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**Lab Address**

Bangladesh Council of Scientific  
and Industrial Research, Dr. Quadrat-  
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**Education**

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Ph.D. in Biomedical Sciences (2023-2028)  
College of Graduate Studies  
SUNY Upstate Medical University  
United States of America

M.Sc (2014-2015)  
GPA:3.75/4.0  
Department of Microbiology  
Jahangirnagar University  
Bangladesh

B.Sc (2010-2014)  
GPA:3.72/4.0  
Department of Microbiology  
Jahangirnagar University  
Bangladesh

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**Master's Thesis**

MSc thesis was carried out entitled "Hexavalent chromium [Cr(VI)] and COD reduction capability of chromium resistant bacteria isolated from tannery effluents" in the Laboratory of Environmental Health, Laboratory Sciences and Services Division (LSSD), International Center for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2014-2015 (Research Supervisor Dr. Zahid Hayat Mahmud and Professor Dr. Anowar khasru Parvez).

**Professional Employment**

**1. Position: Scientific Officer (2018 - present)**  
Bangladesh Council of Scientific and Industrial Research (BCSIR)

**Research Project:** Method validation for the determination of Porcine and Bovine specific DNA and nitrofurantoin metabolites in poultry/fish feed samples by ELISA and HPLC Techniques, Isolation and molecular characterization of multidrug-resistant organisms from environmental and clinical samples of Chattogram City, Screening of novel antimicrobial compound from plant extract, endophytic fungi and soil actinomycetes of Bangladesh.

**Project Leader:** Investigating natural antibacterial agents from high-yielding Bangladeshi garlic varieties against multidrug-resistant pathogens (2019-2021).

**2. Position: Lecturer of Microbiology (2017 - 2018)**  
Department of Microbiology, Khwaja Yunus Ali University, Bangladesh

**Undergraduate Courses Taught:** Microbial Chemistry, Molecular and Microbial Genetics, Quality control of Food, Fish and Beverages.

### 3. Position: Senior Research Assistant (2016 - 2017)

International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)

**Responsibilities:** Identification and molecular characterization of enteric pathogens by PCR and RT-PCR, bioassay of antibiotics by disk diffusion assay, serology test, monitoring of water quality in two diarrheal prevalence regions in Bangladesh, ATCC culture management, data collection, analysis, presentation and writing of manuscripts.

### Publications

1. S. Hossain, Md. Shahiduzzaman, M.A. Rahim, M. Paul, R. Sarkar, F.S. Chaity, d.N. Uddin, G.M. Masud Rana, t.S. Yeasmin, A. Kibria, S. Islam, Bioactive properties and organosulfur compounds profiling of newly developed garlic varieties of Bangladesh, *Food Chemistry: X* (2023), doi: [https://doi.org/ 10.1016/j.fochx.2023.100577](https://doi.org/10.1016/j.fochx.2023.100577).
2. Ferdous, J., Hossain, S., Chaity, F. S., Sarkar, R., Bahar, A., Masud, H. A. A., & Islam, S. (2022). Draft Genome Sequence of a Multidrug-Resistant and Novel Sequence Type 6130 *Klebsiella quasipneumoniae* Strain C11S11\_BCSIR Isolated from Wastewater of a Tertiary Care Hospital in Chattogram, Bangladesh. *Microbiology Resource Announcements*, e00654-22.
3. Hossain, S.; Hossain, S.; Islam, M.R.; Kabir, M.H.; Ali, S.; Islam, M.S.; Imran, K.M.; Moniruzzaman, M.; Mou, T.J.; Parvez, A.K.; Mahmud, Z.H. Bioremediation of Hexavalent Chromium by Chromium Resistant Bacteria Reduces Phytotoxicity. *Int. J. Environ. Res. Public Health* **2020**, *17*, 6013.
4. Hossain Saddam, Morshed Md. Reaz ,Sonet Sanjay Saha ,Islam Rashedul ,Tasneem Atkeeya ,Kabir Mohammad Mahbub (2020). Childhood pneumonia in the developing countries: Causative agents, diagnosis and management strategies emphasizing the current status. *Int. Res. J. Medical Sci.*, **8(1)**, 10-20.
5. Jalal Uddin, Khaled Hossain, Saddam Hossain, Karabi Saha, Fatema Tuz Jubyda, Razoanul Haque, Ali Azam Talukder, Anowar Khasru Parvez, Shuvra Kanti Dey: Bacteriological assessments of food borne pathogens in poultry meat at different super shops in Dhaka, Bangladesh. *Italian Journal of Food Safety* 2019; 8:6720 doi:10.4081/ijfs.2019.6720.
6. Haque, R., Sumiya, M.K., Sakib, N., Sarkar, O.S., Siddique, T.T.I., Hossain, S., Islam, A., Parvez, A.K., Talukder, A.A. and Dey, S.K. (2017). Antimicrobial Activity of Jambul (*Syzygium cumini*) Fruit Extract on Enteric Pathogenic Bacteria. *Advances in Microbiology*, **7**, 195- 204.

