

Curriculum Vitae of

Md. Mahabub Hossain, Ph.D.

Designation : **Professor** (Grade- 2)
Address : Department of Electronics and Communication Engineering (ECE), Hajee Mohammad Danesh Science and Technology University (HSTU), Bangladesh
Research & Lab info: <https://hstu-ssdlab.com>
Date of birth : March 09, 1980
Sex : Male
Marital status : Married with two children
Nationality : Bangladeshi
Phone : +88-01716729015
E-mail : im.mahabub@gmail.com ; mahabub@hstu.ac.bd



Education

- ❑ **Post-Doctoral research** in Ono-Inomata/Toda Laboratory, Division of Mechanical Engineering, Tohoku University, JAPAN. Topic: “*Nanoelectromechanical (NEMS) piezoresistive gas sensor*” Supervisor: Professor Takahito Ono, Ph.D.
Duration: April 2017 - March 2018
- ❑ **Ph.D.** in Electronics Engineering, School of Electronics Engineering, Kyungpook National University, South KOREA, Dissertation: “*Cassegrain architecture based varifocal micro-mirror lens operated by MEMS technique*” Supervisor: Professor Seong Ho Kong, Ph.D.
Duration: March 2013 - February 2017, Result: 4.1/4.3 (Course work)
- ❑ **M. Sc.** in Applied Physics & Electronic Engineering, Rajshahi University, BANGLADESH.
Thesis: “*Seismic Interpretation Using Attributes Analysis: Case Study from Southern Brazil Basin*” Supervisor: Professor Syed Mustafizur Rahman, Ph.D.
Duration: 2004 - 2005, Result: First class, marks: 66.12%, merit position: 4th out of 37 students
- ❑ **B. Sc.** in Applied Physics & Electronics Rajshahi University, BANGLADESH.
Duration: 2000 - 2003, Result: First class, marks: 61.6%, merit position: 3rd out of 50 students
- ❑ **HSC & SSC (Science)** 1998 & 1996, Results: First division, Broads: Rajshahi Education Broad

Research Interest

- ✚ Smart Sensors and Systems, Automation, Robotics, Embedded System, Embedded Machine Learning
- ✚ Photonic Fiber, and Electronic Materials; Microfabrication; MEMS/NEMS

Professional Experiences (Teaching, Research, Administrative, and Professional Bodies)

Teaching and Research Experiences

- ✓ **Professor** **Duration:** Jan 2020 - Present
Department of Electronics and Communication Engineering,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.
- ✓ **Faculty member (Lecturer – Associate Professor)** **Duration:** Jan 2008 – Jan 2020
Department of Electronics and Communication Engineering,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.

- ✓ **Post-Doctoral researcher** **Duration:** Apr 2017 – Mar 2018
Supervisor: Professor Takahito Ono, Ph.D.
Ono-Inomata/Toda Laboratory, Division of Mechanical Engineering,
Tohoku University, Japan.
- ✓ **Research & Ph.D. fellow** **Duration:** Feb 2013 – Feb 2016
Supervisor: Professor Seong Ho Kong, Ph.D.
Micro & Nano Transducer Lab, School of Electronics Engineering,
Kyungpook National University, South Korea.
- ✓ **Lecturer** **Duration:** Nov 2007 - Jan 2008
Department of Electronics & Telecommunication Engineering,
Prime University, Mirpur-1, Dhaka, Bangladesh.

Academic and Administrative Positions

- **Dean** **Duration:** Jan 2020 – Jan 2022
Faculty of Computer Science Engineering,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.
- **Chairman** **Duration:** Nov 2018 - Nov 2024
Department of Electronics and Communication Engineering,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.
- **Director** **Duration:** Aug 2023 - Aug 2024
Student Affairs & Advisory Division,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.
- **Director** **Duration:** Jun 2021 – Jun 2024
Physical Education Division,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.
- **Assistant Proctor** **Duration:** Feb 2019 – Jan 2020
Office of the Proctor,
Hajee Mohammad Danesh Science and Technology University,
Dinajpur 5200, Bangladesh.

