Prof. Partha Pratim Sahu
Department of Electronics and Communication Engineering
Tezpur University

Contributions

Prof Sahu has designed all optical network having node architecture and wavelength router for nation wide network of India. As per node architecture, he and along with research students has proposed/designed/developed its key devices such as wavelength-division-multiplexer, tuneable add/drop multiplexer, tuneable EDFA gain equalizer and photonic switch starting with components. Using these devices, he and his students have designed all optical backbone connecting major cities of India.

For the survivability / protection against node and link failure in optical network (causing loss of huge data), Prof Sahu has proposed and implemented a new restricted shared protection (RSP) scheme in which the reliability of RSP is almost two times more than that of the existing shared protection (SP). Along with his research students, he has also developed a new dispersion reduced routing and wavelength assignment based on traffic grooming and quality service for efficient use of wavelength channels in optical network. Using this scheme, Indian optical backbone was redesigned by him to enhance quality of service.

By using his proposed mathematical model based sinusoidal modes, he has already proposed and designed different tapered structures of MMI couplers and TMI coupler, grating assisted tooth shaped geometry and double S-bend geometry as compact components preferred for integrated optical devices (IOD). Using his proposed mathematical model, many authors outside and inside India have designed integrated optical waveguide devices, as evident for the citations (pl see some of citation in page 9-20)

Recently he has developed and demonstrated ultra compact component based TMI structure to obtain high fidelity for integrated quantum optic processor quantum communication. The work has been published in high impact journal Nature Scientific reports as cited by many authors.

Prof Sahu has developed implicit finite difference temperature equations for accurate and efficient modelling of the thermooptic structures of these devices. He has proposed and developed some thermooptic structures to reduce the heating power (required for thermal tuning) and thermooptic polarization dependence for these key devices (based on TMI / MMI couplers) of optical networks. These structures are used for optical communication devices by many international research groups including NTT lab, Japan, School of Electronics, Nanyang Technological University, Singapore etc.

Prof Sahu has also designed and developed basic logic gate component based on compact all optical two mode interference coupler for optical processing of optical networks. Further he along with his research students has made these components more compact by using surface plasmonics polariton waveguides. These works have been extended for the design and implementation of compact quantum devices to obtain high fidelity quantum entangled states for quantum optic communication and quantum computer. Using his proposed surface

plasmonics waveguide structures, many researchers have designed/implemented optical waveguide processor components, as evident from citations mentioned in page 18-22.

Apart for his works in optical network, he has proposed designed and developed a precision versatile Pythagoras full wave rectifier without diode operating below threshold voltage for low voltage high precision power supply. This concepts have been used by other authors for designing low voltage and high speed modulation schemes in wireless communication as evident from citations mentioned in page 17-18.

Prof Sahu has also started research on interdisciplinary area such as neuro-engineering, medical diagnostic instrumentation etc. He along with his Ph. D students has developed first time mathematical formulation for detection of myelin thickness from nerve conduction velocity of patients suffering from demyelination diseases such as Guillain Barre Syndrome (GBS), Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) etc and validated in Toad model. as evident from citation mentioned in page 23-24.

Recently, he has developed electrochemical sensor for both reduction and detection of mousumbi-juice and metaloxide sensor for on-spot detection of raw fish and raw meat.

Details of projects implemented (completed / in progress)

S.No.	Client/Organisation's name	Nature of project	Duration of project	Amount of grant (Rupees)
1	UGC – Major research project	***Design. Development and Testing of Planer waveguide devices Using Silica based waveguides***	3 years	11.25 lakhs
2.	AICTE	***Modernization of Fiber Optics Lab***	2 years	7 lakhs
3.	AICTE	***Design and implementation of multi-channel frequency hopping spread spectrum signaling for wireless communication applications***	3 years	12.6 lakhs
4.	DST-FIST -I	***Setting up Micro-fabrication facilities***	5 years	137 lakhs
5.	AICTE	***Modernization and Renovation of Fiber Optics Laboratory***	2 years	13 lakhs
6.	AICTE	***Modernization and Renovation of Instrumentation Laboratory***	2 years	10 lakhs
7.	UGC-SAP-I	***Setting up Micro-fabrication lab***	5 years	69 lakhs
8.	DeiTy	***Setting up of Facilities for Fabrication of Micro-electro-Mechanical System (MEMS) Devices***	3 years	326.43 Lakhs
9.	DST-FIST-II	***Development of micro-fabrication design and characterization lab***	5 years	200 lakhs

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[2] P . P. Sahu, Patent No. 201831009528, "A portable Optical fiber instrument for instant petrol purity detection"
[3] P P Sahu, Patent, No: 0522/ KOL/2008, A Reduced Size Linearly Tapered 3dB (Half Power Splitter) Multimode Interference (MMI) Coupler

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Books

[1] Contemporary Optics and Optoelectronics, McGraw Hills, India, ISBN-10:0-07-024888-5 -P P Sahu and P Deb
[2] VLSI design, McGraw Hills, India, ISBN-13:978-1-25-902984-4 – P P Sahu
[3] Routing and Wavelength Assignment for Optical Networks: Quality-of-Service and Fault Resiliency, Springer –Nature, ISBN 978-3-319-46202-8 -B. Chatterjee, N. Sarma, P P Sahu and E. Oki
[4] Planar Waveguide Optical sensors, Springer –Nature, ISBN 978-3-319-35139-1 - Dutta, B. Deka and P P Sahu
[5] Advance in Optical Networks and components, CRC press ISBN-13:978-0367265656, P P Sahu
[6] Fundamentals of Optical Networks components, CRC press. ISBN-13: 978-0367265458 -P P Sahu
[7] Some Biosensing approaches in food analysis, CRC press- P Misra and P P Sahu

Awards/ fellows/honors

Sr. No.	Name of Award/Fellowship etc.	Awarded /by	Year of Award
1.	INSA Teacher Award	Indian National Science Academy	2013
2.	Life Fellow	Optical Society of India	2002
3.	Senior Member	IEEE	2014
4.	Listed in world top 2% scientist	Listed by Stanford University	2020
5	Best poster award	ICFoST,2020.	2020
6	Best paper award	Food security, nutritional security and sustainability	2019

Strengths (in 100 words)

- He is one of key group members to develop and frame courses of B. Tech and and M. Tech programs in Tezpur University, NIT Arunachal Pradesh and NEHU.
- Notable devices developed by him include: tuneable Add/drop multiplexer, wavelength-multiplexer, optical switches, gain equalizer, demyelination-quantifying tool for neuro-diseases, *all-optical-processor components*, *online-petrol-purity detection devices,* rapid-diabetic monitoring optical tool, multichannel spread spectrum transceiver and low-voltage rectifier without diode
- He has also developed and taught interdisciplinary courses such as Biomathematics, Neuro-engineering and BioMEMS apart from cores course of Electronics and communication Engg.

