

RESUME OF PROF. JITENDRA NATH ROY



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Academic Qualification: M. Sc (Physics) and Ph D (Physics) Vidyasagar University.

Specialization: Applied Optics and Photonics, Laser and Optoelectronics, Spintronics

Present Position: Professor, Department of Physics, Kazi Nazrul University, Asansol.

Teaching Experience: 20 yrs [UG and P.G level]

Research Publications: 145

Published /accepted	International	National
❖ Journal	84	11
❖ Conference	36	14

■ **Research Guidance:**

Ph D level:

- **Awarded:** Ten (10). **Thesis Submitted:** 0 **Continued:** Five (5).

■ **Reviewer of International journal**

(i) Nature Photonics (ii) J. of Optical Society of America A, (iii) Optical Engineering (iv) Journal of Electronic Imaging (v) Applied Optics (vi) J. of Optics and Laser Technology and many more.

■ **Special Awards/Honours received**

Year	Name of Award/Honour	Name of Organization
2012	International Sardar Patel Award	Sardar Vallabhbhai Patel Foundation http://www.sardarpatelaward.org/awardgallery.php
2007	Session Chairman	International Conference on <i>Information Technology</i> held at HIT, W.B.
1994	Senior Research Fellowship	C.S.I.R (Govt. of India)
1991	University Silver Medal	Vidyasagar University, W.B, India

- **Research Collaboration:** with Prof. K.E. Zoiros, Department of Electrical and Computer Engineering, Light wave Communications Research Group, Xanthi-Greece.

- **Book Chapter (invited): J.N.Roy** and T.Chattopadhyay, Design and architectures for □ digital signal processing, Chapter-4, “*All-optical quaternary logic based information processing: Challenges and opportunities*”, © INTECH Publishers, Edited by Dr. Gustavo Ruiz (University of Cantabria, Spain), ISBN: 980-953-307-610-7. [16.01. 2013] ([Book Chapter](#))

- **Book :**

Text Book :

- (1) **Spintronics: Fundamentals and Applications** [Authors: P. Dey and J.N.Roy] ISBN 978-981-16-0068-5, ISBN 978-981-16-0069-2 (eBook), <https://doi.org/10.1007/978-981-16-0069-2>, **Publisher: Springer Nature Singapore Pte Ltd, Year:2021.**

Edited Book:

- (2) **Terahertz Biomedical and Healthcare Technologies: Materials to Device** [Editors: A.Biswas, A. Banerjee, A.Acharya, H. Inokawa ,J. N. Roy] ISBN-13: 978-0128185568; ISBN-10: 0128185562..**Publisher: Elsevier Inc Year:2020**
- (3) **Emerging Trends in Terahertz Solid-State Physics and Devices** [Editors: Amit Banerjee, Basabi Chakraborty , Hiroshi Inokawa , Jitendra Nath Roy] ISBN 978-981-15-3234-4. **Publisher: Springer Nature Singapore Pte Ltd, Year:2020.**

- **Research Project: Completed:-2 as P.I (Funding Agency: AICTE,DST)**

Ongoing: 1 as C.I (Funding Agency: BRNS, Govt.of India)

As Co-PI: 1

Year of Sanction: 2020 [Sanction No.: 58/14/07/2020-BRNS/37074]

Funding Agency: Board of Research Studies in Nuclear Sciences (BRNS),Department of Atomic Energy, Govt of India.

Title: Integration of Organic Photodetector and Spin Valve for development of Novel Spin-Controlled Magnetic Organic Photodetector

- **Citations:** <http://scholar.google.co.in/citations?user=LHYZC0MAAAAJ&hl=en&oi=ao>

- **Invited Speaker:**

Year	Nature:	Event
2018	International	International Conference on Emerging Trends in Engineering and Science ETES-2018
2018	National	National Seminar on Emerging Technologies and Future of Electronics ETFE2018

2017	International	International Conference on Emerging Trends in Computing Communication and Control (ICETC3-2017)
2013	International	Winter Symposium on Photonics and Optoelectronics (W-SOPO 2013) Sanya, China http://www.sopoconf.org/SOPO2013DECEMBER/ShowkeynotespeakerDetails.aspx?personID=2944
2013	National	AICTE sponsored Faculty Development Programme organized by B P Poddar Institute of Management and Technology
2012	National	UGC sponsored national seminar on "Science and Technology and its Historical Application" held at Pingla Thana Mahavidyalaya 9-10 February 2012.
2011	National	UGC sponsored national seminar on Photonics and Nano Sciences held at Garhbeta College 20-21 December 2011,

