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Publications

Journals (30):

1. **S. Rajput**, V. Kaushik, P. Babu, S. K. Pandey, P. Babu, and M. Kumar, "All optical modulation in vertically coupled indium tin oxide ring resonator employing epsilon near zero state," **Scientific Reports**, vol. 13, no. 18379, pp. 1-10, October 2023. **(Impact Factor ~ 4.6)**
2. **S. Rajput,** V. Kaushik, P. Babu, P. Tiwari, A.K. Srivastava, and M. Kumar, "Optical Modulation via Coupling of Distributed Heterojunctions in Si-ITO based Subwavelength Grating", **Physical Review Applied,** vol. 15, no. 5, pp. 54029 (1-13), May 2021. **(Impact Factor ~ 5)**
3. **S. Rajput**, V. Kaushik, S. Jain, P. Tiwari, A.K. Srivastava, and M. Kumar, "Optical Modulation in Hybrid Waveguide based on Si-ITO Heterojunction", **IEEE Journal of Lightwave Technology**, vol. 38, no. 6, pp.1365-1371, March 2020. **(Impact Factor ~ 4.7)**
4. **S. Rajput,** V. Kaushik, L. Singh, S. Srivastava, S.K. Pandey, R.D. Mishra, and M. Kumar, "Efficient Photodetector based on Sub-bandgap Transition in Silicon-ITO Distributed Heterojunctions", **IEEE Journal of Lightwave Technology**, vol. 39, no. 21, pp. 6886-6892, November 2021. **(Impact Factor ~ 4.7)**
5. **S. Rajput**, V. Kaushik, L. Singh, S. Srivastava, and M. Kumar, "Optical Modulator based on Silicon-ITO Grating Embedded Rib Structure with Tunable Group Delay", **Optics Letters,** vol. 46, no. 14, pp. 3468-3471, June 2021. **(Impact Factor ~ 3.8)**
6. **S. Rajput,** V. Kaushik, S. Jain, and M. Kumar, "Slow Light Enhanced Phase Shifter based on Low-Loss Silicon-ITO Hollow Waveguide", **IEEE Photonics Journal,** vol. 11, no. 1, pp.1-8, February 2019. **(Impact Factor ~ 2.8)**
7. **S. Rajput,** V. Kaushik, S. Jain, and M. Kumar, "Slow Light Assisted Electrical Tuning in Hollow Optical Waveguide via Carrier Depletion in Silicon and Indium Tin Oxide Sub-Wavelength Gratings", **Journal of Optical Society of America B,** vol. 37, no. 8, pp.2360-2365, June 2020. **(Impact Factor ~ 2.3)**
8. **S. Rajput**, V. Kaushik, L. Singh, S. Srivastava, S.K. Pandey, and M. Kumar, "Efficient Optical Modulation in Ring Structure based on Silicon-ITO Heterojunction with Low Voltage and High Extinction Ratio", **Optics Communications,** vol. 545, no. 129562, May 2023. **(Impact Factor ~ 2.4)**
9. **S. Rajput,** T. Saha, and A. Agarwal, "Enhanced Optical Modulation in AZO based Engineered Hybrid Plasmonic Waveguide: High Extinction Ratio and Low Voltage Operation", **IEEE Journal of Quantum Electronics**, Under Review, 2024. **(Impact Factor ~ 2.4)**
10. **S. Rajput,** A. Sekhar, and T. Saha, "Controlled Hybridization of GaAs-Based Vertically Coupled Hybrid Plasmonic Waveguide for Low-Loss Nanoscale Optical Confinement", **IEEE Transaction on Nanotechnology**, Under Review, 2024. **(Impact Factor ~ 2.4)**
11. V. Kaushik, **S. Rajput,** S. Srivastav, L. Singh, P. Babu, E. Heidari, M. Ahmed, Y.A. Hadeethi, H. Dalir, V.J. Sorger, and M. Kumar, "On-chip Nanophotonic Broadband Wavelength Detector with 2D-Electron Gas", **Nanophotonics,** vol. 11, no.2, pp. 289-296, November 2021. **(Impact Factor ~ 8.5)**
12. V. Kaushik, **S. Rajput,** P. Babu, S. K. Pandey, R. D. Mishra, H. Ren, S. Maier, V. J. Sorger, H. Dalir, and M. Kumar, "Electronically Controlled Semiconductor Nanoparticle Array for Tunable Plasmonic Metasurfaces", **IEEE Journal of Lightwave Technology,** vol. 42, no. 10, pp. 3814-3819**,** January 2024. **(Impact Factor ~ 4.7)**
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21. L. Singh, S. Srivastava, **S. Rajput,** V. Kaushik, R.D. Mishra, and M. Kumar, "Optical Switch with Ultra High Extinction Ratio Using Electrically Controlled Metal Diffusion", **Optics Letters,** vol. 46, no. 11, pp. 2626-2629, June 2021. **(Impact Factor ~ 3.8)**
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23. R.D. Mishra, L. Singh**, S. Rajput,** V. Kaushik, S. Srivastava, and M. Kumar, "Engineered Nanophotonic Waveguide with Ultra-low Dispersion", **Applied Optics,** vol. 60, no.16, pp. 4732-4737, May 2021. **(Impact Factor ~ 1.9)**
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1. **S. Rajput**, A.S. Parihar, V. Kaushik, and M. Kumar, "Efficient Optical Modulation: Unveiling the Potential of Si-ITO Distributed Heterojunctions Coupling in Subwavelength Gratings (AM4J.5)", Delivered Oral Presentation in **Conference on Laser and Electro-optics CLEO 2024**, **Charlotte Convention Center, Charlotte, North Carolina, USA,** 05-10 May 2024.
2. **S. Rajput,** "Highly Efficient Optical Modulation in Grating Embedded Rib Structure via Multiple Silicon-ITO Multiple Heterojunctions", **37th M.P. Young Scientist Congress, M.P. Council of Science and Technology, Bhopal, India,** March 2022.
3. **S. Rajput,** P. Babu, V. Kaushik, L. Singh, S. Jain, and M. Kumar, "High Extinction Ratio in Silicon-ITO Heterojunction based Optical Modulator", **Conference on Laser and Electro-Optics Pacific Rim CLEO-PR-2020, Sydney, Australia,** August 2020.
4. **S. Rajput,** V. Kaushik, S. Jain, and M. Kumar, "Electrically Tunable Absorption in Hollow Waveguide for Optical Modulation", **International Conference on Optics and Electro-optics ICOL-2019, IRDE DRDO, Dehradun, India,** October 2019.

