

## **Academic Profile of Prof. Sourangshu Mukhopadhyay.**

- a) **Brief personal introduction (including passport size photograph, if available).**

**Professor Sourangshu Mukhopadhyay born in Burdwan , West Bengal ,has obtained his M.Sc. (Tech.) degree in Applied Physics and Ph.D. Degree from The University of Calcutta in 1985 and 1992 respectively.**



**( Photograph of Prof. Sourangshu Mukhopadhyay)**

**He was appointed and joined as Lecturer in Physics in Vidyasagar University , Midnapore in 1989. The he was appointed as Reader and professor respectively in Physics. He was then appointed and joined as Professor in Physics in 2005 in The University of Burdwan . He has more than 25 years of Post Graduate teaching and research experiences . His field of research includes “Optical Parallel Computing and Processing, Photonics, Soliton Optics, Optical electronics, Squeezed state of light , etc.” He is a either a Fellow or a Member or a Life Member of many academic bodies , societies , and councils. He has produced 16 Ph. D. scholars ,written Two books , contributed many research papers in peer reviewed cited journals , presented many research papers in conferences , written numerous popular articles , delivered many invited talks in National and International Conferences . He has jointly coordinated two Refresher Courses for College and University Teachers. He has**

**functioned as Head of the Department in Physics in The University of Burdwan for one full term and functioned as Head of the department in physics for one full term and one partial term in Vidyasagar University, functioned as Founder Head of the department of Electronics in Vidyasagar University for one term and functioned also as Head of the Department in Computer Science in Vidyasagar University for one term. He is reviewer of many journals . His h-index as per Google is 19 and as per scopus is 13.**

**b) Present designation including date of effect**

**Professor in Physics, Date of effects 11.11.2005 ( in The University of Burdwan) , March 2004 ( in Vidyasagar University).**

**c) Academic qualifications . M.Sc. ( Tech.), Ph. D. ( Tech).**

**d) Areas of Research interest .**

**Optical Parallel Computing and Processing, Photonics, Soliton Optics, Optical electronics, Squeezed state of light , etc**

**e) Awards & achievements.**

**i) Swami Tejasananda Memorial Award from Ramkrishna Mission Vidyamandira , Belurmath, in 1982.**

**ii) Young scientist award for best paper presentation in Platinum jubilee celebration of University college of Science , Technology and Agriculture, The University of Calcutta.**

**iii) Best paper award obtained jointly for a paper presented in West Bengal State Science congress in The University of Burdwan in Electronics section.**

**iv) Best paper award obtained jointly for a paper presented in West Bengal State Science congress in The University of Burdwan in Computer Science section.**

**f) Special chairs held, if any :**

- i) Chairperson of the Physics session of *10<sup>th</sup> West Bengal State Science Congress*, Vidyasagar University, Midnapore, West Bengal, India, (28<sup>th</sup> February 2003).
- ii) Chairman of a session in a Seminar organized by Vidyasagar University held on 23.02.2005 on the topic of science awareness.
- iii) Professor Sourangshu Mukhopadhyay functioned as president and chairman of the *state level Seminar on 'Future trend in Electronics'*, Organized by Department of Electronics, Vidyasagar University, held on 29<sup>th</sup> March 2005 in Vidyasagar University and he was chaired one technical session of the seminar.
- iv) Functioned as chairman of a technical session of *National workshop on 'Characterization of Laser and Nanomaterials'*, The University of Burdwan, (25<sup>th</sup> to 27<sup>th</sup> January, 2006).
- v) Functioned as Chairperson of a technical session in *Third National Workshop on Characterisation of Laser and Nanomaterials (TNWCLNM -2007)*, organized by Department of Physics, The University of Burdwan, West Bengal-713104, India, (19<sup>th</sup> -21<sup>st</sup> January, 2007).
- vi) Functioned as 'Chairman' of a technical session in *Fourth National Workshop on Characterisation of Laser and Nanomaterials*, organized by Department of Physics, The University of Burdwan, West Bengal, India, (9<sup>th</sup> March, 2008).
- Vii) Functioned as 'Chair' of a technical session of the seminar entitled *Recent advances in Physics*, organized by Department of Physics, The University of Burdwan, Burdwan, West Bengal, India, (28<sup>th</sup> March, 2008).
- viii) Chaired a technical session in a UGC sponsored *state level seminar 'Fundamentals and frontiers in Physics'*, organized by Garhbeta College, Garhbeta, Paschim Medinipur, (22<sup>nd</sup> September, 2008).
- ix) Functioned as chairman of a technical session on 11<sup>th</sup> November in *National workshop on radiation science and applications*, organized by Department of Physics, The University of Burdwan and 'UGC-DAE Consortium for Scientific Research, Kolkata centre', Science Centre, Golapbag, Bardhaman, (November 10-12, 2008).
- x) Functioned as a Chairperson of a technical session of a National Seminar entitled, '*The Universe yours to discover*,' held in Maharajadhiraj Uday Chand Women's College, Burdwan, 28<sup>th</sup> August, 2009.
- xi) Professor Sourangshu Mukhopadhyay functioned as Chairman of a technical session of *International Conference on Radiation Physics and its Applications (ICRPA 2010)*, organized by