Professional Bodies

- **Chairman** **Duration:** Feb 2022 – Present
Bangladesh Computer Society,
Rangpur Divisional Branch, Bangladesh.
- **Member** **Duration:** July 2022 – Present
No: 93080638
IEEE Professionals/ IEEE Robotics and Automation Society

Awards and Recognitions

- ✚ **Smart Bangladesh Award 2023 (The Best Team: District level among all districts in Bangladesh)**
Innovation: Poultry Farming Robot, Innovators: Team leader- Prof. Dr. Md. Mahabub Hossain,
Members- Md. Selim Hossain, Md. Rifat Hoshen, Md Azizul Hakim Bappy, Md. Mujtuba Rafid.
Awards: Crest -Trophy, Certificate and Prizemoney. Awarded by ICT Division, Government of The
People's Republic of Bangladesh.
Bangladesh Gazette (Extraordinary), no. 56.00.0000.049.29.001.20.116, page 28112, 18 Agrahayan
1430 / 03 December 2023.
- ✚ **Postdoctoral Research Fellowship (2017-2018)**, Industry-University-Government Cooperation,
Tohoku University and Japan Govt.

- ✦ **Brain Korea (BK21 Plus) Scholarship (2014-2016)**, for pursuing Ph.D. research, Ministry of Education, South Korea.
- ✦ **Gold Medal Award**, awarded by the Bangabandhu Sheikh Mujibur Rahman Hall for merit position in B. Sc degree in Rajshahi University.
- ✦ **Faculty Merit Scholarship**, awarded for pursuing B. Sc degree in Rajshahi University.

Patent

Smart Poultry Feeder (SPF), Inventors: Md. Mahabub Hossain*, Md Rifat Hoshen, Md. Azizul Hakim Bappy, Shafier Jahan Khan, Md. Mujtuba Rafid; File submitted (2025), Department of Patents, Designs and Trademarks (DPDT), Ministry of Industries, Bangladesh.

Publications (Journals, Books, Book Chapters and Conference Proceedings)

Journals

1. Md. Azizul Hakim Bappy, Md. Rifat Hoshen, Md. Mujtuba Rafid, Md. Mahabub Hossain*, Mst. Afroza Khatun, "Low-Cost Internet of Things (IoT)-Based Climate Control Automation for Improved Poultry Growth and Survival in Least Developing Countries." *Cureus Journal of Engineering*, 2: es44388-025-09291-2, 2025. <https://doi.org/10.7759/s44388-025-09291-2>
2. Md. Rakib Zaman, Md. Azizul Hakim Bappy, Md. Mahabub Hossain*, Md. Selim Hossain, "Data-efficient deep learning framework for real-time Avian Pox identification in broiler chickens using two-stage approach." *Smart Agricultural Technology*, 12, 101246, 2025. <https://doi.org/10.1016/j.atech.2025.101246>
3. Sarker, Siam, Fuad Hassan Faruk, Habibur Rahman, Md Mahabub Hossain*, and Seong Ho Kong. "Design and Performance Analysis of a Dual-Core Gold-Coated PCF-based Plasmonic RI Sensor for the Detection of Bio-Analytes." *Optik*, 2025: 172381. <https://doi.org/10.1016/j.ijleo.2025.172381>
4. Md. Alamin Hossain, Md. Parash Chowdhury, Md. Mahabub Hossain*, Mahfujur Rahman and Md. Selim Hossain. "Hexagonal Hollow Core PCF-Based Blood Components Sensing: Design and Simulation." *Cell Biochemistry and Biophysics*, 2025. <https://doi.org/10.1007/s12013-025-01672-y>
5. Md. Hasan Ali, Md. Faruk Hossain, Md. Mahabub Hossain*, Md. Dulal Haque and Abu Zafor Md. Touhidul Islam. "Annealing effect on structural, morphological, optical, and electrical properties of spin coated ZnS thin films for photovoltaic application." *Optical and Quantum Electronics*, 57:90, 2025. <https://doi.org/10.1007/s11082-024-07997-x>
6. Md Mahabub Hossain*, Rokaia Laizu Naima, and Md Selim Hossain. "Design and development of photonic crystal fiber for application of milk purity detection: an approach of performance analysis." *Optical and Quantum Electronics* 56(7): 1-15, 2024. <https://doi.org/10.1007/s11082-024-07210-z>
7. Md Milon Rana, Md Selim Hossain, Md Mahabub Hossain*, and Md Dulal Haque. "Improved vehicle detection: unveiling the potential of modified YOLOv5." *Discover Applied Sciences* 6(7): 332, 2024. <https://doi.org/10.1007/s42452-024-06029-3>
8. Md. Hasan Ali, Md. Dulal Haque, Md. Faruk Hossain, Md. Mahabub Hossain*, Md. Ferdous Rahman & Abu Zafor Md. Touhidul Islam "Effect of Triton X-100 surfactant on structural, morphological, and optical properties of ZnS thin films deposited by spin coating method, ", *Journal of Sol-Gel Science and Technology*, 2024. <https://doi.org/10.1007/s10971-024-06368-y>
9. Md Rajiul Islam, Jakia Akter Nitu, Md Mahabub Hossain, Md Mehedi Islam, and Md Abubakar Siddik. "I-SBA: an improved SBA broadcast protocol to minimize forwarding for wireless ad-hoc networks." *International Journal of Information Technology*, 1-12, 2024. <https://doi.org/10.1007/s41870-024-01870-6>
10. Md Selim Hossain, Rakib Hossen, Syada Tasmia Alvi, Shuvo Sen, Md Al-Amin, Md. Mahabub Hossain, "Design and numerical analysis of a novel photonic crystal fiber based chemicals sensor in the THz regime", *Physics Open*, 17, December, 2023. <https://doi.org/10.1016/j.physo.2023.100168>
11. Md Hasan Ali, Md Dulal Haque, Md Mahabub Hossain*, and Abu Zafor Md Touhidul Islam. "Improving the efficiency of ZnTe based heterojunction solar cell with In₂Te₃ BSF layer." *Journal of Applied Electrochemistry*, 1-19, November 2023. <https://doi.org/10.1007/s10800-023-02013-8>

