

## CURRICULUM-VITAE

### **DR. BRIJESH KUMAR SINGH**

---

#### CORRESPONDANCE ADDRESS

---

Dr. Brijesh Kumar Singh,  
Assistant Professor  
Department of Physics  
School of Physical Sciences  
Central University of Rajasthan  
NH-8, Bandarsindri, Ajmer -305817, India  
Mb No. : +91-7427892949  
E-mail Id : [brijeshsingh@curaj.ac.in](mailto:brijeshsingh@curaj.ac.in)  
[brijeshsingh831@gmail.com](mailto:brijeshsingh831@gmail.com)



#### HOME ADDRESS:

Village- Sidhawal, Post- Pipraich  
District- Gorakhpur  
Uttar Pradesh-273152, India

---

#### CAREER OBJECTIVE

To contribute best of my knowledge, skills and ability in the growth of my organization, and to attain new heights in my field of work, through effective use of available technology, techniques and constant learning.

#### PROFESSIONAL QUALIFICATION

- Currently **Assistant Professor** in Physics department, Central University of Rajasthan, Ajmer, January 2017- Present
- **Postdoc Fellow** in School of Electrical Engineering, Tel Aviv University, Israel, November 2014 – January 2017
- **Ph.D.** awarded on thesis title “**Internal Energy Flows in Phase Singular Beams and their Applications in Laser Beam Shaping and Optical Tweezers**” from physics department of **Indian Institute of Technology Delhi (I.I.T. Delhi)**, in February 2015
- M.Sc. in Physics from D. D. U. G. University, Gorakhpur, U.P., India with 69.5%, in 2007
- B.Sc. in Physics, Mathematics, Industrial Chemistry from D. D. U. G. University, Gorakhpur, U.P., India with 70.05%, in 2005
- Higher Secondary from U.P. Board, in 2002  
(Mathematics, Physics, Chemistry, Hindi & English)
- High School from U.P. Board, in 2000  
(Mathematics, Science, Social Science, Drawing, Hindi & English)
- Google Scholar id: [ICAb9nAAAAAJ](https://scholar.google.com/citations?user=ICAb9nAAAAAJ)
- Scopus id: [55480058100](https://orcid.org/0000-0001-5906-7021)
- ORCID id: [0000-0001-5906-7021](https://orcid.org/0000-0001-5906-7021)
- Vidwan-id: 93543
- CURAJ: <https://curaj.ac.in/departments/department-physics>
- <https://curaj.irins.org/>

#### ACHIEVEMENTS, AWARDS AND FELLOWSHIP

- **Nano- Center Post Doc Fellowship** in School of Electrical Engineering, Tel Aviv University, Israel (November 2014-January 2017)
  - CSIR-UGC NET (National Eligibility Test) qualified for Junior Research Fellowship (JRF) conducted by CSIR in 2009
  - Secured 72<sup>th</sup> AIR rank in the Joint Entrance Screening Test (JEST) for Physics, 2009
  - Secured 272<sup>th</sup> rank (All India Rank) in the Graduate Aptitude Test in Engineering (GATE) for Physical Science in 2010
  - Qualified for JRF in S. N. Bose National Centre for Basics Sciences, Kolkata, India, 2009
- 
- **Best Poster Award** in **LMI workshop, Israel** 2016
  - **Best Poster Award** in **WRAP conference, Delhi** 2013
  - **Tel Aviv Nano Center** international travel grant to attend conference SPIE 2016 in Belgium
  - **Young scientist** DST international travel grant to attend conference SPIE 2018 in USA