Department of Physics, The University of Burdwan; held at Science Centre, Golapbag, Bardhaman, 16<sup>th</sup> and 17<sup>th</sup> January, 2010.

- xii) Sourangshu Mukhopadhyay chaired a Technical Session in “National Conference on materials devices and circuits in Communication Technology(MDCCT)” held in The University of Burdwan on March 27-28,2010.
- xiii) Professor Sorangshu Mukhopadhyay, functioned as Chairperson in a technical session of the National Workshop on ‘Quantum Perspective of advanced materials’ (QPAM-11) organized by the Department of Physics and Technophysics, Vidyasagar University, Paschim Medinipur-721101, held on 23<sup>rd</sup> to 25<sup>th</sup> March,2011 in Vidyasagar University,Medinipur,West Bengal, India.
- xiv) Professor Sorangshu Mukhopadhyay, functioned as the Vice Chairman of the “National Conference on Particle Physics and Cosmology”, organized by the Department of Physics, The University of Burdwan, Burdwan, West Bengal, India, held on 24<sup>th</sup> to 25<sup>th</sup> March, 2011 in Burdwan.
- xv) Professor Sourangshu Mukhopadhyay has functioned as special guest of Honour in the inauguration function of the seminar entitled, “rends in astronomy and astrophysics and cosmology” held in Kalna College , Kalna , on 21. 11.2011 and has functioned as Chairman in a technical session of the Seminar .
- xvi) Professor Sourangshu Mukhopadhyay has functioned as chairman of a technical session in the “ International Conference on Laser , material Science , & Communication” , organized by the Department of Physics , The University of Burdwan , Burdwan , held on and from 7<sup>th</sup> to 9<sup>th</sup> December ,2011.
- xvii) Professor Sourangshu Mukhopadhyay has functioned as Vice –Chairman of the “ International Conference on Laser , material Science , & Communication” , organized by the Department of Physics , The University of Burdwan , Burdwan , held on and from 7<sup>th</sup> to 9<sup>th</sup> December ,2011 .
- Xviii) Professor Sourangshu Mukhopadhyay has functioned as Chairman of a Technical Session in the seminar entitle “ Recent Trends in Opto-electronics” held in Sripat Singh College , Jiaganj , Murshidabad, and the seminar was organized by the college.
- xix) Professor Sourangshu Mukhopadhyay has functioned as Chairperson of a Technical Session in National Conference on Materials, Devices and Circuits in Communication Technology 2012 (MDCCT 2012) and he has functioned as Guest of Honour in the Inaugural Session of the Conference and also functioned as Vice –Chairman of the Conference.

**xx) Professor Sourangshu Mukhopadhyay , functioned as Chairman of a Technical Session of “ Third National Seminar On Recent Trends In Condensed Matter Physics Including Laser Application (TNSCMPLA 2013)” held on 5<sup>th</sup> March to 7<sup>th</sup> March , 2013 organized by the Department of Physics , The University of Burdwan , in Burdwan, West Bengal , India.**

**xxi) Prof. Sourangshu Mukhopadhyay has functioned as a chairman of a technical session of a “one day seminar on Recent Trends in communication technology” (RTCC 2013) held on 22 nd March, 2013organised by IETE Burdwan subcenter and Dept. Of Physics, The University of Burdwan , in Burdwan, West Bengal , India.**

