


FACULTY PROFILE PROFORMA

Title (Ms/Mr/Dr/Prof)	Prof.	First Name	Pushpa	Last Name	Bindal	Photograph
Designation	Professor					
Department	Physics					
Address (Official)	Department of Physics, Kalindi College					
Phone No.	011-25767804					
Email	pushpabindal@rediffmail.com pushpabindal@kalindi.du.ac.in					
Education						
Subject	Institution		Year		Details	
B.Sc(H) Physics	Hans Raj College, University of Delhi.		1984			
M.Sc.(Physics)	IIT Delhi		1986		II Rank C.G.P.A.=9.53 on 10pt .scale	
M.Tech.(Applied Optics)	IIT Delhi		1988		I Rank C.G.P.A.=8.83 on 10pt .scale	
Ph.D. (Physics)	IIT Delhi		1993			
Post-doctoral	IIT Delhi		Aug 2009 - Aug 2010.		On study leave	
Career Profile						
Organisation/Institution	Designation		Duration		Role	
Kalindi College,	Lecturer (permanent) in Physics		1992-97		Teacher-in-Charge: 1993-95, 2004-06,2016-18 Teaching, Setting up of Physics Labs, Research, Corporate Contribution to College.	
University of Delhi	Senior Lecturer		1997-2001			
	Reader		2001-06			
	Associate Professor		2006-2018			
	Professor		18 July 2018-ongoing			
Research Interests/Specialization						
Fiber & Integrated Optics, Fiber Optic Sensors, Plasmonics						
Administrative Assignments / Contribution to corporate life						

- **Teacher-in-charge of Physics Department of the college from Aug'93 - Aug'95, March 2004-2006 and July 2016-18.**
- **Member, Interview Board for permanent appointments to Department of Physics, Kalindi College:1995, 1998**
- **Member, Interview Board for appointment of project fellow in projects funded by IUAC , 2015, 2016.**
- **Member, Interview Board for Adhoc appointments to Department of Physics, Kalindi College.**
- **Secretary Staff Council 2021-23.**
- **Convener, NEP Implementation Committee 2022-present**
- **Nodal Officer, Central Cluster 2022-present**
- **Convener, Space and Infrastructure Committee 2023**
- **Co-convener Budget Allocation Committee 2023**
- **Member of governing body of the college in 1997, 2021.**
- **Secretary of staff association of the college in 1997**
- **Convener, Criterion II 'Teaching, Learning and Evaluation Criterion', SSR report 2014-2022.**
- **Convener, Addendum to Criterion II in SSR.**
- **Convener, AQAR 2017-18, 2018-19, 2019-2020, 2020-21 Criterion II.**
- **Presiding Officer, Internal Complaints Committee 2017-2020.**
- **Convener, Internal Assessment Moderation Committee**
- **Convener, IBSD Committee 2017-2021.**
- **Convener, Antakshari Club**
- **Interim Convener, Fee Review Committee 2018.**
- **Convener, Prize Committee 2019,2023**
- **Convener, Antakshri Club**
- **Convener, Compering Committee, Inter-College Physics Student Seminar**
- **Event Convener, Judge and Rapporteur of "Oral Presentation" in Inter-College Physics Student Seminar**
- **Convener, Printing and Designing Committee, Inter-College "Skill Enhancement Workshop for Laboratory Staff".**

- **Convener, Sponsorship Committee, Inter-College “Skill Enhancement Workshop for Laboratory Staff”.**
- **Convener, Finance Committee, Inter-College Workshop “Quantum Physics: An Insight”.**
- **Member Advisory Committee, IQAC.**
- **Reception Committee – Oath taking ceremony, Alumni Meet, NCC Fest, Annual day and Leheren**
- **Convener, Space and Infrastructure Committee 2023**
- **Co-Convener, Budget Allocation Committee 2023**
- **Member, Committee of Courses, Department of Physics and Astrophysics 2024**
- **Member, Bank Set up Committee**
- **Member, Prizes of Excellence Committee 2024**
- **Co-convener Sciences, Golden jubilee year celebration committee.**
- **Convener, Prospectus Committee, 2015, 2016.**
- **Member, Work load Committee 2014-21.**
- **Member, Fee revision Committee, 2016, 2017.**
- **Member, Leave Committee**
- **Co-Convener CCL Committee 2021-22.**
- **Convener, Verification Committee for promotions from stage I to II 2020**
- **Member, Screening cum evaluation committee for promotion of Botany faculty 2021**
- **Member, Building Committee**
- **Member, Infrastructure Committee**
- **Convener, Souvenir Committee, Correspondence & Website, Report in National Seminar Sciences.**
- **Deputy-Superintendent of theory semester examinations in the academic session 2014-2015.**
- **Convener, LCD, Mike Committee, Gyan Leher 2014.**
- **Member, Lab Development Committee.**
- **Science representative, Prospectus Committee, 2011-15.**

- Member, Screening Committee.
- Member, timetable committee in 93, 94, 95, 2004-06, 2016-18.
- Member, academic committee for the years 1993, 94, 2000, 2001, 2002, 2016-18.
- Member, library committee in 1998, 99.
- Member, Attendance Committee, 2006-09.
- Member, sports Committee.
- Member, Departmental moderation Committee for Internal assessment.
- Member, Technical Committee, purchase of RO system for college
- Head Examiner, Committee of Paper setters for many physics theory and practical papers.
- External Examiner for Physics Practical examinations in many other colleges of DU.
- Deputy-Superintendent of physics practical examination in the session 1993-95, 97-98, 2005-06 and on rotation basis till now after that.
- College Admissions : Science convener, 2001-2002, Co-convener in 2005, Convener admission B.Sc.(H) Physics in 2012, 2016, 2017 and B.Sc. Physical Sciences in 2018 in core admission committee, member SC/ST committee in 2013 and departmental admission committee for B.Sc(H) Physics/B.Sc. Physical Sciences in 1993, 1994-2000, 2004-06, 2008,2014,2015, 2018-23.

Institutional and Social Responsibilities

- Convener, Anti-Tobacco Committee 2024
- Member, Anti-Ragging Committee 2009-19.
- Convener, Cleanliness Committee, Oath-Ceremony, 2011, member 2013-15.
- Member, Swachhta Abhiyan Committee 2014-19.
- Member, Admission Grievances Committee 2014.
- Member, Eco Club
- Member, organizing Committee, Convener sound and mike committee, NCC festival Udaan 2016, 2017.
- Associated with NGO “World Vision”.