12. Md Abdul Muttalib Moon, Md Kaimujjaman, Md Mahabub Hossain*, Md Mehedi Islam, and Md Selim Hossain. "Seamless real-time thermal imaging system with ESP8266: wireless data transfer and display using UDP." SN Applied Sciences, 5:129, October 2023. <https://doi.org/10.1007/s42452-023-05529-y>
13. Md. Selim Hossain, Shuvo Sen, Md. Mahabub Hossain*, "Reduction of effective material loss (EML) using decagonal photonic crystal fiber (D-PCF) for communication applications in the terahertz wave pulse", Opt Quant Electron 54, 658, August 2022 <https://doi.org/10.1007/s11082-022-04050-7>
14. Md Dulal Haque, Md Hasan Ali, Md Mahabub Hossain, Md Selim Hossain, M. Ismail Hossain, Md Abdul Halim, and AZM Touhidul Islam. "Design and analysis of GaAsN based solar cell for harvesting visible to near-infrared light." Physica Scripta 97(8), 085006, July 2022 <https://doi.org/10.1088/1402-4896/ac7d79>
15. Md. Sazzadur Rahman, Rokaia Laizu Naima, Khatuna Jannatun Shetu, Md. Mahabub Hossain, M. Shamim Kaiser, A. S. M. Sanwar Hosen, Md. Abdul Latif Sarker and Kelvin J. A. Ooi, "Silicene Quantum Capacitance Dependent Frequency Readout to a Label-Free Detection of DNA Hybridization— A Simulation Analysis" Biosensors, 11(6), 178, June 2021. <https://doi.org/10.3390/bios11060178>
16. Md. Selim Hossain, Shuvo Sen, Md. Mahabub Hossain*, "Performance analysis of octagonal photonic crystal fiber (O-PCF) for various communication applications", Physica Scripta, vol. 96(5), 055506, February 2021. <https://doi.org/10.1088/1402-4896/abe323>
17. Md. Selim Hossain, Shuvo Sen, Md. Mahabub Hossain*, "Design of a chemical sensing circular photonic crystal fiber with high relative sensitivity and low confinement loss for terahertz (THz) regime", Optik - International Journal for Light and Electron Optics, 165359, November 2020. <https://doi.org/10.1016/j.ijleo.2020.165359>
18. Md. Biplob Hossain, Md. Selim Hossain, Md. Mahabub Hossain*, Md. Dulal Haque, "Optimization of the Feeding Point Location of Rectangular Microstrip Patch Antenna", Advances in Science, Technology and Engineering Systems Journal Vol. 5, No. 1, 382-386, 2020. <http://dx.doi.org/10.25046/aj050149>
19. Md. Kaimujjaman, Md. Mehedi Islam, Rubayat Mahmud, Mimmun Sultana, Md. Mahabub Hossain, "Digital FM Transceiver Design and Construction using Microcontroller and I2C Interfacing Techniques", International Journal of Recent Technology and Engineering (IJRTE), Volume-8 Issue-5, 4525-4532, January 2020. <https://doi.org/10.35940/ijrte.E6831.018520>
20. Sumonto Sarker, Kritimoy Bosu, Firdous Bin Ismail, Md. Mahabub Hossain, Md. Mehedi Islam, "Design and implement a real-time detection and defence mechanism against the SYN Flood attack in server client system" International Journal of Recent Technology and Engineering, Vol-8 No-4, 10766-74 2019. <http://dx.doi.org/10.35940/ijrte.D4345.118419>
21. Md. Mahabub Hossain, Jun yeop Lee, Dae woong Jung, Seong Ho Kong, "Focus-tunable micro-reflective lens: Design and fabrication feasibility with deformable micromirror," Solid-State Electronics, Vol.161, 107633-39, 2019. <https://doi.org/10.1016/j.sse.2019.107633>
22. Md. Mahabub Hossain, Md. Dulal Haque and Md. Mehedi Islam, "Numerical analysis of single and two relay cooperative communication system with different diversity protocols", International Journal of Advanced Research, Vol. 7 No.11, 111-120, 2019. <http://dx.doi.org/10.21474/IJAR01/9982>
23. Md. Sohrawordi, U. A. Md. Ehasn Ali, Md. Palash Uddin and Md. Mahabub Hossain, "A modified round robin CPU scheduling algorithm with dynamic time quantum", International Journal of Advanced Research, Vol. 7 No. 2, 422-429, 2019. <http://dx.doi.org/10.21474/IJAR01/8506>
24. Md. Mahabub Hossain, Masaya Toda, Takumi Hokama, Mai Yamazaki, Krzysztof Moorthi, Takahito Ono, "Piezoresistive Nanomechanical Humidity Sensors Using Internal Stress In-Plane of Si-Polymer Composite Membranes", IEEE Sensors Letters, 3(2), 1-4, 2019. <https://doi.org/10.1109/LSSENS.2019.2893298>
25. Md. Abubakar Siddik, Md. Mahabub Hossain, Md. Dulal Haque and Md. Omar Faruque, "Design and radiation characterization of rectangular microstrip patch antenna for millimeter-wave communication", American Journal of Engineering Research, Vol.8, No.01, 273-281.