**xxii) Professor Sourangshu Mukhopadhyay functioned as a Session Chairman of a Technical Session of the Seminar entitled “ Frontiers of Physics : An Exchange of Ideas on Emerging Directions” organized by Department of Physics , The University of Burdwan and Department of Physics , The University of Calcutta , held on 5<sup>th</sup> and 6<sup>th</sup> June 2013 in The University of Burdwan, Burdwan.**

**xxiii) Professor Sourangshu Mukhopadhyay functioned as a Chairperson of a technical session in TEQIP II sponsored Short Term Course on “ Introduction to Photonics and Applications( InPhAs 2013 ) organized by National Institute of Technology , Durgapur , West Bengal , India , on July 29 to August 2 , 2013 , Held in National Institute of Technology , Durgapur.**

**xxiv) Professor Sourangshu Mukhopadhyay , functioned as a Chair of a technical session in a National Seminar on “Modern Physics : Some aspects at a glance” organized by “ Department of Physics , Sreegopal Banerjee College, Bagati, Mogra, Hooghly” held in “ Department of Physics , Sreegopal Banerjee College, Bagati, Mogra, Hooghly, West Bengal, India,” on 26<sup>th</sup> and 27<sup>th</sup> September 2013.**

g) Research projects mentioning name of the project, funding agency, project period, etc.

h) Research scholars guided by the faculty mentioning the name of the scholar, title of the thesis, Degree awarded (Ph.D./D.Sc.) & year of award (if already awarded).

<b>Name of Scholar</b>	<b>Title of thesis</b>	<b>Year of submission</b>
<b>Jitendra Nath Roy</b>	<b>Some studies in logical and arithmetical processing for optical/ opto-electronic parallel computation</b>	<b>1996</b>
<b>Partha Ghosh</b>	<b>Optical parallel computation in the view of residue arithmetic and multi-valued logic</b>	<b>1998</b>
<b>Debendra nath Das</b>	<b>Some studies on optical/ opto-electronic implementation of arithmetic, logical and algebraic operation</b>	<b>2000</b>
<b>Partha pratim Das</b>	<b>Some studies on optical logic and arithmetic operations in optical parallel computation</b>	<b>2002</b>
<b>Harihar Bhowmick</b>	<b>Some theoretical studies on Soliton - soliton interaction in optical processing</b>	<b>2005</b>
<b>Abhijit Saha</b>	<b>Some studies of optical soliton propagation and interaction through optical fiber</b>	<b>2005</b>

<b>Archan kumar Das</b>	<b>Some studies for developing optical/ opto-electronic arithmetic and logic operational systems with spatial input encoding decoding mechanism</b>	<b>2005</b>
<b>Kuldeep Roy Chowdhury</b>	<b>Some studies of optical data processing with application of non-linear material based systems</b>	<b>2006</b>
<b>Nirmalya Pahari</b>	<b>Some studies on development of all-optical logic and arithmetic operational systems with the proper accommodation of non-linear material</b>	<b>2006</b>
<b>Shantanu Dhar</b>	<b>Some studies on digital and analog all-optical processing with non-linear material based system</b>	<b>2006</b>
<b>Prasanta Mandal</b>	<b>Some studies on the propagation of Soliton pulses and their interaction in non-linear media</b>	<b>2008</b>
<b>Puspendu Kuila</b>	<b>Some studies on optical soliton propagation and interaction for all-optical switching</b>	<b>2010</b>
<b>Sisir kumar Gorai</b>	<b>Some new analytical approaches of developing all-optical logic processors</b>	<b>2011</b>
<b>Nandita Mitra</b>	<b>Some studies on all-optical logic arithmetic and memory devices with switching mechanism</b>	<b>2012</b>
<b>Debajyoti Samanta</b>	<b>Some studies on development of different all-optical logic, arithmetic and algebraic processors</b>	<b>2012</b>
<b>Bijan Ghosh</b>	<b>Some studies on implementation of all-optical parallel logic and data processing systems</b>	<b>2013</b>

**i) List of publication of books**

- a) **Dr. Sourangshu Mukhopadhyay, "Optical Computation and parallel processing" published by *Classique Books*, 9, Radhanath Mallick Lane, Kolkata 700012, India (2000). ISBN- 81-87616-01-6.**

- b) Dr. Partha Ghosh, Dr. Sourangshu Mukhopadhyay, "Some Digital Approaches in Optical Computation," published by *Premier Books*, 32/3 Old Ballygunge First Lane, Kolkata -19, West Bengal, India (2004).