Skill Development

- Worked in Physics Education. Designed a questionnaire consisting of completely innovative and fundamental problems and administered it students of Kalindi College, Hansraj College, Ramjas College and Miranda House. Result analysis helped me to understand the gap between classroom teaching and actual understanding of a wide range of students. Work resulted in publication 12.
- Referred students to IITD, TIFR, PRL Ahmedabad and Universities abroad for summer projects and Ph.D and counsel them for their academic career.
- Guided and motivated students to take part in intra and inter-college events like Antardhwani, Gyan-Leher, Physcom functions such as Paper Reading Competitions, poster and model-making competitions.
- Convener, Guided students to design and make a project model on alternate sources of energy. It won II prize in Antardhwani, DU festival.

Organization of co-curricular activities

- Overall Convener of inter college festival LEHREN - 1995, 1996, 1997 and 2001
- Convener, programme 'Just a minute' in 'LEHREN' in 1993 & 1994.
- Convener, Antakshari Club
- Convener, Physcom Society
- Member of the prize distribution committee on Annual Day of the college in 1994, 1995, 2003 and 2012-16
- Member of the Rangoli team in Lehren'99.
- Member of the discipline committee.
- Convener of the Finance Committee in LEHREN'99.
- Convener of the programme 'Rangoli' in LEHREN' 2000.
- Convener, stage arrangements -annual day of the college in 1998, 99.
- Convener of stage properties - annual day of the college in 2000.

- Convener of Quiz-Time in Leheren'2002.
- Member, Committee, Ad-Mag Show
- Convener, printing Committee, Annual Day Function, 2005
- Convener, Antakshari programme 2003-2009, 2011-12.
- Convener, Publicity, Leheren 2003-04.
- Judged Paper Reading and poster making Competition several times.
- Judged Miss Fresher Contest in 1996.
- Internal Judge, Mehndi Competition Leheren 2018, 2019.
- Convener, Sound, Light and Mike Committee : Inter College festival Leheren 2012-2016, Alumni Day Function 2012-2016. Oath-Ceremony and Fresher's Party Function, 2012-2016, Orientation programme 2011-16, Inauguration of New Buildings function, IBSD inaugural function, Annual Day and Farewell Party 2012-16, Gyan Leher 2014, NAAC team visit 8-10 September 2016, Sports Day and other public functions of other departments. Inter-College Workshop "Quantum Physics: An Insight", Inter-College Physics Students Seminar, IBSD Workshop

Student welfare

- Convener, PHYSCOM society in 1993-95, 2004-06, 2016-18.
- Took students to an excursion tour to Golden temple, Amritsar (1996) and Vaishno Devi temple, Jammu (1996, 2006).
- Took students to National Physical Laboratory and IUAC.
- Nominated and took 10 physics students for D.S. Kothari Lecture by honorable President of India, Prof A.P.J. Kalam at Vigyan Bhawan.
- Referred students to IITD, TIFR, PRL Ahmedabad and Universities abroad for summer projects and Ph.D.
- Took 26 students for Workshop "Optics, evolution and demo on the assembly of telescopes & a night gazing session" at Gargi College on 17th Oct 2022.

Teaching Experiences (Subject/Courses taught)

Total teaching experience – 30 years, Founder Member of Physics Department.

Taught various physics papers (Mathematical Physics III, Electromagnetic Theory, Electricity and Magnetism, Electromagnetism, Vibrations & Wave optics, Properties of Matter in Annual Mode and Mathematical Physics V, Optics, Waves and Oscillations, Advanced Mathematical Physics, Waves and Optics in Semester and CBCS modes) and Physics labs in courses :

B.Sc (H) Physics

B.Sc (G) group A

B.Sc (H) Mathematics

B.Sc Applied Physical Science

B.Sc Physical Science

Research Guidance

- **Associated with research work of Ph.D. student Ms. Kanchan Gehlot at IITD during study leave.**
- **Have guided students of B.Sc (H) Physics III year in annual mode for various projects in the field of optical fibers and material science.**
- **Principal Investigator of student projects since 2015**

Students are trained to do literature survey, exposed to proper research in Physics and motivated to go for research oriented careers. Taught programming language Matlab. Trained to prepare reports and power point presentations.

Publication (Peer Reviewed/Indexed Journals)

Year of Publication	Title	Journal (Name of the journal. Vol Issue ISSN)	Co-Author
<ul style="list-style-type: none"> ▪ A. Sharma and P.Bindal, “An optimal variational method for the analysis of diffused channel waveguides”, SPIE Proc., vol. 1622., pp.352 (1991). ISSN: 0277-786X. Doi:10.1117/12.636811. ▪ A. Sharma and P.Bindal, “An accurate variational analysis of single mode diffused planar and channel waveguides”, Optical and Quantum Electronics (UK), vol. 24, pp1359-1371,1992. ISSN: 0306-8919. ▪ P.Bindal and A.Sharma, “Modelling of Ti:LiNbO3 directional couplers”, IEEE Photonics Technology Letters, vol. 4, no.7, pp. 728-731,1992.ISSN : 1041-1135. Doi: 10.1169/68.145253. ▪ A.Sharma and P.Bindal, “A simple and accurate analytical method for diffused channel wave guides”, Proceedings of the international conference from Galelio’s Occhialine to Optoelectronics: Frontiers of Materials and Devices, Padova, Italy, World Scientific, Editor: Paolo Mazzoldi (9-12 June,1992). ▪ A. Sharma and P.Bindal, “Analysis of integrated optical waveguides made by diffusion”, Proceedings of Symposium on Photonics And Integrated Optics held at SAMEER, Bombay (16-18 April, 1992). ▪ A review paper by A.Sharma and P.Bindal, “Solutions of the 2-D Helmholtz Equation for Optical Waveguides, Semi-Analytical and Numerical Variational Approaches”, Lamp Series Report, LAMP/92/2, 1-29,1992 (published by the international centre for Theoretical Physics, Trieste, Italy). Lamp:http://hdl.handle.net/10068/324330. ▪ A.Sharma and P.Bindal, “Variational analysis of diffused planar and channel waveguides”, IEEE J. Quantum Electronics (USA), vol. 29, pp 150-153, 1993. ISSN: 1063-7818. ▪ A.Sharma and P.Bindal, “Variational analysis of diffused planar and channel waveguides and directional couplers”, Journal of Optical society of America A (USA), vol.11, pp.2244-2248, 1994. ISSN: 1084-7529. Doi: 10.1364/JOSAA.11.002244. ▪ A.Sharma and P.Bindal, “Analysis of near-field data of diffused channel waveguides: An accurate method to obtain Δn and index profile”, SPIE 			

Proceedings, linear and non-linear integrated optics, vol. 2212, pp.152, 1994. ISSN: 0277-786X, Doi: 10.1117/12.185106.

