

Personal profile of Dhoulendra Mandal



Name	: DR. DHOUMENDRA MANDAL
Designation	: Assistant Professor The Department of Physics Saldiha College, Saldiha, Bankura-722173, West Bengal, India
Date of Birth	: 03.02.1989
Educational Qualification	: B.Sc. (Physics in 2009), M.Sc. (Physics, radio physics and electronics as the special paper, 2011), Ph.D (All-optical logic processors, 2019)
Additional qualification	: NET (JRF-UGC in 2010), GATE (physics in 2015)
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Date of Joining	: 03/03/2015
Area of Teaching	: Classical Mechanics, General properties of matter, Electronics, wave-optics, thermodynamics
Research interest	: Optical communication, optical computing, frequency encoded switching, nonlinear optics.

List of Research Papers in National/International Journal:

1. A new approach of developing all-optical two-bit-binary data multiplier, **D.Mandal**, S. Mandal, S. K. Garai; **Opt. Laser Technol.**, Vol. **64**, p. 292–301 (2014).

2. An all-optical method of developing data communication system with error detection circuit, S. Mandal, **D. Mandal**, S.K. Garai, **Opt. Fiber Technol.** Vol. **20** (2), (2014).
3. All-optical binary logic unit (BLU) using frequency encoded data, **D.Mandal**, S. K. Garai; **Opt. Fiber Technol.**, Vol. **22**, p. 56–67 (2015).
4. Alternative approach of developing all-optical Fredkin and Toffoli gates,**D.Mandal**, S. Mandal, S. K. Garai, **Opt. Laser Technol.** Vol. **72**, p. 33-41 (2015).
5. Frequency encoded data based optical full adder using reversible Toffoli gates, **D.Mandal**,M. K. Mandal, S.K. Garai, **Journal of optics**, Vol. 42(02), p. 197-207, 2016
6. Switching action of Micro Ring Resonator in frequency encoded data processing,**D.Mandal**, S. Mandal, S. K. Garai, **JAST (ISSN 2395-4353)**, Vol. 02(01), p. 39-45, 2016
7. Design of frequency-encoded data-based optical master-slave-JK flip-flop using polarization switch, S. Mandal, **D.Mandal**,M. K. Mandal, S. K. Garai, **Optical Engineering**, Vol. 56(6), p. 0661051-14, 2017
8. Alternative approach of developing optical binary adder using reversible Peres gates, **D.Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, **International Journal of Optics**, Vol. 2018, 2018
9. Design of optical quaternary adder and subtractor using polarization switching, S. Mandal, **D.Mandal**,M. K. Mandal, S. K. Garai, **Journal of optics**, Vol.47(3), p. 332-350, 2018
10. Theoretical approach of developing frequency encoded reversible optical arithmetic and logic unit (ALU) using semiconductor optical amplifier based polarization switches, **D.Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, **Optical Engineering**, Vol.58(1), 2019
11. Scheme of developing Trinary Logic Unit (TLU) using Polarization-based optical switches, S. Mandal, **D.Mandal**,M. K. Mandal, S. K. Garai, **Journal of Computational Electronics**, Vol. 18(2), p 584-618, 2019

Conference Proceeding full paper:

12. A scheme of developing all-optical frequency encoded ternary half adder using polarization switch, S Mandal, D. Mandal, M K Mandal, S K Garai, ICFOP, 2016,OSA, Dec, 2016, IIT Kanpur, India. DOI: 10.1364/PHOTONICS.2016.Th3A.34
13. Design of all-optical binary half and full subtractor with Frequency encoded data, D. Mandal, S. Mandal, M. K. Mandal, S. K. Garai, ICFOP, 2016,OSA, Dec, 2016, IIT Kanpur, India.DOI: 10.1364/PHOTONICS.2016.Tu4A.51
14. “Design of all-optical one bit binary comparator using reversible logic gates,D. Mandal, S. Mandal, M. K. Mandal, S. K. Garai, IEMENTech, 2017, IEEE, 2017, Kolkata, India. DOI: 10.1109/IEMENTECH.2017.8076949
15. Design of all-optical T-gate and Quaternary subtractor circuit, S Mandal, D Mandal, M K Mandal, S K Garai, IEMENTech, 2017, IEEE, 2017, Kolkata, India. DOI: 10.1109/IEMENTECH.2017.8076948