With these experiences, he may be capable to develop Educational Institute and its academic programme.

List of equipments designed and fabricated and/or papers published on education in journals/magazines with state/national/international circulation.

List of equipment developed/fabricated/ assembled under nominee

a) LASER based education kit - Commercialized by HARTRON, Ambala
b) Fiber optic kit - Commercialized by HARTRON, Ambala
c) He Ne LASER - Commercialized by HARTRON, Ambala
d) Semiconductor LASER diode - Commercialized by HARTRON, Ambala
e) LASER diode collimator - Commercialized by HARTRON, Ambala

List of equipment designed / developed/fabricated/ assembled under nominee Technology/products/ patents

. i) **Number of innovation technologies/products developed**

1) Integrated optic sensor based instrument for rapid testing of diabetics - developed
2) Integrated optic sensor based instrument for rapid testing of adulteration of petrol with kerosene and diesel (impurity detection in petrol) - developed and patented
3) Demyelination measurement tool for peripheral nerve disorder -developed
4) Low cost Processing of deposition of grapheme on silicon for photovoltaic application- developed
5) Online portable instrument based optical sensor for measurement of transformer insulation (break down voltage)-developed and patent
6) Online prototype instrument based optical sensor for detection of bacteria colony detection developed in water- developed and under process of patented
7) High speed instrument based optical sensor for early detection of cancer- under process
8) High speed instrument based metal oxide sensor for online monitoring meat and fish based food product- under process
9) Dual purpose sensor for reduction and detection of bitterness in Mousumbi juice-under process

Few notable citation details and updates of five most important papers (mentioned above)

1) Bijoy Chand Chatterjee, Nityananda Sarma, Partha Pratim Sahu, "Priority based Routing and Wavelength Assignment with Traffic Grooming for Optical Networks", IEEE/OSA Journal of Optical Communication and Networking, Vol.-4, no. 6, pp. 480-489, 2012.

IF: 2.183, Citation: 63.

Citation-1: Amin Ebrahimzadeh et. al., "Request differentiation in dynamic light-path establishment for WDM routed all optical networks of data centers", Optical fiber technology (Elsevier), Vol-21, pp 73-80, 2015.

Citation line: "Request differentiation based on call priority has been subject of a couple of recent studies, as well [14–18]" .

Prof Sahu and his students have developed Call priority assignment in optical back bone and used by the above authors

Citation-2: Sergio Ricciardi. et. al., "A hybrid load-balancing and energy-aware RWA algorithm for telecommunication networks", Computer communication (Elsevier), Vol-77, pp 85-99, 2016.

Citation line: "Also [7] proposes a routing optimization algorithm where conection requests characterized by the same source and destination are groomed and served according to a specific priority order." .

Prof Sahu and his students have developed priority order of connection requests in optical back bone and those are groomed and served as mentioned by above authors

Citation-3: Pham Vu Phong et. al., "A hybrid instantaneous recovery route design scheme with two different coding scenarios ", IEICE Communication express , Vol-4, pp 8-13, 2014.

Citation line: "Ouer evaluations use networks……Indian networks [6]……." .

Prof Sahu and his students have developed Indian optical back bone and it is used by above authors

Citation-4: Subhendu Barat. et. al., "Splitting minimization: a novel approach for multicasting in WDM mesh networks", Journal of optics (Springer), Vol-42, pp 268-280, 2013.

Citation line: "A priority based routing and wavelength assignment scheme with incorporation of a traffic grooming mechanism (PRWATG) to reduce call blocking is proposed in[6]." .

Prof Sahu and his students have developed priority based wavelength assignment in Indian optical back bone to reduce call blocking as mentioned by the above authors

Citation-5: Jaisingh Thangaraj et. al., "End-to-end path protection considering four wave mixing in multi-domain WDM optical networks", Journal of optics (Springer), Vol-51, pp 294-309, 2014.

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Citation line: "Most of dynamic traffic grooming problems deal with minimization of the blocking probability [13–15]." .

Prof Sahu and his students have developed priority based traffic grooming wavelength assignment to reduce call blocking in protected optical network as mentioned by the above authors.

Citation-6 : T. Ilavarasan et. al., "An overview of fiber dispersion and nonlinearity compensation techniques in optical orthogonal frequency division multiplexing systems", Journal of optics (Springer), Vol-44 pp 255-270 2015.

Citation line: "Studies have indicated the detrimental effect of fiber dispersion on the QoS of opti cal networks due to its wavelength dependency [30, 31]." .

Prof Sahu and his students have also studied wavelength dependency call blocking as mentioned by the above authors

Citation-7 : P. K. Choudhury., "Adaptive OFDM for chirped reflective ONU based high speed passive optical networks", Journal of optics (Springer), Vol-43 pp 239-246, 2014.

Citation line: "The researchers are investigated different aspects of this network including its system level implementation complexity [1] with wavelength and routing assignments [2] [3]" .

Prof Sahu and his students have also studied different aspects of wavelength assignment as mentioned by the above authors.

Citation-8 : S. Divakaran at.al., "A framework for topology-based traffic grooming with restoration in optical networks", International Journal of High Performance Computing and Networking, Vol- 8, DOI: 10.1504/IJHPCN.2015.072787

Prof Sahu and his students have also studied different aspects of wavelength assignment as mentioned by the above authors.

Citation-9 A. Adaikalam. et. al., "A Modified Priority-Based Multischeduler (PBMS) for Optical Network", Artificial Intelligence and Evolutionary Algorithms in Engineering Systems. Advances in Intelligent Systems and Computing, Vol-324 DOI: 10.1007/978-81-322-2126-5_70.

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Citation-10: Amin Ebrahimzadeh et. al., "Online bandwidth provisioning in all optical interconnection networks of data centers: Throughput maximizing approach", Computer and Electricla engg(Elsevier), Vol-57, pp 15-27, 2017

Citation line: "Request differentiation based on call priority has been subject of a couple of recent

studies, as well [20–24]" .

