Ariful Haque, PhD
Curriculum Vitae

Current Position: Assistant Professor of Electrical Engineering, Texas State University, San Marcos, TX 78640

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Education

Doctor of Philosophy
Dual majors: Electrical Engineering *Graduation- 2020*
and Materials Science and Engineering
North Carolina State University, Raleigh, NC, USA

Master Nanoengineering- Nanoelectronics & Nanophotonics *Graduation- 2019*
North Carolina State University, Raleigh, NC, USA

Master of Science, Materials Science *Graduation- 2015*
Missouri State University, Springfield, MO, USA

Bachelor of Science, Electrical and Electronic Engineering *Graduation- 2012*
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

Research Interest

Ultrawide Bandgap (UWBG) semiconductor fabrication and characterization, UWBG semiconductor doping, Electron field emission devices, fabrication and characterization of Graphene and Graphene Oxide, Nano-materials, Diamond, Heterostructure of CNT and diamond, Laser-solid interaction, NV centers in diamond for quantum computing/sensing, and PVD and CVD deposition.

Funding

As PI and co-PI I received over $11.3M research funding from agencies like National Science Foundation (NSF), US Army Research Office, US Office of Naval Research and Texas Institute of Electronics. Details are provided below.

Experiences

Assistant Professor Sept 2021-Present
Assistant Professor of Electrical Engineering, Texas State University, San Marcos, TX 78640

Technology Development Engineer April 2020- Sept 2021
Logic Technology Development, INTEL Corporation, Hillsboro, Oregon 97124 USA

Student and Postdoctoral Researchers mentored at Texas State University

- Mentored and graduated 2 Ph.D. students, 8 M.S. students, and supervised 4 postdoctoral research associates at Texas State University.
- Currently mentoring 2 postdoctoral research associates, 5 Ph.D. students, 6 M.S. students, and 4 undergraduate student researchers across multidisciplinary research projects.

Professional Experience, Services and Awards

- Advisory Board Member, Microelectronics US Conference 2026.

- Technical Committee Member IEEE EDS -Electronic Materials (2025-Present)
- Member of the Organizing Committee, Electronic Materials Conference 2026
- Member of the Organizing Committee, IEEE Wireless Communications and Networking Conference, 2022
- Panel Member of the Proposal Review, National Science Foundation (4 different panels, 2023-2025)
- Award / Honor Recipient: 2024-25' Texas State University Alpha Chi Honor Society Favorite Professor.

- **Editorships**
  1. Associate Editor, IEEE Electron Device Magazine.
  2. Associate Editor, Frontiers in Carbon.

- **Ad hoc Reviewer (Journals)**
  1. IEEE journal of photovoltaics,
  2. Carbon,
  3. Scientific reports
  4. ACS materials & interfaces
  5. Applied physics A
  6. Journal of crystal growth
  7. Applied physics research
  8. Applied surface science
  9. Solid state communications
  10. Journal of magnetism & magnetic materials
  11. Journal of alloys & compounds
  12. Materials Chemistry C
  13. Coatings
  14. C - Journal of Carbon Research
  15. Chemical physics letter
  16. Diamond & related materials
  17. Thin solid films
  18. Surface & coatings technology
  19. Research & development in material Science
  20. Materials Science & Engineering B
  21. Journal of materials science research
  22. Composite science & technology
  23. Surface & Interface
  24. JOM
- **Invited talk**
  1. 'Diamond and Q-carbon in Electron Field Emission and Electrocatalysis Applications', Seminar series, Department of Physics, Astronomy & Materials Science, Missouri State University, 2020.

Grants and Contracts:

