



## Curriculum Vitae of Sheikh Mahatabuddin, Ph. D.

### Senior Scientific Officer

Bangladesh Atomic Energy Regulatory Authority (BAERA)

Ministry of Science and Technology (MoST)

Dhaka, Bangladesh

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Google Site: <https://drsmuddin.github.io/home/index.html>

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### Summary

**Academician, Regulator, Molecular Biologist and Protein Engineer** with the expertise of protein expression, purification and characterization, cell culture and molecular biological techniques for the discovery of antibody based next generation cancer therapeutics. Expertise on chemical synthesis, cDNA cloning using both the traditional primer and duplexed DNA methods, sequencing, qPCR and western blots to investigate the effectiveness of the nanoformulated therapeutics on cancer cells and mouse model.

Molecular Biology | Data Analyses/Management/Illustration | Regulatory Activities | Report Generation | Protein purification and Crystallography | Cancer Biology | PCR | Academic Writing | Chemistry | Mentoring | Teaching | Online Teaching | Curriculum Development | Academic Administration

### Educational Background

March, 2017	Ph. D. in Life Science [Specialization: Structural Biology], Hokkaido University, Japan (MEXT Scholar)
July, 2009	M. S. in Chemistry, University of Dhaka, Bangladesh
April, 2008	B. Sc. in Chemistry, University of Dhaka, Bangladesh
October, 2003	H. S. C. (Science), Govt. Abdul Jabbar College, Barisal Board, Bangladesh
July, 2001	S. S. C. (Science), Burhanuddin Govt. High School, Barisal Board, Bangladesh

### Professional Experiences

August 2022 – To date	<b>Senior Scientific Officer</b> , Bangladesh Atomic Energy Regulatory Authority (BAERA), Ministry of Science and Technology (MoST), Dhaka, Bangladesh
June 2022 – July 2022	<b>Senior Research Officer</b> , Bangladesh Forest Research Institute (BFRI), Ministry of Forest, Environment and Climate Change (MoEFCC), Chattogram, Bangladesh (1 <sup>st</sup> class gazetted job recommended by BPSC)
Oct 2018 – May 2022	<b>Associate Professor</b> , Department of Nutrition and Food Engineering, Daffodil International University, Dhaka, Bangladesh
Dec 2020 – March 2022	<b>Adjunct Associate Professor</b> , Department of Food Science and Nutrition, Bangladesh Open University, Dhaka, Bangladesh
Oct 2019 – Nov 2020	<b>Adjunct Associate Professor</b> , Department of Computer Science and Textile Engineering, International Standard University, Dhaka, Bangladesh
Oct 2017 – Oct 2018	<b>Postdoctoral Research Fellow</b> , Neurology research, Henry Ford Hospital, Detroit, Michigan, USA [Nanoformulation of cancer drugs to ensure bioavailability through enhancing its water solubility]
May 2017 – Oct 2017	<b>Postdoctoral Scholar</b> , Department of Biological Engineering, Tufts University, Medford, Massachusetts, USA [Protein Engineering and Metazincin Inhibitor Development]
Dec 2016 – March 2017	<b>AIST-RA</b> , Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan [Structure-function relationship of Type III AFPs]
Oct 2016 – Nov 2016	<b>Research Assistant</b> , Laboratory of Biomolecular Adaptation Science, Graduate School of Life Science, Hokkaido University, Sapporo, Japan [Structure-function relationship of Type III AFPs]
Oct 2013 – Sept 2016	<b>AIST Trainee</b> , Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan [Structure-function relationship of Type I AFPs]
May 2010 – Sept 2013	<b>Lecturer Chemistry</b> , St. Joseph Higher Secondary School, Mohammadpur, Dhaka

### Administrative Experiences

Feb 2021– Jan 2022	<b>Head</b> , Department of Nutrition and Food Engineering (NFE), DIU, Dhaka, Bangladesh
Feb 2021– Jan 2022	<b>Member</b> , Academic Council, Daffodil International University, Dhaka, Bangladesh
Jan 2020 – May 2022	<b>Convener</b> , Quality Assurance Cell of FAHS, IQAC, DIU Bangladesh
Sept. 2021 – May 2022	<b>Member</b> , 4 <sup>th</sup> Industrial Revolution Research Cell, DIU, Dhaka, Bangladesh
Jan 2021– May 2022	<b>Deputy Director</b> , Division of Research, DIU, Dhaka, Bangladesh
20, Oct – 20, Nov 2020	<b>Convener</b> , OBE syllabus reformations committee of the Dept. of NFE, DIU, Dhaka Bangladesh
10, July – 17, July 2019	<b>Head</b> (in charge), Department of NFE, DIU, Dhaka, Bangladesh
October 2018– To date	<b>Group Leader</b> , Functional Protein Research Group, Bangladesh (FPRG,BD), Mohammadpur, Dhaka

