COURSEWORK

- Advanced Topics in Biodegradation
- Special Topics in Biological Engineering
- Theory and Operation of Wastewater Treatment Facilities
- Sustainability Engineering
- Physical/Chemical Processes in Water and Wastewater Treatment
- Integrated Environmental Issues
- Advanced Topics in Water Quality and Treatment
- Environmental Planning and Management
- Design of Solid and Hazardous Waste Management Systems
- Applied Ecology
- Special Topics in Environmental Engineering Science
- Experimental Statistics I

INDUSTRY EXPERIENCE

- British American Tobacco Bangladesh** Dhaka, Bangladesh
Team Leader - Secondary Manufacturing Department October 2022 - November 2022
 - Role:** Led a team of equipment owners in secondary manufacturing operations
- ASM Chemical Industries Limited** Gazipur, Bangladesh
Industrial Trainee May 2022
 - Training:** Two-week attachment with a chlor-alkali manufacturer producing stable bleaching powder, poly-aluminium chloride, caustic soda and chlorinated paraffin wax

EARLIER RESEARCH & UNDERGRADUATE PROJECTS

- **Bio & Environmental Technology Research Group, BUET** Dhaka, Bangladesh
Undergraduate Research Assistant April 2018 - December 2019
 - **Bio-Fuel:** Extraction of ethanol from *Chlorella vulgaris*; scaled algal cultures from 200 mL to 25 L by tuning culture composition, temperature and humidity
 - **Undergraduate Thesis:** Cleaner production practice in the power generation sector of Bangladesh — process development, hazard reduction and waste minimisation across plants of several generation technologies
 - **Undergraduate Design:** 100 tons per day plant re-refining used industrial lube oil into API Grade II base oil by thermal de-asphalting

TEACHING EXPERIENCE

- **Instructor:** UDVASH and OMECA coaching institutes, Bangladesh — classroom instruction in mathematics, thermodynamics, reaction kinetics and electrochemistry for university admission candidates (2018 - 2022)
- **Content Development:** Produced recorded lecture material for Emerging Study, an ed-tech platform