26. Wu Bin, Md. Mahabub Hossain, and Seong Ho Kong, "PDMS-based two-axis inclinometer with a 360-degree measuring range", *Sensors and Actuators A*, 239 (2016) 54–60, 2016. <https://doi.org/10.1016/j.sna.2016.01.020>
27. Md. Mahabub Hossain, Wu Bin, and Seong Ho Kong, "Large-stroke convex micromirror actuated by electromagnetic force for optical power control", *Optics Express*, Vol. 23, No. 22, 28358-68, 2015. <https://doi.org/10.1364/OE.23.028358>
28. M. D. Haque, M. M. Islam, Md. Mahabub Hossain, and S. Sarker, "Simulation and Modeling of silicon nanowire field effect transistor", *Journal of Innovation and Development Strategy*, 7(1) 16 2013.
29. M.M. Islam, M.M. Hossain, M.S. Islam, M.T. Islam and A.A. Mamun, "Selection of suitable monochromator & neutron wavelength for TAS at AERE". *J. Innov. Dev. Strategy* 5(1), 44-49, 2011.
30. Sazzadur Rahman, M. Shahidut Tarif, M. Mahabub Hossain, Md Zahirul Hoque Mozumder, and Md Zahirul Hoque. "Study the effect of frequency reuse factor on hardware design of a GSM wireless network", *Bangladesh Res. Pub. J.* 5(1): 16-21, 2011.
31. Md. Mahabub Hossain, M.M. Islam, M.S. Rahman, M.M Islam, and M.S. Islam, "BER evaluation of low-density parity-check coded OFDM system under different modulation schemes", *Inst.eng.tech.* 1(1):1-4, 2010.
32. Mahabub, M.H., Rahman, S.M., Mehedi, M.I., Faruk, M.O., "Sediment distribution of continental margin of the southern Brazil basin in the southwest Atlantic ocean", *J. Soil. Nature.* 3 (1):04-15, 2009.