1. Haque, Ariful (Principal), Percent Contribution: 100%. ERI: Integration of Diamond with Ga2O3 for High Performance Applications, National Science Foundation, Federal, $199,997.00. (Submitted: September 16, 2023, Funded: 2024 - 2026). Grant.
2. Haque, Ariful, Droopad, Ravindranath, Holtz, Mark W, Piner, Edwin L, Geerts, Wilhelmus J, Chen, Yihong, Hudnall, Todd W, Wistey, Mark A, Miyahara, Yoichi, Smith, Casey Eben, Mahato, Dip Narayan, Rastogi, Shiva Kumar, Kim, Namwon. Acquisition of a state-of-the-art Photoluminescence Spectrometer for Materials Characterization in Research and Education, Department of Defense, Federal, $434,519.00. (Submitted: September 2023, Funded: 2024 - 2025). Grant.
3. Piner, Edwin L (Principal), Haque, Ariful (Co-Principal), Valles Molina, Damian (Co-Principal), Miyahara, Yoichi (Co-Principal), Droopad, Ravindranath (Supporting), Holtz, Mark W (Supporting), Scolfaro, Luisa M (Supporting), Miller, David R von (Supporting), Ahmed, Mohammad Iqbal (Supporting). Center for Ultrawide Bandgap Semiconductor Device Materials, National Science Foundation, Federal, $7,500,000.00. (Submitted: December 6, 2024, Funded: September 1, 2025 - August 31, 2029). Grant.
4. Droopad, Ravindranath (Principal), Jimenez, Jesus (Co-Principal), Percent Contribution: 20%, Haque, Ariful (Co-Principal), Percent Contribution: 20%, Londa, Michelle (Co-Principal), Percent Contribution: 20%. Texas Institute for Electronics (TIE) Next-Generation Microelectronics Manufacturing (NGMM) Center (TNC), DARPA, Federal, $1,625,000.00. (Funded: July 2024 - July 2029). Grant.
5. Droopad, Ravindranath (Principal), Percent Contribution: 20%, Haque, Ariful (Co-Principal), Percent Contribution: 35%, Scolfaro, Luisa M (Co-Principal), Percent Contribution: 20%, Valles Molina, Damian (Co-Principal), Percent Contribution: 25%. Integration of Diamond with Ultrawide Bandgap

Oxides: Growth, Characterization, and Modeling with Artificial Intelligence, Army Research Office, Federal, $1,000,000.00. (Submitted: November 2023, Funded: April 2025 - March 2029). Grant.

6. Miyahara, Yoichi (Principal), Satchell, Nathan David (Co-Principal), Holtz, Mark W (Co-Principal), Kim, Namwon (Co-Principal), Martin, Benjamin (Co-Principal), Chen, Yihong (Supporting), Theodoropoulou, Nikoleta (Supporting), Geerts, Wilhelmus J (Supporting), Piner, Edwin L (Supporting), Haque, Ariful (Supporting), Droopad, Ravindranath (Supporting), Mahato, Dip Narayan (Supporting), Smith, Casey Eben (Supporting). MRI: Track 1 Acquisition of state-of-the-art lithography system for micro/nanometer scale device fabrication in research and education, National Science Foundation, Federal, $569,780.00. (Submitted: November 14, 2023, Funded: September 1, 2024 - August 31, 2027). Grant.
7. Hudnall, Todd W (Principal), Kerwin, Sean Michael (Co-Principal), Peterson, Ryan Loren (Co-Principal), Shi, Xijun (Co-Principal), Schilter, David (Co-Principal), Haque, Ariful (Supporting), Droopad, Ravindranath (Supporting), Chen, Yihong (Supporting), Brittain, Bill (Supporting), Geerts, Wilhelmus J (Supporting), Kornienko, Alexander Vladimir (Supporting). MRI: Acquisition of a Single Crystal X-ray Diffractometer to Advance Structural Analysis in Chemical, Biochemical, and Material Sciences at Texas State University, National Science Foundation, Federal, $485,000.00. (Submitted: November 15, 2023, Funded: August 15, 2024 - July 31, 2027). Grant.
8. Haque, Ariful (Principal), Percent Contribution: 75%, Valles Molina, Damian (Co-Principal), Percent Contribution: 25%. Development of Pulsed Laser Annealing for Enhanced Doping and Phase Purity in Synthetic Diamonds for Advanced Electronic and Energy Applications, ORSP, Texas State University, $16,000.00. (Submitted: October 2024, Funded: January 2025 - May 2026). Grant.
9. Chen, Yihong (Principal), Percent Contribution: 50%, Haque, Ariful (Co-Principal), Percent Contribution: 50%. Run to R1 Postdoctoral Catalyst program, Texas State University, $128,000.00. (Funded: September 1, 2023 - August 31, 2025). Grant.
10. Haque, Ariful, Percent Contribution: 50%, Droopad, Ravindranath, Percent Contribution: 50%. Q-carbon Supercapacitors: Towards Durable, Safe, and Biocompatible Energy Storage Devices, ORSP, Texas State University, $16,000.00. (Submitted: October 2022, Funded: January 2023 - May 2024). Grant.
11. Haque, Ariful (Principal), Percent Contribution: 100%. Novel carbon nanostructures for enhanced electron field emission, ORSP, Texas State University, $15,000.00. (Funded: June 2022). Grant.