Prof Sahu and his students have developed Call priority assignment in optical back bone and used by the above authors

Citation-11: W Lai et. al., "A Static Traffic Grooming Scheme for IP over WDM Optical Internet", Journal of Algorithms & Computational Technology Vol. 8, 203, 2013.

Citation line: "In [13], a priority based routing and wavelength assignment (RWA) scheme was proposed with incorporation of a traffic grooming mechanism to reduce the blocked requests".

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Citation-12: Pakorn Leesutthipornchai et. al., "Multi-Objective…. WDM mesh Networks", Candain J. of physics and appl. physics (Springer) Vol. 8, 3061, 2014.

Citation line: "Chatterjee et al. (2012) proposed a priority based routing and wavelength assignment with traffic grooming mechanism (PRWATG) to reduce blocking probability……..The blocking probability increases when the number of connections is increased. with a direct path hadhigher priority than one with an indirect path.".

Prof Sahu and his students have developed priority based assignment with incorporation of a traffic grooming mechanism to reduce the blocked probability in optical back bone as mentioned by the above authors.

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Citation-17: S. Divakaran et. al., " Design and development….Optical networks", International J of high performance computing and networking .., Vol.8, 358-369, 2015.

Prof Sahu and his students have designed Indian optical backbone iwith priority based assignment with incorporation of a traffic grooming mechanism to reduce the blocked probability in optical back bone. It is used by the above authors for implementation of their proposed algorithm.

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Citatation-23: A. F. Ismail et. al., " Performance prédiction ….in the topics", International conference on telecommunication technlogies., 187-191, 2012.

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Citatation-25: K Pushpanathan et. al., " Trafic grooming ….Optical networks", International journal of emerging trends and tehcnlogy in Comm Sc.Vol-2, 355-359, 2013.

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Citatation-26:S. Mallik et. al., " An analytical ……. protection trees", journal of optics (springer).Vol43, 70-78, 2014.

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Prof Sahu and his students have developed Indian optical backbone with priority based assignment with incorporation of a traffic grooming mechanism to reduce number od the wavelengths in optical back bone under heavy traffic condition
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Citation-33:W. Fadini et. al., " A subcarrier… … Optical network", Computer network., Vol-9 1, 700-711, 2017.
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Citation line: Working on routing and wavelength assignment, [9] proposes a scheme based on priority order, first on the type of path and then on the traffic amount. This technique reduces the level of blocking probability that happens due to the wavelength continuity constraint" .

Prof Sahu and his students have developed Call priority order in optical back bone and used by the above authors.

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Citation line: The traffic grooming problem is often combined with the routing and wavelength assignment problem, which is denoted as the traffic grooming routing and wavelength assignment (GRWA) problem [7]." .

Prof Sahu and his students have developed traffic grooming priority order in optical back bone as mentioned in this paper

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Citation line: "the conventional optical network [4]–[6] is incapable of achieving the enormous bandwidth demanded by clients." .

Prof Sahu and his students have developed optical networks having priority order during wavelength assignment

Citation-37: J. Zhao et.al. "Dispersion Based Highest-Modulation-First Last-Fit Spectrum Allocation Scheme for Elastic Optical Networks, IEEE access, Vol-6, pp 59907, 2018.

Citation line: "We set up the experiments for 14 nodes with 21 bi-direction physical links of National Science Foundation Network (NSFNET) [29] and 14 nodes with 24 bi-direction physical links of Indian network [30], as shown in Figs. 2(a) and 2(b) respectively." .

Prof Sahu and his students have developed Indian optical networks having priority order during wavelength assignment

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Citation line: "Traditional wavelength division multiplexing networks…….. causes considerable bandwidth wastage" .

Prof Sahu and his students have developed traditional optical networks having priority order during wavelength assignment

Citation-39: H Saini et.al. "To investigate …high speed networks, International J Information technology, Vol-5, pp 1-10, 2018.

Citation line: .

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Citation line: .

Prof Sahu and his students have developed Indian optical networks having priority order during wavelength assignment.

Citation-41: Pradhan et.al. "Knapsack based…Opticla networks", Optical switch and network, Vol-27, pp 40-49, 2018.

Citation line: "A priority based routing and wavelength assiganment scheme with incorporation of traffic grooming is presented ..[22]."

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in optical backbone.

Citation-42: Li et.al. "Power OTN…methods", Hans J wireless communication, Vol-8, pp 1-20 2018.

Citation line:

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in optical backbone.

Citation-43: Li et.al. "Power OTN…methods", Hans J wireless communication, Vol-8, pp 1-20 2018.

Citation line:

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in optical backbone.

Citation-44. L. H. Bonani et.al. "Load balancing in fixed-routing optical networks with weighted ordering heuristics" IEEE/OSA Journal of Optical Communications and Networking (Volume: 11 , Issue: 3 , March 2019

Citation line:

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Citation-45. H Liu et.al. "Space-Frequency Joint Contention Scheduling Algorithm based on AoD in SDM-EONs" Optical Fiber Technology 47 (2019) 93–101, 2019

Citation line: Traditional wavelength division multiplexing (WDM) networks divide the spectrum into separate channels with fixed-grid, which causes considerable bandwidth waste [1]

Prof Sahu and his students have developed Traditional WDM network dividing channels in the network and priority order of wavelength assignment with traffic grooming in optical backbone.

Citation-46. Bijoy Chatterjee, Eiji Oki. Elastic Optical Networks: Fundamentals, Design, Control, and Management, CRC press, 2020

Citation line:

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-47. Himanshi Saini and Amit Kumar Garg "DHbLP: A Novel Technique for Survivability in Optical Networks", J. Opt Comm, 2019,https://doi.org/10.1515/joc-2018-0195

Citation line: Chatterjee, Sarma and Sahu [47] proposed a priority based routing and wavelength assignment scheme with incorporation of a traffic grooming mechanism (PRWATG) to reduce call blocking. In this technique,connections with same source destination pair are groomed and routing is implemented on basis of priority estimated through type of path and traffic volume

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-48. S Kumar, V Bhambhu, "Design and Implementation of Closed Loop Efficient Routing with Distance Optimization in Optical Networks", (IJETER) Vol-1, pp8-15, August (2019)

Citation line:

Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-49. Bakhe Nleya et.al., "A Restricted Intermediate Node Buffering-Based Contention Control Scheme for OBS Networks", 2019 International Conference on Advances in Big Data, Computing and Data Communication Systems (icABCD), 10.1109/ICABCD.2019.8851001.

