Department of Electrical and Electronic Engineering
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Arefin Ahamed Shuvo
Assistant Professor
Research Areawide and ultra-wide bandgap Semiconductor Devices, High-electron moblity transistors (HEMTs), FET Devices, Energy harvesting devices and Nanogenerators.

Biography

I am **Arefin Ahamed Shuvo**, currently serving as an assistant professor in the Department of Electrical and Electronic Engineering at Khulna University of Engineering & Technology (KUET), Bangladesh. My research interests encompass UWBG channel HEMT, power switching devices, energy harvesting devices, nanogenerators, and self-powered devices.

I have completed both my Bachelor of Science (BSc) and Master of Science (MSc) degrees in Electrical and Electronic Engineering from Khulna University of Engineering & Technology (KUET). During my BSc final year, I focused on the design of AlGaN/AlGaN-based ultra-wide-bandgap HEMT using SILVACO TCAD, a project that was later published in the Journal of Computational Electronics. My MSc thesis involved investigating 2D material functionalized polymers and their integration into triboelectric nanogenerators to enhance performance, utilizing COMSOL Multiphysics. This work was published in ACS Applied Electronic Materials.

Looking ahead, I am eager to continue expanding my knowledge and contributing to advancements in semiconductor research. My goal is to drive innovation in semiconductor device technology, addressing critical challenges and paving the way for new applications in this rapidly evolving field.

Education

Master of Science in Electrical and Electronic Engineering
Khulna University of Engineering & Technology, Khulna,Bangladesh(2019-2022)
Thesis Title: **Theoretical Analysis of High Performance Triboelectric Nanogenerators Based on Functionalized Polymers**
Bachelor of Science in Electrical and Electronic Engineering
Khulna University of Engineering & Technology,Bangladesh(2015-2019)Achievement:Technical Scholarship, Deans Award
Higher Secondary Certificate
Saidpur Govt. Science College,Bangladesh(2012-2014)Achievement:Dinajpur Board Scholarship
Secondary School Certificate
Lions School & College, Saidpur,Bangladesh(2010-2012)Achievement:Dinajpur Board Scholarship

Service Records

- **Assistant Professor**
  Department/Section: Electrical and Electronic Engineering
  Khulna University of Engineering & Technology *From 23-03-2023 to 01-01-1970*
- **Lecturer**
  Department/Section: Electrical and Electronic Engineering
  Khulna University of Engineering & Technology *From 16-02-2020 to 23-03-2023*

Research Interest

wide and ultra-wide bandgap Semiconductor Devices, High-electron moblity transistors (HEMTs), FET Devices, Energy harvesting devices and Nanogenerators.

Publication

Books

Journals

2. A. A. Shuvo, A. G. Bhuiyan and M. S. Islam, "Finite Element Modeling of MXene/PVDF-Based High-Performance Triboelectric Nanogenerators for Self-Powered Wearable Electronics," ***ACS Applied Electronic Materials*** , American Chemical Society, vol. 6, no.6, DOI:10.1021/acsaelm.4c00534, June 4, 2024 .

1. A. A. Shuvo, M. R. Islam and M. T. Hasan, "Ultrawide-bandgap AlGaN-based HEMTs for high-power switching," ***Journal of Computational Electronics*** , Springer, vol. Volume 19, DOI:10.1007/s10825-020-01532-3, 17 June, 2020 .

Conference

3. P. B. Tirtha, M. M. Fuad, A. A. Shuvo, M. F. Mituand A. G. Bhuiyan, "Effect of Fin-width on the DC Performance of AlGaN/GaN Fin-HEMTs," ***2023 6th International Conference on Electrical Information and Communication Technology (EICT)***, IEEE, 13 February 2024 .

2. S. Hazra, A. A. Shuvo and A. G. Bhuiyan, "Electrical Characteristics of Dual Gate AlGaN/GaN High-Electron Mobility Transistors," ***2021 5th International Conference on Electrical Information and Communication Technology (EICT)***, IEEE, December,2021 .

1. S. Sheikh, A. A. Shuvo and A. G. Bhuiyan, "Effects of Structural Variation for Improved Performance of a Vertical AlGaN/GaN Superjunction HEMT," ***2021 5th International Conference on Electrical Engineering and Information & Communication Technology (ICEEICT)***, IEEE, November,2021 .