### Poster & Oral Presentations

1. Hexavalent chromium and COD reduction capability of chromium-resistant bacteria. Zahid H. Mahmud ([zhmahmud@icddr,b.org](mailto:zhmahmud@icddr,b.org)), Saddam Hossain, Md. Rafiqul Islam, Md. Shafiqul Islam, Alvee Ahmed, Tanvir Noor Nafiz, Mir Himayet Kabir, Md. Anowar Khasru Parvez and Niyaz Ahmed. Asian Conference on Diarrhoeal Diseases and Nutrition, 2017 (India).
2. Isolation and Characterization of Multiple Antibiotics and Heavy Metals Resistant Bacteria from the Major Urban River's Water of Bangladesh: A Public Health and Environmental Concerns. Saddam Hossain, Mohammad Mahbub Kabir, Sadia Mahbub Maleha, Saiful Islam, Farjana Showline Chaity, Rajib Sarker, Suman Das, Habibur Rahman Bhuiya, Mohammad Mostafa. Conference on Environmental Solutions for Sustainable Development: Towards Developed Bangladesh (CESSD 2019, Dhaka, Bangladesh).

3. Bioactive properties and organosulfur compound profiling of garlic varieties available in local commercial markets of Bangladesh. **Saddam Hossain**, International Conference on Environmental Protection for Sustainable Development (ICEPSD 2022, Dhaka, Bangladesh).

### Laboratory Skills

**Cultural Technique:** Identification of bacteria using cultural, microscopic, and biochemical techniques, Maintaining and preserving the bacterial cultures, MIC and MBC of antibiotics against pathogens, Plaque Assay Technique, and Biofilm Formation Assay.

**Molecular Techniques:** Chromosomal DNA extraction from bacterial cells, DNA Quantification, Polymerase Chain Reaction (PCR), RT-PCR, nested PCR, Real-time PCR, Agarose Gel Electrophoresis, RAPD, etc.

**Immunologic Technique:** Immunochromatographic (IC) technique for detection of antigen, ELISA.

**Bioinformatics:** Software-assisted sequence alignment and database search (ClustalW), Primer Designing, Phylogenetic Tree Construction, Peptide Vaccine Candidate Identification, 3D modeling of protein, NGS data analysis of whole bacterial genome using different tools including Galaxy, Virulence Gene Finder, The Comprehensive Antibiotic Resistance Database, etc.

**Virology:** Viral RNA and DNA extraction using Promega kit, Detection of RNA and DNA viruses by PCR and IC techniques.

**Others:** Animal Modeling (acute toxicity in mice), Method Validation, and **High-Performance Liquid Chromatography (HPLC)**.

### Awards

- ✚ Jahangirnagar University's highest grade merit scholarship (4 times).
- ✚ National Science and Technology (NST) Fellowship for M.S. Thesis, 2014-15, Ministry of Science and Technology, Government of People's Republic of Bangladesh.
- ✚ Prime Minister Fellowship from the Prime Minister's Office, Government of the People's Republic of Bangladesh, as a part of "strengthening the capacity of public administration for achieving the SDGs project.

### Professional Training & Courses

- ✚ Metagenomics applied to surveillance of pathogens and antimicrobial resistance (Technical University of Denmark, February-March, 2023).
- ✚ Trainer on PCR (Bangladesh Council of Scientific and Industrial Research, 18-22 December, 2022, 11-13 March, 2022).
- ✚ High-performance Liquid Chromatography (Bangladesh Council of Scientific and Industrial Research, 14-18 November, 2021).
- ✚ Gas Chromatography-Mass Spectrometry (Bangladesh Council of Scientific and Industrial Research, 07-11 February, 2021).
- ✚ **R & D Management Training** (Council of Scientific and Industrial Research -Human Resource Development Centre (India), 17-21 February, 2020).

- ✦ Training on Method Validation (Bangladesh Council of Scientific and Industrial Research,7-10 December 2019).
- ✦ Workshop on Computer-Aided Drug Design (Khwaja Yunus Ali University, 2018).
- ✦ Workshop on Next Generation Sequencing Data Analysis of Microbial Genomes (icddr,b, 2017).
- ✦ Bio Safety and Bio Security (icddr,b, 2016).
- ✦ Undergraduate In-plant training on Biotechnology (Bangladesh Livestock Research Institute, May-June, 2014).

### Computer Skills

1. Data arrangement and processing: Extensive experience with Microsoft word, excel, PowerPoint, and GraphPad prism, Endnote.
2. Statistical analysis: Using different statistical software such as SPSS, Minitab and MS excel, R programming.

### Language Skills

1. Bengali & English (IELTS-7.0; Speaking-7.5, Reading 7.5, Writing 6.5, Listening 6.0).

### Profile Links

Researchgate:<https://www.researchgate.net/profile/Mdsaddam-Hossain-2>.

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### References

**Dr. Anowar Khasru Parvez**

**Professor**

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Jahangirnagar University, Savar, Dhaka-1342, Bangladesh  
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**Dr. Saiful Islam**

**Principal Scientific Officer**

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Dr. Qudrat-I-khuda road, Dhanmondi, Dhaka-1205  
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**Dr. Shuvra Kanti Dey**

**Professor**

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