

Curriculum vitae of

S. M. Zahid Hosen

Scientific Officer

Molecular Modeling and Drug Design Laboratory, Pharmacology Research Division

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EDUCATION:

June 12 –June23, 2017	Certified in International Chemical Design and Discovery Course (3ECTS) Passed with distinction Centre for Molecular and Biomolecular Informatics, Radboud University, Netherlands
Orientations	Nuclear /Kinase receptor based validation of X-ray protein structure, Homology modeling, Virtual screening by docking, <i>in silico</i> SBDD based lead identification, lead optimization, 2D/3D QSAR,KNIME, KLIFS for knowledge based design of kinase ligands.
January –March, 2011	Certified in Pharmaceutical Bioinformatics(7.5ECTS) GPA-G (65 %)
Orientations	Department of Pharmaceutical Biosciences , Uppsala University, Sweden Representing Molecules in Computers, Databases in Pharmaceutical Biosciences, Statistical Experimental Design, Structure Descriptors, Physical and Chemical Data, Macromolecular Descriptors, Alignments in Bioinformatics, Representation of 3D Structures, Methods for Data Analysis, Rule Based Learning and Rough Sets, QSAR and Proteochemometrics, Validation of Models, Lead Identification and Optimization.
Autumn 2009–Spring, 2010	Master of Pharmacy by Research CGPA- 3.83 out of 4(Passed with distinction) Southern University Bangladesh
Placement and dissertation	Incidence of GIT Cancer and Liver Cancer in Relation to ABO Blood Groups and Rh Factors in Bangladeshi populations
Orientations	Biological drug assays, pharmaceutical development, drug metabolism and pharmacokinetics, statistical methods applied to the industry.
January2004 – December, 2007	Bachelor of Pharmacy (Hons) First Class Second (70.023% Marks) University of Science & Technology Chittagong (USTC)
Orientations	Prospective pharmacology, drug design Developed a large scientific interest and great polyvalence

CAREER TRACKS, RESEARCH EXPERIENCE AND SKILLS

3rd February 2013 to Present	Position: Scientific Officer. & Project Leader Molecular Modeling and Drug Design Laboratory (MMDDL) (http://www.mmddl.ctgbcsir.gov.bd) Organization Name: Bangladesh Council of Scientific and Industrial Research (BCSIR), Chittagong-4220, Ministry of Science and Technology, People's Republic of Bangladesh
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Duties and Responsibilities

- Applications Investigator and Project Leader-Molecular Modeling and Drug Discovery Laboratory (<http://www.mmddl.ctgbsir.gov.bd>)
- Conducting Research work and Finding Research gap
- Supervise Research Fellow, Research Assistant, Graduate Project student & Conducting Ad-hoc test to assist Industries.
- Resource person for qPCR, Virtual screening & Molecular Modeling in various training and workshop events
- Record keeping and documentation, Method Validation & Verification, Measurement of Uncertainty in chemical analysis

Technical skill

Computational drug design and discovery:

Medicinal chemistry, Protein modeling and dynamic simulation, *insilico* ligand/structure and fragment based drug design, Chemical modeling and chemoinformatics, etc. **Software:** Autodock Vina and GLIDE, SCHRODINGER suite 2015/17, Acceryls Discovery Studio 2.5, MOE, and YASARA molecular dynamics. **Operating Systems:** Unix, Windows Vista, Windows XP

Statistical Analysis: Graph pad and Origin pro.

Molecular biology: DNA and RNA extraction, DNA/RNA quantification, Conducting PCR, RT-PCR, Real time PCR, PCR product purification for, DNA fingure printing and DNA Sequencing, Restriction enzyme analysis, Agarose Gel Electrophoresis, Gel Documentation and primary cell culture.

Microbiology: Liquid and solid culture of bacteria/virus isolation and transformation; work in class II laboratory. **Microscopy:** Confocal, phase contrast, light microscopy. **Biochemistry:** Western blot, ELISA, enzymatic assays. **Analytical methods:** Titrations, spectrophotometry, chromatography (thin layer, HPLC), UFLC.

Animal manipulation:

Mice, rat, rabbit and guinea pig, **Handling, feeding, breeding, marking and dissection** for analgesic, anti-inflammatory, acute toxicity, chronic toxicity, antidiabetic, anti-diarrhoeal etc.

Project Management: Trained in Management Skills for Project Executives.