Books

1. Md. Mahabub Hossain, *Seismic Attributes Analysis: Case Study: Southern Brazil Basin*, Lap Lambert Academic Publishing GmbH KG, ISBN: ISBN-10: 3659311820, ISBN-13: 9783659311826, January, 2013. <https://www.amazon.com/Seismic-Attributes-Analysis-Southern-Brazil/dp/3659311820>

Book Chapters

1. Rana, Md Milon, Md Dulal Haque, and Md Mahabub Hossain. "Comparative Study of Vehicle Detection with Different YOLOv5 Algorithms." In *International Symposium on Sustainable Energy and Technological Advancements*, pp. 253-263. Singapore: Springer Nature Singapore, 2023. https://doi.org/10.1007/978-981-99-8886-0_23
2. Jafirul Islam Jewel, Md. Mahabub Hossain*, Md. Dulal Haque, "Design and implementation of a drowsiness detection system up to extended head angle using FaceMesh machine learning solution" *Machine Intelligence and Emerging Technologies*, 2023, Springer Nature (SCOPUS Indexed). https://doi.org/10.1007/978-3-031-34622-4_7
3. Md. Kaimujjaman, Md. Mahabub Hossain*, Mst. Afroza Khatun, "A Smart Automation System for Controlling Environmental Parameters of Poultry Farms to Increase Poultry Production, *Proceedings of Trends in Electronics and Health Informatics, Proceedings of Trends in Electronics and Health Informatics TEHI 2022* Springer Nature (SCOPUS Indexed). https://doi.org/10.1007/978-981-99-1916-1_6
4. Md. Faisalur Rahman and Md. Mahabub Hossain*, "Implementation of Robotics to Design a Sniffer Dog for the Application of Metal Detection", *Advances in Intelligent Systems and Computing (AISC, volume 1309)*, Springer Nature Book Series, pp 393-404, December 2020 (SCOPUS Indexed). https://doi.org/10.1007/978-981-33-4673-4_31

Conference Presentations / Proceedings

1. Moyna, Mastura Islam, Md Mahabub Hossain*, and Md Mehedi Islam. "Performance Optimization of Hybrid Beamforming in MU-MIMO NOMA Systems with Reconfigurable Intelligent Surfaces." 2025 2nd International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM), IEEE, 27-28 June 2025, DUET, Dhaka, BANGLADESH. <https://doi.org/10.1109/NCIM65934.2025.11160013>