- A.Sharma and P.Bindal, “Equivalent Waveguides”, Proceedings of Conference on emerging opto-electronic technologies (CEOT’94), Bangalore, India, July 18-22,1994, published by Tata McGraw-Hill pub.Co..
- A.Sharma and P.Bindal, “Modelling of single mode diffused channel optical waveguides”, J.Indian Institute of Science, vol. 76, pp.183-199, 1996. ISSN:0019-4964, Journal.iisc.ernet.in/index.php/iisc/article/view/632.
- Pushpa Bindal, Vandana Verma and Pratibha Jolly, “Physics students conceptual understanding of interference and diffraction”, ICPE 2005, Proceedings of International Conference on “World View on Physics Education – Focusing on Change”, 21-26 August 2005, Vigyan Bhavan, New Delhi, India.
- P.Bindal and A.Sharma, “Improved variational effective index approximation for Photonic crystal slabs”, Proceedings of 18th International Workshop on Optical Waveguide Theory and Numerical Modeling”, 9th-10th April 2010, Cambridge, UK. ISBN-10: 0954114620
- Pushpa Bindal, Kanchan Gehlot and Anurag Sharma, “ Effective Index Approximation for Photonic Crystal Slab : Modelling of out of plane losses” in PHOTONICS 2010, Proceeding of c on Fiber Optics and Photonics, 11-15 December 2010, IIT Guwahati, India.
- Pushpa Bindal and Anurag Sharma, “Modelling of Photonic Crystal Waveguides : A simple and Accurate Approach ” , Optical and Quantum Electronics, pp.435-436, vol. 42, 2011. E-ISSN 1572-817X, Doi: 10.1007/s 11082-010-9413-x.
- Pushpa Bindal, Triranjita Srivastava, Ananya and Aastha Dhankhar, “Effect on microbending losses with pressure and change in core size of optical fibers,” *Yearly Academic Journal, Kalindi College*, vol. 15, (2016) (ISSN no: 2348-9014).
- Pushpa Bindal, Triranjita Srivastava, Sujata, Anju, Diksha Tandon, “Refractive index profiling of multimode optical fiber and study of its propagation characteristics,” *Yearly Academic Journal, Kalindi College*, vol. 15, (2016) (ISSN no: 2348-9014).
- Triranjita Srivastava, Pushpa Bindal, Asmita Deep and Ashima Sharda, “A simple and accurate modified bisection method for analyzing waveguiding structures with complex dielectric constants,” *Yearly Academic Journal, Kalindi*

College, vol. 15, (2016) (ISSN no: 2348-9014).

- **Triranjita Srivastava, Pushpa Bindal, Priyanka, Anuradha, Priyam and Priscilla,** “Propagation characteristics of planar dielectric and plasmonic structures,” *Yearly Academic Journal, Kalindi College*, vol. 15, (2016) (ISSN no: 2348-9014).
- **Triranjita Srivastava, Pushpa Bindal, Priyanka, Anuradha, Priyam and Priscilla,** “Electromagnetic Wave Propagation in Photonic Structures: Dielectric and Metallo-Dielectric Waveguides,” *Technology Letters A*; vol. 4, no 3, ISSN: 2348-8131, pp. 17-25, 2017.
- **Triranjita Srivastava, Pushpa Bindal, Asmita Deep and Ashima Sharda,** “A Comparative Study of Numerical Methods for Analysing Planar Plasmonic Waveguides,” *Technology Letters A*; vol. 4, no 3, ISSN: 2348-8131, pp. 5-11, 2017.
- **Pushpa Bindal, Triranjita Srivastava, Ananya and Aastha Dhankhar,** “Experimental Study of Microbending Losses in Optical Fiber,” *Technology Letters A*; ISSN: 2348-8131, pp. 37-40, 2017.
- **Pushpa Bindal, Triranjita Srivastava, Sujata, Anju and Diksha Tandon,** “Study of Propagation Characteristics of Optical Fibers: Experiment and Simulation,” *Technology Letters A*; vol. 4, no 3, ISSN: 2348-8131, pp. 26-33, 2017.
- **Triranjita Srivastava, Pushpa Bindal, Shatakshi Chamoli and Vaiwaswati Joshi,** “A simple numerical method for study of rectangular core plasmonic waveguides,” *Yearly Academic Journal, Kalindi College*, Vol. 16, (2017) (ISSN no: 2348-9014).
- **Triranjita Srivastava, Pushpa Bindal, Divita Gautam and Shikha Bajaj,** “Surface Plasmon Resonance Sensor based on Graphene,” *Yearly Academic Journal, Kalindi College*, Vol. 16, (2017) (ISSN no: 2348-9014).
- **Pushpa Bindal, Triranjita Srivastava,** “Experimental Investigations on Splice Losses in Optical Fibers,” *Yearly Academic Journal, Kalindi College*, Vol. 16, (2017) (ISSN no: 2348-9014).
- **Triranjita Srivastava and Pushpa Bindal (Equal contribution),** “Optical Fiber Technique: An alternative for day lighting systems” *Proc. of National Seminar*

सक्षममहिला, सक्षमसमाज: एकवैज्ञानिकदृष्टिकोण- *A Paradigm Shift Towards Empowerment of Women* (ISSN no: 2348-9014), held on 3-4 Feb 2017 .

