

Mainul Hossain

Curriculum Vita

Address: Department of Electrical and Electronic Engineering
University of Dhaka, Dhaka-1000, Bangladesh

Phone: +880-1782383782

E-mail: mainul.eee@du.ac.bd

Website: [END Research Group](#)

Education

Ph.D. Electrical Engineering	University of Central Florida, Orlando, Florida, USA	2012
M.S. Electrical Engineering	University of Central Florida, Orlando, Florida, USA	2012
B.Sc. Applied Physics, Electronics and Communication Engineering	University of Dhaka, Dhaka-1000, Bangladesh	2009

Research Summary

- US Patent: 1
- Book Chapter: 1
- Peer-Reviewed Journal Publications: 25+
- Conference Presentations and Invited Talks: 20+
- Scholarly Citations: 570+ (h-index =12, i-10 index = 13)

Academic and Professional Appointments

Assistant Professor, Department of Electrical and Electronic Engineering <i>University of Dhaka, Dhaka-1000, Bangladesh</i>	Aug 2019 - Present
Student Advisor, Department of Electrical and Electronic Engineering <i>University of Dhaka, Dhaka-1000, Bangladesh</i>	Jun 2019 - Nov 2019
Part-time Faculty, Department of Nuclear Engineering <i>University of Dhaka, Dhaka-1000, Bangladesh</i>	Jul 2019-Nov 2019
India Science Research Fellow (ISRF), Centre for Nano Science and Engineering (CeNSE) <i>Indian Institute of Science (IISc), Bangalore, India</i>	Nov 2019 - Mar 2020
Lecturer, Department of Electrical and Electronic Engineering <i>University of Dhaka, Dhaka-1000, Bangladesh</i>	Oct 2017 - Aug 2019
Principal Engineer, Advanced Module Engineering (AME)-Metrology <i>Globalfoundries US Inc., Malta, New York, USA</i>	Jun 2014 - Oct 2017
Senior Engineer, Advanced Module Engineering (AME)-Metrology <i>Globalfoundries US Inc., Malta, New York, USA</i>	Jan 2013 - Jun 2014
Co-Op Engineer, Thin Films Metrology (Technology Development) <i>Globalfoundries US Inc., Malta, New York, USA</i>	Aug 2012 - Nov 2012
NanoScience and Technology Center (NSTC) Graduate Research Fellow School of Electrical Engineering and Computer Science (EECS) <i>University of Central Florida, Orlando, Florida, USA</i>	Aug 2009 - Dec 2012

Honors and Awards

- **India Science Research Fellowship (ISRF)**, Government of India 2019
- Spotlight Award by 12FDSOI Integration, Globalfoundries US. Inc., Malta, NY, USA 2017
- Appreciation Award by Advanced Module Engineering, Globalfoundries US Inc., Malta, NY, USA 2016
- Certified **Lean Six Sigma Greenbelt**, Globalfoundries US Inc., Malta, NY, USA 2015
- Appreciation Award by Thin Films PVD, Globalfoundries US Inc., Malta, NY, USA 2015
- Appreciation Award by 22FDSOI Integration, Globalfoundries US Inc., Malta, NY, USA 2015
- Spotlight Award by Epi/Diffusion, Globalfoundries US. Inc., Malta, NY, USA 2014
- Appreciation Award by 14XM Integration, Globalfoundries US Inc., Malta, NY, USA 2014
- Appreciation Award by Epi/Diffusion, Globalfoundries US. Inc., Malta, NY, USA 2013
- Graduate Research Fellowship Award, NSTC, University of Central Florida, Orlando, FL, USA 2009-2013
- Delegate to the 58th **Lindau Meeting of Nobel Laureates** (Physics), Lindau Council, Lindau, Germany 2008
- Certificate of Excellence Award by The Daily Star for outstanding results in GCE O`Level Exams 2000

Peer-Reviewed Journal Publications (h-index = 12)