2. Chowdhury, Md Parash, Md Alamin Hossain, Md Mahabub Hossain*, and Md Selim Hossain. "Design and Analysis with Monitoring of Photonic Crystal Fiber (PCF) Based Oil Sensing." In 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE), pp. 1-5. IEEE, 2025 Chittagong, BANGLADESH. <https://doi.org/10.1109/ECCE64574.2025.11013848>
3. (Invited Talk paper) Md. Abdul Muttalib Moon , Md. Mahabub Hossain*. "Seamless real-time thermal imaging system with ESP8266 for wireless data transfer." The 5th International Conference on Engineering, Physics, MEMS-Biosensors and Applications (ICEBA2024), November 11-12, 2024; Ho Chi Minh City and Vinh Long Province, VIETNAM.
4. Md. Rajiul Islam, Jakia Akter Nitu, Md. Mahabub Hossain, Md. Mehedi Islam, Md. Abubakar Siddik "TA-TDP: A Topology Aware Total Dominant Pruning Broadcast Protocol to Reduce Forwarding Stations in Wireless Ad-hoc Networks" 2024 6th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT), IEEE, 02-04 May 2024, Dhaka, BANGLADESH. <https://doi.org/10.1109/ICEEICT62016.2024.10534535>
5. Jakia Akter Nitu, Md. Rajiul Islam, Md. Mehedi Islam, Md. Mahabub Hossain, Md. Abubakar Siddik, "TA-PDP: An Topology Aware Partial Dominant Pruning Broadcast Protocol to Minimize Forwarding for Wireless Ad-hoc Networks", 2023 IEEE International Conference on Telecommunications and Photonics (ICTP), IEEE, 21-23 December 2023, Dhaka, BANGLADESH. <https://doi.org/10.1109/ICTP60248.2023.10490930>
6. Md. Rajiul Islam, Jakia Akter Nitu, Md. Mahabub Hossain, Md. Mehedi Islam, Md. Abubakar Siddik "T-SP: A Timer-based Self-Pruning Broadcast Protocol using One-hop Neighbor Information" 2023 26th International Conference on Computer and Information Technology (ICCIT), IEEE, 13-15 December 2023, Cox's Bazar, BANGLADESH. <https://doi.org/10.1109/ICCIT60459.2023.10441178>
7. Himu Rani, Humaira Kawsari, Sumaya Kakon, Mahfujur Rahman, Md. Mahabub Hossain, "A Printed 2-Shaped Dual Band Microstrip Antenna for RFID/WLAN/ISM Band Applications", 2023 6th International Conference on Electrical Information and Communication Technology (EICT), IEEE, 07-09 December 2023, Khulna, BANGLADESH. <https://doi.org/10.1109/EICT61409.2023.10427879>
8. Rokaia Laizu Naima, Md. Mahabub Hossain*, Md. Dulal Haque, Md. Hasan Ali "Performance Improvement of SnS-based Heterostructure Solar Cell using Cu₂O HTL", 14th International Conference on Computing Communication and Networking Technologies (ICCCNT) IEEE, 06-08 July 2023, IIT Delhi, INDIA. <https://doi.org/10.1109/ICCCNT56998.2023.10306815>
9. Takumi Hokama, Md. Mahabub Hossain, Masaya Toda, Krzysztof Moorthi, Mai Yamazaki, Takahito Ono, "Nanomechanical Piezoresistive Sensor with Polymer-Si Membrane for Gas Detection." [Proceedings of the 9-th Asia-Pacific Conference of Transducers and Micro-Nano Technology, 2018, 24 – 27 June 2018, HONG-KONG.
10. Md. Mahabub Hossain, Jun Yeop Lee, and Seong Ho Kong, "Fabrication of a MEMS based symmetrically deformable convex mirror", The 30th IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS2017), January 22-26, 2017, Las Vegas, USA. <https://doi.org/10.1109/MEMSYS.2017.7863493>
11. Md. Mahabub Hossain, Jun Yeop Lee, and Seong Ho Kong, "Spherically deformable convex micromirror for beam-spot imaging" Proceeding of 29th International Microprocesses and Nanotechnology Conference (MNC2016), November 08-12, 2016, Kyoto, JAPAN.
12. Md. Mahabub Hossain, Wu Bin, and Seong Ho Kong, "Electromagnetically Controlled Convex Micromirror for Focal Length Variation", Proceeding of IEEE Sensors, November 1-4, 2015 Busan, South KOREA. <https://doi.org/10.1109/ICSENS.2015.7370267>
13. Md. Mahabub Hossain, Wu Bin, Won Ick Jang, Seong Ho Kong, "Focus Tunable MEMS Deformable Convex Mirror Based on Electromagnetic Actuation", International Conference on Applied Mechanics and Mechatronics Engineering (AMME2015), October 25-26, 2015, Bangkok, THILAND. DEStech Publications, Inc, ISBN: 978-1-60595-021-1.
14. Wu Bin, Md. Mahabub Hossain, Dong-Geon Jung, Soon-Yeol Kwon, and Seong Ho Kong, "Dual-around-axis Measurable Electrolytic Tilt Sensor" International Conference on Applied Mechanics and

