



Dr. Sajid Muhaimin Choudhury

Associate Professor, Department of EEE, BUET


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Brief Biography

RenderCV  is a LaTeX-based CV/resume version-control and maintenance app. It allows you to create a high-quality CV or resume as a PDF file from a YAML file, with **Markdown syntax support** and **complete control over the LaTeX code**.

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Quick Guide

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Education





Ph.D.	Purdue University , West Lafayette, IN, USA School of Electrical and Computer Engineering <ul style="list-style-type: none"> • Ph.D. Thesis: WAVEFRONT MANIPULATION WITH META-SURFACES BASED ON NEW MATERIALS • Ph.D. Co-supervisor(s): Alexandra Boltasseva and Alexander Kildishev 	Aug 2013 – Aug 2019
M.Sc.	Bangladesh University of Engineering and Technology (BUET) Department of Electrical and Electronic Engineering <ul style="list-style-type: none"> • M.Sc. Engg. Thesis: Design of a Fractal Antenna based on Hexaflake Fractal Structure • M.Sc. Engg. Supervisor: Dr. M. A. Matin 	Aug 2011 – 2013
B.Sc.	Bangladesh University of Engineering and Technology (BUET) Department of Electrical and Electronic Engineering <ul style="list-style-type: none"> • CGPA: 3.94/4.0 • Undergraduate Thesis: Design and Analysis of a Multiband Dual Feed Axially Symmetric Cassegrain Antenna System • Undergraduate Supervisor: Dr. M. A. Matin 	Dec 2004 – Aug 2010
H.S.C.	Notre Dame College , Dhaka <ul style="list-style-type: none"> • GPA: 5.00/5.00 	2004
S.S.C.	Udayan Uchchya Madhyamic Bidyalaya , Dhaka <ul style="list-style-type: none"> • GPA: 5.00/5.00 	2002

Experience

Associate Professor, Department of Electrical and Electronic Engineering (EEE) Bangladesh University of Engineering and Technology (BUET)	July 2022 – to date
Assistant Professor, Department of Electrical and Electronic Engineering (EEE) Bangladesh University of Engineering and Technology (BUET)	June 2013 – July 2022

Publications

Journal Articles

- [J24] M. M. Haque, M. R. Islam, and S. M. Choudhury. “Investigation of the physical properties through strain effect of monolayer silicon carbide material: DFT analysis”. In: *Physica B: Condensed Matter* 697 (2025), p. 416670. DOI: <https://doi.org/10.1016/j.physb.2024.416670>  URL: <https://www.sciencedirect.com/science/article/pii/S0921452624010111>.
- [J23] M. E. Karim, M. R. Karim, and S. M. Choudhury. “Synergizing deep learning and phase change materials for four-state broadband multifunctional metasurfaces in the visible range”. In: *Optics & Laser Technology* 181 (2025), p. 111730. DOI: <https://doi.org/10.1016/j.optlastec.2024.111730>  URL: <https://www.sciencedirect.com/science/article/pii/S0030399224011885>.
- [J22] M. A. H. Bhuiyan, P. Das, and S. M. Choudhury. “Polarization insensitive electrically reconfigurable meta-lens for the 2 μ m wavelength”. In: *Opt. Mater. Express* 14.12 (Dec. 2024), pp. 2830–2843. DOI: 10.1364/OME.540435  URL: <https://opg.optica.org/ome/abstract.cfm?URI=ome-14-12-2830>.
- [J21] M. E. Karim and S. M. Choudhury. “Sb₂S₃/AlGaAs based Reconfigurable Metasurface for Dynamic Polarization and Directionality Control of Quantum Emitter Emission”. In: *RSC Advances* 40 (2024). URL: <https://doi.org/10.1039/D4RA03726J>.
- [J20] P. Mahmud, K. F. Supti, and S. M. Choudhury. “Lithium niobate photonic topological insulator-based multi-wavelength optical demultiplexer with piezoelectric switch-off”. In: *Opt. Express* 32.26 (Dec. 2024), pp. 45786–45800. DOI: 10.1364/OE.541271  URL: <https://opg.optica.org/oe/abstract.cfm?URI=oe-32-26-45786>.
- [J19] M. H. Himel, B. Sikder, T. Ahmed, and S. M. Choudhury. “Biomimicry in Nanotechnology: A Comprehensive Review”. In: *NanoScale Advances* 5 (2023), pp. 595–614. URL: <https://doi.org/10.1039/D2NA00571A>.
- [J18] M. E. Karim and S. M. Choudhury. “Reconfigurable Broadband Metasurface with Switchable Functionalities in the Visible Range”. In: *Optical Materials Express* 13.5 (2023), pp. 1409–1423. URL: <https://doi.org/10.1364/OME.489981>.
- [J17] M. A. H. Bhuiyan, S. A. Mitu, and S. M. Choudhury. “TiN-GST-TiN all-optical reflection modulator for the 2 μ m waveband reaching 85% efficiency”. In: *Applied Optics* 61 (2022), pp. 9262–9270. URL: <https://doi.org/10.1364/AO.470247>.
- [J16] H. Roy, E. Karim, S. Mondal, and S. M. Choudhury. “Custom Gold-Patterned Rewritable Optical Disc based Plasmonic Sensor for Blood Hemoglobin Detection”. In: *Optics Continuum* 1.10 (2022). URL: <https://doi.org/10.1364/OPTCON.473106>.
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- [J12] H. Jiang, S. Choudhury, Z. A. Kudyshev, D. Wang, P. Xiao, Y. Jiang, and A. V. Kildishev. “Enhancing sensitivity to ambient refractive index with tunable few-layer graphene/hBN nanoribbons”. In: *Photonics Research* 7.7 (2019), pp. 815–822. URL: <https://doi.org/10.1364/PRJ.7.000815>.