1. S. Cynthia, R. Ahmed, S. Islam, K. Ali, and **M. Hossain**, "Graphene based hyperbolic metamaterial for tunable mid-infrared biosensing," *RSC Adv.*, vol. 11, pp. 7938-7945, 2021.
2. S. S. Nishat, M. J. Hossain, F. E. Mullick, A. Kabir, S. Chowdhury, S. Islam, and **M. Hossain**, "Performance analysis of perovskite solar cells using DFT extracted parameters of TiO₂ electron transport layer", *J. Phys. Chem. C* (Under Revision), 2021.
3. M. A. Hasan, F. I. Sakib, and **M. Hossain**, "Negative capacitance gate-all-around tunnel FETs for highly sensitive label-free biosensors," *IEEE Trans. Electron. Devices* (Under Revision), 2021.
4. M. Hasan, M. S. Hussain, **M. Hossain**, M. Hasan, H. U. Zaman, and S. Islam, "High-speed and scalable XOR-XNOR based hybrid full adder design," *Comput. Electr. Eng.*, vol. 93, no. 107200, 2021.
5. M. Hasan, M. S. Hussain, A. H. Siddique, **M. Hossain**, H. U. Zaman, and S. Islam, "A scalable high-speed hybrid 1-bit full adder design using XOR-XNOR module," *Int. J. Circ. Theor. App.* (Under Review), 2021.
6. M. Hasan, M. S. Hossain, A. H. Siddique, **M. Hossain**, H. U. Zaman, and S. Islam, "A high-speed 4-bit carry look-ahead architecture as a building block for wide word-length carry-select adder," *Microelectron. J.*, vol. 109, no.104992, 2021.
7. M. Hasan, A. H. Siddique, A. H. Mondol, **M. Hossain**, H. U. Zaman, and S. Islam, "Comprehensive study of 1-bit full adder cells: Review, performance comparison and scalability analysis," *SN Applied Sciences*, vol. 3, 2021.
8. F. I. Sakib, M. A. Hasan, and **M. Hossain**, "Exploration of negative capacitance in gate-all-around Si nanosheet transistors," *IEEE Trans. Electron. Devices*, vol. 67, pp. 5236-5342, 2020.
9. S. Zaman and **M. Hossain**, "Broadband light absorption by metal nanoparticle or quantum dot-coated silicon nanostructures for solar cell applications," *OSA Continuum*, vol. 3, pp. 3082-3093, 2020.
10. M. Hasan, F. Mayo, M. S. Hossain, R. Ahmed, **M. Hossain**, K. Ali, and S. Islam, "Plasmonic corrugated waveguide coupled to rectangular-nanoresonator as tunable optical filter," *OSA Continuum*, vol. 3, pp. 3314-3323, 2020.
11. M. A. Khan, P. Paul, M. Rashid, **M. Hossain**, and M. A. R. Ahad, "An AI-based visual aid with integrated reading assistant for the completely blind," *IEEE Trans. Human-Mach. Syst.*, vol. 50, pp. 507-517, 2020.
12. M. Hasan, H. U. Zaman, **M. Hossain**, P. Biswas, and S. Islam, "Gate diffusion input technique based full swing and scalable 1-bit hybrid full adder for high performance applications," *Eng. Sci. Technol. Int. J.*, vol. 23, pp. 1364-1373, 2020.
13. M. A. Hasan, S. S. Nishat, **M. Hossain**, and S. Islam, "Influence of device parameters on performance of ultra-scaled graphene nanoribbon field effect transistor," *ECS J. Solid State Sci. Technol.*, vol. 9, 121006, 2020.
14. M. Hassan, A. H. Mondol, **M. Hossain**, H. U. Zaman, and S. Islam, "High-performance design of a 4-bit carry look-ahead adder in static CMOS logic," *Indonesian Journal of Electrical Engineering and Informatics (IJEI)*, vol. 8, pp. 666-673, 2020.
15. F. I. Sakib, F. E. Mullick, S. Shahnewaz, S. Islam, and **M. Hossain**, "Influence of device architecture on the performance of negative capacitance MFIS transistors," *Semicond. Sci. Technol.*, vol. 35, 025005, 2019.
16. M. Hasan, M. J. Hussein, **M. Hossain**, H. U. Zaman, and S. Islam, "Design of a scalable low-power 1-bit hybrid full adder for fast computation," *IEEE Trans. Circuits Syst. II Express Briefs*, vol. 67, pp. 1464-1468, 2019.
17. A. Paro, **M. Hossain**, T. J. Webster, and M. Su, "Monte Carlo and analytic simulations in nanoparticle-enhanced radiation therapy," *Int. J. Nanomedicine*, vol. 11, pp. 4735-4741, 2016.
18. Y. Luo, C. Wang, P. Peng, **M. Hossain**, T. Jiang, W. Fu, Y. Liao, and M. Su, "Visible light mediated killing of multidrug-resistant bacteria using photoacids," *J. Mater. Chem. B*, vol. 1, pp. 997-1001, 2013.
19. Y. Luo, **M. Hossain**, C. Wang, Y. Qiao, L. Ma, and M. Su, "Targeted nanoparticles for enhanced X-ray radiation killing of multidrug-resistant bacteria," *Nanoscale*, vol. 5, pp. 687-694, 2013.
20. **M. Hossain**, and M. Su, "Nanoparticle location and material dependent dose enhancement in X-ray radiation therapy," *J. Phys. Chem. C*, vol. 116, pp. 23047-23052, 2012.
21. **M. Hossain**, Y. Luo, Z. Sun, C. Wang, M. Zhang, H. Fu, and M. Su, "X-ray enabled detection and eradication of circulating tumor cells with nanoparticles," *Biosens. Bioelectron.*, vol. 38, pp. 348-354, 2012.