Mechatronics Engineering (AMME2015), October 25-26, 2015, Bangkok, THILAND. DEStech Publications, Inc. ISBN: 978-1-60595-021-1.

15. Md. Mahabub Hossain, Ho Won Kim, and Seong Ho Kong “A New Technology of a Deformable Convex Mirror for Adaptive Optical Systems” Proceeding of 7th Asia-Pacific Conference on Transducers and Micro / Nano Technologies (APCOT2014), June 29 - July 02, 2014, S. KOREA.
16. M. Mahabub Hossain, Roza Assefa Lemelemu , Ho Won Kim , Seong Ho Han , Young Chan Choi , Dong Geon Jung , Ju Chan Choi , and Seong Ho Kong "Nickel Electroplating for Nano-Layer Surface Formation", Proceeding of The Korean Sensors Society, 2013, Seoul, South KOREA.

Conferences Seminars Presentations, Talks and Appreciations

- ❖ **Session Chair** at IEEE International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN) 2025 held on 31st July – 2nd August 2025 at Bangladesh Army University of Science and Technology (BAUST), Saidpur, Bangladesh.
- ❖ **Invited Talk Speaker**, Topic: Seamless real-time thermal imaging system with ESP8266 for wireless data transfer, The 5th International Conference on Engineering, Physics, MEMS-Biosensors and Applications (ICEBA2024), November 11&12, 2024; Ho Chi Minh City and Vinh Long Province, Vietnam.
- ❖ **Invited Talk Session Chair**, Title: AI, IoT and NLP Based Smart Digital Health Care System at 2nd International Conference on Big Data, IoT and Machine Learning (BIM 2023) held on September 06-08, 2023 at DIU, Dhaka, Bangladesh.
- ❖ **Session Chair** at 2nd International Conference on Machine Intelligence and Emerging Technologies (MIET) 2022 held on September 23-25, 2022 at NSTU, Noakhali, Bangladesh.
- ❖ **Judge** in NACTAR Robotics Olympiad 2022, a National Robotics Competition held on August 5-6, 2022 at National Academy for Computer Training and Research (NACTAR), Bogura, Bangladesh
- ❖ **Judge** of MUJIB 100 IDEA CONTEST 2021 organized by UGC and Ministry of Education, Bangladesh.
- ❖ **National Advisory Committee Member** of International Conference on Electronics, Communications and Information Technology 2021 (ICECIT 2021) held on September 14-16 at Khulna University, Khulna, Bangladesh.
- ❖ **Panel Session Chair** at IEEE Computer Society Bangladesh Chapter Summer Symposium 2021, Bangladesh.

Course Conducted as a Teacher during last Five Years (2020 – Present)

M.Sc. (Engineering) Courses: Advanced Artificial Intelligence and Robotics (4); VLSI Technology and Device Modeling (5th time running).

B.Sc. (Engineering) Courses: Mechatronics and Robotics (3); Database Design and Management (1); Microprocessor and Microcomputer (3); Computer communications and Networks (2nd time running); Control System Engineering (4); Industrial Electronics (3); Electronics-I (1); Electronics-II (5th time running).