### PROFESSIONAL EXPERIENCE

- UGC – SRF (Senior Research Fellowship) 2011-2014, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India
- UGC – JRF (Junior Research Fellowship) 2009-2011, Physics, IIT Delhi, India
- Three years Teaching Assistantship in B Tech II<sup>nd</sup> year Engineering Physics Laboratory, Department of Physics, IIT Delhi, India
- Six months Teaching Assistantship in B Tech I<sup>st</sup> year Optics Laboratory, IIT Delhi
- Six months Teaching Assistantship in NIN100 Course of B Tech I<sup>st</sup> year, IIT Delhi
- Mentor of **eleven Master and four UG project** students in 2017-2021
- Mentor of **four Ph.D. students** in 2017-2021

### OTHER ADMINISTRATIVE EXPERIENCE

- **Co-convenor of International Symposium on Photonics and Plasmonics (ISPP-2019)**, 23-24 September 2019
- **Ph.D. Advisor**, Physics department, Central University of Rajasthan, 2018-2019
- **Faculty Advisor of M.Sc. students**, Central University of Rajasthan, 2017-2018
- **Organizing committee members** of National Symposium on Technologically Advanced Functional Materials (**NSTAFM-2017**), March 16-17, 2017, Physics department, Central University of Rajasthan, Ajmer, India
- **Organizing committee members** of International OSA Network of Students **IONS -1, Delhi**, IIT Delhi, India, December 1-2, 2011
- **Vice-president** of Badminton club, Central University of Rajasthan, 2017-2018
- **Program Co-ordinator** Physics students of Integrated M.Sc. (5Y) 2020-2021

### AREA OF SPECIALIZATION

- Super-oscillating laser beams
- Optical Microscopy and Image Processing
- Laser beam spot beyond the diffraction limit
- Controlled shaping of laser modes
- Phase singular beams, Non-diffracting and Self-healing beams
- Optical tracking of crack propagation in glass plates
- High-resolution optical Trapping
- Optical self-healing beam

- Optical Metrology & Polarization singularity
- Ultrafast laser beam shaping

## FIELDS OF INTEREST

- Super-resolution microscopy
- Coherence and Polarization optics
- Bio-photonics & Pattern Recognition
- Diffractive Optics & Photonics crystals
- Adaptive optics, Propagation of optical field in turbulent media, speckles
- Bio medical Optics & Fiber Optics

## SPONSORED/CONSULTANCY PROJECTS

- UGC BSR Research Startup Grant No.F.30-356/2017(BSR) of Rs. 10,00,000 (2017-2019)
- Core Research Grant No. CRG/2019/001187 (DST/SERB) of Rs. 33,18,832 (2020-2023)

## INTERNATIONAL JOURNAL PUBLICATIONS

1. Brijesh Kumar Mishra, **Brijesh Kumar Singh**, “Longitudinal shaping for the creation of tunable dark spots with high-order radially polarized beams”, **Journal of the Optical Society of America A (JOSA A)**, 42, 1544-1550 (2025). (I.F.-1.9) [doi.org/10.1364/JOSAA.570883](https://doi.org/10.1364/JOSAA.570883)
2. Bhavesh Pant, Brijesh Kumar Mishra, Sarika Singh, **Brijesh Kumar Singh**, “Mode transformation and dark spot formation of cylindrical vector beams by thin dielectric film”, **Optics and Laser Technology**, 180, 111539 (2025). (I.F.-4.5) [doi.org/10.1016/j.optlastec.2024.111539](https://doi.org/10.1016/j.optlastec.2024.111539)
3. Bhavesh Pant, **Brijesh Kumar Singh**, “Far-field sub-diffraction focusing and controlled focus shaping of circularly polarized light using a dielectric phase plate”, **Journal of the Optical Society of America A (JOSA A)**, 41, 1899-1904 (2024). (I.F.-1.9) [doi.org/10.1364/JOSAA.536523](https://doi.org/10.1364/JOSAA.536523)
4. Bhavesh Pant, **Brijesh Kumar Singh**, “Formation of subwavelength tunable flat-top focus with double foci characteristic by tightly focused cylindrical vector beams”, **Optics Communications**, 572, 130972, 1-7 (2024). (I.F.-2.9) [doi.org/10.1016/j.optcom.2024.130972](https://doi.org/10.1016/j.optcom.2024.130972)
5. Hemant Kumar Meena, Bhavesh Pant, **Brijesh Kumar Singh**, “Controlled experimental generation of perturbed high-order Ince–Gaussian laser modes”, **Journal of the Optical Society of America A (JOSA A)**, 41, A25-A31 (2024). (I.F.-1.9) [doi.org/10.1364/JOSAA.507393](https://doi.org/10.1364/JOSAA.507393)
6. Bhavesh Pant, Hemant Kumar Meena, **Brijesh Kumar Singh**, “Creation of pure longitudinal super-oscillatory spot”, **Optics Letters**, 48, 1240-1248 (2023). (I.F.-3.6) [doi.org/10.1364/OL.481274](https://doi.org/10.1364/OL.481274)