- Pushpa Bindal and Triranjita Srivastava, “Experimental Investigations on Macrobending Losses in Multimode Optical Fibers”, *Yearly Academic Journal*, Vol. XVII, pp. 34-37, ISSN:2348-9014, 2018.
- Bindal P. and Srivastava T. (2019). “Experimental Investigations on Excited Modes in Planar Optical Waveguide” (equal contribution), *Yearly Academic Journal*, Vol. XVIII, pp. 38-42, ISSN: 2348-9014, 2019.
- Bindal P. and Srivastava T.,”Experimental study of radiation patterns of LEDs: A Tutorial”, *Asian Journal al of Physics*, Vol. 30, ISSN: 0971-3093, 2020.
- Triranjita Srivastava and Pushpa Bindal,” Comprehensive study of propagation characteristics of lossy metamaterial based “,*Asian Journal al of Physics*, Vol. 30, ISSN: 0971-3093, 2020.
- Triranjita Srivastava, Pushpa Bindal, Ayasha Malik, Prachi Kadiyan, Shrishti Choudhary, Sweety and Anshu, “ Numerical Computation using SCILAB – GUI An Application Software”. *Proceedings of the 15th International Conference MSAST 2021*, Dec 21-23, page 131-132.
- Pushpa Bindal, Triranjita Srivastava, Shrishti Choudhary, Ayasha Malik, Prachi Kadiyan, Sweety and Anshu, “Graphical User Interface (GUI): A promising tool for simulation,” *Yearly Academic Journal*, XXI, ISSN: 2348-9014 (2022).
- Pushpa Bindal, Triranjita Srivastava, Shweta Tiwari, Yati Gupta, Vanshika Singh, Sakshi, “A Study of Scientific Implementation of Python to Physics”, *yearly academic journal 2023*, ISSN: 2348-9014, Kalindi College.
- Pushpa Bindal and Ayasha Malik "Graphical User Interface: An Efficient Approach for Analysis and Comparative Study of Different Distributions in Statistical Mechanics", *IJECWK*, Vol. 5, Issue 1, Nov. 2023, ISSN No. 2249-541X (Print) & 2249-5428 (Online).

Paper Presentations in Conference/Seminar:

- **Chamoli S., Bindal P. and Srivastava T. (5-6 April 2018) “Invisibility: Turning Fiction into Reality”, Poster No- P0021, National Conference on Scientific Innovation - A Headstart 2k18, on 5-6 April 2018, St. Stephen’s College, University of Delhi.**
- **Puri S., Bindal P. and Srivastava S.(5-6 April 2018), “Artificial Intelligence: Need Of The Hour”, Poster No-P0011, National Conference on Scientific Innovation - A Headstart 2k18, on 5-6 April 2018, St. Stephen’s College, University of Delhi.**
- **Srivastava T., Bindal P. and Bajaj S.(5-6 April 2018) "An Innovative Day Lighting System", Poster No- P0014, National Conference on Scientific Innovation - A Headstart 2k18, on 5-6 April 2018, St. Stephen’s College, University of Delhi.**
- **Singhal A., Srivastava T., and Bindal P. (5-6 April 2018),"Qubits: Size Doesn’t Matter", Poster No- P0018, National Conference on Scientific Innovation - A Headstart 2k18, on 5-6 April 2018, St. Stephen’s College, University of Delhi**
- **Bindal P. and Srivastava T. (17th Aug 2019) “Optics through Experiments”, 7th Annual Convection of IAPT RC1, organized by Indian Association of Physics Teachers, Regional Council - Haryana and Delhi Regions.**
- **Srivastava T. and Bindal P. (17th Aug 2019) “Polarization of Electromagnetic Waves through Simulations”, 7th Annual Convection of IAPT RC1, organized by Indian Association of Physics Teachers, Regional Council - Haryana and Delhi Regions.**
- **Srivastava T., and Bindal P. (26-27 September 2019), “Experimental Study of Radiation Patterns of LEDs”, National Conference on Advanced Materials: Theory and Applications" at Hans Raj College, University of Delhi.**
- **Bindal P. and Srivastava T., (26-27 September 2019), "Macrobending losses in Multimode Optical Fiber; An Experimental Study", National Conference on Advanced Materials: Theory and Applications" at Hans Raj College, University of Delhi.**
- **Srivastava T., Bindal P., Som M., Chakraborty N., Tiwari M. , Divya, Natasha and Thakral H.(06-07 February, 2020) ”Propagation Characteristics of Metamaterial based waveguide”, National Conference On “New Trends In Nanotechnology And Applications” (NTNA-2020) organized by Department Of**

Physics, Atma Ram Santan Dharma College, University Of Delhi.

- **Bindal P. and Srivastava T., “Curriculum for Multifaceted Development” Name of Event- 8th Annual Convention organized By Indian Association of Physics Teachers, Regional Council (Delhi & Haryana) held on 10th & 11th October 2020.**
- **Srivastava T. and Bindal P., “Four Year UG Course: Fluidity and Merits”8th Annual Convention Organized By Indian Association of Physics Teachers, Regional Council (Delhi & Haryana) held on 10th & 11th October 2020.**
- **Pushpa Bindal, Triranjita Srivastava, Shrishti Choudhary, Ayasha Malik, Prachi Kadiyan, Sweety and Anshu, “SCILAB - Graphical User Interface (GUI): A step towards virtual laboratory,” 28th February 2022, National Conference on Emerging trends in Physics & Physics education, organized by RIE, NCERT, Ajmer.**
- **Pushpa Bindal and Yati Gupta, “Learning by Doing: A gateway to Concepts of Physics” at 10th Annual Convention organized by IAPT, RC on 24th-25th September 2022.**
- **Pushpa Bindal and Sakshi, “Aiding the offline teaching with online tools” at 10th Annual Convention organized by IAPT, RC on 24th-25th September 2022.**
- **Triranjita Srivastava, Pushpa Bindal, Mansi Som, Nivedita Chakraborty, Mrinal Tiwari Divya, Natasha and Himani Thakral, “Modal Characteristics of Asymmetric Metamaterial based Waveguide” at STREE 2020 (Science Technology Research and Entrepreneurship Enhancement), National Conference & Expo during November 24th to 26th, 2022 organized by JNU and Shakti at Jawaharlal Nehru University.**
- **Pushpa Bindal , Triranjita Srivastava , Shruti Tiwari , Ishika Rajpal , Anjala and Kritika Bharti, “E-Content Development: A Dimension Of Entrepreneurship”, at STREE 2020 (Science Technology Research and Entrepreneurship Enhancement), National Conference & Expo during November 24th to 26th, 2022 organized by JNU and Shakti at Jawaharlal Nehru University.**
- **Pushpa Bindal and Ayasha Malik, “Graphical User Interface (GUI):**

**Characterization Technique for Photonic and Plasmonic Structures”
2nd International Conference on "Advanced Functional Materials and Devices"
AFMD-2023, 13th -15th March 2023 organized by ARSD College..**