Citation line: In any case, severaltypes of WCs exist including tunable wavelength converters (TWCs) and fixed wavelength converters (FWCs) [7]
Prof Sahu and his students have developed architecture based WC priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-50. Xinyun Wu et.al., "A matheuristic for a telecommunication network design problem with traffic grooming", Omega 90 (2020) 102003.

Citation line: Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-51. T Xiangxuan et.al., "Resource Allocation Algorithm based on MultiDimensional Resource Description in Complex Optical Network" 2019 International Conference on Information Technology and Computer Application (ITCA), 2019

Citation line: Prof Sahu and his students have developed priority order of wavelength assignment with traffic grooming in Indian optical backbone.

Citation-52. M Zhang et.al., "Characteristics and mechanism of all-optical switching based on one-dimensional periodic two-segment-connected tetrahedral optical waveguide network"Optics Communication (Press) 2020. https://doi.org/10.1016/j.optcom.2020.126091
Citation line: When the all-optical switch in this work is applied to a nationwide optical network [28], to switch control the photonic propagation, it can be set as a light control basic element in the start or terminal module of the network.
Prof Sahu and his students have used all optical switches as a terminal module in priority order of wavelength assignment with traffic grooming in Indian optical backbone.
Citation-53: P Jin et.al. ., "Optical logic gates based on the transverse spin of structured optical fields" Optics Communications 446 (2019) 118–122
Citation line: It is worth mentioning that some important progresses on all-optical logic devices have recently been acquired by Sahu, et al. [34–36],where, based on compact surface plasmonic modes and optical waveguides,the authors applied optically controlled two mode interference coupler.
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic devices as mentioned by the above authors.
Citation-54. J Chen et.al. ., "Plasmon Excitation in BC3 Nanostructures from First Principles", Plasmonics (2019) 14:109–116.
Citation line: Previous studies have certified the widespread application of SPs as laser, resonance sensor, optical switch, super-resolution imaging, and novel micro-nano optoelectronic devices, etc. [5–11]..
Prof Sahu has proposed optical pulse controlled two mode surface plasmonics structure for all optical devices as mentioned by the above authors.

2) P. P. Sahu, "All optical switch using optically controlled two mode interference coupler" Applied Optics, Vol.-51, no. 14, pp. 2601-2605, 2012.

IF: 2.180, Citation: 27.

Citation-1 : J. W. M. Menezes et al, Numerical analysis .....allopticla logic gates, J. Nonlinear Optic. Phys. Mat. 21, 1250037 (2012) [23 pages] DOI: http://dx.doi.org/10.1142

Prof Sahu has proposed two mode interference structure for all optical switch and used for compact optical logic gates as mentioned by the above authors.

Citation-2 : P Wu et al, All Optical control….condition, Optical engineering, .Vol-57, 035103, 2018

Prof Sahu has proposed two mode interference structure for all optical switch and used for optical control as mentioned by the above authors.

Citation-3 Preeti Rani et.al. "Design of all optical logic gates in photonic crystal waveguides" , Optik 126 (2015) 950–955, 2015

Prof Sahu has proposed two mode interference structure for all optical switch and used for compact optical logic gates as mentioned by the above authors.

Citation-4 Osman Akin et.al. "Demonstration of pulse controlled all-optical switch/modulator" Optics Letters Vol- 39 Page 1469 -1473, 2014

Prof Sahu has proposed two mode interference structure for all optical switch and the same concept used for the modulator, as mentioned by the above authors.

Citation-5 : Trung-Thanh Le et. al. All-optical switches based on 3 x 3 generalized multimode interference structure" Photonics and Nanostructures – Fundamentals and Applications 11 (2013) 261–269

Prof Sahu has proposed two mode interference structure for all optical switch and the same concept used for MMI coupler based switch, as mentioned by the above authors.

Citation-6 : .Chen Wang et. al. "Ultracompact linear on-chip silicon optical logic gates with phase insensitivity", EPL (Europhysics Letters), Vol-103, pp 64001, 2013.

Citation line: "So far people have focused on two routes to construct optical logic gates: one is based on linear optical effects, and various schemes such as interferometry [3]"

Prof Sahu has proposed two mode interference structure for all optical switch and the same non linear concept is used in phase sensitivity.

Citation-7: Najmeh Nozhat at. al. All-optical XOR and NAND logic gates based on plasmonic nanoparticles, Opt, Comnn, Vol-392, pp208-213, 2017

Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and same nonlinear concept used for NOR and NAND gates, as mentioned by the above authors..

Citation-8 : L. M. Lupken et al, «Low power….waveguide, Optics letters .Vol-43,1631-1634, 2018

Prof Sahu has proposed two mode interference structure for all optical switch and used for optical switch via phase modulation as mentioned by the above authors.

Citation-9: K Bhandel et al, «Design an simulation .....logic gates », International conference on computation intelligence and comm networks 973-977, 2014

Prof Sahu has proposed two mode interference structure for all optical switch and used for optical switch via phase modulation as mentioned by the above authors.

Citation-10 : .P Rani et. al. "optical logic …….NOR gates", International conference on Fibre optics and photonics,W4E,5, 2016.

Prof Sahu has proposed two mode interference structure for all optical switch and the same non linear concept is used in NOR gate as mentioned by author.

Citation-11: .Y Shimada et. al. "Perfromance simulation of novel ……Optical switches", International conference on photonics in switching, W4E,5, 2015.

Prof Sahu has proposed two mode interference structure for all optical switch and the same non linear concept is used in switcing. as mentioned by author

Citation-12: .A Pal et. al. "Design of optical ……Optical switches", J of optical communication, Vol 38, 133-140, 2017.

Prof Sahu has proposed two mode interference structure for all optical switch and the same non linear concept is used in optical switching. as mentioned by author.

Citation-13: .S Tomer et. al. "Plasmonic waveguide ……Optical AND gates", Plasmincs design materials and Chaterization and Applications (SPIE),XV, 10346, 2017.

Prof Sahu has proposed two mode interference structure for all optical switch and the same non linear concept is used in optical And gates. as mentioned by author.