## National Expert Committee Membership

- 29 Nov 2021– To date Expert Committee for Safe Technology for Fruits Ripening, Bangladesh Food Safety Authority, Dhaka, Bangladesh
- 10 Oct 2022– To date Expert Committee on Nutrition for Harmonization of the Food Standards, Bangladesh Food Safety Authority, Dhaka, Bangladesh

## Skill Development Trainings (Long-term)

10. Strategic Management Course. 25 – 13 December 2023 Organizer: SEIP, Bangladesh Institute of Governance and Management (BIGM), MoPA, Government of Bangladesh.
09. IAEA School on Nuclear and Radiological Leadership for Safety. 20 February – 03 March 2023 Organizer: IAEA, Tokai University, Japan and European Union.
08. Training Course on Nuclear Regulatory Oversight aspects of nuclear facilities under the NuRID Project. 8-12 January 2023, Bangladesh Atomic Energy Regulatory Authority (BAERA), Dhaka, Bangladesh.
07. Forestry Research and Development in Bangladesh, 16 June – 02 July 2022, Organizer: COMPASS program of USAID, USFS and Bangladesh Forest research Institute (BFRI).
06. Workshop on Bangladesh National Qualifications Framework (BNQF) and Accreditation Standards & Criteria, 16-17 June 2021, Organizer: Bangladesh Accreditation Council (BAC)
05. Engaging University Faculties for Capacity Building in Achieving SDGs on Sustainable Food and Agriculture. 13-17 October 2019. Organizer: FAO, Swedish University of Agricultural Sciences, BARD.
04. Teaching Research and Professional Development. 18 July to 3 August 2019, Organizer: Daffodil International University and Purdue University, USA.
03. *Workshop on Preparing Future Faculty (PFF)*: An introduction to teaching and writing for graduate students. March 16-20, 2015, Organized by: University of California Berkeley and Hokkaido University, Sapporo, Japan.
02. Advanced certification to conduct recombinant DNA experiments. 10-30 October 2013, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Hokkaido, Japan.
01. Advanced training on NMR and Circular Dichroism Spectroscopy. 10-20 May 2016, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan.

## Invited/Keynote Lectures

6. Keynote speech on “Role of Scientists in the Process of the Development of a Sustainable Environmental Policy” National Conference on Law and Policy, Green University, Dhaka, Bangladesh. 22-23 July, 2022
5. Invited lecture entitled, “*Galley Maintenance and Cabin Safety*” Bangladesh Airlines Training Center (BATC), Biman Bangladesh Airlines, Dhaka, Bangladesh. 24 January 2021
4. Invited lecture entitled, “*General Hygiene: Food and Health*” Bangladesh Airlines Training Center (BATC), Biman Bangladesh Airlines, Dhaka, Bangladesh. 24 January 2021.
3. Invited lecture entitled, “*Food Safety and Toxicology*” Bangladesh Airlines Training Center (BATC), Biman Bangladesh Airlines, Dhaka, Bangladesh. 24 January 2021.
2. Invited lecture entitled, “*COVID-19 Facts and Myths: awareness building workshop for Gono Bhaban SPBN-2*” Gono Bhaban SPBN2, Dhaka, Bangladesh. 20 August 2020.
1. Popular talk on Biotechnology entitled “*Food adulteration, DNA mutation and Cancer*” in the National Biotechnology Fair organized by National Institute of Biotechnology (NIB) and the Ministry of Science and Technology, BSMNT auditorium, Dhaka, 18-19 October 2019

## Publications (Book/Book Chapters)

**Mahatabuddin S** and Tsuda S (2018) Applications of Antifreeze Proteins: Practical Use of the Quality Products from Japanese Fishes: Adaptation Mechanisms and Their Applications (Chapter 17), Survival Strategies in Extreme Cold and Desiccation: Adaptation Mechanisms and their Application, Iwaya-Inoue M., Sakurai M. and Uemura M. (Eds), 321-337, DOI: 10.1007/978-981-13-1244-1\_17