22. Y. Luo, C. Wang, **M. Hossain**, Y. Qiao, L. Ma, J. An, and M. Su, "Three-dimensional microtissue assay for high-throughput cytotoxicity of nanoparticles," *Anal. Chem.*, vol. 84, pp. 6731-6738, 2012.
23. Y. Luo*, **M. Hossain***, C. Wang, Y. Qiao, L. Ma, and M. Su, "On-chip radiation biodosimetry with three-dimensional microtissues," *Analyst*, vol. 137, pp. 3441-3444, 2012. [***equal contribution**]
24. Y. Luo, C. Wang, Y. Qiao, **M. Hossain**, L. Ma, and M. Su, "In vitro cytotoxicity of surface modified bismuth nanoparticles," *J. Mater. Sci. Mater. Med.*, vol. 23, pp. 2563-2573, 2012.
25. C. Wang, Y. Hong, M. Zhang, **M. Hossain**, Y. Luo, and M. Su, "Thermal fingerprint of silica encapsulated phase change nanoparticles," *Nanoscale*, vol. 4, pp. 3237-3241, 2012.
26. **M. Hossain**, C. Wang, and M. Su, "Multiplexed biomarker detection using x-ray fluorescence of composition-encoded nanoparticles," *Appl. Phys. Lett.*, vol. 97, no. 26, 2010.
27. C. Wang*, **M. Hossain***, L. Ma, Z. Ma, J. Hickman and M. Su, "Highly sensitive thermal detection of thrombin using aptamer-functionalized phase change nanoparticles," *Biosens. Bioelectron.*, vol. 26, pp.437-443, 2010. [***equal contribution**]
28. C. Wang, L. Ma, **M. Hossain**, M. Zhang, H. Wang, S. Zou, J. Hickman, and M. Su, "Direct visualization of molecular scale chemical adsorptions on solids using plasmonic nanoparticle arrays," *Sensor Actuat B-Chem.*, vol. 150, pp. 667-672, 2010.

