CURRICULUM VITAE

Mr. Surajit Bosu

Surajit Bosu is currently working as a faculty in the Department of Physics in Bankura Sammilani College, Bankura, West Bengal, India. He received his B.Sc. in Physics from Saldiha College (under the The University of Burdwan), West Bengal, India. He received his M.Sc. in Physics from Guru Ghasidas University, Chattishgarh, India. He is currently pursuing the Ph.D. degree with the Department of Physics, Bankura University, Bankura, West Bengal, India. His research interests include all-Optical amplifier, optical devices, and optical communication. He has published twelve international journal and fourteen papers presented in international conferences (oral mode).

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Experience in Academia

2016 –2020 — **Guest Lecturer,** Physics Department, Bankura Sammilani College, Bankura, West Bengal, India.

2020 – · · · · — **State Aided College Teacher (SACT),** Physics Department, Bankura Sammilani College, Bankura, West Bengal, India.

Personal Profile

2020 –· · · · — **Ph.D. Physics (Thesis Submitted), Bankura University** in Optical Communication. **Thesis title:** *Some studies on alternative methods for designing digital optical processors using reflective semiconductor optical amplifier.*

2010 – 2012 — **M.Sc., Guru Ghasidas University, Bilaspur, Chattisgarh, India** Specialization with Electronics.

Publication Summary

- Journal: **12** (SCI=**9**, ESCI=**2** Scopus=**1**)
- Book Chapter: **8** (Indexed: Scopus)
- Conference Presentation: **14**
- Citation=87, h index=6, i 10 index= 4

Research Publications

Journal Articles

1. S. Bosu and B. Bhattacharjee, "Alternative approach to design dibit-based XOR and XNOR gate," *Journal of Integrated Circuits and Systems (Scopus) ISSN: 1872-0234*, vol. 19, no. 1, pp. 1–06, 2024.

2. S. Bosu and B. Bhattacharjee, "An alternative approach to design encryption and decryption circuits using reflective semiconductor optical amplifier," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, pp. 1–10, 2024. URL: https://doi.org/10.1007/s12596-024-02040-4.

3. S. Bosu and B. Bhattacharjee, "An alternative approach to design half-subtractor using reflective semiconductor optical amplifier with numerical simulation," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, pp. 1–11, 2024. URL: https://doi.org/10.1007/s12596-024-02357-0.

4. S. Bosu and B. Bhattacharjee, "All-optical dibit-based Feynman gate using reflective semiconductor optical amplifier with frequency encoding scheme," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, vol. 52, no. 3, pp. 33–41, 2023. URL: https://doi.org/10.1007/s12596-022-00875-3.

5. S. Bosu and B. Bhattacharjee, "An alternative approach to design an inhibitor logic gate using reflective semiconductor optical amplifier," *Journal of Active & Passive Electronics, ISSN 1555-0281*, pp. 1–09, 2023.

6. S. Bosu and B. Bhattacharjee, "Dibit-based frequency encoded binary-to-gray code converter," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, pp. 1–11, 2023. URL: https://doi.org/10.1007/s12596-023-01193-y.

7. S. Bosu and B. Bhattacharjee, "A design of all-optical read-only memory using reflective semiconductor optical amplifier," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, pp. 1–11, 2022. URL: https://doi.org/10.1007/s12596-022-00943-8.

8. S. Bosu and B. Bhattacharjee, "A novel approach of developing all-optical frequency encoded dibit-based Peres gate using reflective semiconductor optical amplifier," *Journal of Nonlinear Optical Physics & Materials* (***I.F.= 2.9***) *ISSN (online): 1793-6624*, p. 2 350 022, 2022. URL: https://doi.org/10.1142/S0218863523500224.

9. S. Bosu and B. Bhattacharjee, "All-optical frequency encoded 2-bit comparator using dibit-based logic and reflective semiconductor optical amplifier," *International Journal of Nanoparticles (Scopus) ISSN: 1753-2507*, vol. 14, no. 2-4, pp. 121–137, 2022. URL: https://doi.org/10.1504/IJNP.2022.126378.

10. S. Bosu and B. Bhattacharjee, "All-optical frequency encoded dibit-based parity generator using reflective semiconductor optical amplifier with simulative verification," *Facta Universitatis, Series: Electronics and Energetics* (***I.F. = 0.7***) *ISSN: 2217-5997 (Online)*, vol. 35, no. 1, pp. 029–041, 2022. URL: https://doi.org/10.2298/FUEE2201029B.

11. S. Bosu and B. Bhattacharjee, "Dibit-based OR and NOR gate using reflective semiconductor optical amplifier," *Journal of Nonlinear Optical Physics & Materials* (***I.F.= 2.9***) *ISSN (online): 1793-6624*, pp. 1–11, 2022. URL: https://doi.org/10.1142/S0218863523500467.