## Publications

11. Ishmam S M, **Mahatabuddin S**, Jabber M A (2023) Harnessing the VQE to simulate quantum chemistry in an undergraduate project: Properties of Hydrogen, Oxygen and Water Molecules, *023 IEEE International Conference on Quantum Computing & Engineering (QCE)* [DOI: 10.1109/QCE57702.2023.20329]
10. Lima A, **Mahatabuddin S**, Akter S, Gouri M, Islam M R, Islam M M, Khan M S (2022) Fine-tuning differential expression of osmoregulatory genes enables anadromous migration of Hilsa (*Tenualosa ilisha*) submitted to *Comparative Biochemistry and Physiology, Part B*
9. Islam M J, Khan S, Chowdhury A B M A, **Mahatabuddin S\*** (2022) Pre-and Post-Treatment Symptom-based Quality of Life of the Head and Neck Cancer Patients of Bangladesh: A piloted Short-time Cohort Study submitted to *BMC*.
8. Al-Balushi J, **Mahatabuddin S**, Rahman M M, Uddin M J (2022) Convective heat transport for copper oxide-water nanofluid in an isosceles triangular cavity with a rippled base wall in the presence of magnetic field, *International Journal of Thermofluids*, 16 (100195) (Impact Factor: 9.47) [https://doi.org/10.1016/j.ijft.2022.100195]
7. Hossain M M, Chowdhury M A, Hossain J, Rashid M H A, Akter T, Khan M N, **Mahatabuddin S**, Uddin N, (2021) Heavy Metal Pollution in the Soil-Vegetable System of Tannery Estate, *Environmental Nanotechnology, Monitoring and Management*, 100557 [https://doi.org/10.1016/j.enmm.2021.100557] (Impact Factor: 5.95)

## Publications

6. Tsuda S, Yamauchi Y, Khan NMU, Arai T, **Mahatabuddin S**, Miura A, Konod H (2020), Fish Derived Antifreeze proteins and glycoprotein exhibit different ice-binding property with increasing concentration. *Biomolecules*, 10 (3), 423. DOI: 10.3390/biom10030423 (Impact Factor: 6.06)
5. **Mahatabuddin S**, Fukami D, Arai T, Nishimiya Y, Shimizu R, Shibasaki C, Kondo H, Adachi M, Tsuda S (2018) Polypentagonal ice-like water networks emerge solely in an activity improved variant of ice-binding protein. *Proc. Natl. Acad. Sci. U. S. A.* 201800635 (https://doi.org/10.1073/pnas.1800635115). (Impact Factor: 12.78)
4. Ghann W, Kang H, Uddin J, Gonawala SJ, **Mahatabuddin S**, Ali MM (2018) dendrimer-based nanoparticle for dye sensitized solar cells with improved efficiency. *Journal of Nanomedicine and Nanotechnology*, 9(2), DOI:10.4172/2157-7439.1000496. (Impact Factor: 14.59)
3. **Mahatabuddin S**, Hanada Y, Nishimiya Y, Miura A, Kondo H, Davies PL, Tsuda S (2017) Concentration-dependent oligomerization of an  $\alpha$ -helical polypeptide makes it hyperactive. *Scientific Reports* 7, 42501. DOI: 10.1038/srep42501. (Impact Factor: 4.5)
2. **Mahatabuddin S**, Nishimiya Y, Miura A, Kondo H and Tsuda S (2016) Critical ice shaping concentration: A new parameter to evaluate the activity of antifreeze proteins. *Cryobiology and Cryotechnology*, 62 (02), 95-103.
1. Arai T, J. Cheng, **Mahatabuddin S**, Kondo H and Tsuda S (2015), Observation of inhibitory effect of antifreeze protein on progressive freeze-concentration, *Cryobiology and Cryotechnology*, 61 (02), 121-124.

## Research Interests

Heat Transfer and Nuclear Reactor Chemistry, Radiotherapy, Food development and preservation, Functional protein isolation, recombinant preparation to industrial applications, Full length peptide or chemical inhibitors of the metzincin, Public Health Related problems, Drug discovery, Innovative foods using natural ice shaping agents, cancer statistics, malnutrition, structural biology, and Computational approaches.