Selected Conference Proceedings/Presentations

1. S. Cynthia, R. Ahmed, S. Islam, K. Ali, and **M. Hossain**, "Mid-infrared biosensors with grating coupled graphene based hyperbolic metamaterial", *2021 OSA Optical Sensors and Sensing Congress*, Vancouver, Canada, (2021)
2. M.A. Hasan, F.I. Sakib, and **M. Hossain**, "Performance comparison of negative capacitance in Si nanowire and nanosheet field effect transistors", *2021 Virtual MRS Spring Meeting and Exhibit-Symposium, EL09-Ferroelectricity and Negative Capacitance—Fundamentals, Applications and Controversies*, Seattle, WA, USA, (2021).
3. S. Zaman, and **M. Hossain**, "Nanostructured-Gratings for Enhanced Light Absorption in Ultra-Thin Crystalline Si Solar Cells" *11th International Conference on Electrical and Computer Engineering (ICECE 2020)*, Dhaka, Bangladesh, (2020).
4. M. A. Khan, M. Rashid, S.M. A. Ahad, P. Paul, **M. Hossain**, and M.A.R. Ahad, "Vision-based visual aid and reading assistant for blind*", *1st National Workshop on Big Data and Machine Learning (BDML 2020)*, Chittagong, Bangladesh, (2020). * **The 3rd Best Idea Award**.
5. Q. R. Islam, J. Tyson, S. Islam, T. Rahman, S.A. Boden, and **M. Hossain**, "Bunched silicon nanowires for enhanced light trapping in solar cells," *The Photovoltaic Science, Application and Technology Conference (PVSAT-15)*, Warwick, UK, (2019).
6. S. Shuvo, **M. Hossain**, Z. R. Khan, H. Jones, R. Gadhoke, A. Gupta, W. MacLeod, T. Rahman, S. A. Boden, M. T. Chowdhury, "Design and analysis of a low cost IoT based data logging system for solar PV monitoring," *The Photovoltaic Science, Application and Technology Conference (PVSAT-15)*, Warwick, UK, (2019).
7. **M. Hossain**, G. Subramanian, D. Triyoso, J. A. Wahl, T. Mcardle, R. Hayan, A. Vaid, A. F. Bello, W. T. Lee, M. Klare, M. Kwan, H. Pois, Y. Wang, and T. Larson, "XPS-XRF hybrid metrology enabling FDSOI process," *SPIE Advanced Lithography*, San Jose, California, USA, (2016).
8. A. Vaid, G. Iddawela, S. Mahendrakar, M. Lenahan, Y. Ramnath, M. Hossain, A.F. Bello, C. Bozdog, H. Pois, W.T. Lee, M. Klare, M. Kwan, P. Isbester, M. Sendelbach, N. Yellai, and T. Larson, "Hybrid-enabled thin film metrology using x-ray and optical," *SPIE Advanced Lithography*, San Jose, California, USA, (2016).
9. J. Shu, Z. Sun, Y.B. Lee, J. Palazzo, Z. Bayindir, **M. Hossain**, S. Choi, J. Rullan, and H. Liu, "Selectivity Characterization and Enhancement of Metal-organic chemical vapor deposited (MOCVD) selective cobalt cap for advanced back end of line," *American Vacuum Society (AVS) 61st International Symposium & Exhibition*, Baltimore, Maryland, USA, (2014).
10. G. Subramanian, **M. Hossain**, C. Yen, A. Elia, and A. F. Bello, "Metal Gate Metrology Enabled by XPS Measurements with Data Feed Forward," *SEMICON West*, San Francisco, California, USA, (2014).

