



Department of Mechatronics Engineering
Khulna University of Engineering & Technology
Khulna - 9203, Tel:041-769471 (191); Fax :041-774403



Biography

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Sourav Roy

Assistant Professor

Research Area Optoelectronic Device, III-V, III-N, Perovskite, Polymer & Dye-based Photovoltaic System Design, MPP tracking algorithm, Particle Swarm Optimization, Polarization-mode Dispersion, Embedded System Design

Education

Master of Science in Electrical & Electronic Engineering

Khulna University of Engineering & Technology ,Bangladesh(2015-2017)

Thesis Title: [Crystallographic Orientation-dependent Optoelectronic Properties of InGaN/GaN Blue Laser](#)

Bachelor of Science in Electrical & Electronic Engineering

Khulna University of Engineering & Technology ,Bangladesh(2009-2014)

CGPA 3.75/more for consecutive 8 semesters

Higher Secondary Certificate

Khulna Public College ,Bangladesh(2007-2009)

BUET Merit Position:908; Total seat: 910+55(Reserved) && KUET Merit position:31; Total seat: 540+5(Reserved)

Secondary School Certificate

Rotary School, Khalishpur, Khulna ,Bangladesh(2005-2007) Achievement:Golden A+

Service Records

- **Lecturer**
Department/Section: Electrical and Electronic Engineering
European University of Bangladesh From 01-01-1970 to 01-01-1970
Responsibility:Teaching at UG Level
- **Lecturer**
Department/Section: Electrical and Electronic Engineering
Varendra University From 01-01-1970 to 01-01-1970
Responsibility:Teaching at UG level
- **Lecturer**
Department/Section: Electrical and Electronic Engineering
Jessore University of Science & Technology From 01-01-1970 to 01-01-1970
Responsibility:Teaching & Research
- **Assistant Professor**
Department/Section: Electrical and Electronic Engineering
Jessore University of Science & Technology From 01-01-1970 to 01-01-1970
Responsibility:Teaching & Research
- **Assistant Professor**
Department/Section: Mechatronics Engineering
Khulna University of Engineering & Technology From 01-01-1970 to 01-01-1970
Responsibility:Teaching and Research

Research Interest

Optoelectronic Device, III-V, III-N, Perovskite, Polymer & Dye-based Photovoltaic System Design, MPP tracking algorithm, Particle Swarm Optimization, Polarization-mode Dispersion, Embedded System Design

RG Website: https://www.researchgate.net/profile/Sourav_Roy14

 <https://orcid.org/0000-0001-5739-2525>

Scopus Profile: <https://www.scopus.com/authid/detail.uri?authorId=56605693700>

Publication

Books

Journals

13. (2022) , " Influence of spin-orbit coupling and biaxial strain on the inorganic lead iodide perovskites, APbI₃ (A = K, Rb, and Cs)," **Journal of Physics and Chemistry of Solids**, Elsevier , pp.110919
12. (2022) , " Comparative investigation into polarization field-dependent internal quantum efficiency of semipolar InGaN green light-emitting

- diodes: A strategy to mitigate green gap phenomenon," **Materials Today Communications**, Elsevier , vol31, pp.103705
11. (2022) , " Comparative investigation into key optoelectronic characteristics of semipolar InGaN blue laser diodes: A strategy to mitigate quantum-confined stark effect," **Results in Physics**, Elsevier , vol34, pp.105246
10. (2021) , " Plasmonic Sensor based on Microstructure PCF: Performance Analysis with Outside Detecting Approach," **Optical and Quantum Electronics**, Springer , vol54, no.58
9. (2022) , " Impact of strain on the electronic, phonon, and optical properties of monolayer transition metal dichalcogenides XTe₂ (X=Mo and W)," **Physica Scripta**, IOPscience
8. Roy,S. , Rahman,M. S. , Kundu,D. , Piata,F. A. and Islam,M. R. (2022) , " Numerical investigation into photovoltaic performance of organolead trihalide perovskite quantum dot intermediate band solar cell," **Materials Science Forum**, Trans Tech Publications, vol1048, pp.172-181
7. (2021) , " Key Photovoltaic Parameters of Organohalide Lead Perovskite Quantum Dot Intermediate Band Solar Cell: A Numerical Investigation," **Materials Today Communications**, Elsevier , vol29, pp.102884
6. (2021) , " Numerical Investigation into Optical and Electronic Performance of Crystal Orientation-dependent InGaAs/InP Near-Infrared Laser ," **Results in Physics**, Elsevier , vol26, pp.104353
4. (2021) , " Hybrid Structure Based High Performance SPR Sensor: A Numerical Approach of Structure Optimization for DNA Hybridization," **Optical and Quantum Electronics**, Springer , vol53, no.1, pp.24
3. (2020) , " Numerical Investigation into Optoelectronic Performance of InGaN Blue laser in Polar, Non-Polar and Semipolar Crystal Orientation," **Crystals**, vol10, no.11, pp.1033
2. Ahsan,S. T. ,Islam,M. and Roy,S. (2015) , " Crystallographic Orientation-dependent Optical Properties of InGaAs/GaAs Quantum Well Architecture by 4×4 Hamiltonian Matrix ," **The AIUB Journal of Science and Engineering**, AIUB , vol14, no.1, pp.89-95
1. Roy,S. ,Ahsan,S. T. and Kirtania,S. G. (2017) , " Optoelectronic Performance of Vertical Cavity Surface Emitting AlGaAs/GaAs QW Laser in Non-Conventional Orientation," **International Journal of Computer Applications**, Computer Science Foundation , vol176, no.6, pp.37-42

Conference

11. Roy,S. and Hossain,M. J. (5-7 June, 2020) , "Numerical Analysis of Lattice-matched InAlAs/InGaAsP/InGaAs based Triple-junction Solar Cell using MATLAB/Simulink," **IEEE TENSYP 2020** , IEEE
9. Roy,S. , Islam,M. R. , Hasan,M. M. and Hossain,S. A. (20-22 December, 2016) , "Crystallographic Orientation-Dependent Performance of 445nm InGaN Blue Laser," **9th International Conference on Electrical and Computer Engineering (ICECE)** , IEEE, pp.307-310
3. (4-6 Nov. 2015) , "A dual triangular cut resonator patch antenna for WLAN applications," **International Conference on Electrical & Electronic Engineering (ICEEE)** , IEEE