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Conference Proceedings

- [C23] M. T. Alam, Y. Mahmud, Z. J. Nikita, and S. M. Choudhury. “Gesture Controlled Bot with Temperature & Humidity (TH) Sensing Features”. In: *2024 2nd International Conference on Information and Communication Technology (ICICT)*. 2024, pp. 36–40. DOI: 10.1109/ICICT64387.2024.10839649 [🔗](#).
- [C22] M. A. H. Bhuiyan, S. A. Mitu, and S. M. Choudhury. “VO₂-based All-optical Reflection Modulator for 2 μ mWaveBand”. In: *2023 IEEE Photonics Conference (IPC)*. 2023, pp. 1–2. DOI: 10.1109/IPC57732.2023.10360477 [🔗](#).
- [C21] S. A. Khan, S. T. Azad, T. Mondal, A. J. Bin Iqbal, and S. M. Choudhury. “Development of an Internet of Things based Bangla Calendar Clock”. In: *2023 26th International Conference on Computer and Information Technology (ICCIT)*. 2023, pp. 1–6. DOI: 10.1109/ICCIT60459.2023.10441436 [🔗](#).
- [C20] A. Mukit, M. S. H. Bijoy, S. M. Choudhury, and M. T. Mahmud. “Discrete Modulated Continuous-Variable Quantum Key Distribution: Security and Noise Tolerance Enhanced by Decoy States and Effective Error Correction Protocol Integration”. In: *2023 IEEE International Conference on Telecommunications and Photonics (ICTP)*. 2023, pp. 1–5. DOI: 10.1109/ICTP60248.2023.10490525 [🔗](#).

- [C19] K. R. Pritom, M. E. Karim, and S. M. Choudhury. “A Polarization Insensitive Achromatic Metalens Operating at Two Wavelengths in Visible Regime”. In: *2023 IEEE International Conference on Telecommunications and Photonics (ICTP)*. 2023, pp. 01–05. DOI: 10.1109/ICTP60248.2023.10491019 [↗](#).
- [C18] S. Sarkar and S. M. Choudhury. “Design and Performance Analysis of a c-Si Thin-Film Solar Cell Using Plasmonic Ag Nanostructures”. In: *2023 IEEE International Conference on Telecommunications and Photonics (ICTP)*. 2023, pp. 01–05. DOI: 10.1109/ICTP60248.2023.10490886 [↗](#).
- [C17] L. J. Prokopeva, H. Jiang, A. V. Kildishev, D. Wang, and S. Choudhury. “Computationally efficient surface conductivity graphene model for tunable graphene-based devices (Conference Presentation)”. In: *Proceedings of SPIE Volume 11282, SPIE OPTO, 2020, San Francisco, California, United States*. 2020, pp. 1–2. DOI: 10.1117/12.2547341 [↗](#).
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- [C10] J. Kim, Y. Zhao, A. Dutta, S. M. Choudhury, A. V. Kildishev, A. Alu, and A. Boltasseva. “Nanostructured Transparent Conducting Oxide Films for Polarization Control with Plasmonic Metasurfaces”. In: *CLEO: 2014*. Optica Publishing Group, 2014, FF2C.2. DOI: 10.1364/CLEO_QELS.2014.FF2C.2 [↗](#). URL: https://opg.optica.org/abstract.cfm?URI=CLEO_QELS-2014-FF2C.2.
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- [C7] S. M. Choudhury, M. A. Zaman, M. Gaffar, and M. A. Matin. “A Novel Approach for Changing Bandwidth of FSS Filter Using Gradual Circumferential Variation of Loaded Elements”. In: *Proceedings of Progress in Electromagnetic Research Symposium PIERS, Cambridge, USA*. 2010.
- [C6] S. M. Choudhury, M. Gaffar, M. A. Zaman, and M. A. Matin. “Design of an X band aperture matched horn antenna by optimization of back-lobe and cross-polarization level”. In: *International Conference on Electrical & Computer Engineering (ICECE 2010)*. 2010, pp. 550–553. DOI: 10.1109/ICECE.2010.5700751 [↗](#).
- [C5] M. Gaffar, S. M. Choudhury, M. A. Zaman, M. I. Momtaz, M. S. Alam, and M. A. Matin. “Sensitivity analysis of a circularly polarized U-slot microstrip antenna”. In: *International Conference on Electrical & Computer Engineering (ICECE 2010)*. 2010, pp. 546–549. DOI: 10.1109/ICECE.2010.5700750 [↗](#).