## Trainings (Short-term)/workshops arranged/delivered/attended

24. Communication with the Public in a Nuclear or Radiological Emergency. [Participant] July 2023, Organizer: IAEA Nucleus, online platform
23. Motivational Workshop on Quality Assurance and Accreditation in Higher Education, [Attendee] 26 October, 2021, Organizer: Bangladesh Accreditation Council (BAC)
22. Training on Predatory Publications and Publishers: 1. Research and Data Collection Ethics & 2. How to save your intellectual properties **[Organizer and Resource person]** 31 March 2021, Organizer: Faculty of Allied Health Sciences, Daffodil International University.
21. Workshop on Designing Syllabi to Guide the First Day of Class and Craft an Inclusive Classroom of Biophysics, Organized by: The Biophysicist USA. 28 July 2021 (Participant)
20. *Workshop on Sustainable Development Goals (SDGs): The role of academicians to achieve SDGs by 2029*; Organized by: Daffodil International University, Dhaka, Bangladesh, 27, November 2019, 2015. (Organizer and Speaker)
19. Training Session on the Techniques to write an impactful and scientifically sound abstract **[Organizer and Resource person]** 16 July 2019, Organizer: Faculty of Allied Health Sciences, Daffodil International University.
18. Henry Ford Cancer Institute Multi-Disciplinary Breast Oncology Training [Attendee] 29 September 2018, Organizer: Henry Ford Cancer Institute, Detroit, MI, USA.
17. RCRA Hazardous Waste Awareness Training for radioactive chemicals [Attendee] 17 April 2018, Organizer: Henry Ford Hospital, Detroit, MI, USA.
16. Advanced training by Institutional Animal Care [Attendee] 20 December 2017, Organizer: Institutional Animal Care and Use Committee and Use Committee (IACUC), Henry Ford Hospital, Detroit, MI, USA.
15. Training on Human Resources Management in HFHS [Attendee] 6 November 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
14. Training on clinical general safety [Attendee] 29 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
13. Training on Clinical Hazard Safety [Attendee] 28 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
12. Training on Patient Safety [Attendee] 26 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
11. Training on diversity [Attendee] 25 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
10. Training on basic safety for a hospital employee [Attendee] 24 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
09. Training on online privacy & security course [Attendee] 24 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
08. Training on Clinical Personal Safety [Attendee] 20 October 2017, Organizer: Henry Ford Hospital, Detroit, MI, USA.
07. Biosafety in Research Laboratories (BRL) Training [Attendee] 21 June 2017, Organizer: Tufts University, MA, USA.
06. Bloodborne Pathogens Training [Attendee] 9 May 2017, Organizer: Tufts University, MA, USA.
05. General Lab Safety and Hazard Communication Training [Attendee] 8 May 2017, Organizer: Tufts University, MA, USA.
04. Handling Pressurized Gases [Attendee] 10 May 2016, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan.
03. Bio-Safety training for BSL-3 Lab [Attendee] 02 January 2014, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan.
02. Bio-Safety training for BSL-2 Lab [Attendee] 19 November 2013, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan.
01. Advanced training on NMR and Circular Dichroism Spectroscopy [Attendee] 10-20 May 2016, National Institute of Advanced Industrial Science and Technology (AIST), Sapporo, Japan.

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## News Coverage of the Research Outcomes

Discovery of high function BpAFP; Discovery of high function BpAFP; How antifreeze proteins inhibit ice crystal growth; A water molecule network similar to ice has been discovered on the molecular surface of AFP, Other News Paper Articles.

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## Reviewer

1. Journal of Cryobiology and Cryotechnology, Japanese Society for Cryobiology and Cryotechnology
2. (a) DIU Journal of Science and Technology; (b) DIU Journal of Allied Health Sciences, DIU, Bangladesh
3. Microbial Bioactives, Eman Research, Australia
4. ICMEAS, MIST, Dhaka, Bangladesh

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## Conferences, Symposia and Workshops