Chapter in Book

1. A scheme of developing optical frequency encoded quaternary NMIN gate and D flip flop, S. Mandal, **D. Mandal**, M. K. Mandal, S. K. Garai, in “Advances in Laser Applications and Condensed Matter Physics: Collected Contributions”, A. Chakraborty and A. Choudhuri (Ed.), Levant Books, West Bengal, India, ISBN: 978-81-936036-9-7.
2. Design of optical reversible Feynman gate and optical parity generator and checker circuits, **D. Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, in “Advances in Laser Applications and Condensed Matter Physics: Collected Contributions”, A. Chakraborty and A. Choudhuri (Ed.), Levant Books, West Bengal, India, ISBN: 978-81-936036-9-7.
3. Design of Optical Quaternary MultiplierCircuit Using Polarization Switch, **D. Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, in V. Janyani et al. (eds.), Optical and Wireless Technologies,Lecture Notes in Electrical Engineering 546, Springer Nature Singapore Pte Ltd. 2020, ISBN: 978-981-13-6158-6; / 978-981-13-6159-3
https://doi.org/10.1007/978-981-13-6159-3_13

Seminars/Conferences Proceeding Abstracts:

1. A new approach of developing all-optical reversible logic gates: **D. Mandal**, S. K. Garai; **21st West bengal state science and technology congress**, 20-21st Feb., 2014, burdwan university, burdwan, W.B. India,P-39
2. Alternative approach of developing all-optical full adder using all-optical reversible logic gates;**D.Mandal**, S. K. Garai; **National Seminar on Condensed Matter, Laser and Communication (NSCMLC 2015)**; Feb 27 - 28, 2015; the department of physics, the University of burwan, Burdwan, W.B.India, P-29.
3. Design of all-optical binary adder using reversible Peres gates, **D. Mandal**, S. Mandal, M. K. Mandal, S. K. Garai Science congress, 2017, Kolkata, India.
4. Design of all-optical binary adder using reversible Peres gates, **D. Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, 1st Regional Science congress, 2016, Bankura, West Bengal, India.
5. Design of optical reversible Feynman gate and optical parity generator and checker circuits, **D. Mandal**, S. Mandal, M. K. Mandal, S. K. Garai, NSCMPLA 2017, 8-9 March, 2017, Burdwan, west Bengal, India.
6. A scheme of developing optical frequency encoded quaternary NMIN gate and D flip flop, S Mandal, **D Mandal**, M K Mandal, S K Garai, NSCMPLA 2017, 8-9 March, 2017, Burdwan, west Bengal, India.
7. Design of optical Quaternary Multiplier Circuit using Polarization Switch, S Mandal, **D Mandal**, M K Mandal, S K Garai International Conference on Optical and Wireless Technologies (OWT-2018), 10-11 Feb, 2018, Jaipur, India.

National/ International Seminars/ Conferences/Workshops Attended:

1. National seminar on **Human rights: Challenges and Responsibilities**, Saldiha College, Saldiha, Bankura, India.
2. Two-day international seminar on **Recent Trends on Histro-Geographic Approaches of South - Asian Environment**, Saldiha College, Saldiha, Bankura.
3. Short term course on **‘Foundations in photonics and applications’**, May 16-20, 2016, Department of Physics, NIT Durgapur, Durgapur, Burdwan

4. **Author Workshop** conducted by **Elsevier** in association with Department of science and technology, Govt. of West Bengal, December 2nd – 3rd, Kolkata.

International & National links for Teaching & Research:

Research work is being carried out in collaboration with Physics Department, NIT Durgapur, Durgapur, West Bengal, India, and Physics Department, M.U.C. Women's College, University of Burdwan, West Bengal, India.

Professional Experience:

1. Three years and seven months teaching experience in Kangsabati Sishu Vidyalaya (High) School, Khatra, Bankura, as Assistant Teacher in Physics. [From 02.08.2011 to 02.03.2015].
2. Two years B.Ed. programme through ODL mode from Netaji Subhas Open University (2013-2015).

Other Academic Activities:

Acting as member of different sub-committees of our college.

Acted as member of different Committees of Seminars /Conferences/Symposia etc. at college and university level