The list of published and/or accepted papers of Dr. J. N. Roy

	<i>Total</i>	<i>Since 2016</i>
<u>Citations</u>	2098	1033
<u>h-index</u>	27	18
<u>i10-index</u>	55	36

International Referred Journal (SCI) : 84

2021

1. MP Singh, M Hossain, JK Rakshit, GK Bharti, **JN Roy** “Proposal for Polarization Rotation–Based Ultrafast All Optical Switch in Ring Resonator” *Brazilian Journal of Physics* 1- 12 (2021).
2. A Raja, K Mukherjee, **JN Roy**, Analysis of new all optical polarization-encoded Dual SOA-based ternary NOT & XOR gate with simulation, *Photonic Network Communications*, 41 (3), 242-251 (2021).
3. A Raja, K Mukherjee, JN Roy Polarization rotation-based all-optical AND gate using single semiconductor optical amplifier and implementation of a majority gate, *Journal of Optical Communications*, (2021).
4. S.K.Das, D.Banerjee, **J.N.Roy**, Particle shape-induced correlation effect in random deposition in 1+ 1 dimension and related effect in ballistic deposition. *Surface Review and Letters*, 28 (2), 1-10 (2021).
5. A Raja, K Mukherjee, **J N Roy**, Design analysis and applications of all-optical multifunctional logic using a semiconductor optical amplifier-based polarization rotation switch. *Journal of Computational Electronics*, 20 (1), 387–396 (2021).

2020

6. D Nath, P Dey, AM Joseph, JK Rakshit, **J N Roy**, Performance improvement of bilayer CuPc/BPPC organic photo-detector by thermal annealing, **Optical Materials**, 108 (2020) 110371.
7. D Nath, P Dey, AM Joseph, JK Rakshit, **J N Roy**, CuPc/C 60 heterojunction for high responsivity zero bias organic red light photodetector, **Applied Physics A**, 126, (2020).
8. D Nath, P Dey, AM Joseph, JK Rakshit, **J N Roy**, `Zero bias high responsive visible organic photodetector based on pentacene and C60. **Optics & Laser Technology**, 131, 106393 (2020).

9. D Nath, P Dey, AM Joseph, JK Rakshit, **J N Roy**, Photocurrent generation under forward bias with interfacial tunneling of carrier at pentacene/F16CuPc heterojunction photodetector” *Journal of Alloys and Compounds*, **815**, 152401 (2020).
10. A Raja, K Mukherjee, **J N Roy**, K Maji “Analysis of new all-optical polarization-encoded quaternary Galois field adder processing soliton pulses” *J Opt* (2020). [Springer Publication] <https://doi.org/10.1007/s12596-020-00594-7>.
11. K Maji, K Mukherjee, A Raja, **JN Roy** “Numerical simulations of an all-optical parity generator and checker utilizing a reflective semiconductor optical amplifier at 200 Gbps” *J Comput Electron* (2020). . <https://doi.org/10.1007/s10825-020-01451-3>.

2019

12. A Raja, K Mukherjee, **JN Roy**, K Maji “Analysis of polarization encoded optical switch implementing cross-polarization modulation effect in semiconductor optical amplifier” *Int. J. Photon. Opt. Technol.* 5(1) 2019.

2018

13. Debarati Nath, S. K. Mandal, Debajit Deb, J. K. Rakshit, P. Dey, and **J. N. Roy**, Light tuning DC and AC electrical properties of ZnO-rGO based hybrid nanocomposite film, *Journal of Applied Physics* **123**, 095115 (2018).
14. Debarati Nath, S. K. Mandal, Debajit Deb, J. K. Rakshit, P. Dey and **J. N. Roy**, “Optical, electrical properties and structural characterization of ZnO:rGO based photodetector,” *AIP Conference Proceedings* **1942**, 080006 (2018).
15. P. Dey, D. Deb, Rajesh Debnath, S.K. Mandal, Archana Lakhani, T.K. Nath, **J.N. Roy**, A. Nath “Sign reversal of spin-polarized tunnelling magnetoresistance in 99.95% $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ -0.05% Paraffin wax nanocomposite: An effect of spin-flip scattering at intergranular Paraffin wax interface”, *Journal of Magnetism and Magnetic Materials* **468**, (2018) 85–90.
16. S. K. Mandal, Swati Singh, Rajesh Debnath, P. Dey, **J.N. Roy**, T.K. Nath, Magnetoelectric coupling and AC electrical properties of $x\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3 - (1-x)\text{HoMnO}_3$ ($x = 0.1, 0.3$ and 0.5) lead free multiferroic nanocomposites, *Materials Chemistry and Physics* 205 217-227.
17. S Chakraborty, MK Paul, **JN Roy**, A Nath Diagnostic study of multiple double layer formation in expanding RF plasma. *Physics of Plasmas*, 25.033518 (2018)

