

Md. Enamul Hoque

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Work on Progress

- 2020 - **The pandemic data analysis with the Unscented Kalman Filter**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
(www.mjonyh.github.io)
- 2019 - **Development and Maintenance of HPC in SUST, Sylhet, Bangladesh**, *Molecular Dynamics for the Organic and Biomolecules in HPC*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
(Project ID: PS/2019/01/28)
- 2018 - **Development of TeLiScOS for HPC in SUST, Sylhet, Bangladesh**, *Terminal based Light weight Scientific Operating System*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
(<https://sourceforge.net/projects/telisc-os>)
- 2018 - **Cancer Diagnosis using Nonlinear Optics**, *A world bank project*, Nonlinear Optics Research Laboratory, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
(<https://nlosust.org>)

Education

- 2018 **PhD, Nonlinear Optics**, *Shahjalal University of Science and Technology*, Sylhet - 3114, Bangladesh.
Thesis: Second and Third Order Nonlinear BioOptics Analysis of Biomolecules in Liquids
Supervisors: Professor Yasmeen Haque and Professor Susanta Kumar Das
- 2010 **MS, Physics**, *Shahjalal University of Science and Technology*, Sylhet - 3114, Bangladesh.
Thesis: Analysis of α -nucleus Potential for the Stripping Reaction of $^{60,62,64}\text{Ni}$.
Supervisor: Professor Susanta Kumar Das
- 2008 **BSc, Physics**, *Shahjalal University of Science and Technology*, Sylhet - 3114, Bangladesh.
Project: The Simple Harmonic Oscillator Potential, The Square Well Potential and Their Supersymmetric Potentials and Wavefunctions.
Supervisor: Professor Susanta Kumar Das

Experience

- 2015–Current **Assistant Professor**, *Department of Physics*, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
Conducted “Computational Physics I” and “Computation Physics II”, MS Laboratory courses and Project work in the area of Computational Physics.

- 2013–2015 **Lecturer**, *Department of Physics*, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
Taught the course "Computational Physics I" and "Computational Physics II". Both of the courses required to complete a project work on computation or simulation. I was also conducting the MS Laboratory course which contain the physics experiment and simulation.
- 2011–2014 **Web application developer, Founder Member**, *IT Lab Solutions*, Sylhet - 3100, Bangladesh.
The software farm, IT Lab Solutions (<http://www.itlabsolutions.com>), was founded to develop web application and research. The farm was collaborating with the Leading University, Sylhet and the Metropolitan University, Sylhet for the internship of the student of B.Sc. in Computer Science department.
- 2010–2012 **Lecturer**, *North East Nursing Institute and College*, Sylhet - 3100, Bangladesh.
Taught the physics part of the course "Physics and Chemistry in Nursing" which contain the fundamental physics with X-Ray, Gamma-Ray, Ultra Sonic etc.
- 2009–2010 **Lecturer**, *Sylhet Science College*, Sylhet - 3100, Bangladesh.
Taught the physics course of higher secondary school level. I also conducted the examination processes.
- 2010–2011 **Web application developer**, *IFIX*, Sylhet - 3100, Bangladesh.
Worked as a web application developer with PHP, CSS and MySQL to develop website.

Seminars

- June, 2013 **Enhancement of Second Harmonic Generation from Metallic Nanoparticles (Au, Ag and Pt)**, *Department of Physics, Shahjalal University of Science and Technology*, Sylhet - 3114, Bangladesh.

Workshops and Trainings

Organized

- Aug, 2020 **Python for Physicists**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
(Online)
- Dec, 2019 **Python for Physicists**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
- Dec, 2017 **Python for Physicists**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
- Oct, 2016 **Computation and Writing Skill Development**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.
- Apr, 2014 **Python for Physicists**, *Computational Physics Laboratory*, Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.

Attended

- Nov, 2014 **School on Parallel Programming and Parallel Architecture for HPC**, *International Centre for Theoretical Physics*, Trieste, Italy.
- Mar, 2014 **Workshop on Advanced Techniques for Scientific Programming and Management of Open Source Software Packages**, *International Centre for Theoretical Physics*, Trieste, Italy.
- Jan, 2014 **Training on Teaching Methodology**, *Shahjalal University of Science and Technology*, Sylhet - 3114, Bangladesh.