14. **Mahatabuddin S**: "Bridging technological skill gaps through the generation of technically sound graduates: the role of academia" *BCSIR Congress-2022*, BCSIR, Dhaka; 01-03 December 2022 (Poster presentation)
13. **Mahatabuddin S** and Tsuda S: "Crystal structure substantiate the anchor clathrate water (ACW) mechanism for the moderate active antifreeze proteins" *The 5<sup>th</sup> Conference of Bangladesh Crystallographic Association*, Dhaka University, Dhaka Bangladesh; 25-26 January 2019 (Oral presentation)
12. **Mahatabuddin S** and Tsuda S: "Introduction of a new parameter critical ice shaping concentration (CISC) for evaluation of the activity of antifreeze proteins" *The 4<sup>th</sup> International Life Science Symposium*, Conference Hall of Hokkaido University, Sapporo, Japan; 18 November/2016. (Oral presentation)
11. Rahman AT, **Mahatabuddin S**, Ohyama Y, Kondo H and Tsuda S: "Quantitative Methods to Evaluate Ice Recrystallization Kinetics of AFP Solutions" *The 5<sup>th</sup> International Life Science Symposium*, Conference hall of Hokkaido University, Sapporo, Japan; 28 October/2017. (Oral presentation)
10. Rahman AT, **Mahatabuddin S**, Ohyama Y, Kondo H and Tsuda S: "Quantitative Method to Evaluate Ice Recrystallization Kinetics of AFP Solutions" *26<sup>th</sup> Chemical Engineering Conference*, Hokkaido University, Sapporo, Japan; 27 January/2017. (Oral presentation)
9. Fukami D, **Mahatabuddin S**, Kondo H, Miura A and Tsuda S: "Activity modification by mixing of antifreeze proteins" *The 4<sup>th</sup> International Life Science Symposium*, Conference Hall of Hokkaido University, Sapporo, Japan; 18 November/2016. (Oral presentation)
8. Rahman AT, **Mahatabuddin S**, Ohyama Y, Kondo H and Tsuda S: "Quantitative methods to evaluate ice recrystallization inhibition rate using Ferret's diameter" *The 4<sup>th</sup> International Life Science Symposium*, Conference Hall of Hokkaido University, Sapporo, Japan; 18 November/2016. (Poster presentation)
7. Takeyama M, **Mahatabuddin S**, Miura A, Kondo H and Tsuda S: "Cell preservation mechanism of fish type III antifreeze protein using artificial lipid bilayer" *The 89<sup>th</sup> Annual Meeting of the Japanese Biochemical Society*, Sendai International Center, Tohoku University, Japan; 25-27 September/2016 (Oral and poster presentation)
6. **Mahatabuddin S**, Hanada Y, Miura A, Kondo H, and Tsuda S: Ice-accumulation ability of an alpha-helical peptide shows a significant concentration dependence. *The 3<sup>rd</sup> International Life Science Symposium*, Conference Hall of Hokkaido University, Sapporo, Japan; 26 November/2015. (Oral presentation)
5. **Mahatabuddin S**, Ishihara K, Hanada Y, Miura A, Kondo H and Tsuda S: Expression and Characterization of a New Type I Antifreeze protein from a Japanese Fish. *The 2<sup>nd</sup> International Life Science Symposium*, Conference Hall of Hokkaido University, Sapporo, Japan; 23 October/2014. (Oral presentation)
4. **Mahatabuddin S**, Ishihara K, Hanada Y, Miura A, Kondo H and Tsuda S: Functional Analysis of a New Type I Antifreeze Protein from Barfin plaice, *Liposetta pinnifasciata*. *The 52<sup>nd</sup> Annual Meeting of Biophysical Society Japan (BSJ)*, Sapporo Convention center, Sapporo, Japan; 25-27 September/2014. (Poster presentation)
3. **Mahatabuddin S**, Ishihara K, Hanada Y, Miura A, Kondo H and Tsuda S: A 40-residue Type I Antifreeze Protein exhibited an extremely high thermal hysteresis activity. *2<sup>nd</sup> International Ice-Binding Protein Conference*, Conference Hall of Hokkaido University, Sapporo, Japan; 04-08 August/2014. (Poster and Oral presentation)
2. Cell Press LabLinks meeting Small Molecule Metabolites as Signaling Molecules, Pfizer, 1 Portland Street, Cambridge, MA, USA; 11 September/2017. (Participant)
1. The 1<sup>st</sup> International Life-Science Symposium (ILSS); Sapporo, Japan, March 6, 2013. (Participant)

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## Honors and Awards

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| Oct 2016 –  | Monbukagakusho (MEXT) Honors Scholarship offered by JASSO (Japan Student Services                |
| March 2017  | Organization)  |
| Oct 2013 –  | Monbukagakusho (MEXT) scholarship from the government of Japan to pursue doctoral degree         |
| Sept 2016   |  |
| July 2001 – | Scholarship from Board of Intermediate and Secondary Education for excellent result in Secondary |
| Sept 2003   | School Certificate Examination   |