Laboratory Information Management Systems (LIMS)-Thermo Scientific Nautilus, ISO-17025

Lead instructor at:

MMDDL

<https://mmddl.ctgbsir.gov.bd/events>

February 2013 to June 2015

Working in Annual Development Project of Bangladesh Government

Strengthening of analytical and microbiological laboratory BCSIR laboratories Chittagong

Technical skills

DNA and RNA extraction, preparation, Conducting PCR, RT-PCR, Real time PCR, Agarose Gel Electrophoresis, Gel Documentation and LIMS

Record keeping and documentation, Method Validation & Verification, Measurement of Uncertainty in chemical analysis.

1st Jul, 2012 to

Position: Assistant Professor

31st Jan, 2013:

Position: Lecturer

(<http://www.bgctub-edu.com/>)

24th Jan, 2009 to

Department of Pharmacy, BGC Trust University Bangladesh

30th Jun 2012

Duties and Responsibilities

- Supervised and taught undergraduate students, and pharmacy technicians adapting to different scientific levels and backgrounds, stimulating discussion and reflexion.
- Lecture and hands on practical areas: Pharmaceutical Biotechnology, Clinical Pharmacy, Pharmacology, CADD and Bioinformatics
- Worked as a student academic advisor
- Worked as an Internal and External Examiner

RECENT RESEARCH GRANTS –As a Project Leader 2016-2018

1. **Research Grant from the Bangladesh Council of Scientific and Industrial Research (BCSIR)**
"Application of computer modeling in the evaluation of naturally occurring anticancer compounds: A Step towards Drug Discovery from Bangladeshi Medicinal Plants" Financial Year 2016-17(SL.No.42) (<http://www.mmddl.ctgbcsir.gov.bd>)- One million Taka

2017-2019

2. **Research Grant from the Bangladesh Council of Scientific and Industrial Research (BCSIR)**
Database development of nature derived molecules for rational drug discovery in Bangladesh Financial Year 2017-19(Project SL.No.-1-Name of the Unit/Laboratories: BCSIR Laboratories, Chittagong) One million Taka
(<http://www.mmddl.ctgbcsir.gov.bd>)

3. **Research Grant from the Bangladesh Council of Scientific and Industrial Research (BCSIR)**
Strengthening of Molecular Modeling and Drug Discovery Laboratory for cell and biochemical methods based hit to lead screening. Four hundreds million Taka.

TRAVELS GRANTS ACHIEVED:

1. Selected for International Chemical Design Course at CMBI, Radbound University, Netherlands. Funded by Bangladesh council of scientific and industrial research, which will be held at CMBI, forthcoming 10-23th June 2017.
2. Full Grant, 2013, from Ministry of Science and Technology Bangladesh-Under Annual development Project" Strengthening Analytical and Microbiological Laboratory Chittagong" for the live and training on DNA Isolation, Detection, Quantification & Primer Design, November 5-8, 2013, All Russian Research Institute for agricultural microbiology(ARRIAM), St. Petersburg Russia.
3. Full Travel Grant, 2012, from Texas University (USA): 4th United States – Japan Cooperative Medical Science Program, on "Cholera and Other Bacterial Enteric Infections" December 13-15, 2012, Tokyo-Chiba University, Japan.
4. Full Travel Grant, 2011, from National Institute of Health America (NIH-USA) through ICDDR, Dhaka Bangladesh: 46th United States – Japan Cooperative Medical Science Program, on "Cholera and Other Bacterial Enteric Infections" December 13-15, 2011, Kolkata, India.
5. Full schooling fees waived for the completion of Pharmaceutical Bioinformatics (7.5ECTS). Uppsala University-Sweden (2011).

SELECTED INVITED SCIENTIFIC PRESENTATIONS

1. **Hosen S. M. Z;** *In Silico* expedition for Selective Naphthyl-Based CREBBP Bromodomain Inhibitor International Conference on Bioinformatics and Biostatistics for Agriculture, Health and Environment; Date: 20-23 January, 2017
2. **Hosen S. M. Z;** Raju Dash: Molecular Simulation and Flexibility Analysis of Phytocompound-Binding with DNA: Perspectives in Cancer Therapy Session-3: public health & drug discovery (PHDD). 3rd NCNST program schedule-oral presentations - PUBLIC HEALTH & DRUG DISCOVERY (PHDD), Asian Women University; 04/2016
3. **Hosen S. M. Z;**Raju Dash: Computational Analysis and Binding Site Identification of Type III Secretion System ATPase from *Pseudomonas aeruginosa*". https://nihcesaev.cit.nih.gov/node_share_links/547?token=88de3c58-44a7-4987-b854-01802ace5e99. US-Japan Conference on Cholera and Other Bacterial Enteric Infections, USA Maryland; 01/2016
4. **Hosen S. M. Z;** Saha, D.; Arifuzzaman, M.; Kamal, A. T. M. M. 2012.Detection of residual antibiotics in fresh cow milk- consequences lead to antibiotic resistance. Bulletin of Pharmaceutical Research 2012; 1(S):145; India.
(<http://www.appconnect.in>)
5. **Hosen, S. M. Z.,***Escherichia coli* O104:H4 Germany Outbreak- a lesson in genomic plasticity: be aware of the capacity of the E. coli species- emergence of highly aggressive strains in near future, 2012. 47th United States – Japan Cooperative Medical Science Program, on "Cholera and Other Bacterial Enteric Infections" December 13-15, 2012, Tokyo-Chiba University, Japan.