11. H. Fu, **M. Hossain**, Z. Sun, Y. Luo, M. Zhang, and M. Su, "Nanoparticle enabled capture, detection and killing of circulating tumor cells," *4th Annual Symposium on Nanoscience and Nanotechnology (NanoFlorida 2011)*, Miami, Florida, USA, (2011).
12. Y. Luo, Z. Sun, Y. Qiao, M. Zhang, M. Hossain, L. Ma, and M. Su, "In vitro cytotoxicity of surface-modified bismuth nanoparticles," *4th Annual Symposium on Nanoscience and Nanotechnology (NanoFlorida 2011)*, Miami, Florida, USA, (2011).
13. C. Wang, Z. Ma, **M. Hossain**, and M. Su, "Visual detection of mercury vapor using plasmonic nanoparticle array," *Sensors, 2010 IEEE* pp. 323-326, Waikoloa, Hawaii, USA, (2010).
14. F. Jahan, **M. Hossain**, M. A. Uddin, T. N. Upal, and Z. H. Mahmood, "Effect of layer thickness, alloy composition and temperature on charge density at $\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$," *International Conference on Advances in Materials and Processing Technologies (AMPT)*, Kuala Lumpur, Malaysia, (2009).
15. T. N. Upal, M. A. Uddin, **M. Hossain**, F. Jahan, and Z. H. Mahmood, "Study of charge density at $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ heterostructure interface," *2nd International Workshop on Electron Devices and Semiconductor Technology (IEDST 2009)*, Mumbai, India, (2009).
16. M. O. Islam, M. R. Islam, **M. Hossain**, M. Akhir, M. A. Uddin, T. N. Upal, and Z. H. Mahmood, "InN: The Material For Future High Speed Electronic and Optoelectronics Devices," *9th International Conference on Fiber Optics and Photonics (Photonics 2008)*, Delhi, India, (2008).
17. **M. Hossain**, A. F. Rabbi, and Z. H. Mahmood, "GaN for Communication Devices," *8th International Conference on Optoelectronics, Fiber Optics and Photonics (Photonics 2006)*, Hyderabad, India, (2006).
18. **M. Hossain**, A. F. Rabbi, and Z. H. Mahmood, "GaN as Optoelectronic and Photonic Devices," *8th International Conference on Optoelectronics, Fiber Optics and Photonics (Photonics 2006)*, Hyderabad, India, (2006).
19. **M. Hossain**, A. F. Rabbi, and Z.H. Mahmood, "Perspective of Quantum Dot and Quantum Wire Devices," *8th International Conference on Optoelectronics, Fiber Optics and Photonics (Photonics 2006)*, Hyderabad, India, (2006).

Book Chapter

1. Z. Ma, Y. Hong, S. Ding, M. Zhang, **M. Hossain**, and M. Su, "Three-dimensional micro/nanomaterials generated by fiber-drawing nonmanufacturing," *Three dimensional nanoarchitectures: Designing next-generation devices*, pp.117-132, Springer, 2011.

US Patent

1. C. Bozdog, A. Vaid, S. Mahendraker, **M. Hossain** and T. Kagalwala, "Measurement system and method for measuring in thin films," **United States Patent No: US 10.030,971 B2**, ISSUED, July 24, 2018.

Invited Talks

1. **Invited Talk:** "Hyper-scaling for Emerging Nanoelectronic Device," 2nd International Conference on Robotics, Electrical and Signal Processing Techniques (iCREST`21), Dhaka, Bangladesh, Jan 2021.
2. **Public Lecture:** "Seeing the Light," on occasion of International Light Day, Society for the Popularization of Science in Bangladesh (SPSB), Dhaka, Bangladesh, May 2020
3. **Seminar Talk:** "Nanoscale Devices-Industry and Beyond," Centre for Nanoscience and Engineering (CeNSE), Indian Institute of Science (IISc), Bangalore, India, Jan. 2020.
4. **Invited Talk** "Keeping Moore`s Law Alive-An Industry Perspective," Department of Physics, University of Dhaka, Bangladesh, Nov. 2018.
5. **Public Lecture:** "Applications of Light in Nanotechnology," on occasion of International Light Day, Society for the Popularization of Science in Bangladesh (SPSB), Dhaka, Bangladesh, May 2018.
6. **Invited Talk:** "Nanoparticle aided X-ray Radiation Modality for Cancer Diagnosis and Treatment and Emerging Smart-Phone Based Platforms for Point-of-Care Diagnosis in Low Resource Settings" International Conference on Nanotechnology and Condensed Matter Physics (ICNCMP), Dhaka, Bangladesh, Dec. 2017.

Academic and Professional Service

Academic Roles

Student Advisor: *Department of EEE, University of Dhaka, Dhaka-1000, Bangladesh* (Jun. 2019 – Nov. 2019)

Seminar-in-Charge: *Department of EEE, University of Dhaka, Dhaka-1000, Bangladesh* (Jan. 2019 – Nov. 2019)

Journals

Journal Reviewer: *ACS Analytical Chemistry, Journal of Nanomaterials, IEEE Transactions in Nanotechnology*

Conference Organization

Technical Program Co-Chair:

[*2nd International Conference on Innovation in Engineering and Technology \(2019\)*](#)

- Managed all conference organization efforts for article submission, review and final selection for 200+ national and international participants, including planning of technical sessions, inviting renowned plenary speakers, arranging for student travel and awards, planning and leading technical program committee, and so forth.

