

# *Profile*

**Name:** Dr. Baishali Sarkar

**Designation:** Assistant Professor of Physics

**Present Affiliation:** M.U.C. Women's College, B. C. Road, Burdwan-713104, West Bengal, India.

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## **Academic Background:**

- **Ph.D.** in Physics from the University of Burdwan
- **M. Sc.** in Physics from The University of Burdwan (*First class First*), was awarded University Gold Medal and University Bronze Medal
- **B.Sc.** in Physics (*First Class*) from The University of Burdwan
- **CSIR-UGC NET (JRF)**
- **Certificate Course** in Computer Application

## **Teaching Experience:**

Assistant Professor of Physics at B. N. Mahavidyalaya, Itachuna, Hooghly, W.B. (02.12.2008 – 10.12.2018)

Assistant Professor of Physics at M.U.C. Women's College, Burdwan, W.B. (11.12.2018 - till date)

**Research Area:** Photonics

## **Research Activities:**

### **Publications:**

### **Journals:**

1. B. Sarkar and S. Mukhopadhyay, "An all-optical scheme for developing a Synaptic neuron by EDFA", IJECT, 5(2), 2014.
2. B. Sarkar and S. Mukhopadhyay, "An all-optical scheme for implementing an integrated Pauli's X, Y and Z quantum gates with optical switches", J. Opt., 46(02), 2017.
3. B. Sarkar and S. Mukhopadhyay, "An All-Optical System for Implementing Integrated Hadamard-Pauli Quantum Logic", J. Opt. Commun., <https://doi.org/10.1515/joc-2019-0093>, 2019.
4. B. Sarkar and S. Mukhopadhyay, "An all-optical integrated Pauli X, Y, Z quantum gates with frequency encoding technique", IJTP, 67(1&2), 2019.

5. B. Sarkar and S. Mukhopadhyay, "Optoelectronic Scheme for Generation of Time Bound Low-Frequency Electronic Signal Using Multi-Passing of Light", *J. Opt. Commun.*, <https://doi.org/10.1515/joc-2018-0086>, 2018, *J. Opt. Commun.* 42(2), 2021.
6. B. Sarkar and S. Mukhopadhyay, "An optical method for sharp increase of light frequency by the use of multiple number of LiNbO<sub>3</sub> crystals biased by saw tooth electronic pulse", *INJP*, 95(9), 2021.
7. B. Sarkar, "Quantum optical Frequency encoded Oscillator using Pauli Y gate and EDFA", *IJTP*, 69(3&4), 2021.

#### **Book Chapter in edited volumes:**

1. B. Sarkar and S. Mukhopadhyay, "An all-optical feedback loop based frequency encoded data-storing unit by EDFA", CRC press, Taylor & Francis Group, ISBN: 978-1-138-02983-5, 2017.
2. B. Sarkar and S. Mukhopadhyay, "A method of developing intensity modulated light signal using two modulating signals simultaneously by LiNbO<sub>3</sub> crystal", *Advances in Laser Applications and Condensed Matter Physics: Collected Contributions*, ISBN: 978-81-936036-9-7, 2017.

#### **Paper presentation in Conferences, Symposia, Seminars and Workshops:**

1. B. Sarkar and S. Mukhopadhyay, "A new proposal of two qubit quantum optical Hadamard gate using polarization encoding technique", 4th Regional Science & Technology Congress (Western Region), 2019, The University of Burdwan and Department of Science & Technology and Biotechnology (DSTBT) Govt. of W. B.
2. B. Sarkar and S. Mukhopadhyay, "A method of developing a Pauli Z gate followed by a Pauli Y gate which is also followed by Pauli X gate", National Seminar on Condensed Matter Physics including Laser Applications (NSCMPLA 2019), The University of Burdwan.
3. B. Sarkar and S. Mukhopadhyay, "An all-optical feedback loop based memory unit by EDFA", National Seminar on Modern Physics: Some Aspects at a Glance (2013), S. B. College in collaboration with The University of Burdwan.
4. B. Sarkar and S. Mukhopadhyay, "A new proposal of quantum Z logic gate using half wave plate", 21<sup>st</sup> West Bengal State Science & Technology Congress, 2014, The University of Burdwan and Department of Science & Technology and Biotechnology (DSTBT) Govt. of W. B.

**Professional Training / Courses Undertaken:**

<b>Serial No.</b>	<b>Name of the Course</b>	<b>Place</b>	<b>Duration</b>
1	<b>Orientation Programme</b>	UGC-HRD Centre, The University of Burdwan	03.09.2011 to 30.09.2011
2	<b>Refresher Course</b> in Physical Sciences	UGC-HRD Centre, The University of Burdwan	16.01.2013 to 05.02.2013
3	<b>Refresher Course</b> in Application of Nano Sciences in modern day research and technology	UGC-HRD Centre, The University of Burdwan	25.06.2019 to 08.07.2019
4	<b>FDP</b> on Photonics	Central University of Jharkhand	18.01.2021 to 22.01.2021
5	<b>FDP</b> on Quantum Computing	Central University of Punjab	23.08.2021 to 27.08.2021
6	<b>Refresher Course</b> in Advances in Nano-Science and Nano-technology	UGC-HRD Centre, The University of Burdwan	26.11.2021 to 02.12.2021
7	<b>STC</b> on E-content Development and Online Pedagogy	UGC-HRD Centre, The University of Burdwan	21.06.2022 to 27.06.2022

Baishali Sarkar