- **Pushpa Bindal and Ayasha Malik, "Graphical User Interface: An Efficient Approach for Analysis and Comparative Study of Different Distributions in Statistical Mechanics", in one Day National Symposium On Advancements On Various Fields Of Physics on 3rd September 2023 organized by Association of Indian Physicists (AIP) & Janardan Singh.Foundation.**

Books/ Chapters

- **Pushpa Bindal, Propagation characteristics of Diffused Optical Channel Waveguides and Devices (Doctoral e-thesis). <http://eprint.iitd.ac.in>**
- **Author of the two e-lessons on matrices uploaded on website of ILL, DU (ISSN No. 2349-154 X) :**

Matrices : Matrix Operations and their properties

Algebraic properties of Special Matrices

- **Article on workshop “ Light” , published as book chapter in special IYL book by Optical Society of India, 2016.**
- **Book Chapter - Graphical User Interface (GUI): Characterization Technique for Photonic and Plasmonic Structures, pp 57-67, Chapter 10, Recent Advances in Functional Materials and Devices, Springer Proceedings in Materials, Vol. 37, 2023.**
- **Contributed a unit on ‘Interference’ in M.Sc. Physics course of Indira Gandhi National Open University.**

Seminar/Workshop/Conferences Presentation/Organisation

Organization of conferences/workshops/special lectures

- **Member, Organizing committee of the international conference (Photonics-98) in 1998, IIT Delhi.**
- **Prepared a project proposal and obtained a grant of Rs. 75,000/ from UGC to organize a National seminar in the college. Organized as Convener, UGC Sponsored National Seminar on Emerging Trends in Science and Technology: Photonics and Nanotechnology, 1-2 February, 2005, Kalindi College, University of Delhi.**
- **Member, Organizing Committee : Convener (i) Finance Committee (ii) Light and Mike committee, 1st Vigyan Vividha, Inter College Science festival, 29-30 Jan 2014, Kalindi College, DU.**
- **Convener, Organized one day workshop on ‘EINSTEIN AND HIS YEAR OF MIRACLES’ by Prof A.K.Ghatak , 24th Sept 2014, Kalindi College, DU partially sponsored by National Academy of Sciences.**
- **Convener, Organized one day workshop on ‘LIGHT’ , 1st September 2015 to honour the year 2015- the international year of light as declared by the United Nations at Kalindi College, DU partially sponsored by National Academy of Sciences.**
- **Organized a lecture on optical communication by Shanti Swaroop Bhatnagar Awardee Prof. Anurag Sharma, I.I.T. Delhi ON 14.8.2001.**
- **Organized a lecture on Light matters in Science and Technology by Prof. K.Thyagarajan, I.I.T. Delhi, on 21.3.2012.**
- **Member, Organizing Committee: Convener, sound and Mike committee, National Seminar organized by Department of Geography, 25-26 Feb 2016.**
- **Member, Organizing Committee: Convener, sound and Mike committee, National Seminar organized by Department of Hindi, 10-11 March 2016.**
- **Member, Organizing Committee: Convener, sound and Mike committee, Inter-College NCC festival Udaan, 16 March 2016.**
- **Member, Organizing Committee: Convener, sound and Mike committee, National Seminar organized by Department of Journalism, 17-18 March 2016.**
- **Member, Organizing Committee: Convener, sound and Mike committee, National Seminar organized by Department of Sanskrit, 11-12 August 2016.**

- Convener, Department of Science & Technology Sponsored two day National Seminar on theme “ सक्षम महिला, सक्षम समाज: एक वैज्ञानिक दृष्टिकोण - A Paradigm Shift Towards Empowerment of Women “ , 3-4 February 2017.
- Convener, Inter-College Physics Fest Dimenzie, 15th February, 2017. The themes chosen: Science in Everyday Life, Waste to Wealth , Circuit Mania and Science Fiction Writing.
- Member, Organizing Committee: Convener, sound and Mike committee, International Seminar organized by Department of Geography, 1-2 Feb 2017.
- Inter-College NCC festival Udaan, February 20, 2017.
- Convener, The National Academy of Sciences India, Delhi Chapter sponsored two day Inter-College Workshop “Quantum Physics: An Insight” held on 25-26 Oct. 2018, at Kalindi College, University of Delhi.
- Member, Organizing Committee, Physics Co-Ordinator, two day Inter-College “Skill Enhancement Workshop for Laboratory Staff” held on 13-14th March 2018 at Kalindi College, University of Delhi.
- Convener, Inter-College workshop ‘Challenges and Opportunities in Entrepreneurship Development in North Eastern states of India’ on 9th of April 2018 organized by IBSD- Kalindi College Centre.
- Convener, workshop " Legal Awareness of women on sexual harassment, Pre Conception, Pre Natal and Diagnostic Techniques Acts" on 19th September 2018 organized by Internal Complaints Committee , Kalindi College.
- Convener, Inter-College workshop ““An Exposition of Perishable Products of the North East and its Challenges”.’ on 6th March 2019 organized by IBSD- Kalindi College Centre.
- Member, Organizing Committee, Inter-College Physics Student seminar.
- Convener, workshop " Legal Awareness on Fundamental Rights & Right to Information Act-2005" on 28th August 2019 organized by Internal Complaints Committee, Kalindi College.
- Member, Organizing Committee, sound system for National Seminar on “Nuclear, Particle & Accelerator Physics”, 6th November 2019, organized by Kalindi College, University of Delhi.
- Convener, Workshop conducted on Waves and Optics paper in B.Sc.(H) Physics to

discuss the model question paper, model problem set on 11th February 2019 in Department of Physics and Astrophysics.

- **Convener, National Webinar on “What is Light : Evolution of Quantum Theory” organized by Department of Physics, Kalindi College on 12th May 2020.**
- **Convener, National Webinar on “Science, Society and Exponential Change: Reimagining the Future” organized by Department of Physics on 13th May 2020.**
- **Co-Convener, An 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual & Problem-based Approach organized by the National Academy of Sciences India (NASI) - Delhi Chapter.**

- **Convener of National Webinar “Exploring Physics with experts” organized by Department of Physics, Kalindi College & The National Academy of Sciences India(NASI) - Delhi Chapter held on 10/2/2021.**

- **Program Co-ordinator, One week Workshop (June 16, 2022 to June 23, 2022) on “Yuva Shakti Abhiyan 2022” organized by Kalindi College in collaboration with Indraprastha Shakti.**

- **A National Webinar Series on “Omnipresent Physics: An Experiential Approach” under the aegis of The National Academy of Sciences, India (NASI) - Delhi Chapter, Science-Society program. The following National Webinars were organized:**