7. Bhavesh Pant, Hemant Kumar Meena, **Brijesh Kumar Singh**, “Super-oscillatory spots with different inhomogeneous linear polarized states”, **Applied Optics**, 62, 9599-9604 (2023). (I.F.-1.9) [doi.org/10.1364/AO.504695](https://doi.org/10.1364/AO.504695)
8. Hemant Kumar Meena, Bhavesh Pant, **Brijesh Kumar Singh**, “Controllable experimental modulation of high-order Laguerre–Gaussian laser modes”, **Journal of the Optical Society of America A (JOSA A)**, 40, 1770-1778 (2023). (I.F.-1.9) [doi.org/10.1364/JOSAA.499212](https://doi.org/10.1364/JOSAA.499212)
9. Bhavesh Pant, Hemant Kumar Meena, **Brijesh Kumar Singh**, “Focusing Spirally Polarized Beam into a Super-Oscillatory Spot”, Proceedings of **Optica Imaging Congress 2023** (3D, COSI, DH, FLatOptics, IS, pcAOP), ISBN: 978-1-957171-28-9, Paper no IW5E.6, [doi.org/10.1364/ISA.2023.IW5E.6](https://doi.org/10.1364/ISA.2023.IW5E.6), in Boston Park Plaza Hotel, Boston, Massachusetts, USA, August 14-17, 2023.
10. Hemant Kumar Meena, Bhavesh Pant, **Brijesh Kumar Singh**, “Optimization of the optical energy in the high-order laser modes”, Proceedings of **Symposium on Optics and Photonics 2024**, **Aryabhat Publication House**, ISBN: 978-93-95463-44-7, Chapter-1, Page no. 13-28, Department of Physics, University of Lucknow, March 09, 2024.
11. Bhavesh Pant, Brijesh Kumar Mishra, **Brijesh Kumar Singh**, “Dark core size enhancement in Cylindrical Vector beams”, Proceedings of **Symposium on Optics and Photonics 2024**, **Aryabhat Publication House**, ISBN: 978-93-95463-44-7, Chapter-15, Page no. 247-250, Department of Physics, University of Lucknow, March 09, 2024.
12. Hemant Kumar Meena, **Brijesh Kumar Singh**, “Experimental realization of modulated Hermite–Gaussian laser modes: a maximum number of highly intense lobes”, **Journal of the Optical Society of America A (JOSA A)**, 39, 2104-2109 (2022). (I.F.-1.9) [doi.org/10.1364/JOSAA.470435](https://doi.org/10.1364/JOSAA.470435)
13. Hemant Kumar Meena, **Brijesh Kumar Singh**, “Controlled modulation of optical energy in the high order Hermite-Gaussian laser modes”, **Optik**, 232, 1-11 (2021). (I.F.-2.18) [doi.org/10.1016/j.ijleo.2021.166560](https://doi.org/10.1016/j.ijleo.2021.166560)
14. Hemant Kumar Meena, Bhavesh Pant, **Brijesh Kumar Singh**, “Evolution of elegant, standard, and modulated high order Hermite-Gaussian laser modes in free space”, **Asian Journal of Physics**, 30, 1-13 (2021).
15. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Interferometric visualization of crack growth in glass plate”, **Applied Physics B: Laser and Optics**, 125, 1-7 (2019). (I.F.-2.07) [doi.org/10.1007/s00340-019-7131-1](https://doi.org/10.1007/s00340-019-7131-1)
16. **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, Ady Arie, “Particle manipulation beyond the diffraction limit using structured super-oscillating light beams”, **Light Science & Applications (Nature Publishing Group)** 6, e17050, 1-6 (2017). (I.F.-20.25) [doi.org/10.1038/lsa.2017.50](https://doi.org/10.1038/lsa.2017.50)
17. Y Eliezer, **Brijesh Kumar Singh**, L. Hareli, A. Bahbad, A Arie, “Experimental realization of structured super-oscillatory pulses”, **Optics Express** 26, 4933-4941 (2018). (I.F.-3.5) [doi.org/10.1364/OE.26.004933](https://doi.org/10.1364/OE.26.004933)
18. **Brijesh Kumar Singh**, Roei Remez, Yuval Tsur, Ady Arie, “Measurement of acceleration and orbital angular momentum of Airy beam and Airy-vortex beam by