## Selected Thesis and project titles supervised by DSM

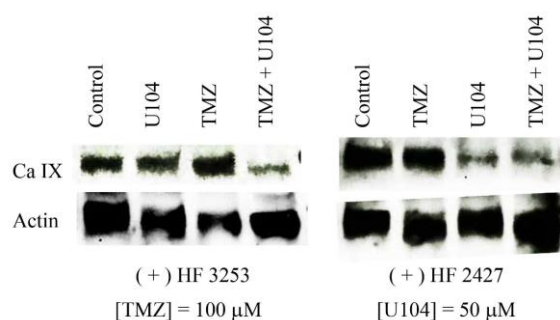
Name of the Student	Type	Title of the Thesis/Project/Internship
Lima Akter (NST-Fellow)	M S Thesis	Expression Profiling of Targeted Osmoregulatory Related Genes of Hilsa ( <i>Tenualosa ilisha</i> ) [Department of Fisheries, University of Dhaka]
Shah Ishmam Mohtashim	B. Sc. Project	Quantum Chemical Computations for the Properties of Hydrogen, Oxygen and Water Molecules [Department of Chemistry, University of Dhaka]
Md. Jahirul Islam	MPH Thesis	Assessment of the pre- and post-treatment quality of life of the head and neck cancer patients. [Birmingham City University, UK ( <b>Passed with distinction</b> )]
	MPH Thesis	Acute Malnutrition and Dietary Diversity among the Children Aged 6-59 Months of Bangladesh. [Department of Public Health, Daffodil International University, BD]
Md. M. Rahman (NST-Fellow)	M Pharm Thesis	Isolation and Characterization of organic insect repellent from <i>Polygonum maculosa</i> . [Department of Pharmacy, Daffodil International University, BD]
Anower Parvez	M Pharm Thesis	Isolation and Characterization of organic insect repellent from <i>Antidesma acidum</i> . [Department of Pharmacy, Daffodil International University, BD]
Hanif Mahmud	M. Sc. Thesis	Eating disorders among pregnant women in Savar, Gaforgan and Dhamrai area of Bangladesh (Department of Food Science and Nutrition, HSTU, Dinajpur)
Galib Anjum	Project	Proximate analysis of newly developed mangrove apple leaf tea
	Intern	Diabetes mellitus, diet chart of diabetic, kidney disease, and heart disease patients in BSHI
Munira Ferdous Nemi	Project	Relationship between feeding practices and the nutritional status of Children Aged 6-59 Months living in urban slums
	Intern	Management of severe acute malnutrition in children aged 6-59 months at BSHI
Sadia Arafin	Project	Association with maternity care and the nutritional status of Children Aged 6-59 Months living in urban slums
	Intern	Management of severe acute malnutrition in children aged six months to five years at BSHI
Sufia Khatun Diya	Project	Comparative Studies on SAM between Pekua Refugee Camp and Mohammadpur Slum
	Intern	Management of severe acute malnutrition in children aged six months to five years at BSHI
Sakib Bin Nazmul Karim	Project	Determination of SAM-MAM among children aged 6-59 months in the Mirpur Slums area of DNCC
	Intern	Management of severe acute malnutrition in children aged six months to five years at BSHI
Md. Atiqur Rahman	Project	Development of ready to drink powder from tamarind leaves
	Intern	Quality control assurance and production of dairy products at Milk Vita
Maimuna Akter Md. Sabet Hossain	Project	A comprehensive study of chromium and lead in natively reared chicken
	Thesis	Development of mangrove apple leaf tea
Md. Rabiul Hasan	Thesis	Development of organic mosquito repellents
	Intern	Quality control assurance and production of dairy product at Milk Vita
Kollol Kumar Barua	Project	Development of cake from mixed flour: wheat, green banana, and sweet potato
	Intern	Internship report on Banoful & Co. Ltd
A B M Rabiul Hasan	Project	Development of green coconut jelly
	Intern	Internship report on production of coconut cream (Thailand)
Hanif Mahmud	Thesis	Comparative study of starch content in the extracted starches from different sources
	Intern	Internship report on production of ice-cream at Polar Ice-Cream
H. Mahmud Ansary	Project	Development of ready-to-drink (RTD) drinks from Tamarind, tamarind seed, ispgula, and milk
Mominul Islam	Project	Development, sensory evaluation and proximate analysis of peanut cup cake
	Intern	"Quality control assurance and production of snacks, bakery items" in Micro-trade Food and Beverage Limited
H. Mahmud Ansary	Project	Development of ready-to-drink (RTD) drinks from Tamarind, tamarind seed, ispgula, and milk
Zannatul Fardous Jerin Afroze Anhi	Project	Physiochemical properties of new-colored potato (Variety: V1, V7, V15, UNK3, Sarpomonia)
	Project	Physiochemical properties of new-colored potato (Variety: V2, UNK, 10125, Ladyrose, UNK7)
Md. Shamim Al Mamun	Project	Development of nutritious ready-to-drink (RTD) drinks powder from pumpkin seed
Shourav Hussain	Intern	Quality control assurance and production of dairy product at Milk Vita
	Project	Quality control assurance and production of dairy product at Milk Vita
Afsana Ferdousi Bithee	Project	Proximate analysis of ready-to-drink (RTD) powder from Tamarind, tamarind seed, ispgula, & milk
	Intern	Construction of the diet chart for the diabetic, kidney, and heart disease patients
Tanbir Ahmed	Project	Household WASH Practices and Nutritional Status among the Children Aged 6–59 Months Living in Selected Slums of the DSCC
	Intern	Work descriptions and Report about WTP, Sugar plant, CO2 plant, CSD Plant, Can line, DWP, Aseptic plant, Dairy plant, Snacks plant, PPS plant and ETP plant At Akij Food and Beverage Limited
Mahmuda Akther Moonmoon	Project	Eating disorders among pregnant women in Dhaka city
	Intern	Internship on maternal and neonatal health in Mohammadpur Infertility Center