- [C4] M. A. Zaman, M. Gaffar, S. M. Choudhury, and M. A. Matin. “Optimization and analysis of a Ka band Pickett Potter horn antenna with low cross polarization”. In: *International Conference on Electrical & Computer Engineering (ICECE 2010)*. 2010, pp. 542–545. DOI: 10.1109/ICECE.2010.5700749 [↗](#).
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Patents

- [P2] E. Marinero-Caceres, A. Toppo, S. Choudhury, U. Guler, Z. Kudyshev, J. Pekny, S. Pol, H. Reddy, and V. Shalaev. “Thermophotovoltaic system and method of making the same”. US20210234498A1. July 29, 2021. URL: <https://patents.google.com/patent/US20210234498A1/en>.
- [P1] A. Shaltout, S. Choudhury, A. V. Kildishev, A. Boltasseva, and V. M. Shalaev. “System for producing ultra-thin color phase hologram with metasurfaces”. US9952557B2. Apr. 24, 2018. URL: <https://patents.google.com/patent/US9952557B2/en>.

Preprint / Manuscript Under Preparation

- [X3] M. M. Haque and S. M. Choudhury. “Design of Silicon-Carbide Based Single-Quantum-Well White LED”. Under review in *Heliyon*. 2024.
- [X2] A. Sarker and S. M. Choudhury. “Design of Dual-Band Plasmonic Absorber for Biomedical Sensing and Environmental Monitoring”. Submitted to Optics and Laser Technology. 2024. arXiv: 2411.12356 [physics.optics] [↗](#). URL: <https://arxiv.org/abs/2411.12356>.
- [X1] S. Sarker and S. M. Choudhury. “Efficiency Enhancement of c-Si/TiO₂ Heterojunction Thin Film Solar Cell Using Hybrid Metal-Dielectric Nanostructures”. Under review in *Solar Energy*. 2024.

Membership / Fellowship of Learned Societies, Professional Institutions and Other Noteworthy Affiliations ---

Senior Member, Institute of Electrical and Electronic Engineers (IEEE)

- Secretary, IEEE Bangladesh Section (July 2021 - May 2022)
- Chair, IEEE Young Professionals Bangladesh (Mar 2020 - Apr 2022)
- Chair, IEEE Graduates of the Last Decade (Jan 2013 - Dec 2013)
- Vice -Chair, IEEE Graduates of the Last Decade (Jan 2011 - Dec 2012)
- Student Activities Coordinator, IEEE Bangladesh Section (Jan 2011 - Dec 2012)
- Chair, IEEE BUET Student Branch (Jan 2008 - Aug 2009)
- Treasurer, IEEE BUET Student Branch (Jan 2007 - Dec 2008)

Member, IEEE Photonics Society

- Vice Chair, IEEE Photonics Society Bangladesh (April 2022 – to date)
- Founding Chair, IEEE Photonics Society Bangladesh (Mar 2021 – Apr 2022)

Member, The Optica

- Founding President, Optica Bangladesh Section May 2022 – to date
- Founding Moderator, BUET Optical and Photonics Society July 2022 – to date
- Treasurer, OSA Purdue Chapter, USA Jun 2016 – May 2017

Member, National Young Academy of Bangladesh (NYAB), April 2021 – to date

Life Member, American Alumni Association of Bangladesh (AAAB) , April 2024 – to date

Life Member, Association of BUET Alumni, April 2021 – to date

Student Activities at Purdue University, West Lafayette, IN, USA

- President, **Nanotechnology Student Advisory Council (NSAC)** (Jun 2017 – May 2018)
- Vice-President, **Nanotechnology Student Advisory Council (NSAC)** (Jun 2016 – May 2017)
- Treasurer, SPIE Purdue Chapter, USA (Jun 2015 – May 2016)
- President, Bangladesh Students Association (**Purdue BDSA**), USA (Jul 2017 – Jun 2018)
- Treasurer, Bangladesh Students Association (**Purdue BDSA**), USA (Jul 2015 – Jun 2017)

References

Available upon request