12. S. Bosu and B. Bhattacharjee, "A novel design of frequency encoded multiplexer and demultiplexer systems using reflected semiconductor optical amplifier with simulative verification," *Journal of Optics* (***I.F.= 1.6***) *(ISSN: 0974-6900)*, vol. 50, no. 3, pp. 361–370, 2021. URL: https://doi.org/10.1007/s12596-021-00711-0.

Book Chapter

1. S. Bosu and B. Bhattacharjee, "Dibit-based encryption and decryption circuits using reflective semiconductor optical amplifier," in *Presented in, International Conference on Natural Sciences and Engineering for sustainable Development (NSESD 2024), Kazi Nazrul University, Asansol, India.*, New Delhi Publisher, ISBN: 9788197108716 (eBook), 2024.

2. S. Bosu and B. Bhattacharjee, "Frequency encoded dibit-based Fredkin gate," in *2023 Devices for Integrated Circuit (DevIC)*, IEEE (ISBN: 979-8-3503-4726-5), 2023. URL: DOI:%2010.1109/DevIC57758.2023.10135019.

3. S. Bosu and B. Bhattacharjee, "A design of frequency encoded dibit-based inhibitor logic using reflective semiconductor optical amplifier with simulative verification," in *In Communication and Intelligent Systems: Proceedings of ICCIS 2021*, Springer Nature Singapore (ISBN: 978-981-19-2130-8), 2022, pp. 1–10. URL: https://doi.org/10.1007/978-981-19-2130-8_1.

4. S. Bosu and B. Bhattacharjee, "All-optical Feynman gate using frequency encoding scheme, add/drop multiplexer and reflective semiconductor optical amplifier with simulative verification," in *In Advances in Communication, Devices and Networking: Proceedings of ICCDN 2021*, Springer Nature Singapore (ISBN: 978-981-19-2004-2), 2022, pp. 25–34. URL: https://doi.org/10.1007/978-981-19-2004-2_3.

5. S. Bosu and B. Bhattacharjee, "All-optical frequency encoded dibit-based half subtractor using reflective semiconductor optical amplifier with simulative verification," in *Proceedings of the International Conference on Paradigms of Communication, Computing and Data Sciences (PCCDS 2021)*, Springer (ISBN: 978-981-16-5746-7), 2022, pp. 29–38. URL: https://doi.org/10.1007/978-981-16-5747-4_3.

6. S. Bosu and B. Bhattacharjee, "Dibit-based 4-bit parity generator using reflective semiconductor optical amplifier and frequency encoding scheme," in *In Advances in Communication, Devices and Networking: Proceedings of ICCDN 2021*, Springer Nature Singapore (ISBN: 978-981-19-2004-2), 2022, pp. 45–56. URL: https://doi.org/10.1007/978-981-19-2004-2_5.

7. S. Bosu and B. Bhattacharjee, "Dibit-based NAND gate using reflective semiconductor optical amplifier," in *In 2022 IEEE International Conference of Electron Devices Society Kolkata Chapter (EDKCON 2022)*, IEEE (ISBN: 978-1-6654-7205-0), 2022, pp. 279–283. URL: DOI:%2010.1109/EDKCON56221.2022.10032883.

8. S. Bosu and B. Bhattacharjee, "A design of frequency encoded dibit-based comparator using reflective semiconductor optical amplifier with simulative verification," in *2021 Devices for Integrated Circuit (DevIC)*, IEEE (ISBN: 978-1-7281-9955-9), 2021, pp. 175–179. URL: DOI:%2010.1109/DevIC50843.2021.9455891.

9. S. Bosu and B. Bhattacharjee, "All-optical frequency encoded dibit-based half adder using reflective semiconductor optical amplifier with simulative verification," in *2021 Devices for Integrated Circuit (DevIC)*, IEEE (ISBN: 978-1-7281-9955-9), 2021, pp. 388–392. URL: DOI:%2010.1109/DevIC50843.2021.9455814.

Skills

Languages — Strong reading, writing and speaking competencies for English, Bengali.

Coding — C, Python, LaTeX,

Awards and Achievements

2020 — **Best Paper Award**, 'All-optical frequency encoded Fredkin gate using Reflective Semiconductor Optical Amplifier with simulative verification' presented at 1^{st} **Virtual International Conference on Applied Science, Technology, Management and Language Studies (ASTMLS-2020)**, Sona College OF Technology, Tamilnadu, India.

2021 — **Best Paper Award**, 'All-Optical Feynman Gate using Frequency Encoding Scheme, Add/drop Multiplexer and Reflective Semiconductor Optical Amplifier with simulative verification' presented at **Fifth International Conference in Communication, Devices, and Networking ICCDN-2022**, Sikkim Manipal Institute of Technology, Sikkim, India, Published in: Dhar, S., Do, DT., Sur, S.N., Liu, H.CM. (eds) Advances in Communication, Devices and Networking. Published in: Lecture Notes in Electrical Engineering, vol 902. Springer, Singapore.