2017

18. J.K.Rakshit and **J.N.Roy**, “Silicon micro-ring resonator-based all-optical digital-to-analog converter” *Photonic Network Communications* 34(1) 82 (2017) [Publisher:

Springer US].

19. S. K. Mandal, Swati Singh, P. Dey, **J. N. Roy**, P. R. Mandal and T. K. Nath Temperature and Frequency Dependence of AC Electrical Properties of Zn and Ni doped CoFe_2O_4 Nanocrystals, , *Philosophical Magazine*, **97**, 1628–1645 (2017).
20. P. Dey, Rajesh Debnath, Swati Singh, S. K.Mandal and **Jitendra Nath Roy** Irreversibility in Room Temperature Current-Voltage Characteristics of NiFe_2O_4 Nanoparticles: A Signature of Electrical Memory Effect", *Journal of Magnetism and Magnetic Materials*, **421**, 132 (2017).
21. D Nath, P Dey, D Deb, JK Rakshit, **JN Roy** - Fabrication and characterization of organic semiconductor based photodetector for optical communication **CSI transactions on ICT**, 2017

2016

22. JK Rakshit, JN Roy "Design of all-optical universal shift register using nonlinear microring resonators" *Journal of Computational Electronics*, **15** (4) 1450-1461(2016).
23. S. K. Mandal, Swati Singh, P. Dey, **J. N. Roy**, P. R. Mandal, T. K. Nath, Frequency and Temperature Dependence of Dielectric and Electrical Properties of TFe_2O_4 (T=Ni, Zn, $\text{Zn}_{0.5}\text{Ni}_{0.5}$) Ferrite Nanocrystals, *Journal of Alloys and Compounds*, **656**, 887-896 (2016).
24. JK Rakshit, JN Roy "All-optical ultrafast switching in a silicon microring resonator and its application to design multiplexer/demultiplexer, adder/subtractor and comparator circuit" *Optica Applicata* **46**(4) 517-539.
25. T.Majumder, JJ Hmr, J N Roy,S P Mondal Spectral dependent photoelectrochemical behaviors of CdS sensitized ZnO nanorods, *Journal of nanoscience and nanotechnology* **16** (4), 4065-4070 (2016)

2015

26. **J.N.Roy**, *P.Bhowmik*, and *T.Chattopadhyay* Design of all optical ternary logic based half adder circuit and it's applications, *Journal of Optics* **44**(4) (2015).
27. R Debnath, P Dey, S Singh, **J N Roy**, SK Mandal Magnetically tunable alternating current electrical properties of $x\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3-(1-x)\text{ErMnO}_3$ ($x= 0.1, 0.3,$ and 0.5) multiferroic nanocomposite" *Journal of Applied Physics* **118** (4), 2015, 044104.
28. SK Mandal, Swati Singh, P Dey, **J N Roy**, PR Mandal, TK Nath "Frequency and temperature dependence of dielectric and electrical properties of TFe_2O_4 (T= Ni, Zn, $\text{Zn}_{0.5}\text{Ni}_{0.5}$) ferrite nanocrystals" *Journal of Alloys and Compounds*, **656** (2015)

887.

29. Swati Singh, P Dey, **J N Roy**, SK Mandal “Tunable dielectric constant with transition metals doping in Zn $1-x$ (MnTM) x O (TM= Co, Fe) nanocrystals. *Journal of Alloys and Compounds* 642, 2015,15-21.