Citation-14: .W. Belhadi et. al. "All optical logic gates ……Phtonic crystals", Optik, Vol 168, 237-243, 2087.

Prof Sahu has proposed two mode interference structure for all optical switch,. as mentioned by author.

Citatio-15: K Bhandel et al, «Design an simulation …..logic gates », International J of CSNT,Vol-3, 86-93, 2014

Prof Sahu has proposed two mode interference structure for all optical switch and used for all optical logic gates via phase modulation as mentioned by the above authors.

Citatio-16: C Wang et al, «Ultra compact …..optical logic gates », arXiv1210.6092, 2012

Prof Sahu has proposed two mode interference structure for all optical switch and used for all optical logic gates via phase modulation as mentioned by the above authors.

Citatio-17: Z. Li et al, «linear and passive…..logic gates », Phtonics society summer tropical meeting IEEE, 189-90, 2013

Prof Sahu has proposed two mode interference structure for all optical switch and used for all optical logic gates via phase modulation as mentioned by the above authors.

Citation-18: Q. Lu et.al. "High-speed ultra-compact all-optical NOT and AND logic gates designed by a multi-objective particle swarm optimized method", Optics and Laser technology ,Volume 116, August 2019, pp 322-327, 2019

Citation line: "]. In recent years, different schemes have been demonstrated for the design of all-optical logic gates such as interferometry [3,4]." .

Prof Sahu and his students have developed all optical logic gates using two mode interferometer.

Citation-19: Lupken et.al. "High-speed ultra-compact all-optical NOT and AND logic gates designed by a multi-objective particle swarm optimized method", Optics Letters, Vol. 43, pp. 1631-1634, 2018

Citation line: ".The overall loss of our setup, related to input and output coupling losses as well as filtering loss, was estimated to around 14 dB and can be avoided for all-optical switching applications by building a fully integrated all-optical switch [20]." .

Prof Sahu and his students have demonstrated all-optical switching applications by building a fully integrated all-optical switch

Citation-20: Belhadj et.al. "All-optical logic gates based on coupled heterostructure waveguides in two dimensional photonic crystals", Optik, Vol. 168, , Pages 237-243,2018

Citation line: "Previous developments have focused on two routes to construct optical logic gates: the first one is based on linear optical effects, such as interferometry [9],." .
Prof Sahu and his students have developed all-optical logic switching using linear effects.
Citation-21: Wu et. al. "All-optical control based on polarization rotation effect at a critical coupling condition", Optical Engineering, Vol.57 , pp. 0035103, 2018
Citation line: "different kinds of alloptical devices have been designed and fabricated, including all-optical switching and routing, all-optical frequency controlling, light-controlled tuning, photonic circuits, and logic gates and memories [9]" .
Prof Sahu and his students have demonstrated all-optical switching applications by building a fully integrated all-optical switch.

3) Bijoy Chand Chatterjee, Nityananda Sarma, Partha Pratim Sahu, "Priority based Dispersion-reduced Wavelength Assignment for Optical Networks", IEEE/OSA Journal of Lightwave Technology , vol. 31, no. 2, pp. 257-263, 2013.
IF: 5.090, Citation: 27.
Citation-1: A K Pradhan et. al., "Design of light-tree based multicast traffic grooming in WDM mesh networks", Journal of optics (Springer), Vol-43, pp 330-340 2014.
Citation line: "A priority based dispersion-reduced wavelength assignment (PDRWA) scheme is proposed in [22] to reduce the overall dispersion in optical network without increasing blocking probability and total propagation loss." .
Prof Sahu and his students have developed dispersion reduced wavelength assignment based traffic grooming to reduce propagation loss and increase quality of service as mentioned by the above authors.

Citation-2 : Amin Ebrahimzadeh et. al., "Request differentiation in dynamic light-path establishment for WDM routed all optical networks of data centers", Optical fiber technology (Elsevier), Vol-21, pp 73-80, 2015.
Citation line: "Request differentiation based on call priority has been subject of a couple of recent
studies, as well [14, 15–18]" .
Prof Sahu and his students have developed dispersion reduced priority assignment in optical back bone and used by the above authors.
Citation-3: Subhendu Barat. et. al., "Splitting minimization: a novel approach for multicasting in WDM mesh networks", Journal of optics (Springer), Vol-42, pp 268-280, 2013.
Citation line: "As dispersion degrades the quality of signal in optical networks, a priority based dispersion-reduced wavelength assignment (PDRWA) scheme to reduce overall dispersion
in optical network is proposed in [7].".
Prof Sahu and his students have developed a priority based dispersion-reduced wavelength assignment (PDRWA) scheme to reduce overall dispersion in optical network in Indian optical back bone to reduce call blocking as mentioned by the above authors.

Citation-4: Jaisingh Thangaraj et. al., "End-to-end path protection considering four wave mixing
in multi-domain WDM optical networks", Journal of optics (Springer), Vol-51, pp 294-309, 2014.

Citation line: "Protection strategies for single domain WDM optical networks [4-9, 10-14] greatly affects the blocking probability in the connection…….manner.]." .

Prof Sahu and his students have developed priority based dispersion reduced wavelength assignment in Indian optical back bone to reduce call blocking in protected optical network as mention by the above authors

Citation-5: Amin Ebrahimzadeh et. al., "Online bandwidth provisioning in all optical interconnection networks of data centers: Throughput maximizing approach", Computer and Electricla engg(Elsevier), Vol-57, pp 15-27, 2017

Citation line: "Request differentiation based on call priority has been subject of a couple of recent

studies, as well [20–24]" .

Prof Sahu and his students have developed dispersion reduced priority assignment in optical back bone asmentioned by the above authors.

Citation-6: S Barat. et. al., "A load balanced approach of multicast routing and wavelength assignment in WDM networks ", International Journal of Communication Networks and Distributed Systems Vol-15, DOI: 10.1504/IJCNDS.2015.070259

Prof Sahu and his students have developed a priority based dispersion-reduced wavelength assignment (PDRWA) scheme to reduce overall dispersion in optical network in Indian optical back bone to reduce call blocking as mentioned by the above authors.

Citation-7: T. Ilavarasan et. al., "An over view ……..multi-plexing systems", J of optics (springer), Vol-44, pp 255-270, 2015

Prof Sahu and his students have developed dispersion reduced priority assignment in optical back bone as mentioned by the above authors and used for comparison.