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6. **S. Rajput**, V. Kaushik, S. Jain, and M. Kumar, "Graphene based High Speed Silicon Slotted Optical Phase Modulator", **The International Conference on Fiber Optics and Photonics- Photonics 2018, Indian Institute of Technology Delhi, India,** December 2018.
7. **S. Rajput,** V. Kaushik, S. Jain, and M. Kumar, "Ultra-low Loss Slow Light in Si-ITO based Hollow Core Waveguide", **International Symposium on Integrated Functionalities-ISIF 2017, Delhi University, New Delhi, India,** December 2017.
8. V. Kaushik, **S. Rajput,** P. Babu, S.K. Pandey, R.D. Mishra, H. Ren, S. Maier. V.J. Sorger, H. Dalir, J. Scheuer, and M. Kumar, "Electronically Controlled Quantum Confinement for Tunable Plasmonic Metasurfaces", Delivered Oral Presentation in **Conference on Laser and Electro-optics CLEO 2024**, **Charlotte Convention Center, Charlotte, North Carolina, USA,** 05-10 May 2024.
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10. S. Jain, L. Singh, **S. Rajput,** and M. Kumar," Low Group Index Optical Slot Structure for Efficient Optical Modulation", **Conference on Laser and Electro-Optics CLEO-2020, San-Jose, California, USA,** May 2020.
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17. F.A. Tantray, R. Chouhan, **S. Rajput,** A. Agrawal, and P. Sen, "Effect of Oxygen Partial Pressure on the Structural and Optical Properties of Ion Beam Sputtered TiO_2 thin films", **Journal of Physics Conference Series, International Conference on Recent Trends in Physics 2016 (ICRTP2016).**

Patents (02):

1. All Optical Modulation in Indium Tin Oxide based Vertically Coupled Ring Resonator employing Epsilon Near Zero State
   Inventors: M. Kumar, **S. Rajput,** V. Kaushik, P. Babu, and S.K. Pandey
   Status: Published, Indian patent, No. 202321010734
2. A Bio-chemical Sensor with Engineered Nanophotonic Structure, the process of preparation and use thereof.
   Inventors: M. Kumar, S. Srivastava, L. Singh, S. Jain, **S. Rajput**, and V. Kaushik
   Status: Published, Indian patent, No. 202121008991

Book Chapters (02):

1. V. Kaushik, **S. Rajput**, and M. Kumar, "Voltage Dependence of Lattice Period in Anodized Alumina Based Photonic Crystals", In book: ICOL-2019, Proceedings of the International Conference on Optics and Electro-Optics, Dehradun, India, Online ISBN978-981-15-9259-1, March 2021.
2. S. Jain, L. Singh, **S. Rajput**, and M. Kumar, "Waveguide Engineering in Optical Slot Structure for Efficient Optical Modulation", In book: ICOL-2019, Proceedings of the International Conference on Optics and Electro-Optics, Dehradun, India, Online ISBN978-981-15-9259-1, March 2021.