- (<http://www.us-japan-cholera.jp/>)
6. **Hosen, S. M. Z.**, *Probiotics, Prebiotics and Synbiotics: Recent Advances*, 2012. 47th United States – Japan Cooperative Medical Science Program, on “Cholera and Other Bacterial Enteric Infections” December 13-15, 2012, Tokyo-Chiba University, Japan. (<http://www.us-japan-cholera.jp/>)
 7. Das, R.; Arifuzzaman, M.; Abedin, J.; Paul, L. and **Hosen, S. M. Z.*** Entero-Aggregative-Haemorrhagic Escherichia coli (EAHEC), Verocytotoxins-Producing Escherichia coli O104:H4 Outbreak: European Union (EU), 2011. 46th United States – Japan Cooperative Medical Science Program, on “Cholera and Other Bacterial Enteric Infections” December 13-15, 2011, Kolkata, India. (www.us-japan-choleraconference.net)
 8. **Hosen S. M. Z.** Bioinformatics, Drugs & Omics- An overview of the major areas of the Omics. Accepted for forthcoming 2nd International Conference and exhibition on Pharmaceutical Regulatory Affairs. November 23-24, 2012 Hyderabad International Convention Center, India. (<http://omicsgroup.org/journals/ArchivePROA/pharmaceutical-regulatory-2012-proceedings-accepted-abstracts.php>)
 9. **Hosen S. M. Z.**; Dash, R; DrugBank: An Update. YoungBB 3rd National Congress 2012. Genetic Engineering & Biotechnology. Shajalal University of Science & Technology, Sylhet, Bangladesh.
 10. **Hosen S. M. Z.**; Das, R.; Emran, T. B; Rahim, Z. B.; Biswas, S. K; Chowdhury, A. and Saha, D. Bioinformatics, Drugs & Omics- An overview of the major areas of the Omics. YoungBB 3rd National Congress 2012. Genetic Engineering & Biotechnology. Shajalal University of Science & Technology, Sylhet, Bangladesh

LIST OF BOOK PUBLICATION

1. Dibyajyoti Saha, **S.M. Zahid Hosen** and Swati Paul, 2012 “Glimpse of Cancer chemoprevention, Lambert Academic Publishing (LAP), ISBN 978-3-659-18483-3, paperback, 269 Pages (<http://www.amazon.com/gp/search?index=books&linkCode=qs&keywords=9783659184833>)

LIST OF PAPER PUBLICATIONS

- 1) **Hosen SMZ**, Dash R, Khatun M, Akter R, Bhuiyan MHR, Karim MR, Mouri MJ, Ahmed F, Islam KS, and Afrin, S. In silico ADME/T and 3D QSAR analysis of KDR inhibitors, *Journal of Applied Pharmaceutical Science*. Volume: 7, Issue: 1, January, 2017. DOI: 10.7324/JAPS.2017.70116
- 2) **Hosen SMZ**, Kabir MSH, Hasanat A, Chowdhury TA, Chakrabarty N, Sarker SK, Habib MR, Dash R. Docking and ADME/T analysis of silibinin as a potential inhibitor of EGFR kinase for ovarian cancer therapy, *Journal of Applied Pharmaceutical Science*. (2016); 6(8): 001-005. doi:10.7324/JAPS.2016.60801
- 3) Dash R, Junaid M, Islam N, Akash MFC, Khan MI, Arifuzzaman M, Khatun M, **Hosen SMZ**, Molecular Insight and Binding Pattern Analysis of Shikonin as a Potential VEGFR-2 Inhibitor, *Current Enzyme Inhibition*, 2017, 13, 1-10. DOI: 10.2174/1573408013666161227162452
- 4) Dash R, Uddin MMN, **Hosen SMZ**, Molecular docking analysis of known flavonoids as dual COX-2 inhibitors in the context of cancer, *Bioinformation*. 2015;11(12):543-549. doi:10.6026/97320630011543.
- 5) Dash R, **Hosen SMZ**, Karim MR, Kabir MSH, Hossain MM, Junaid M, Islam A, Paul A, and Khan MA. In silico analysis of indole-3-carbinol and its metabolite DIM as EGFR tyrosine kinase inhibitors in platinum resistant ovarian cancer vis a vis ADME/T property analysis, *Journal of Applied Pharmaceutical Science*. Science 5 (2015), 073-078. doi:10.7324/JAPS.2015.501112
- 6) Dash R, **Hosen SMZ**, Sultana T, Junaid M, Majumder M, Ishaq IA, and Uddin MMN. Computational Analysis and Binding Site Identification of Type III Secretion System ATPase from Pseudomonas aeruginosa, *Interdisciplinary*