Citation-8: A. Israr et. al., "Performance analysis ……..multi-plexing systems", International Conf. on Frontiers of information technology), 77-80, 2015

Prof Sahu and his students have developed dispersion reduced priority assignment in optical back bone as mentioned by the above authors and used for comparison.

Citatation-9:Chatterjee et. al., " Routing….Optical networks", IEEE com. Surveys and tutorial , Vol-17, 1776-1800, 2015.

Prof Sahu and his students have developed Indian optical backbone with dispersion priority based assignment with incorporation of a traffic grooming mechanism to reduce number od the wavelengths in optical back bone which has been used for his works.

Citation-10 : Amin Ebrahimzadeh et. al., "Online bandwidth ……. Maximizing approach", Computer and electrical engg (Elsevier), Vol-57, pp 15-27, 2017.

Prof Sahu and his students have developed dispersion reduced priority assignment in optical back bone and used by the above authors.

Citation-11:VKA. Kumar et. al., " Review of contemporary ….OBS network", J of Optics (springer)., Vol-1, 8-14, 2018.

Prof Sahu and his students have developed Indian optical backbone with dispersion reduction priority based assignment with incorporation of a traffic grooming mechanism to

reduce number od the wavelengths in optical back bone which has been used for reviewing of different works on OBS networks.
Citation-12. Chatterjee et.al.. Elastic Optical Networks: Fundamentals, Design, Control, and Management, CRC press, 2020
Prof Sahu and his students have developed dispersion reduction priority order of wavelength assignment with traffic grooming in Indian optical backbone.
4) P. P. Sahu, "Theoretical Investigation of All optical switch based on compact surface plasmonic two mode interference coupler", IEEE/ OSA J of Lightwave Technlogy, 34(4), 1300-1305, 2016.
IF: 2.862, Citation: 33.
Citation-1: S. Kumar et.al ., "Design of Full-Adder and Full-Subtractor Using Metal-Insulator-Metal Plasmonic Waveguides," Plasmonics , pp1-11,DOI: 10.1007/s11468-016-0350-y. 2016.
Citation line: "Hence, four non-degenerated SP modes lie in between metallic interfaces [19, 20, 21]."
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for compact full adder and substructor by the above authors.

Citation-2: M. Farhat et.al ., "Ultrashort hybrid plasmonic transverse electric pass polarizer for silicon-on-insulator platform " Optical Engineering , vol- 56(1), 017107 2017

Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for Ultrashort hybrid plasmonic transverse electric pass polarizer by the above authors.

Citation-3: Najmeh Nozhat at. al. All-optical XOR and NAND logic gates based on plasmonic nanoparticles, Opt, Comnn, Vol-392, pp208-213, 2017
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for NOR and NAND gates, as mentioned by the above authors.
Citation-4: Aliaksandr Hubarevich .et.al., "Highly Efficient Ultrathin Plasmonic Insulator-Metal-Insulator-Metal Solar Cell," Plasminics , pp1-5, doi:10.1007/s11468-016-0493-x
Citation line: "Additionally, this structure can be implemented for integrated optical circuits [27, 28, 29] as well as for solar thermoelectric generator due to high thermal conductivity of metals and its operation at high temperature."
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for compact solar cell by the above authors.

Citation-5: Timothy J. Davis et. al., »Plasmonic circuits for manipulating optical information" Nanophotonics, DOI 10.1515/nanoph-2016-0131, 2016.

Citation line: "There are interferometers in which refractive index modulation by a light pulse on a photo-refractive material induces a phase shift in one beam path changing the interference state and therefore the plasmon intensity [130–133].

Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for accurate phase changer for variation of plasmonic intensity as mentioned by the above authors.

Citation-6: Shahram Bahadori-Haghighi et.al. "3-D Analysis of an ultrashort Optical Cross-Bar Switch Based on a Graphene Plasmonic Coupler" IEEE/OSA Journal of Light wave technology, DOI 10.1109/JLT.2017.2688354, 2017.
Citation line: "Various kinds of optical switches and modulators have already been studied and implemented [4], [5]."
Prof Sahu has proposed all optical switch and used for high speed communication as mentioned by the above authors
Citation-7: T J Davis et.al. "Plasmonics circuits.....waveguides " Nanophotonics, Vol-6, 543-559, 2017.

Prof Sahu has proposed all optical switch and used for high speed communication as mentioned by the above authors
Citation-8:MTH Azar et.al. "Design of full adder.....optical information" J of Nanophotonics(SPIE), Vol-12, 987-997, 2017.

Prof Sahu has proposed all optical switch and used for high speed communication as mentioned by the above authors.
Citation-9: R. sharma et.al., "Computational study...numerial model for Dimer," Plasmonics , pp1-10(in press) 2018.
Citation line: "Hence, four non-degenerated SP modes lie in between metallic interfaces [19, 20, 21]."
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.
Citation-10: M. Ghadrdan et.al. ., "Low threshold ..... crystal resonator" Superlattics and microstructures, Vol=111,789-795 2017.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for compact full adder and substructor by the above authors.
Citation-11: S. Dutta et.al. ., "Proposal for ..... non Boolean computation", Scientific reports , Vol-7, 1786, 2017.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors and concept is used for non Boolean computation.
Citation-12: L. Chen et.al. ., "Chip scale ..... Mechanism" Optics letters , Vol-42,4199-4202 2017.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.
Citation-13: N H Shen et.al. ., "Meta materials ..... collimation" Physical review B , Vol-93,245118 2016.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.
Citation-14: L. Chen et.al. ., "Numericals investigation..... layers" Photonics research , Vol-5, 335-339, 2017.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.

Citation-15: A. Hubarevich et.al. ., "Highly efficent ..... Solar cell" Plasmonics , Vol-13,141-145 2018.

Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for compact full adder and substructor as mentioned by by the above authors and the concept is used for obtaining high efficient solar cell,

Citation-16: A. Hubarevich et.al. ., "Design and ..... and octagon" Photonics and nanostructures , Vol-29,15-2, 2018.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.
Citation-17: D. Niu et.al. ., "Optimized Design and ..... power computation" Applied optics, Vol-56,5799-5803, 2017.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors.