astigmatic transformation”, **Optics Letters** **40**, 5411-5414 (2015). (I.F.- 3.6) [doi.org/10.1364/OL.40.005411](https://doi.org/10.1364/OL.40.005411)

19. **Brijesh Kumar Singh**, Roei Remez, Yuval Tsur, Ady Arie, “Super Airy beam: Self accelerating beam with intensified main lobe”, **Optics Letters** **40**, 4703-4706 (2015). (I.F.-3.6) [doi.org/10.1364/OL.40.004703](https://doi.org/10.1364/OL.40.004703)
  
20. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Controlled modulation of laser beam and dynamic patterning of colloidal particles using optical tweezers”, **Journal of Modern Optics** **63**, 269-275 (2016). (I.F.-1.657) [doi.org/10.1080/09500340.2015.1076079](https://doi.org/10.1080/09500340.2015.1076079)
  
21. M. Bahl, **Brijesh Kumar Singh**, Rakesh Kumar Singh, P. Senthilkumaran, “Internal energy flows of coma-affected singular beams in low-numerical-aperture systems”, **Journal of Optical Society of America A** **32**, 514-521 (2015). (I.F.-2.129) [10.1364/JOSAA.32.000514](https://doi.org/10.1364/JOSAA.32.000514)
  
22. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Conical Light Sword Optical Beam and Its Healing Property”, **Optics Letters** **39**, 2064-2067 (2014). (I.F.- 3.6) [doi.org/10.1364/OL.39.002064](https://doi.org/10.1364/OL.39.002064)
  
23. Ranjeet Kumar, **Brijesh Kumar Singh**, Rakesh Kumar Singh, D. S. Mehta, “Optical Cogwheel’ And ‘Defocused Beam’ for 2D Multiparticle Patterned Trapping”, **International Journal of Engineering Research & Technology (IJERT)** **2**, 69-73 (2013). (I.F.-1.76) [doi.org/10.17577/IJERTV2IS120175](https://doi.org/10.17577/IJERTV2IS120175)
  
24. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Visualization of Internal Energy Flows in an Optical Field Carrying Pair of Fractional Vortices”, **Journal of Modern Optics** **60**, 1027-1036 (2013). (I.F.-1.657) [doi.org/10.1080/09500340.2013.828790](https://doi.org/10.1080/09500340.2013.828790)
  
25. **Brijesh Kumar Singh**, Monika Bahl, D. S. Mehta, P. Senthilkumaran, “Study of Internal Energy Flows in Dipole Vortex Beams by Knife Edge Test”, **Optics Communications** **293**, 15–21 (2013). (I.F.-2.125) [doi.org/10.1016/j.optcom.2012.11.085](https://doi.org/10.1016/j.optcom.2012.11.085)
  