j) List of publication of papers

( Papers published only in peer reviewed journals are given)

1988 -

1. S. Mukhopadhyay, A. Basuray, A. K. Dutta, "New coding scheme for addition and subtraction using modified signed digit number representation in optical computation", *Applied Optics (USA)*, 27(8), 1375-1376 (1988).
2. "Optical Computation, Researches in this decade", *Journal of Optics*, 17(4), 94(1988).
3. S. Mukhopadhyay, A. Basuray, A. K. Datta, "A real-time optical parallel processor for binary addition with a carry", *Optics Communication (The Netherlands)*, 66(4), 186-190 (May 1, 1988).

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4. "Arithmetic operation using modified ternary number system for use of optical computation", *Optics Letters (USA)*, 14, 426(1989).
5. "An optical parallel processor of addition and subtraction of binary data", *Journal of Optics*, 18(3), (1989).

1990-

6. S. Mukhopadhyay, "An optical conversion system: From binary to decimal and decimal to binary", *Optics Communications (The Netherlands)*, 76(5-6), 309-312(15 May, 1990).
7. S. Mukhopadhyay, A. Basuray, A. K. Datta, "New technique of arithmetic operation using the positional residue system", *Applied Optics (USA)*, 29(20), 2981-2983(1990).



1991-

8. A. Basuray, S. Mukhopadhyay, Hirak Kumar Ghosh, A. K. Datta, "A tristate optical logic system," *Optics Communications* (The Netherlands), 85(2-3), 167-170(1 September, 1991).

1992-

9. S. Mukhopadhyay, "Optical implementation of a knowledge-based expression in data form," *Optical Engineering* (USA) 31(6), 1284-1286(1992).
10. A. K. Datta, S. Mukhopadhyay, A. Basuray, "Carry-less arithmetic operation of decimal numbers by signed digit substitution and its optical implementation", *Optics Communications* (The Netherlands), 88(2-3), 87-90(15 March, 1992).
11. S. Mukhopadhyay, "Binary optical data subtraction using ternary dibit representation technique in optical arithmetic problems", *Applied Optics* (USA), v.31, p.4622 10 August (1992).
12. "A conversion scheme of decimal number to its residue for optical computation". *Indian Journal of Pure and Applied Physics*, Vol- 30, p.322 (July 1992).

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13. "A minimization Technique for the determination of residues of a decimal number by fibre optic maps", *Journal of Optics*, Vol. 22, No. (1), (1993).
14. S. Mukhopadhyay, J. N. Roy, S. K. Bera, "Design of a minimized LED array for maximum parallel logic operations in optical shadow casting technique", *Optics Communications* (The Netherlands), 99(1-2), 31-37(15 May, 1993).

1994-

15. "Use of minimized light mode patterns of shadow casting system for optical parallel logic operations in the enhanced edge of image", *Indian Journal of Technology*, Issue. Vol.1 (February 1994).
16. Jitendra Nath Roy, S. Mukhopadhyay, "A minimization scheme of optical space-variant logical operations in a combinational architecture", *Optics Communications*, 119(5-6), 499-504(15 Sep, 1995).

17. "Use of power based moduli in residue arithmetic," *Comms.in Instrumentation*.vol.3 No.(3), (1995).

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18. "An optical conversation system: From 2<sup>n</sup> radix based number to it modified trinary number system", *Journal of Optics*, Vol.25, No.(1), (1996).

19. "New technique of residue based logic operation for parallel computation in optics", *Comms in Instrumentation*, Vol.4, No.(3), p.231-237 (1996).

20. "Space-variant approach of all optical multiple logic actions in triple input purview", *Comms in Instrumentation*, Vol.4, No.(3), p.173-179 (1996).

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21. Partha Ghosh, Debendra Nath Das, S. Mukhopadhyay, "An alternative approach of all optical flip-flop with tristate logic", *Indian Journal of Pure and Applied Physics*, Vol.36, p.224-227 (April 1998).

22. "An all-optical scheme for data addition with optical non-linear material based circuit", *Comms. In Instrumentation*, April-June Issue, (1998).

23. Debendra Nath Das, S. Mukhopadhyay, "Image edge detection and enhancement by an inversion operation", *Applied Optics*, 37(35), 8254-8257(1998).