Technical Program Committee, Member:

[*1st International Conference on Innovation in Engineering and Technology \(2018\)*](#)

- Managed all conference organization efforts for article submission, review and final selection for 200+ national and international participants, including planning of technical sessions, inviting renowned plenary speakers, arranging for student travel and awards, planning and leading technical program committee, and so forth.

Publicity Chair:

[*1st International Conference on Materials Science and Semiconductor Devices \(2018\)*](#)

- Managed all conference organization efforts for publicity circulation, article submission, review and final selection for 100+ national and international participants, including planning of technical sessions, inviting renowned plenary speakers, arranging for student travel and awards, planning and leading technical program committee, and so forth.

Workshop Organizer:

[*International Workshop on Artificial Intelligence & Applications \(IWAIA\) \(2017\)*](#)

- Contributed to all conference organization efforts for international meeting of 50+ attendees.

Professional Societies

- Institute of Electrical and Electronics Engineers (IEEE)
 - Member (2018 – present)
 - Student Member (2009 – 2013)
- Materials Research Society (MRS)
 - Student Member (2009 – 2013)
- Optical Society of America (OSA)
 - Member (2021 – present)
- National Young Academy of Bangladesh (NYAB)
 - Member (2020 – present)

Research and Professional Experience

University of Dhaka, Dhaka, Bangladesh

Assistant Professor, Department of Electrical & Electronic Engineering

Aug 2019 – Present

- Supervise, advise, and mentor students towards the completion of their degrees.
- Direct research program on nanoelectronics and nanophotonic devices for diverse applications.
- Support the teaching mission of the university in both undergraduate and graduate education.
- Serve the academic community through committee work, both research and administrative in nature.
- Establish and maintain international recognition for students/research coming out of the lab.

University of Dhaka, Dhaka, Bangladesh

Lecturer, Department of Electrical & Electronic Engineering

Oct 2017 – Aug 2019

- Supervise, advise, and mentor students towards the completion of their degrees.
- Direct research program on nanoelectronics and nanophotonic devices for diverse applications.
- Support the teaching mission of the university in both undergraduate and graduate education.
- Serve the academic community through committee work, both research and administrative in nature.
- Establish and maintain international recognition for students/research coming out of the lab.

Indian Institute of Science (IISc.) Bangalore, India*India Science Research Fellow (ISRF), Centre for Nano Science and Engineering (CeNSE)* Nov 2019 – Apr 2020

- Fabricated and characterized 2D materials-based homojunction FETs for pH sensing.
- Fabricated and characterized the first 2D materials-based heterojunction FETs for pH sensing.
- Co-supervised Ph.D. student for research in emerging nanoelectronic devices.

Globalfoundries, US Inc., Malta, New York, USA*Principal Engineer, Advanced Module Engineering (AME)-Metrology* Jun 2014 – Oct 2017

- Lead metrology engineering team for developing state-of-the-art XPS/XRF and HRXRD solutions for characterization of next generation high-k metal gate and epitaxial/implant processes for 32 nm (IBM), 28 nm (IBM/AMD), 14 nm (Globalfoundries/Samsung/IBM), 7nm (Globalfoundries), 22 nm FDSOI (Globalfoundries) and beyond CMOS devices.
- Developed hybrid metrology techniques for characterizing 7nm and beyond FinFET, nanowire and NCFET processes.
- Implemented and enhanced skills in design of experiments (DOE), debugging, statistical process control (SPC), statistical data analysis with JUMP (JMP), and project management.

Globalfoundries, US Inc., Malta, New York, USA*Senior Engineer, Advanced Module Engineering (AME)-Metrology* Jan 2013 – Jun 2014

- Metrology lead for developing HRXRD, XRF and XRR solutions for 20nm and beyond CMOS technology nodes. Tool owner for HRXRD, XRR and XRF tools and backup tool owner for XPS tool sets.
- Implemented and enhanced skills in design of experiments (DOE), debugging, statistical process control (SPC), data analysis with JUMP (JMP), and project management.