Citation-18: Y S Lin et.al. ., "A large-area ..... for glucose sensing" Optical materials, Vol-75,739-743, 2018.
Prof Sahu has proposed two mode surface plasmonics structure for all optical switch as mentioned by the above authors and the concept is used for glucose sensing.
Citation-19: Wang et.al. "Theoretical investigation .... lithography", Result in physics, Volume 47,pp 324–331, 2018.
Citation line: "Subwavelngth structures ..... all optical switches [21, 22]." .
Prof Sahu has developed all optical switches using surface plasmonics structures and the concept has been used for lithography.
Citation-20: Lin et.al. "A large-area, wide-incident-angle, and polarization-independent plasmonic color filter for glucose sensing", Optical Materials 75 (2018) 739e743
Citation line: "It explains the remarkable sensitivity of plasmonics with respect to changes in optical parameters at the metal-dielectric boundary [15,16]" .
Prof Sahu has shown the sensitivity of plasmonics with respect to changes in optical parameters at the metal-dielectric boundary
Citation-21: Ghadrdan et.al.. "A large-area, wide-incident-angle, and polarization-independent plasmonic color filter for glucose sensing", Photonics and nanostructures Fundamentals and Applications Vol.29 (2018) 15–21
Citation line: "These proposed structures have different characteristics, functions, and application in different situations. Among these, the AOS based on surface plasmon polaritons (SPPs) have attracted much attention owing to ultra-fast response time and nanometer scale [15–19]." .
Prof Sahu has developed SPP based devices for to ultra-fast and nanometer scale application
Citation-22: Chen et.al.. "Plasmon Excitation in BC3 Nanostructures from First Principles" , Plasmonics, Vol. 14, pp 109–116, 2019
Citation line: "Previous studies have certified the widespread application of SPs as laser, resonance sensor, optical switch, super-resolution imaging, and novel micro-nano optoelectronic devices, etc. [5–11]" .
Prof Sahu has developed SPP based devices for nanometer scale application
Citation-23: Hubarevich et.al.. "Highly Efficient Ultrathin Plasmonic Insulator-Metal-Insulator-Metal Solar Cell" Plasmonics, Vol. 13, pp 141–145, 2018

Citation line: "this structure can be implemented for integrated optical circuits [27–29] as well as for solar thermoelectric generator due to high thermal conductivity of metals and its operation at high temperature.".

Prof Sahu has developed SPP based structure for integrated optical circuits application.

Citation-24: Wang et.al.. "All-optical logic gates based on metallic waveguide arrays "Results in physics, Vol 11,Pages 837-841, 2018

Citation line: "Various kinds of logic gates based on plasmonic structures have been proposed, such as silver nanowire network [1], [2], plasmonic slot waveguides [3], [4], dielectric-loaded waveguides [5], metal–insulator–metal structures [6], and silicon hybrid plasmonic waveguides [7], [8], [9]..".

Prof Sahu has developed SPP based silicon hybrid structure for integrated optical circuits application.

Citation-25: Sharma et.al.. "Computational Study of Plasmon Interaction in Organic Media: a Comparison Between Analytical and Numerical Model for Dimer" Plasmonics, Vol. 13, pp 1775–1784, 2018

Citation line: "To miniaturize photonic devices, one of the prospective components is organic materials [16.".

Prof Sahu has miniaturize device using SPP based structure for integrated optical circuits application.

Citation-26: Jaber et.al.. "Design Investigation of 2× 2 Mach–Zehnder Optical Switch Based on a Metal–Polymer–Silicon Hybrid Plasmonic Waveguide"Fiber and Integrated optics, Vol. 13, pp 1775–1784, 2018

Citation line: "Plasmonic OSs were also investigated theoretically and experimentally using non-MZI configurations [52–62] which are generally not compatible with POH modulators which makes the incorporating of both modulators and switching on the same platform is relatively not efficient.".

Prof Sahu has miniaturize device using SPP based switching device for integrated optical circuits application.

Citation-27: Zekriti et.al.. "Temperature Effects on the Resolution of Surface-Plasmon-Resonance-Based Sensor "Plasmonics, Vol. 13, pp 1775–1784, 2018

Citation line: "The field expression at an arbitrary point in the structure can be written as [29, 30, 31]:.".

Prof Sahu has developed field expression which is used for modeling of SPP based sensor.

Citation-28. M Zhang et.al., "Characteristics and mechanism of all-optical switching based on one-dimensional periodic two-segment-connected tetrahedral optical waveguide network"Optics Communication (Press) 2020. https://doi.org/10.1016/j.optcom.2020.126091

Citation line: The result of Channel 1 was compared with the previously reported results [7, 34, 35]. The threshold energy of the all-optical switch based on an optically controlled two-mode interference coupler was 21.6 pJ [34], the threshold energy of the all-optical switch based on a compact surface plasmonic two-mode interference coupler was 16.4pJ [35].

Prof Sahu and his students have used all optical switches as a terminal module

Citation-29: X. Wang et.al.. "Theoretical investigation of subwavelength structure fabrication based onmulti-exposure surface plasmon interference lithography" Results of Physics, Results in Physics 12 (2019) 732–737733

Citation line: "……. All optical switches[21,22],"

Prof Sahu has developed all optical switch using SPP device.

Citation-30: Marziyeh Moradi et.al.. "Design of all optical XOR and XNOR logic gates based on Fano resonance in plasmonic ring resonators" Optical and Quantum Electronics (2019) 51:154

Citation line: "Recently, many different plasmonic devices such as all optical switches (AOS) (Ghadrdan and Mansouri-Birjandi 2016, 2017; Emadi et al. 2017; Sahu 2016;".

Prof Sahu has developed All optical switch using SPP.

Citation-31: Marziyeh Moradi et.al.. "Design of all optical XOR and XNOR logic gates based on Fano resonance in plasmonic ring resonators" Optical and Quantum Electronics (2019) 51:154

Citation line: "Recently, many different plasmonic devices such as all optical switches (AOS) (Ghadrdan and Mansouri-Birjandi 2016, 2017; Emadi et al. 2017; Sahu 2016;".

Prof Sahu has developed All optical switch using SPP

Citation-32. P Jin et.al., "Optical logic gates based on the transverse spin of structured optical fields", Optics Communications 446 (2019) 118–122..

Citation line: It is worth mentioning that some important progresses on all-optical logic devices have recently been acquired by Sahu, et al. [34–36],where, based on compact surface plasmonic modes and optical waveguides,the authors applied optically controlled two mode interference coupler],.