24. Partha Ghosh, S. Mukhopadhyay, "Optical shadow-casting technique in residue arithmetic", *Comms.in Instrumentation*, Oct.-Dec, (1998).

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25. "An alternative approach of using tree architecture for parallel optical logic operations", *Asian Journal of Physics*, Vol. 9, No.(4), page 885-888 (2000).

26. "A brief background of optical parallel computation: Researches in some areas", *Laser Horizon*, Volume 4, No. (2), Page 57-62 (2000).

2001-

27. S. Mukhopadhyay, Debendra Nath Das, Partha Pratima Das, Partha Ghosh, "Implementation of all-optical digital matrix multiplication scheme with non-linear material", *Optical Engineering*, 40(9), 1998-2002(1 September, 2001).
28. Debendra Nath Das, Partha Ghosh, Partha Pratima Das, S. Mukhopadhyay, "Optical multiplexing-demultiplexing with Non-linear based switches", *Indian Journal of Pure and Applied Physics*, volume 39, page 447-449 (July 2001).

2002-

29. Debendra Nath Das, Partha Ghosh, Partha Pratima Das, S. Mukhopadhyay, "Determination of Hall-Coefficient and Carrier concentration of a semiconductor specimen," *Lab Experiments*, 2(3), 61-69(December 2002).

2003-

30. Kuladeep Roy Chowdhury, S. Mukhopadhyay, "A new method of binary addition scheme with massive use of non-linear material based system," *Chinese Optics Letters*, 1(4), 241-242(April 20, 2003).
31. Archan Kumar Das, S. Mukhopadhyay, "A new technique of spatial input encoding of multiple input variables in all-optical multiplexing," *Laser Horizon*, 6(2), 42-49(March 2003).

2004-

32. Archan Kumar Das, S. Mukhopadhyay, "General approach of spatial input encoding for multiplexing and De-multiplexing", *Optical Engineering (USA)*, 43(1), 126-131(1 January, 2004).
33. Kuladeep Roy Chowdhury, S. Mukhopadhyay, "Binary optical arithmetic operation scheme with tree architecture by proper accommodation of optical nonlinear materials," *Optical Engineering*, 43(1), 132-136(1 January, 2004).
34. Sarmistha Naskar, Sarmistha Das Dey, Sandeep Chakraborty, Samir Kumar Ghosh, Tushar Kanti Tapadar, S. Mukhopadhyay, "An experimental observation of pulse width broadening due to elliptical bending of an optical fibre", *Laser Horizon*, 7(1), 23-25 (September 2004).

35. Kuladeep Roy Chowdhury, S. Mukhopadhyay, "An all-optical binary comparator using non-linear material", *Journal of Optics*, 33(2), 81-85 (2004).
36. Nirmalya Pahari, Debendra Nath Das, S. Mukhopadhyay, "All-optical method for the addition of binary data by non-linear materials", *Applied Optics*, 43(33), 6147-6150(2004).
37. Archan Kuman Das, S. Mukhopadhyay, "A new method of triggering mechanism in tristate for optical multiplexing-demultiplexing operation in optical signal processing", *Asian Journal of Physics*, 13(1), 63-68 (2004).

2005-

38. Abhijit Sinha, S. Mukhopadhyay, "Effect of higher order non-linearity in frequency variation of self-phase modulation in optical fiber communication", *Chinese Optics Letters*, 2(9), 500-502(2005).
39. Kuladeep Roy Chowdhury, Partha Pratima Das, S. Mukhopadhyay, "All-optical time-domain multiplexing-demultiplexing scheme with non-linear material," *Optical Engineering*, 44(3), 035201(1 March, 2005).
40. Archan Kumar Das, S. Mukhopadhyay, "An all-optical matrix multiplication scheme with non-linear material based switching system", *Chinese Optics Letters*, 3(3), 172-175 (2005).
41. Abhijit Sinha, Harihar Bhowmik, Puspendu Kuila, S. Mukhopadhyay, "New method of controlling the power of a Gaussian optical pulse through an electro-optic modulator and a nonlinear wave guide for generation of solitons", *Optical Engineering*, 44(6), 065003(1 June, 2005).
42. Shantanu Dhar, S. Mukhopadhyay, "All optical implementation of ASCII by use of nonlinear material for optical encoding of necessary symbols", *Optical Engineering*, 44(6), 065201(1 June, 2005).
43. Archan Kumar Das, S. Mukhopadhyay, "All-optical system for wide range decimal multiplexing", *Indian Journal of Pure and Applied Physics*, 43, 253-258 (2005).
44. Kuladeep Roy Chowdhury, Debduiti De, S. Mukhopadhyay, "Parity checking and generating circuit with nonlinear material in all-optical domain", *Chinese Physics Letters*, 22(6), 1433-1435 (2005).