**() times conducted*

M.Sc. (Engineering) Research Supervision (Session, Thesis Title)

1. 2025 Jan-Jun [Optimizing Hybrid Beamforming in MU-MIMO NOMA Systems with RIS](#)
2. 2024 Jul-Dec [Hexagonal Hollow Core PCF-Based Blood Components Sensing: Design and Simulation](#)
3. 2024 Jul-Dec [Design and Analysis with Monitoring of Photonic Crystal Fiber \(PCF\) Based Oil Sensing](#)
4. 2023 Jul-Dec [Seamless Real-time Wireless Data Transfer for Thermal Imaging System using UDP Protocol](#)

5. 2023 Jan-Jun [Improved Vehicle Detection: Unveiling the Potential of Modified YOLOV5](#)
6. 2023 Jan-Jun [Efficiency Improvement of SnS–Based Heterojunction Solar Cell using Cu₂O Hole Transport Layer](#)
7. 2022 Jan-Jun [Driver Drowsiness Detection System Based on Facemesh Machine Learning Solution](#)
8. 2022 Jan-Jun [Design of a Smart Automation System for Detection of Temperature and Humidity through a Developed Sensor System of Poultry Ventilation Process](#)

Skills and Expertise

Computer Networking (CISCO Networking Academy Certified)

- CISCO: Networking, Switching, Routing, and Wireless Essentials
- CISCO: Enterprise Networking, Security, and Automation

Microfabrication skills

- Lithography (photo, e-beam and soft), mask design, polymer and hard-mask coating and patterning
- Etching (wet and dry): TMAH, HNA, HF, Deep RIE, RIE, XeF₂ etc
- Deposition (metal & soft film): evaporation, sputtering, electroplating, oxidation, CVD, spin coating
- Measurement and characterization: interferometer, SAM, AFM etc.

Software/Tools Familiarity

Design & drawing – Optalix optical design, COMSOL Multiphysics*, CAD, Adobe illustrator (**initial*)

Signal processing & Data analysis – MATLAB (MathWorks), Database (MySQL)

Operating system – Windows, UBUNTU

Utility software – MS-Word, MS-Excel, MS Power Point, Adobe Photoshop, OriginPro etc.

Funded Project Conducted as Principal Investigator

1. Optical Fiber Sensing and Sensor Application

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2024-2025

Position: Principal Investigator, Status: Completed

2. Intelligent System and Deep Learning

Funded by: Special Research Allocation, Ministry of Science & Technology, Bangladesh, 2023 - 2024

Position: Principal Investigator, Status: Completed

3. Photonic Crystal Fiber Sensor and Application

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2024-2025

Position: Principal Investigator, Status: Completed

4. Smart Sensor Networks and Embedded System

Funded by: Information and Communication Technology (ICT) Division, Ministry of Posts, Telecommunications & Information Technology, Bangladesh, 2022-2023

Position: Principal Investigator, Status: Completed

5. Sensing, Detection and Environment Control

Funded by: Special Research Allocation, Ministry of Science & Technology, Bangladesh, 2022-2023

Position: Principal Investigator, Status: Completed

6. IoT based Intelligent System

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2022-2023

Position: Principal Investigator, Status: Completed

7. Sensor Networks and Embedded System

Funded by: Special Research Allocation, Ministry of Science & Technology, Bangladesh, 2021-2022
Position: Principal Investigator, Status: Completed

8. Smart Integrated System

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2021-2022
Position: Principal Investigator, Status: Completed

9. Thermal Sensing, Imaging, Wireless Transmission and Robotics

Funded by: Information and Communication Technology (ICT) Division, Ministry of Posts, Telecommunications & Information Technology, Bangladesh, 2020-2021
Position: Principal Investigator, Status: Completed

10. Robotics, Microwave Communication and Control

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2020-2021
Position: Principal Investigator, Status: Completed

11. Sensor Network and Automation

Funded by: Special Research Allocation, Ministry of Science & Technology, Bangladesh, 2019-2020
Position: Principal Investigator, Status: Completed

12. Sensing System and Data Processing

Funded by: UGC through Institute of Research and Training (IRT), Hajee Mohammad Danesh Science and Technology, Dinajpur, Bangladesh, 2019-2020
Position: Principal Investigator, Status: Completed

Visiting Countries

South Korea, China, Japan, Sri Lanka, Saudi Arabia, Thailand, Nepal

References

Referee's names will be available upon request.

I hereby declare that the above-mentioned statements are true and correct.

Professor Md. Mahabub Hossain, Ph.D.

mahabub@hstu.ac.bd | +8801716729015

Date: 21 November 2025