26. **Brijesh Kumar Singh**, G. Singh, P. Senthilkumaran, and D. S. Mehta, “Generation of Optical Vortex Arrays Using Single-Element Reversed-Wavefront Folding Interferometer”, **International Journal of Optics**, **2012**, Article ID 689612, 7 pages, 2012. doi:10.1155/2012/689612. (I.F.-1.167) [doi.org/10.1155/2012/689612](https://doi.org/10.1155/2012/689612)
  
27. **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, and Ady Arie, “Stiff trap using Super-oscillations optical beams”, Proceedings of **SPIE**, Volume 10723, Optical Trapping and Optical Micromanipulation XV; **1072303** (2018) <https://doi.org/10.1117/12.2325027>; **SPIE Photonics 2018**: International conference on optics & photonics, San Diego, California, United States, August 19-23, 2018.
  
28. **Brijesh Kumar Singh**, Roei Remez, Yuval Tsur, Ady Arie, “Non-diffracting Super Airy beam with intensified main lobe”, Proceedings of **SPIE**, volume **98960Z** (29 April 2016); doi: 10.1117/12.2225881; **SPIE Photonics Europe 2016**: International conference on optics & photonics, Brussels, Belgium, April 3-7, 2016.
  
29. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Vortices in Helico-Conical Beam and Fractional Vortex Beam”, Proceedings of **IEEE Xplore**, 14663408, DOI:

[10.1109/WRAP.2013.6917623](https://doi.org/10.1109/WRAP.2013.6917623), **WRAP2013**: Workshop on Recent Advances in Photonics, IIT Delhi, India, December 17-18, 2013.

30. **Brijesh Kumar Singh**, Rakesh Kumar Singh, D. S. Mehta, P. Senthilkumaran, "Controlled Generation of Periodic Polarization Structure by Interference", Proceedings of **IEEE Xplore**, 14663381, DOI: 10.1109/WRAP.2013.6917624, **WRAP2013**: Workshop on Recent Advances in Photonics, IIT Delhi, India, December 17-18, 2013.
  
31. Vishal Srivastava, M. Inam, **Brijesh Kumar Singh**, D. S. Mehta, "High Resolution Corneal topography and Tomography of Fish Eye Using Full-Field White Light Interference Microscopy with Color Fringe Analysis", Proceedings of **IEEE Xplore**, 14651209, DOI: 10.1109/WRAP.2013.6917679, **WRAP2013**: Workshop on Recent Advances in Photonics, IIT Delhi, India, December 17-18, 2013 (**Best poster award**).
  
32. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, "Generation of Optical Vortices Using Cracked Glass Plate", **Photonics 2012**, In proceedings **IEEE Xplore**, 13583874, (25/06/2013); Electronic ISBN: 978-1-55752-959-0, OSA2012, the International Conference on Fiber Optics and Photonics, IIT Madras, December 9-12, 2012.

## CONFERENCES/WORKSHOPS/SYMPOSIUMS

1. **Brijesh Kumar Singh**, "Near and Far-field sub-diffraction focus shaping" **International Topical Meeting on Classical and Quantum Optics (INTOCQ-24)**, Department of Physics, Indian Institute of Space Science and Technology (IIST), Trivandrum, Kerala, India, 16-18 December 2024. (Invited Talk)
  
2. Bhavesh Pant, and **Brijesh Kumar Singh**, "Double focus property of tightly focused cylindrical vector beams" **XLVII OSI Symposium on International Conference on Advances in Optics and Photonics Instrumentation (OPTOIn-2024)**, CSIR-CSIO Chandigarh, India 23-25 October 2024.
  