45. Partha Ghosh, S. Mukhopadhyay, "Implementation of tristate logic based all optical flip-flop with nonlinear material", *Chinese Optics Letters*, 3(8), 478-479(2005).
46. Abhijit Sinha, S. Mukhopadhyay, "A study on the considering of the non-linear phenomenon of refractive index in material dispersion", *Journal of Optics*, 34(3), 140-144 (2005).
47. Nirmalya Pahari, S. Mukhopadhyay, "An all-optical R-S flip-flop by optical non-linear material", *Journal of Optics*, 34(3), 108-114 (2005).
48. Archan Kumar Das, Partha Pratima Das, S. Mukhopadhyay, "A new approach of binary addition and subtraction by non-linear material based switching technique", *Pramana- Journal of Physics (India)*, 64(2), 239-247(February 2005).

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49. Nirmalya Pahari, S. Mukhopadhyay, "New method of all-optical data comparison with nonlinear material using 1's complement method", *Optical Engineering*, 45(1), 015201(2006).
50. Puspendu Kuila, Abhijit Sinha, Harihar bhowmik, S. Mukhopadhyay, "Theoretical study of using an amplitude modulation scheme with an electro-optic modulator for generation of the proper power shape function of an optical soliton pulse in a nonlinear waveguide", *Optical Engineering*, 45(4), 045002(2006).
51. Prasanta Mondal, S. Mukhopadhyay, "Analytical study to find the proper coupling energy from one optical waveguide to another with consideration of the nonlinear correction factor", *Optical Engineering (USA)*, 45(11), 114602.1-114602.5(2006).
52. Shantanu Dhar, S. Mukhopadhyay, "All-optical decoding method for ASCII-coded data using nonlinear-material-based switching", *Optical Engineering (USA)*, 45(11), 115201(2006).
53. Prasanta Mondal, Harihar Bhowmik, D. De, S. Mukhopadhyay, "A study on the propagation of a Gaussian soliton pulse through an optical fibre when dispersion is compensated accommodating the non-linearity of the fibre media", *Indian Journal of Physics*, 80, 527-530 (2006).
54. Jitendra Nath Roy, Anup Kumar Maiti, S. Mukhopadhyay, "Designing of an all-optical time division multiplexing scheme with the help of non-linear material based tree-net architecture", *Chinese Optics Letters (China)*, 4(8), 483-486 (2006).

55. Prasanta Mondal, Harihar Bhowmik, S. Mukhopadhyay, "All-optical method of conducting long distance switching by proper use of an electro-optic Pockels material and a non-linear optical wave guide," *Optical Engineering (USA)*, 45(7), 075002(2006).
56. Nirmalya Pahari, S. Mukhopadhyay, "New method of all-optical data comparison with non-linear material using 1's complement method", *Optical Engineering*, 45(1), 015201(2006).
57. Nirmalya Pahari, S. Mukhopadhyay, "New scheme for image edge detection using the switching mechanism of nonlinear optical material", *Optical Engineering (USA)*, 45(3), 037003(2006).
58. Puspendu Kuila, Abhijit Sinha, S. Mukhopadhyay, "An all-optical method of conducting some logic operations by interaction of two modulated Gaussian pulses," *Journal of Optics*, 35(4), 196-205 (2006).