- **National Webinar “Simple Experiment- Big Learning” by Mr. Amit Kumar Bajpai, Coordinator-SGM-IAPT on 19th Oct 2022.**
- **National Webinar “Science of Imaging: Thousand Words on what a picture is worth” by Prof. Mahesh Narayan Shetti, Wilson College, Mumbai on 20th Oct 2022.**
- **National Webinar “Quantum Science in Visible Range” by Prof. Y K Vijay, Director, CIST, IIS University on 22th Oct 2022.**
- **National Webinar “Solid Angles all around- An easy estimate” by Prof. Sarmistha Sahu, Maharani Lakshmi Ammanni College for Women, Bengaluru on 1st Nov 2022.**

- **National Workshop “ Fascinating Science and Indian Contributions” under the aegis of The National Academy of Sciences, India (NASI) - Delhi Chapter, Science-Society program on 28-29 Oct 2022.**
- **Member, organizing team for Workshop “Optics, evolution and demo on the assembly of telescopes & a night gazing session” at Gargi College on 17th Oct 2022.**

Participation in conferences, seminars, workshops

- **Participated in International conference “Emerging Trends in Optoelectronic Technologies”, December 1991, Indian Institute of Science, Bangalore, India.**
- **Participated in an INDO-UK workshop on “Fibre Optics and Applications” held at British Council, Kasturba Gandhi Marg, New Delhi, march 18-21, 1994.**
- **Participated in Photonics-98: International conference on Fiber Optics and Photonics, December 14-18, 1998 held at I.I.T.Delhi and India Habitat Centre, New Delhi.**
- **Participated in program titled “New Directions in Physics Education Research- Implications for teaching of college physics”, from May 3-8’99 at the department of physics and astrophysics, University of Delhi.**
- **Participated in the tutorial seminar on contemporary optics in fiber and integrated optics, December 22-24, 1999 at I.I.T.Delhi.**
- **Attended two day symposium organized at the Department of Physics and Astrophysics, University of Delhi From 19-20 December’2002.**
- **Participated in the National Seminar on “Emerging Trends in Science and Technology: Photonics and Nanotechnology”, 1-2 February 2005, Kalindi College, University of Delhi, Delhi.**
- **Participated in the International conference on Physics Education “World View on Physics Education in 2005 : Focusing on Change “, 21-26 August 2005, Vigyan Bhawan, New Delhi.**
- **Participated in the fourth UNESCO Workshop on Active Learning in Optics and Photonics “ALOP ASIA 2006” , 6-11 November 2006, Miranda House, University of**

Delhi, Delhi.

- **Participated in the Conference on the "Recent Advances in Nano-Science and Nano-Technology", 6th of October, 2007, Institute of Technology and Management, Gurgaon, Haryana.**
- **Participated in Indo-Australia Symposium on Multifunctional Nanomaterials, Nanostructures and Applications, 19-21 December 2007, Department of Physics and Astrophysics, University of Delhi, Delhi.**
- **Participated in the Two-Days Workshop on "Quantum Mechanics : Theory and Applications", 21-22 November 2008, Deen Dayal Upadhyaya College, University of Delhi, Delhi.**
- **Participated in the International Conference on Fiber Optics and Photonics "PHOTONICS-2008", December 14-17, 2008, IIT Delhi.**
- **Participated in the national symposium titled Indian Physics and Mega Projects : Research on the Frontiers", 2-3 February 2009, Miranda House, University of Delhi, Delhi.**
- **Participated in One Day Workshop on Einstein and Theory of Relativity, 2010, IIT Delhi.**
- **Participated in the 10th International Conference on Fiber Optics and Photonics "PHOTONICS 2010", 11-15 December 2010, IIT Guwahati, India.**
- **Participated in International Conference on Engineering Physics, Materials and Ultrasonics, June 3-4, 2016, Northcap University, Gurgaon, Haryana.**
- **Participated in the National Seminar on "सक्षम महिला, सक्षम समाज: एक वैज्ञानिक दृष्टिकोण - A Paradigm Shift Towards Empowerment of Women", 3-4 February 2017, Kalindi College, University of Delhi, Delhi.**
- **Workshop on "Quantum Physics: An Insight" held on 25-26 Oct. 2018, at Kalindi College, University of Delhi.**
- **National Seminar on "Journey of Science and Technology in India: A Historical Perspective," held on 2 Sep. 2017, organized by "The National Academy of Sciences, India (Delhi Chapter) & Calcutta Presidency College Alumni Association, Delhi" held at NIPGR Auditorium, New Delhi.**
- **Participated in the National Conference on "Technological Empowerment of Women" held on 8-9th March 2018 at Vigyan Bhawan, New Delhi to commemorate**

the International Women's Day. Nominated by the National Academy of Sciences India, Delhi Chapter to participate in the National Conference.

- **Participated in Conclave on “ Biodiversity for Everone's Life” jointly organized by Miranda House and Institute of Bioresources and Sustainable Development, Manipur on 31st August at Miranda House, University of Delhi.**
- **Participated in two days seminar “125th Birth Anniversary of Professor Meghnad Saha” organized by the National Academy of Sciences, India on October 6-7, 2018 at Allahabad on nomination of NASI Delhi Chapter.**
- **Participated in 88th Annual Session and Symposium ‘Science, Technology and Ecosystem for Sustainable Rural Development’, 6-8 December, 2018 at M. G. Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, Satna, M. P on nomination of NASI Delhi Chapter.**
- **Participated in workshop on “An Exposition of Perishable Products of North East and its Challenges”, 6th March 2019, organized by Kalindi College, University of Delhi.**
- **Participated in one day workshop on “Implementation of the University Grants Commission (Prevention, Prohibition and Redressal of Sexual Harassment of women employees and students in higher educational Institutions) Regulations, 2015” for the members of the ICC of the North Campus Colleges of the University on 12th march, 2019 organized by Internal Complaints Committee, University of Delhi.**
- **Participated in one day national conference on Biotechnology in present era: impact on human life and environment scheduled on 23rd August, 2019 organized by Maitreyi College, University of Delhi.**
- **Participated in 5th National Session and Symposium “Brainstorming on Safe and Sustainable Water including Sanitation”, “A Road to Swachh & Swasth Bharat” 19-21 Sep. 2019 at M.P Council of Science and Technology, Bhopal Jointly organized by Bhopal Chapter of The National Academy of Sciences, India, MPCOST, Bhopal & Hindustan Unilever Ltd. on nomination of NASI Delhi Chapter.**
- **Participated in 89th Annual Session and Symposium ‘Science and Technology based Entrepreneurship Development’ on 21st-23rd Dec 2019 at National Academy of Agricultural Research Management(NAARM), Hyderabad on nomination of NASI**

Delhi Chapter.