Globalfoundries, US Inc., Malta, New York, USA*Co-Op Engineer, Thin Films Metrology (Technology Development)* Aug 2012 – Nov 2012

- Qualified the first-of-a-kind HRXRD for high volume manufacturing.

University of Central Florida, Orland, Florida, USA*Graduate Research Fellow, NanoScience Technology Center (NSTC)* Aug 2009 – Dec 2012
School of Electrical Engineering and Computer Science (EECS)

- Design and fabrication of an integrated platform for cancer detection and treatment using characteristic X-ray fluorescence signal from bio-conjugated metallic nanoparticles.
- Design and fabrication of an on-chip radiation dosimeter based on three dimensional micro tissues.
- Using numerical and Monte Carlo simulations to investigate dose enhancements in nanoparticle aided X-ray radiation therapy.

Teaching Experience**University of Dhaka, Dhaka, Bangladesh***Assistant Professor, Department of Electrical & Electronic Engineering* Aug 2019 – Present

- **EEE 5115 (Fall 2020): Characterization of Materials and Semiconductors**
Taught graduate-level course on electrical, optical, chemical, and physical characterization of materials and semiconductor devices.
- **EEE 4134 (Fall 2020): VLSI Design-I Laboratory**
Taught undergraduate-level (senior) lab classes on introductory VLSI circuit design and implementation.
- **Physics 1202 (Fall 2019, Fall 2020): Optics Laboratory**
Taught undergraduate-level (freshman) lab classes on Optics.
- **EEE 5110 (Fall 2019): Nanomaterials**
Taught graduate-level course on properties and advanced applications of nanomaterials.

University of Dhaka, Dhaka, Bangladesh*Part-time Faculty, Department of Nuclear Engineering* Jul 2019 – Nov 2019

- **NE 4109 (Fall 2019): Introduction to Nanoscience and Nanotechnology.**
Taught undergraduate level introductory course on the foundations and applications of nanoscience and nanotechnology in nuclear engineering.

University of Dhaka, Dhaka, Bangladesh*Lecturer, Department of Electrical & Electronic Engineering* Oct 2017 – Aug 2019

- **EEE 3109 (Spring 2018, Spring 2019): Electronic Devices**
Taught core undergraduate-level (junior) course on semiconductor device physics.
- **EEE 5106 (Fall 2018): Solid State Physics**
Taught core graduate-level course on advanced theories of solid-state physics.
- **EEE 4105 (Spring 2018): Materials Science**
Taught core undergraduate-level (senior) course on advanced concepts in materials science.

- **EEE 4134 (Spring 2018, Fall 2018, Spring 2019): VLSI Design-I Laboratory**
Taught undergraduate-level (senior) lab classes on introductory VLSI circuit design and implementation.
- **Physics 1202 (Fall 2018): Optics Laboratory**
Taught undergraduate-level (freshman) lab classes on Optics.

Referees

Ming Su, Ph.D.

Professor & Associate Chair of International Collaborations,
Department of Chemical Engineering
Northeastern University, Boston, MA, USA
E-mail: m.su@northeastern.edu
Phone: +1-617-373-6219
Website: <https://coe.northeastern.edu/people/su-ming/>

Myungsun Kim, Ph.D.

Senior Member of Technical Staff,
Applied Materials, San Francisco, CA, USA
Email: stefan76kim@gmail.com
Phone: +82-10-3547-5488
Website: [linkedin.com/in/myungsun-kim-phd-26199742](https://www.linkedin.com/in/myungsun-kim-phd-26199742)

Navakanta Bhat, Ph.D.

Professor, IEEE Fellow,
Centre for Nano Science and Engineering (CeNSE)
Indian Institute of Science (IISc), Bangalore, India
E-mail: navakant@iisc.ac.in
Phone: +91-80-22933312
Website: <http://www.cense.iisc.ac.in/navakanta-bhat>