2014

30. **J.N.Roy** and P. Bhowmik, “Polarization encoded all-optical multi-valued shift operators” *Optics Communication*.325(2014)144-151 [13/04/2014].
31. J.K.Rakshit and **J.N.Roy**, “micro-ring resonator-based all-optical reconfigurable logic operations ” *Optics Communication* 321 (2014) 38-46 .
32. **J.N.Roy** and J.K.Rakshit, “Design of micro-ring resonator-based all-optical logic shifter” *Optics Communication*. 312 (2014) 73–79 DOI: [2013/9/19]
33. P.Bhowmik, **J.N.Roy** and T.Chattopadhyay “Designing of all-optical generalized circuit for two input binary and multi-valued logic operations. ” *Optics Communication*. 331 (2014) 14-27.
34. J.K.Rakshit and **J.N.Roy**, “Design of all-optical time division multiplexing scheme with the help of Micro-ring resonator” *Optica Applicata XLIV (1) 2014*.
35. J.K.Rakshit, T.Chattopadhyay and **J.N.Roy**, “A theoretical study of all optical clocked D flip flop using single micro-ring resonator” *Journal of Computational Electronics*, 13(1) 2014, 278-286 ..
36. S Singh, P Dey, JN Roy, SK Mandal “Enhancement of dielectric constant in transition metal doped ZnO nanocrystals” *Applied Physics Letters* 105(9) 2014,92903

2013

37. J.K.Rakshit, T.Chattopadhyay and **J.N.Roy**, “Design of ring resonator based all optical switch for logic and arithmetic operations - a theoretical study”, *Optik International Journal for Light and Electron Optics*, <http://dx.doi.org/10.1016/j.ijleo.2013.04.075> 124 (23), 6048-6057 (2013). [2013/7/21].
38. P.Bhowmik, **J.N.Roy** and T.Chattopadhyay, “Ternary Galois Field Arithmetic Operations With Optical Nonlinear Material (OPNLM) Switch”, *International Journal for Light and Electron Optics*, *Optik* 124 (22), 5561-5566 (2013) (Elsevier), <http://dx.doi.org/10.1016/j.ijleo.2013.03.167>. [2013/7/18].
39. E Dimitriadou, KE Zoiros, T Chattopadhyay and **JN Roy** “Design of ultrafast all-optical 4-bit parity generator and checker using quantum-dot semiconductor optical

- amplifier- based Mach-Zehnderinterferometer *Journal of Computational Electronics*, 12(3) 2013, 481-489. DOI 10.1007/s10825-013-0463-x (Springer), [Link](#)
40. T.Chattopadhyay and **J.N.Roy** “Design of polarization encoded all-optical 4-valued MAX logic gate and its applications” *Optics Communication*. 300 (2013)119–128. <http://dx.doi.org/10.1016/j.optcom.2013.02.025>. [15.03.2013].
41. J K Rakshit , **J.N.Roy** and T Chattopadhyay “Design of micro ring resonator based all optical parity generator and checker circuit” *Optics Communication*. 303 (2013) 30-37 <http://dx.doi.org/10.1016/j.optcom.2013.03.025> . 2013/4/16.
42. T.Chattopadhyay and **J.N.Roy** “All-optical Quaternary Computing and Information Processing: a promising path” *J.of Optics* (Springer publication) 42(3) (2013) 228-238 DOI: 10.1007/s12596-013-0126-0. [17th March 2013].

2012

43. D.K.Gayen, A. Bhattacharyya, T.Chattopadhyay and **J.N. Roy** "Ultrafast All-Optical Half Adder using Quantum-Dot Semiconductor Optical Amplifier-based Mach-Zehnder Interferometer" *Journal of Light wave Technology*. (IEEE), 30(21), (2012), 3387- 3393. [Link](#) [publisher: IEEE-OSA] DOI: [10.1109/JLT.2012.2215579](https://doi.org/10.1109/JLT.2012.2215579) [01.11.2012]
44. T.Chattopadhyay, P.Bhowmik and **J.N.Roy**, “Polarization encoded optical N-valued inverter”, *Journal of Optical Society of America B*, (OSA), 29(10), (2012), 2852-2860. [Link](#) [01.10.2012]
45. J.K.Rakshit, T.Chattopadhyay and **J.N.Roy** “Design of Micro Ring Resonator Basedall Optical Adder/Subtractor” *Progress in Theoretical and Applied Physics*. 1(1) 2012, 32-43. www.researchmathsci.org [31st January 2013]
46. M.K.Das .T. Chattopadhyay, **J.N.Roy**, Passive all-optical tree architecture (PATA) based scheme for conversion of 2ⁿ radix based number to its binary form” *IET Optoelectronics* . (2012) doi: 10.1049/iet-opt.2011.0088 [Link](#) [October 2012].
47. T. Chattopadhyay and **J.N.Roy** “Designing of an all-optical quaternary NOT gate using binary NOT gate” *Optik. Int.J. Light Electron. Opt* (2012) [Publisher: Elsevier] <http://dx.doi.org/10.1016/j.ijleo.2012.01.035>. [April 2013].
48. D. K. Gayen, **J. N. Roy**, and R. K. Pal “All-optical Carry Look ahead Adder with the help of Terahertz Optical Asymmetric Demultiplexer” 123 (40-45) (2012), *Optik - Int. J. Light Electron Opt*. <http://dx.doi.org/10.1016/j.ijleo.2010.11.029> [January 2012].