- **Participated in a Seminar on “*Nuclear, particle and Accelerator Physics*” jointly organized by Department of Physics, Kalindi College and The National Academy of Sciences (NASI) Delhi Chapter on 6th November, 2019 at Kalindi College**
- **Participated in a National Seminar on “*Laser Dynamics and Fiber Optics*” organized by *Department of Electronics and Department of Physics, Shaheed Rajguru College of Applied Sciences for Women, University of Delhi* on 7th January, 2020.**
- **Participated in Webinar on “Understanding The Corona Virus: Some Good News” organized by Department of Mathematics, Kalindi College on 5th May 2020.**
- **Participated in National Webinar on “Higher Education in India after COVID-19”, organized by ARSD College, on 7th May, 2020.**
- **Participated in Webinar on “Material Science, Technology and Society” organized by school of physical sciences, JNU on 8-9th May 2020.**
- **Participated in National Webinar on “*What is Light : Evolution of Quantum Theory*” organized by Department of Physics, Kalindi College on 12th May 2020.**
- **Participated in Webinar on “*How teachers should be ready to handle post pandemic challenges*” organized by Chennai Institute of Technology on 12th May 2020.**
- **Participated in National Webinar on “*Science, Society and Exponential Change: Reimagining the Future*” organized by Department of Physics on 13th May 2020.**
- **Participated in National Webinar on “*An Introduction to measurement of Light*” organized by Department of Physics on 13th May 2020.**
- **Participated in National Webinar on “*Emerging Out a Winner in Lockdown*” organized by Department of Physics, Kalindi College on 14th May 2020.**
- **One-week online teaching-learning workshop on “Design, Development, delivery of e-content and online assessment”, organized by Institute of Development and Communication, Chandigarh from 20 Jul - 25 Jul 2020.**
- **One-week Workshop on “Academic Writing” organized by ILLL, DU from 27th Jan to 2nd Feb 2021.**
- **Faculty Enrichment Webinar for Physics Teachers in Higher Education Event organized by National Resource Centre for Education, NIEPA held on March 12, 2021.**
- **“Feedback, SSS, Innovative and Distinctive Practices”, Event organized by H.V**

Desai College, IQAC Cluster India and White Code held on 19-21 May 2021

- **“New Education Policy 2020: Transformational Features and Challenges”, Webinar organized by IQAC , Kalindi College held on 11 Dec 2020.**
- **“Challenges of Teaching Physics Laboratory Courses in Online Mode”, National Workshop organized by IQAC & Physics Department, Kalindi College held on 23 Jan - 25 Jan 2021**
- **“Physics in Everyday Life”, Webinar organized by B.M.S College For Women, Bengaluru held on 2nd March 2021**
- **“Wave Optics II: Polarization”, Webinar organized by Indian Association of Physics Teachers (Delhi & Haryana) on 4th July 2020.**
- **“Electrostatics I”, Webinar organized by Indian Association of Physics Teachers (Delhi & Haryana) held on 11th July 2020.**
- **“Electrostatics II”, Webinar organized by Indian Association of Physics Teachers (Delhi & Haryana) held on 25th July 2020.**
- **“Magnetism and Matter”, Webinar organized by Indian Association of Physics Teachers (Delhi & Haryana) held on 4th August 2020.**
- **“Awareness Program on National Digital Library of India (NDLI)” organized by NDLI & Library, Kalindi College held on 10 Jul- 12 Jul 2020.**
- **National online “Experimental Workshop on Simulation in Physics” organized by IAPT _ Asian Physics Olympiad Cell) held on 10 Jul- 12 Jul 2020.**
- **“Virtual Summit Series of Microsoft Products” organized By Society for Information Research & Studies Held on 4th July 2020.**
- **Workshop on “Optics & Photonics- Theory & Computational Techniques” organized By IIT Roorkee on 26th-27th Dec 2020.**
- **International Webinar on the topic “Photonics Revolution” organized By Raj Kumar Goel Institute of Technology, Ghaziabad Held on 12 Aug 2020.**
- **“Mentoring Teachers for Effective Online Teaching” organized by Daulat Ram College, University of Delhi Held on 4 Jul 2020.**
- **“Engineered Nanostructures for therapeutic and Biomedical Applications” organized By RPS Degree College, Mahendragarh held on 3 July 2020.**
- **Online Lecture on “Revisiting the laws of thermodynamics”, organized by Indian Association of Physics Teachers, Haryana and Delhi Regions, on July 3, 2021.**

- **Online Lecture on “Hidden Symmetry in Planetary Motion”, organized by Indian Association of Physics Teachers, Haryana and Delhi Regions, on July 10, 2021.**
- **Online Lecture on “The mass of small things”, organized by Indian Association of Physics Teachers, Haryana and Delhi Regions, on July 24, 2021.**
- **National webinar on “E-Content Development using Basic Tools”, organized by E-Content Development Committee, Kalindi College, University of Delhi on Sep 27, 2021.**
- **National webinar on “Intellectual Property Rights in Academics” organized by Research Committee in Collaboration with IQAC, Kalindi College on September 30, 2021**
- **Attended 9th Annual Convection of IAPT RC1, held on 9-10 Oct 2021, organized by Indian Association of Physics Teachers, Haryana and Delhi Regions.**
- **National webinar on “Fight Against Tobacco” organized by the Anti-Tobacco Committee in collaboration with IQAC, Kalindi College, University of Delhi, on 16th October 2021.**
- **International Webinar on “Gender, culture and the everyday experience, organized by Physithon-The Physics Society, Kalindi College, on Oct 27, 2021.**
- **National webinar on “Tools and techniques for Avoiding plagiarism in E-content Development”, organized by E-Content Development Committee, Kalindi College, University of Delhi on Nov. 09, 2021**
- **National webinar on “Novel Properties of Plasmonic Metal Nanostructures for Surface-Enhanced Raman Scattering Sensing and Cancer Therapy” organized by organized by the Research Centre for Compact Radiation Sources and Department of Applied Science and Humanities at Raj Kumar Goel Institute of Technology, Ghaziabad on Nov,29, 2021.**
- **Online Lecture on “10 beautiful experiment in Physics”, organized by Indian Association of Physics Teachers, Haryana and Delhi Regions, on Jan 15, 2022.**
- **National Seminar "Rewiring Your Genetics: From Genetics To Epigenetics" organized by the Physithon Society, Department of Physics, Kalindi College, University of Delhi, held on 15 January, 2022**
- **Workshop on Government e-Marketplace (GeM), organized by**

Bhaskaracharya College of Applied Sciences (University of Delhi), on 27-28 Jan 2022.