## Courses instructed by Dr. Sheikh Mahatabuddin

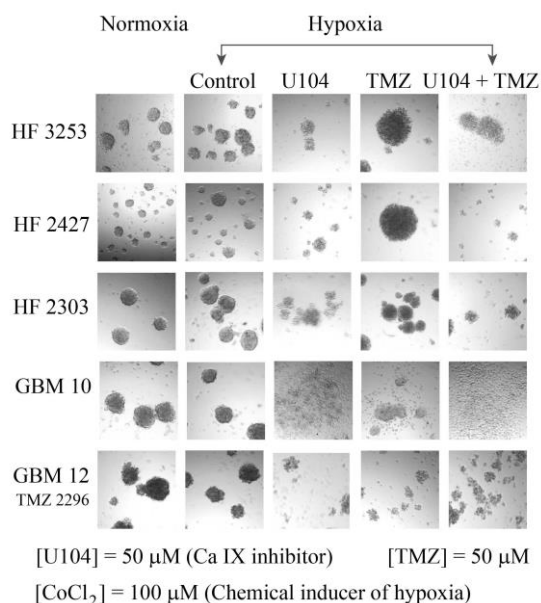
Course Code	Name of the Course	Students Major	No. of students per section	Number of sections and repetition
BPH 214	Biochemistry & Molecular Biology	B. of Pharmacy	45	2 and 4 Semesters
BPH 221	Pharmaceutical Analysis and Quality Control I	B. of Pharmacy	45	2 and 2 Semesters
BPH 414	Advanced Pharmaceutical Analysis and Quality Control	B. of Pharmacy	45	2 and 2 Semesters
BPH 415P	Advanced Pharmaceutical Analysis and Quality Cont. Prac.	B. of Pharmacy	45	2 and 2 Semesters
NFE 211	Biochemistry	B. Sc. in NFE	45	3 and 8 Trimesters
NFE 221	Food Biotechnology	B. Sc. in NFE	45	2 and 8 Trimesters
NFE 427	Instrumental Methods of Food Analyses	B. Sc. in NFE	45	2 and 2 Trimesters
NFE 428	Instrumental Methods of Food Analyses Practical	B. Sc. in NFE	45	2 and 2 Trimesters
NFE 121	Organic Chemistry	B. Sc. in NFE	45	2 and 3 Trimesters
NFE 115	Physical, Inorganic and Analytical Chemistry	B. Sc. in NFE	45	2 and 5 Trimesters
NFE 111	Introduction to Food Sciences	B. Sc. in NFE	45	2 and 3 Trimester
CHE 103	Textile Chemistry	B. Sc. in Textile Engineering	45	1 and 3 Trimesters
CHE 101	General Chemistry	B. Sc. in CSE	45	4 and 4 Semester
	Enzyme Kinetics and Enzymology	B. Sc. in CHE	25	1 an 1 Semester