Sciences: Computational Life Sciences (2015): 1-9. DOI:10.1007/s12539-015-0121-z

- 7) **Hosen SMZ**, Saha D, Dash R, Emran TB, Alam A, and Junaid M. Drug Bank: An Update-Resource for in Silico Drug Discovery, *Research Journal of Pharmaceutical Dosage Forms and Technology* 4, no. 3 (2012): 166-171.
- 8) **Hosen SMZ**, Saha D, Khanam UH, Barua S, Rashid M, Khan MAU, Emran TB, Dey TK, and Afser ASM, Evaluation of Drug-Drug Interaction in a Patient Drugs Profile with Multiple Complicacy and Patient Management, *Research Journal of Pharmacy and Technology*, 5, no. 6 (2012): 813-816.
- 9) **Hosen SMZ**, Das R, Rahim ZB, Chowdhury n, Paul N, and Saha D. Vent by acetic acid induced writhing method, *Bulletin of Pharmaceutical Research* ,1, no. 3 (2011): 63-7.
- 10) Das R, Shimamoto T, **Hosen SMZ**, Arifuzzaman M. 2011. Comparative Study of different msDNA (multicopy single-stranded DNA) structures and phylogenetic comparison of reverse transcriptases (RTs): evidence for vertical inheritance, *Bioinformation*, 7(4): 176-179 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3218519/>
- 11) **Hosen SMZ**, Das R, Rahim, Z B, Chowdhury N, Paul L, and Saha D. 2011. Study of Analgesic activity of the methanol extract of Acorus calamus L. & Oroxyllum indicum Vent by acetic acid induced writhing method, *Bulletin of Pharmaceutical. Research*. 1(3):63-67.

**SCIENTIFIC/
PROFESSIONAL
MEMBERSHIPS**

International Society for Computational Biology (ISCB)
Member Royal society of Chemistry(MRSC)
Regular Member-American Chemical Society (RMACS)
Registered Pharmacist-Bangladesh Pharmacy Council
Bangladesh Pharmaceutical Society
Association of Pharmacy Professional India
USTC Pharmacists Association, Bangladesh

PERSONAL SKILLS:

Communication skills

- Strong communication/presentation skills: presented data clearly and confidently to both small and large groups, at home or abroad, in Bengali as well as in English, adapting style and content to the level of knowledge and understanding of others
- Strong synthesizing, writing, and information technology skills: wrote scientific articles in international peer-reviewed journals, as well as the highly technical replies to the questions raised by the reviewers. Wrote funding application and produced regular progression reports.
- Editor in Chief- MMDDL Newsletter, Ex Editor in Chief-Pharma Magazine-BGC Trust University, Bangladesh.

Interpersonal skills:

- Collaborated with other students, scientists, outlining objectives, methodology, and conclusions, actively listening to people and stimulating interest and discussion.
- Exchanged constructive feedback and support and learned delegating responsibility.

Adaptability:

- Collaborated and communicated at all professional levels, and with people from diverse origins and cultures.
- Can work both independently and in team settings.
- Adapted to living abroad, learned perseverance and self-motivation.

Management and organization:

- Managed several projects and collaborations in parallel, planned work to achieve goals and targets on time, set realistic objectives, developed creative solutions to problems. Attended introductory courses of management.
- Used to seek and critically assess large amounts of information, to define the cause of problems, determine available options and to use my own experience and that of others to move things forward.

Leadership

Managed fund and established Country's First CADD and drug discovery Lab at BCSIR, created a network in home and abroad with the expert in this arena to perform the research in the field of drug discovery and development.

Ex- Secretary and Press Secretary of the Scientist Association, BCSIR laboratories Chittagong

Other Skills

Full clean driving license.

Efficient, organized, reliable, fast-learner, highly motivated, get the job done.

Interests

I have great interest in photography, drawing, cycling, swimming, and travelling.

REFERENCES

Mahmuda Khatun

Director

Bangladesh Council of Scientific and Industrial Research (BCSIR), Chittagong.

Ministry of Science & Technology. People Republic of Bangladesh.

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S. M. ZAHID HOSEN
Updated: 8th September, 2017