49. K E Zoiros, M K Das, T.Chattopadhyay, H K Maity, D K Gayen, , **J N Roy**, All-Optical Pseudorandom Binary Sequence Generator with TOAD-based D Flip-Flops *Optics Communication* 284 (19) 4297-4306 (2011) [Publisher: Elsevier] [in press: [doi:10.1016/j.optcom.2011.05.007](https://doi.org/10.1016/j.optcom.2011.05.007)]
50. Tanay Chattopadhyay and **Jitendra Nath Roy** “Polarization encoded all-optical quaternary Successor with the help of SOA assisted Sagnac switch” *Optics Communication*. 284(12) 2755-2762 (2011)[Publisher: Elsevier] <http://dx.doi.org/10.1016/j.optcom.2011.02.005>
51. C.Taraphdar ,T. Chattopadhyay and **J.N.Roy** “Designing of Polarization encoded all-optical ternary multiplexer and Demultiplexer” **Recent patent in signal processing** (Bentham Science Publishers), 1(2), 143-155 (2011), [Link](#).
52. Tanay Chattopadhyay and **Jitendra Nath Roy**, “ Easy conversion technique of binary to quaternary signed digit and vice versa” *Physics express*. (simplex-academic-publishers), 1(3), 2011, 165-174. [Link](#)
53. C.Taraphdar, T. Chattopadhyay and **J.N.Roy** “Designing of an all-optical scheme for single input Ternary logical operations ” **Optik. Int.J. Light Electron. Opt** 122(1)33-36 (2011) [Publisher: Elsevier]. <http://dx.doi.org/10.1016/j.ijleo.2009.09.016>
54. D.K.Gayen, A. Bhattacharyya, C.Taraphdar, R.K. Pal and **J.N. Roy** “All-Optical Binary Coded Decimal (BCD) Adder with the help of Terahertz Optical Asymmetric Demultiplexer” Accepted in *Computing in Science and Engineering*.13 (1) 50-57(2011) [*IEEE*]. DOI: [10.1109/MCSE.2009.209](https://doi.org/10.1109/MCSE.2009.209)
55. D. K. Gayen, T. Chattopadhyay, **J. N. Roy** and R. K. Pal “All-optical Prefix Tree Adder with the help of SOA-assisted Sagnac Switch”, **Chinese Optics Letters** 9 (6) (2011) 062001. doi: 10.3788/COL201109.06200.
56. D.K.Gayen, M.K.Das, **J.N.Roy** and R.K.Pal , “All-optical binary to Gray code and Gray to binary code conversion scheme with the help of Semiconductor Optical Amplifier -assisted Sagnac switch” **IET Circuits Devices and System**, 5(2). 123–131 (2011) Doi [10.1049/iet-cds.2010.0069](https://doi.org/10.1049/iet-cds.2010.0069).
57. T. Chattopadhyay, M.K.Das , **J.N.Roy**, A.K.Chakraborty and D.K.Gayen,“ Conversion of Binary number to its Quaternary Signed Digit form and its all-optical implementation” **IET Circuits Devices and System** 5(2). 132–142 (2011) . doi: 10.1049/iet- cds.2010.00565 [Link](#).

58. D.K.Gayen, C. Taraphdar, **J.N.Roy** and R.K.Pal , “All-optical Reconfigurable Logic Operations with the help of Terahertz Optical Asymmetric Demultiplexer” **Optik - Int. J. Light Electron Opt.**122 (8) 711-718 (2011), <http://dx.doi.org/10.1016/j.ijleo.2010.04.024>.
59. T. Chattopadhyay and **J.N.Roy** , “Semiconductor Optical Amplifier (SOA)-Assisted Sagnac Switch for designing of all-optical tri-state logic gates” **Optik - Int. J. Light Electron Opt.** 122 (12) 1073-1078 (2011),<http://dx.doi.org/10.1016/j.ijleo.2010.06.045>
60. T. Chattopadhyay and **J.N.Roy** , All-optical quaternary Galois field sum of product (GFSOP) circuits 122(9) 758-763 (2011), Pages **Optik - Int. J. Light Electron Opt.** (2010), <http://dx.doi.org/10.1016/j.ijleo.2010.06.002>,