3. **Brijesh Kumar Singh**, "Mode conversion of cylindrical vector beams" **Workshop on Optics Photonics: Theory and Computational Techniques Workshop on Sensors and Nanophotonics (OPTCT + SeNcity-24)**, Department of Physics, Indian Institute of Technology (IIT) Roorkee, India, 23-25 February 2024. (Invited Talk)
  
4. Bhavesh Pant, Brijesh Kumar Mishra, and **Brijesh Kumar Singh**, "Sub-diffraction spot formation with circularly polarized light" **XLVI OSI Symposium on International Conference on Optics, Photonics and Quantum Information (OPTIQ -2023)**, International School of Photonics, Kochin University of Science and Technology, Kochi, India 11-13 December 2023.
  
5. Bhavesh Pant, Hemant Kumar Meena, and **Brijesh Kumar Singh**, "Focus Shaping with Inhomogeneous Vector Beams Beyond the Diffraction Limit" **Photonics-2023**, Indian Institute of Science (IISc) Bengaluru, India, 05-08 July 2023.
  
6. Bhavesh Pant, Ram Kalyan Meena, and **Brijesh Kumar Singh**, "Focusing the radially polarized light into a subwavelength focal spot" **XLV OSI Symposium on Conference on Optics, Photonics and Quantum optics (COPaQ -2022)**, Indian Institute of Technology (IIT) Roorkee, India, 10-13 November 2022.

7. Hemant Kumar Meena, Brijesh Kumar Mishra, and **Brijesh Kumar Singh**, “Controlled shaping of high order sinusoidal Laguerre-Gaussian Laser modes” **XLV OSI Symposium on Conference on Optics, Photonics and Quantum optics (COPaQ -2022)**, Indian Institute of Technology (IIT) Roorkee, India, 10-13 November 2022.
8. Hemant Kumar Meena, Brijesh Kumar Mishra, and **Brijesh Kumar Singh**, “Controlled shaping of high order Laguerre-Gaussian laser modes” **Frontiers in Optics and Photonics (FOP-21)**, Indian Institute of Technology Delhi, India, 24-27 September 2021.
9. Bhavesh Pant, Ram Kalyan, and **Brijesh Kumar Singh**, “Flat-top focusing with radially polarized vector beam” **Frontiers in Optics and Photonics (FOP-21)**, Indian Institute of Technology Delhi, India, 24-27 September 2021.
10. Hemant Kumar Meena, Mamata, and **Brijesh Kumar Singh**, “Modulation of optical energy in the higher order Hermite-Gaussian mode” **International Conference on Optics and Electro-Optics, (ICOL-2019)**, Instruments R&D Establishment (IRDE), Dehradun, India, 19-22 October 2019.
11. Hemant Kumar Meena, and **Brijesh Kumar Singh**, “Optimization of optical energy in the Higher order Laser Modes” **International Symposium on Photonics and Plasmonics (ISPP-2019)**, Central University of Rajasthan, Ajmer, India, 23-24 September 2019.
12. **Brijesh Kumar Singh**, Y Eliezer, L. Hareli, A. Bahbad, A Arie “Generation of structured super-oscillatory optical pulses” **International Conference on Fiber Optics and Photonics - Photonics 2018**, Indian Institute of Technology Delhi, India, 12-15 December 2018.
13. **Brijesh Kumar Singh**, “Control transfer of optical energy in the higher order mode of Ince-Gaussian beam” **XLII Annual Meeting of the Optical Society of India (OSI) International symposium on Optics (OSI-ISO 2018)**, Indian Institute of Technology Kanpur, India, 19-22 September 2018.
14. **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, and Ady Arie, “Super-oscillations interaction with particle: high localization trapping”, **International Topical Meeting on Applied and Adaptive Optics INTOPMAA-17**”, Indian Institute of Space, Science and Technology (IIST) Trivandrum, India, 11-13 August 2017.
15. **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, and Ady Arie, “High resolution trapping using structured super-oscillating optical beams”, **The 6<sup>th</sup> OASIS International conference and Exhibition on Optics and Electro-optics 2017 Israel**, 27-28 February 2017.
16. **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, and Ady Arie, “Unprecedented localization of particles using structured super-oscillating optical beams”, **Workshop on Light matter interaction**, Tel Aviv University, Israel, 26 October, 2016. (**Best Poster Award**).