Prof Sahu and his students have developed optically controlled two mode interference coupler for alll optical devices using SPP modes.

5) N Gogoi and P. P. Sahu, "All optical compact surface plasmonic two mode interference device for optical logic gates", Applied Optics 54 (5), 1051-1057, 2015.

Impact Factor: 2.180, Citation: 25

Citation-1 S. Kumar et.al. , "Design of Full-Adder and Full-Subtractor Using Metal-Insulator-Metal Plasmonic Waveguides," Plasminics , pp1-11,DOI: 10.1007/s11468-016-0350-y. 2016.

Citation line: "Hence, four non-degenerated SP modes lie in between metallic interfaces [19, 20, 21]."

Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used for compact full adder and substructor as mentioned by the above authors.

Citation-2: Yaxue Zhai et. al. Performance analysis of an all-optical logic gate based on a single I/Q modulator with direct detection", Applied Optics , Vol. 55, pp. 6807-6812 (2016)

Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used for all optical logic gates as mentioned by the above authors.

Citation-3: A. Pal et. al. Optical 1's and 2's complement devices using lithium-niobate-based waveguide, Opt. Eng. 55(12), 125104 (Dec 20, 2016). doi:10.1117/1.OE.55.12.125104

Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used for all optical 1's and 2's complement =s as mentioned by the above authors.

Citation-4 Talal Ghannam , "Dipole-Nano-Laser Based Plasmonic Nano-Sensor for Sensing Photons and Bio-Chemical Analytes," Plasminics , , Vol-12, pp 125–129, 2017
Citation line:"Both can be used as plasmonic sensors and also as wave guides or logical gates [7, 8]"
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used for plasmonics sensor as mentioned by the above authors.

Citation-5: M. Farhat et.al ., "Ultrashort hybrid plasmonic transverse electric pass polarizer for silicon-on-insulator platform " Optical Engineering , vol- 56(1), 017107 2017

Prof Sahu has proposed two mode surface plasmonics structure for all optical logic gates and used for Ultrashort hybrid plasmonic transverse electric pass polarizer by the above authors.

Citation-6: J. C. Sales et. al., "High quality of logic gates from the return arm of a Sagnac fiber interferometer" Journal of Electromagnetic Waves and Applications, Volume 30, pp 1257396 2016

Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used the concept as mentioned by the above authors.

Citation-7 T. F. Assunção et. al. Phase-shift-controlled logic gates in Y-shaped nonlinearly coupled chains", Phys. Rev. E 93, 022218, 2016.
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic operation and used for phase shift controlled logic gates as mentioned by the above authors.

Citation-8: Aliaksandr Hubarevich .et.al., "Highly Efficient Ultrathin Plasmonic Insulator-Metal-Insulator-Metal Solar Cell," Plasminics , pp1-5, doi:10.1007/s11468-016-0493-x

Citation line: "Additionally, this structure can be implemented for integrated optical circuits [27, 28, 29] as well as for solar thermoelectric generator due to high thermal conductivity of metals and its operation at high temperature."
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic gates and used for compact solar cell by the above authors.

Citation-9: Timothy J. Davis et. al., »Plasmonic circuits for manipulating optical information" Nanophotonics, DOI 10.1515/nanoph-2016-0131, 2016.

Citation line: "There are interferometers in which refractive index modulation by a light pulse on a photo-refractive material induces a phase shift in one beam path changing the interference state and therefore the plasmon intensity [130–133].

Prof Sahu has proposed two mode surface plasmonics structure for all optical switch and used for accurate phase changer for variation of plasmonic intensity as mentioned by the above authors.
Citation-10: A. Hubarevich et.al. ., "Highly efficent ..... Solar cell" Plasmonics , Vol-13,141-145 2018.

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Citation-11: P. Sharma et.al. ., "All optical logic gates ..... waveguides"IEEE Photonics technology letters, Vol-30 959-962, 2018.
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Citation-12: S. Dutta et.al. ., "Proposal for ..... non Boolean computation", Scientific reports , Vol-7, 1786, 2017.
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Citation-13: Y S Lin et.al. ., "A large-area ..... for glucose sensing" Optical materials, Vol-75,739-743, 2018.
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Citation-14: N Gogoi et.al. ., "All optical ..... wavguide" Applied Optics, Vol-57, 2715-2719, 2018.
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic gates as mentioned by the above authors and the concept is used for optical tunable power splitter.

Citation-15. P Jin et.al. ., "Optical logic gates based on the transverse spin of structured optical fields" Optics Communications 446 (2019) 118–122
Citation line: It is worth mentioning that some important progresses on all-optical logic devices have recently been acquired by Sahu, et al. [34–36],where, based on compact surface plasmonic modes and optical waveguides,the authors applied optically controlled two mode interference coupler.
Prof Sahu has proposed two mode surface plasmonics structure for all optical logic devices as mentioned by the above authors.

Citation-16. Y. Ye et.al. ., "A Novel Multi-functional Plasmonic Logic Deviceby Angle Manipulation", DOI 10.1109/TNANO.2019.2962752, IEEE Transactions on Nanotechnology,2019.

Citation line: For instance, NOT, AND, and OR logic gates were implemented by modulating the refractive index of the GaAsInP cladding with incidence of optical pulse energy [15].
Prof Sahu has proposed optical pulse controlled two mode surface plasmonics structure for all optical logic devices as mentioned by the above authors.

Citation-17. J Chen et.al. ., "Plasmon Excitation in BC3 Nanostructures from First Principles", Plasmonics (2019) 14:109–116.
Citation line: Previous studies have certified the widespread application of SPs as laser, resonance sensor, optical switch, super-resolution imaging, and novel micro-nano optoelectronic devices, etc. [5–11]..

Prof Sahu has proposed optical pulse controlled two mode surface plasmonics structure for all optical devices as mentioned by the above authors.

Citation-18. S Wei et.al., "A simple graphene nanoribbon structure-based terahertz all-optical logic gates with fano resonance" Optical Materials 97 (2019) 109401

Citation line: In Ref. [19], a surface plasmonic two-mode interference coupler based on silver/silicon/silver waveguide for logic gate operation has been investigated.

Prof Sahu has proposed optical pulse controlled two mode surface plasmonics structure for all optical devices as mentioned by the above authors.

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