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61. T. Chattopadhyay and **J.N.Roy** “Design of SOA-MZI based all-optical programmable logic device (PLD)” *Optics Communication*. 283 (12) 2506-2517 (2010) [Publisher: Elsevier]. <http://dx.doi.org/10.1016/j.optcom.2010.02.031>
62. Dilip Kumar Gayen, Tanay Chattopadhyay, Rajat Kumar Pal and **Jitendra Nath Roy**, “All-optical Multiplication with the help of Semiconductor Optical Amplifier—assisted Sagnac Switch” **Journal of Computational Electronics**, Volume 9(2) 57-67 (2010) Pages DOI: 10.1007/s10825-010-0305-z [Springer].
63. D.K.Gayen, **J.N.Roy**, R.K.Pal and S. P. Ghosh “All-Optical Incrementer/Decrementer with the Help of Semiconductor Optical Amplifier-Assisted Sagnac Switch” *International Journal of Optomechatronics*, 4(2) 177 – 194 (2010) DOI: 10.1080/15599612.2010.484519 [Taylor & Francis].
64. T. Chattopadhyay and **J.N.Roy** “Polarization Encoded All-optical Quaternary Universal Inverter and Designing of Multi-valued Flip-flop” **Optical Engineering** 49 (3) 035201 (2010) doi:10.1117/1.3362897 [Publisher: S.P.I.E .USA]. [Link](#).
65. D.K.Gayen, C.Taraphdar and **J.N.Roy**, “Terahertz Optical Asymmetric Demultiplexer based All Optical Data Comparator” *Journal of Circuit Systems and Computers* 19 (3) 2010 **Publisher: World Scientific Publishing Company Pvt Ltd.**] DOI: 10.1142/S0218126610006359
66. C.Taraphdar ,T. Chattopadhyay and **J.N.Roy**, “Mach-Zehnder Interferometer based all-optical Reversible Logic Gate” *Optics and Laser Technology* 42(2) 249–259(2010) [Publisher: Elsevier] <http://dx.doi.org/10.1016/j.optlastec.2009.06.017>

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68. T. Chattopadhyay and **J.N.Roy** “Polarization encoded TOAD based all-optical quaternary Literals”.121(7) 617–622 (2010) **Optik** [Publisher: Elsevier] <http://dx.doi.org/10.1016/j.ijleo.2008.09.014>

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69. T. Chattopadhyay and **J.N.Roy** “Polarization encoded all-optical quaternary multiplexer and demultiplexer -a proposal”, *Optik. Int. J. Light Electron. Opt* 120(17) 941-946 (2009), [Publisher: Elsevier] <http://dx.doi.org/10.1016/j.ijleo.2008.03.030>.
70. **T.Chattopadhyay**, C.Taraphdar and J.N.Roy, “Quaternary Galois field adder based all-optical multivalued logic circuits”, *Applied Optics*, (feature issue on ‘optical high-performance computing’) (OSA), 48(22), (2009), E35-E44. [Link](http://dx.doi.org/10.1364/AO.48.000E35) [Publisher: Optical Society of America] <http://dx.doi.org/10.1364/AO.48.000E35>.
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72. T. Chattopadhyay, **J.N.Roy** and A.K.Chakraborty “Polarization encoded all-optical Quaternary R-S Flip-flop using binary latch” *Optics Communication*.282 (7) 1287-1292 (2009) <http://dx.doi.org/10.1016/j.optcom.2008.12.022> [Publisher: Elsevier].
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74. **J.N.Roy** “Mach-Zehnder Interferometer based tree architecture for all-optical logic and arithmetic operations”. *Optik. Int.J. Light Electron. Opt* 120(7) 318-324 (2009) <http://dx.doi.org/10.1016/j.ijleo.2007.09.004> [Publisher: Elsevier]
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Optical Physics and Materials 17 (3) 315-328 (2008) Doi: [10.1142/S0218863508004159](https://doi.org/10.1142/S0218863508004159) **Publisher: World Scientific Publishing Company Pvt Ltd.**

77. **J.N.Roy**, G.K.Maity, T.Chattopadhyay and D.Gayen "Terahertz Optical Asymmetric Demultiplexer based tree-net architecture for all-optical conversion scheme from binary to its other 2^n radix based form" *Chinese Optics Letter*, 6(7)536-540 (2008) doi: 10.3788/COL20080607.0536
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