17. **Brijesh Kumar Singh**, Rakesh Kumar Singh, D. S. Mehta, P. Senthilkumaran, “Polarization Modulation in Speckles”, **ICOL 2014**: International conference on optics & optoelectronics 37<sup>th</sup> Symposium of OSI, IRDE Dehradun, India, 05-08 March 2014.
  
18. **Brijesh Kumar Singh**, D. S. Mehta and P. Senthilkumaran, “Knife Edge Test of Helico-Conical Beam”, In proceedings of XXXVII Optical Society of India (OSI) Symposium on Frontier in Optics and Photonics, Pondicherry University, Pondicherry, India, 23-25 January 2013.
  
19. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Generation of Optical Vortices Using Cracked Glass Plate”, **Photonics 2012**, In proceedings **IEEE Xplore**, 13583874, (25/06/2013); Electronic ISBN: 978-1-55752-959-0, OSA2012, the International Conference on Fiber Optics and Photonics, IIT Madras, India, 09-12 December 2012.
  
20. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Study of Poynting Vector and Orbital Angular Momentum of Conical Vortex Lens”, **IONS-2** Chennai, IIT Madras, India, 07-08 December 2012.
  
21. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Experimental Visualization of Optical Energy Flow in a Dipole Vortex Beam”, **SO’ 2012: “Singular optics”**, Sevastopol, Ukraine, 16-21 September 2012.
  
22. **Brijesh Kumar Singh**, Manoj Kumar Sharma, Joby Joseph, D. S. Mehta and P. Senthilkumaran, “Generation of Reshaped Hollow Gaussian Beam”, The XXXVI Optical Society of India Symposium on Frontier in Optics and Photonics, IIT Delhi, New Delhi, India, 03-05 December 2011. (**Student Organizer**)
  
23. **Brijesh Kumar Singh**, D. S. Mehta, P. Senthilkumaran, “Experimental Detection of Azimuthal Rotation of Poynting Vector in a Dipole Vortex Beam”, International OSA Network of Students **IONS -1, Delhi**, IIT Delhi, New Delhi, India, 01-02 December 2011. (**Student Organizer**)
  
24. “Hands-on workshop on Biophysical and Biotechnological Research Techniques for Scientists and Scholars”, at **AU-KBC Research Center, Anna University** Chennai, India, 25–27 July 2011.
  
25. Sunil Vyas, Manoj Kumar Sharma, **Brijesh Kumar Singh**, Joby Joseph, D. S. Mehta, P. Senthilkumaran, “Vortex Creation From Non-Linear Phase Ramps”, **Photonics 2010**, International Conference on Fiber Optics and Photonics, IIT Guwahati, India, 11-15 December 2010.

#### INVITED TALK IN INTERNATIONAL CONFERENCE

- **Brijesh Kumar Singh**, “Near and Far-field sub-diffraction focus shaping” International Topical Meeting on Classical and Quantum Optics (INTOCQ-24), Department of Physics, Indian Institute of Space Science and Technology (IIST), Trivandrum, Kerala, India, 16-18 December 2024.

- **Brijesh Kumar Singh**, “Mode conversion of cylindrical vector beams” Workshop on Optics Photonics: Theory and Computational Techniques Workshop on Sensors and Nanophotonics (OPTCT + SeNcity-24), Department of Physics, Indian Institute of Technology (IIT) Roorkee, India, 23-25 February 2024.
- **Brijesh Kumar Singh**, “Structured super-oscillating optical beams: spot size beyond the diffraction limit and stiff optical traps” Department of Physics, Indian Institute of Science Education and Research (IISER), Mohali, India, 14 January 2019.
- **Brijesh Kumar Singh**, “A tour to Nobel prize 2018 in Physics” Three days webinar series on Popular Topics in Physics, Department of Physics, University of Lucknow, India, 18 May 2020.
- **Brijesh Kumar Singh**, Harel Nagar, Yael Roichman, and Ady Arie, “Super-oscillations interaction with particle: high localization trapping”, International Topical Meeting on Applied and Adaptive Optics INTOPMAA-17”, Indian Institute of Space, Science and Technology (IIST) Trivandrum, India, 11-13 August 2017.