- Dec, 2013 **Workshop on Laser Operation Technique**, *Research Laboratory: Nonlinear Optics*, Department of Physics, Shahjalal University of Science and Technology, Sylhet, Bangladesh.
- Oct, 2013 **Training on Simulink**, *Matwork Private India, Ltd*, Pune, India.
- Oct, 2013 **Training on Matlab**, *Matwork Private India, Ltd*, Pune, India.
- Feb, 2013 **Workshop on COMSOL Multi-Physics**, Dhaka, Bangladesh.
- Jan, 2012 **Workshop on Laser Fundamental**, *Research Laboratory: Nonlinear Optics*, Department of Physics, Shahjalal University of Science and Technology, Sylhet, Bangladesh.
- Jan, 2012 **Nonlinear Optics Research**, *Research Laboratory: Nonlinear Optics*, Department of Physics, Shahjalal University of Science and Technology, Sylhet, Bangladesh.

Technical Experience

Proficient With

- languages C, C⁺⁺, Python, Multi-lang(Fortran, C and Python), Matlab, Mathematica, SigmaPlot, PHP, HTML, CSS
- technologies Joomla CMS, MySQL, L^AT_EX, Bash Scripting, Microsoft Office, Windows, Ubuntu, Mandriva

Have Experience With

- languages Octave, Euler, Fortran
- technologies Bash Scripting, pgplot, gnuplot, Drupal CMS, Git, Vim, Makefile, SQL Server, Visual Studio, Mac-OSX, Debian

Packages for Research

- DWUCK This package have been used to find out the cross-sections in elastic scattering and nuclear reaction with various optical potential.
- Others The Empire for calculating nuclear cross-sections, Comp-hep & Yasara for Feynman reaction processes.

Developed Packages for Research

- Z-scan Computational Package to obtain the result from the experimental data of the Z-scan experiments and their analyses.
- MCS Monte Carlo Simulation is coded in C⁺⁺ to measure the fundamental limit of the hyper-polarizability of nonlinear optical materials.
- Others Dynamical behaviour of Smoke, Water flow in the base of small depth, Eigenfunctions with Eigenvalues are practice (github) specially concerning the Quantum Monte Carlo Simulation.

Languages

- English Professionally Fluent
- Bangla Mothertongue

Traveling

- Raman Research Institute, Bangalore in India (2015)
- Frankfurt and Koln in Germany (9th to 12th November, 2014).
- Trieste and Venice in Italy (27th October to 9th November, 2014).
- Trieste, Venice and Rome in Italy (9th to 25th March, 2014).

- Chennai, Bangalore, Goa, Pune, Kolkata in India (28th Sept to 14th Oct, 2013).

Achievements

- University I received scholarship 1st, 2nd and 3rd from my university of graduation.
- College I was rewarded as the best student of college.
- School I received the primary scholarship.

Activities

- Current: Conducting research with both the Computational Physics Research Group (Professor Susanta Kumar Das) and the Nonlinear Optics Research Group (Professor Yasmeen Haque) at the Department of Physics, Shahjalal University of Science and Technology, Sylhet, Bangladesh.
- University: I have acted as President of SAS (SUST Astronomical Society), I am the founder member of SDC (SUST Debating Club) and also SSA (SUST Science Arena). I was a member of the club KIN (a social welfare club).
- College: I have acted as Secretary of Science Club and organized a Science Fair at the college. I was also a member of BNCC (Bangladesh National Cadet Corps).
- School: I was the captain of the scout team at high school and I took part to serve the flood affected people with my scout team in 1998.

Hobbies

Different outdoor games like Football, Cricket and indoor games like Playing Card, Chess and Table Tennis are games of my choice.

I like to play Guitar and also watching movie is the best part of my entertainment for me.

Travelling through out the world is my passion and I also like to do photography.

Personal Information

- Date of Birth 10th September, 1984.
- Nationality Bangladesh by Birth.
- Marital Status Married.

Referees

Professor Yasmeen Haque, *Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.*

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Professor Susanta Kumar Das, *Department of Physics, Shahjalal University of Science and Technology, Sylhet - 3114, Bangladesh.*

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