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59. Prasanta Mondal, S. Mukhopadhyay, "Method of conducting an all-optical NAND logic operation controlled from a long distance", *Optical Engineering (USA)*, 46(3), 035009(2007).
60. Jitendra Nath Roy, Anup Maiti, S. Mukhopadhyay, "Exploitation of nonlinear material based tree-net architecture in all optical demultiplexing scheme," *Journal of Optics*, 36(1), 1-7 (2007).
61. Prasanta Mondal, S. Mukhopadhyay, "A new approach of long distance all-optical switching mechanism by interaction between two Gaussian pulses in transverse mode propagated through an optical waveguide," *Journal of Optics*, 36(1), 22-30 (2007).
62. Anup Kumar Maiti, Jitendra Nath Roy, S. Mukhopadhyay, "All-optical conversion scheme from binary to its MTN form with the help of nonlinear material based tree-net architecture," *Chinese Optics Letters*, 5(8), 480-483 (August 2007).
63. Jitendra Nath Roy, Anup Kumar Maity, Debajyoti Samanta and Sourangshu Mukhopadhyay, "Tree-net architecture for integrated all-optical arithmetic operations and data comparison scheme with optical nonlinear material," *Optical Switching and Networking*, 4, 231-237(2007).

#### 2008-

64. Debajyoti Samanta, S. Mukhopadhyay, "A new scheme of implementing all-optical logic systems exploiting material nonlinearity and polarization based encoding technique," *Optoelectronics Letters (China)*, 4(3), 172-176 (May 2008).

65. Sisir Kumar Garai, Debajyoti Samanta, S. Mukhopadhyay, "All-optical implementation of inversion logic operation by second harmonic generation and wave mixing character of some nonlinear material," *Optics and Optoelectronic Technology (China)*, 6(4), 39-42(2008).
  66. Debajyoti Samanta, S. Mukhopadhyay, "All-optical method for maintaining a fixed intensity level of a light signal in optical computation" *Optics Communications*, 281(19), 4851-4853(2008).
  67. Puspendu Kuila, Abhijit Sinha, S. Mukhopadhyay, "An all optical remote controlled X-Nor logic using soliton pulse," *Optoelectronics Letters*, 4(5), 365-368(September 2008).
  68. Kuladeep Roy Chowdhury, S. Mukhopadhyay, "An all-optical scheme of signed digit binary addition based on optical non-linear material," *Optoelectronics Letters*, 4(6), 447-451(Nov, 2008).
  69. Puspendu Kuila, Abhijit Sinha, S. Mukhopadhyay, "A theoretical approach for generation of optical soliton pulse inside an optical fiber using electro-optic modulator," *Journal of Optics*, 37(1), 14-24 (2008).
  70. Nandita Mitra, S. Mukhopadhyay, "A new scheme of an all-optical J-K flip-flop using nonlinear material," *Journal of Optics*, 37(3), 85-92 (2008).
  71. Kuladeep Roy Chowdhury, Abhijit Sinha, S. Mukhopadhyay, "An all optical comparison scheme between two multi-bit data with optical nonlinear material," *Chinese Optics Letters*, 6(9), 693-696 (2008).
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72. Debajyoti Samanta, S. Mukhopadhyay, "Implementation of an optical S-R flip-flop with polarization encoded light signal", *Optoelectronics Letters*, 5(1), 57-60(1 January, 2009)
  73. Nandita Mitra, S. Mukhopadhyay, "Development on astable multivibrators using the combination of linear and nonlinear materials as switching elements based on all optical method," *Optoelectronics Letters*, 5(2), 101-103(1 March, 2009).
  74. Bikash Chakraborty, S. Mukhopadhyay, "Alternative approach of conducting phase-modulated all optical logic gates," *Optical Engineering*, 48(3), 035201(2009).
  75. Sisir Kumar Garai, S. Mukhopadhyay, "Method of implementing frequency encoded multiplexer and demultiplexer systems using nonlinear semiconductor optical amplifier," *Optics and Laser Technology*, 41(8), 972-976 (2009).
  76. Ashish Pal, S. Mukhopadhyay, "Using modified Mach-Zehnder interferometer to get better nonlinear correction term of an isotropic nonlinear material," *Chinese Optics Letters (OSA)*, 7(7), 624-626 (10 July, 2009).

77. Sisir Kumar Garai, S. Mukhopadhyay, "Method of implementing frequency-encoded NOT, OR and NOR logic operations using lithium niobate waveguide and reflecting semiconductor optical amplifiers," *Pramana –journal of Physics*, 73(5), 901-912 (November, 2009).
78. Sisir Kumar Garai, S. Mukhopadhyay, "Method of implementation of all-optical frequency encoded logic operations exploiting the propagation characters of light through semiconductor optical amplifiers," *Journal of Optics*, 38(2), 88-102 (2009).

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