



## PROFILE

**Designation:**

Associate Professor of Physics

**Present Affiliation:**

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

**Permanent Address:**

133, Hazra Math, Barobalidanga, Sripally, Burdwan-713103, West Bengal, India

**Research Area:**

Photonics

## CONTACT

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# DR. BAISHALI SARKAR

## EDUCATION

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**Ph.D.**

In Physics awarded by the University of Burdwan

**M. Sc.**

In Physics from The University of Burdwan (First class First) Awarded University Gold Medal and University Bronze Medal

**B.Sc.**

In Physics (*First Class*) from The University of Burdwan

**CSIR-UGC NET**

Positioned as JRF

**Certificate Course**

In Computer Application

## TEACHING EXPERIENCE:

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**B. N. Mahavidyalaya, Itachuna, Hooghly, W.B.**

Assistant Professor of Physics  
(02.12.2008 – 10.12.2018)

**M.U.C. Women's College, Burdwan, W.B.**

Assistant Professor of Physics  
(11.12.2018 - till date)

## RESEARCH ACTIVITIES:

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### JOURNAL PUBLICATIONS:

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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", Journal of Optics, 46(02), 2017.
3. B. Sarkar and S. Mukhopadhyay, "An All-Optical System for Implementing Integrated Hadamard-Pauli Quantum Logic", J. Opt. Communications, <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. Communications, 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", Indian Journal of Physics, 95(9), 2021.
7. B. Sarkar, "Quantum optical Frequency encoded Oscillator using Pauli Y gate and EDFA", IJTP, 69(3&4), 2021.
8. B. Sarkar, S. Lakshan and S. Mukhopadhyay, "All-optical method of generation of Phase Shift Keying data using optical Pockels crystal", Journal of Optics, <https://doi.org/10.1007/s12596-023-01292-w>, 2023.

### BOOK CHAPTER IN EDITED VOLUMES:

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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:**

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1. B. Sarkar, "Gold nano particles in controlling environmental pollution: A Review", International Conference on Environment, Forestry and Sustainable Agriculture, St. Xavier's College and International Academy of Science and Research (IASR), Kolkata, 2022.
2. 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), The University of Burdwan and Department of Science & Technology and Biotechnology (DSTBT) Govt. of W. B., 2019.
3. 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), The University of Burdwan, 2019.
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, The University of Burdwan and Department of Science & Technology and Biotechnology (DSTBT) Govt. of W. B., 2014.
5. 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, S. B. College in collaboration with The University of Burdwan, 2013.

## **SEMINAR/CONFERENCES/ WORKSHOPS ATTENDED:**

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1. National Thematic Workshop on Recent Advances in Material Sciences, Dept. of Physics, The University of Burdwan, March 8-9, 2016.
2. Second National Seminar on Recent Trends in Condensed Matter Physics including Laser Application, Dept. of Physics, The University of Burdwan, March 22-23, 2012.
3. First National Seminar on Recent Trends in Condensed Matter Physics including Laser Application, Dept. of Physics, The University of Burdwan, March 6-7, 2012.
4. National Conference on Particle Physics and Cosmology, Dept. of Physics, The University of Burdwan, March 24-25, 2011.
5. Workshop on CBCS Syllabus of Physics Course of studies, The University of Burdwan, October 30 –November 3, 2017.
6. UGC sponsored seminar on Empowerment of Women, M.U.C. Women's College, Burdwan, February 25-25, 2005.

**PROFESSIONAL TRAINING / COURSES UNDERTAKEN:**

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

**BAISHALI SARKAR**