### YouTube Links of DSM's Lectures:

Topics	Links
Chemical Calculations	<a href="https://www.youtube.com/watch?v=_6kM_CizRW4">https://www.youtube.com/watch?v=_6kM_CizRW4</a>
Chemical Bonding	<a href="https://www.youtube.com/watch?v=YUb-_jqhA7Q">https://www.youtube.com/watch?v=YUb-_jqhA7Q</a>
Michaelis-Menten equation	<a href="https://www.youtube.com/watch?v=CTbrk7YdB5g">https://www.youtube.com/watch?v=CTbrk7YdB5g</a>
Oxidation-Reduction	<a href="https://www.youtube.com/watch?v=GBCumlmt5cg">https://www.youtube.com/watch?v=GBCumlmt5cg</a>
Glycolysis	<a href="https://www.youtube.com/watch?v=1LBqXismCms">https://www.youtube.com/watch?v=1LBqXismCms</a>



Western blot result performed by DSM



Cell images after and before treatment

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## Professional Membership

Biophysical Society, USA [Membership no. 108940]  
Biophysical Society of Japan [Membership no. 6741]  
Bangladesh Chemical Society [Membership no. LM1684]  
Dhaka University Alumni Association [Membership No. LM-11699]  
Registered graduate Association of Dhaka University [Membership No. LM-49863]

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## Skills (Experimental)

**Molecular Biology:** RNA and DNA extraction, cDNA cloning, SDS-PAGE, Gel electrophoresis, rtPCR, qPCR, Reverse transcription, Western blotting, Cell survival assay, Gene expression assay, Yeast surface display, mammalian cell preservation, Serial Cloner, Genious.

**Biophysics and Proteomics:** Expression and purification of recombinant protein in *E. coli*, yeast, mammalian cell culture methods, Functional protein purification to technological application, Site-specific mutation, Isotopic labelling of proteins, Protein crystallization, Biochemical and biophysical characterization of protein, Affinity chromatography, Ion exchange chromatography, Size exclusion chromatography, PyMOL, HEX, EasyModeller, COOT.

**Chemistry:** Chemical kinetics, Chemical synthesis, TLC, HPLC, Column chromatography, Rotary vapor evaporator, Schlenk line, Chemical and toxicological analysis.

**Instruments:** Scanning Electron Microscope (SEM) (JSM 6490 LA, JEOL), E-Graph (ATTA Bio-instrument, Azure C400), CD spectrophotometer (JASCO J-725), BIORAD Biologic Duoflow, Photomicroscopes equipped with temperature controlling unit, UV-visible spectrophotometer with digital data processing facilities, ABLE Jar Fermenter (BMJ-PI), Flow cytometer (Attune NXT), Inverted microscope (Leica DFC420 C), High-performance Liquid Chromatography (HPLC), IVIS Spectrum imager, NMR Spectrophotometer.

Cell lines used in my researches: **Cancer cells:** GBM6, GBM10, GBM12, GBM22, HF2303, HF3253, HF2427, HF2353, HF3016, U-87, U251, MBAMD-231, MBAMD-157, MBAMD-468, SUM149, SUM159, MIA, HN26 and HN48.

**Recombinant protein expression and molecular biological experiments:** HEK293, BL21(DE3), JM109, NEB stable, DH5 $\alpha$ Z1, RJY100.

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## Course Coordination

- Instrumental Methods of Analysis [Undergraduate Level]
- Advanced Food Analysis [Under Graduate Level]
- Biochemistry and Molecular Biology [Undergraduate Level]
- Food Chemistry [Undergraduate Level]
- Quality Control and Quality Assurance [Undergraduate Level]
- Advanced Pharmaceutical Quality Control [Graduate Level]
- Frozen Food and Cold Chain Management [Graduate Level]

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## Other Experiences/Expertise

- Lead most of the departmental programs and cultural events organized by Department of Chemistry, University of Dhaka (from April 2004-December 2010).
- Volunteer in 2<sup>nd</sup> Ice Binding Protein (IBP) Conference held in Sapporo, Japan.
- Editor and designer of the Souvenir, Abstracts and Programme of Bangladesh Chemical Congress 2008 and First Humboldt Kollege International Conference in Dhaka, Bangladesh.
- English (academic), Bangla (Native), Hindi (Spoken), Japanese (spoken) & Arabic (reading)

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