#### TEACHING EXPERIENCES

- Assistant Professor, Physics Department, Central University of Rajasthan, Ajmer (Jan 2017- Present)
- Optics and Modern Physics (3 Credit, UG class of 102 Students)
- Atomic Physics (4 Credit, PG class of 38 Students)
- Electromagnetic Theory (4 Credit, PG/UG class of 38 Students)
- Physics Lab I (2 Credit, PG, 38 Students)
- Physics Lab III (2 Credit, UG, 102 Students)
- Physics Lab V (4 Credit, UG, 23 Students)

#### AFFILIATION TO PROFESSIONAL BODIES

- Member of the Optical Society of India (Life Member)
- Member of the Indian Association of Physics Teachers (2020)
- Member of the OSA- The Optical Society (since 2009 - 2014)
- Member of Israel Physical Society (since 2016-2017)

#### INTERNATIONAL JOURNALS REVIEWER EXPERIENCES

- Optics Express (Optica/OpticsInfobase Publishers)
- Applied Optics (Optica/OpticsInfobase Publishers)
- Applied Physics Letters (American Institute of Physics)
- Journal of Optics (IOP Publishers)
- Journal of Modern Optics (Taylor & Francis Group)
- Optics and Laser Technology (Elsevier)
- Chinese Optics Letters

#### PERSONAL PROFILE

NAME	: DR. BRIJESH KUMAR SINGH
Father's Name	: Sri Chandra Prakash Singh
Mother's Name	: Smt. Indu Devi

Date of Birth : 01<sup>th</sup> January 1986  
Gender : Male  
Category : OBC  
Marital Status : Married  
Language : English and Hindi  
Nationality : Indian

## REFERENCES OF REFEREES

**Prof. P. Senthilkumaran**

Department of Physics  
Indian Institute of Technology Delhi  
E-mail : [psenthil@physics.iitd.ac.in](mailto:psenthil@physics.iitd.ac.in)  
Ph : +91-01126596007

**Prof. Kedar Khare**

Department of Physics  
Indian Institute of Technology Delhi  
E-mail : [kedark@physics.iitd.ac.in](mailto:kedark@physics.iitd.ac.in)  
Ph : +91-01126591362

**Prof. Ady Arie**

School of Electrical Engineering  
Tel Aviv University, Israel  
E-mail : [ady@eng.tau.ac.il](mailto:ady@eng.tau.ac.il)  
Ph: +972-36423508

**Prof. Joby Joseph**

Department of Physics  
Indian Institute of Technology Delhi  
E-mail : [joby@physics.iitd.ac.in](mailto:joby@physics.iitd.ac.in)  
Ph: +91-01126591336

**Prof. D. S. Mehta**

Department of Physics  
Indian Institute of Technology Delhi  
E-mail : [mehtads@physics.iitd.ac.in](mailto:mehtads@physics.iitd.ac.in)  
Ph : +91-01126591455

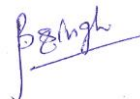
**Prof. Rakesh Kumar Singh**

Department of Physics  
Indian Institute of Technology BHU  
E-mail : [krakeshsingh.phy@iitbhu.ac.in](mailto:krakeshsingh.phy@iitbhu.ac.in)  
Ph : +91-542-6701917

## DECLARATION

I hereby declare that all the information given by me is true to the best of my knowledge and belief.

Date : 20 June, 2026  
Place : Ajmer



**(DR. BRIJESH KUMAR SINGH)**