- **Three Days Lecture Series (Online) Workshop faculty development Programme on “NEP 2020: Delhi University Undergraduate Curriculum Framework 2022” organized by Mahatma Hansraj Faculty Development Centre, Hansraj College during 27th January– 29th January, 2022.**
- **National Workshop on “*Story Lines in Music and Poetry*” organized by Sagacious Scribblers - The English Creative Writing Club, Kalindi College, University of Delhi on 28th January, 2022.**
- **International Webinar on “Ask an expert cum career counseling” organized by Gargi College on March 12, 2022.**
- **STREE 2020 (Science Technology Research and Entrepreneurship Enhancement), National Conference & Expo during November 24th to 26th, 2022 organized by JNU and Shakti at Jawaharlal Nehru University.**
- **One Day National Symposium On Advancements On Various Fields Of Physics” organized on 3rd September 2023 organized by **Association of Indian Physicists (AIP) & Janardan Singh.Foundation.****
- **Online talk on “India’s Big Leap Into The Space” by Prof. Rajmal Jain, Former Scientist, Physical Research Laboratory, Ahmedabad, Gujarat, India on 23rd September 2023 via Zoom Platform organized by Indian Association of Physics Teachers, Regional Council (Delhi & Haryana) & Hansraj College, University of Delhi.**
- **Online talk on “ Aerosols and its impact on Environment” organized by Hansraj College, University of Delhi, Delhi on 21st October 2023.**
- **Online talk on “ Plasma Antenna for 5G Communications” organized by Hansraj College, University of Delhi, Delhi on 18th November 2023.**
- **Online Workshop on ARTIFICIAL INTELLIGENCE AWARENESS IN PHYSICS held from February 15th to 20th, 2024 organized by RC 12A.**

Participation in refresher/orientation/training courses.

- **Attended an orientation course (OR-27) organized by CPDHE, University of Delhi from May 19-June 15, 1995.**

- **Attended a refresher course in physics (PHY-V) organized by CPDHE, University of Delhi from May 20-June 8, 1996.**
- **Participated in a refresher course in physics (PHY-6) organized by CPDHE, University of Delhi from May 3'99-July 11'2000.**
- **Participated in a refresher course in physics (PHY-6) organized by CPDHE, University of Delhi from October 3-23'2001.**
- **Participated in the ICT Workshop for capacity building of Delhi University Faculty, 16-28 April 2010, Kalindi College, University of Delhi.**
- **Participated in the training program entitled "C & C++ programming language", 8-15 June, 2011, Institute of Lifelong Learning, University of Delhi.**
- **Participated in the two days program on lectures by Shanti Swaroop Bhatnagar Awardees organized at DDU college, February 2013.**
- **Participated in the Ist Vigyan Vividha, Inter College Science festival, 29-30 Jan 2014, Kalindi College, DU.**
- **Participated in INDO-UK workshop on "Computational Photonics", March 1-3, 2014, IIT Delhi.**
- **Participated in one day workshop on 'Einstein and his year of miracles', 24th Sept 2014.**
- **Participated in one day workshop on 'Light', 1st Sept 2015.**
- **Participated in B.N.Singh lecture on 30th Sept 2015 at Department of Physics and Astrophysics**
- **Participated in special NASI lectures organized at DDU college, DU, 17th Feb 2016.**
- **Workshop "Capacity building workshop on e-content creation", 23 September 2016, ILLL, University of Delhi, Delhi.**
- **Workshop on "Optics and its applications in Information Technology" , 1 October 2016, Bennet University, Greater Noida, Uttar Pradesh.**
- **Deputed by College Principal to participate in the workshop series on ' Use of new Technologies in the teaching methods' at CPDHE, University of Delhi.**
- **Participation in Faculty Development Workshop on "MOOCs and E--content Development" held on 13-17 July 2019, at Deen Dayal Upadhyaya College, University of Delhi, Delhi.**

Awards & Distinctions

- M.Tech.(Applied Optics), C.G.P.A.=8.83 on 10pt .scale, I Rank, IIT Delhi
- M.Sc.(Physics), C.G.P.A.=9.53 on 10pt .scale, II Rank, IIT Delhi
- Post-doctoral research at IIT Delhi during study leave from Aug-2009 to Aug 2010.
- Qualified the National level entrance examination for M.Sc. at IIT.
- Qualified the National level entrance examination “GATE” for M.Tech. with a score of 93.75.
- Awarded the merit scholarship during M.Sc at IITD.
- Awarded the CSIR -JRF fellowship for Ph.D.
- Awarded the IIT -SRF fellowship during Ph.D.
- Qualified the National level eligibility test for lectureship “NET” in 1990.
- Selected for SRA position in Department of Physics and Astrophysics in 1992.
- specially invited to 2015 NASI Scopus Young Scientist Awards Ceremony
- Appointed External Examiner for evaluation of 3 M.Tech. Theses by IIT Delhi and took their viva-voce on 13.5.2016.
- External Examiner for evaluation of three M.Tech. Theses by IIT Delhi and took their viva-voce on 28.5.2018.
- External Examiner for evaluation of three M.Tech. Theses by IIT Delhi and took their viva-voce on 03.06.2019.
- Honored with “Best Teacher Award” by Govt. of NCT of Delhi in 2018.
- Awarded *Best Poster Paper Presentation* under subtheme: “Alternative sources of energy” in a National Seminar “सक्षममहिला, सक्षमसमाज: एकवैज्ञानिकदृष्टिकोण- A Paradigm Shift Towards Empowerment of Women, held on 3-4 Feb, 2017, New Delhi, India, for presenting paper “*Optical Fiber Technique: An alternative for day lighting systems*”.
- External Expert for conduct of practical examination at IP University on 10.04.2021.
- Honored with “Distinguished Teachers Award” by Lions Club Capital Greens in 2021.
- External Expert for upgradation of Ph.D. student Megha Mangal from University of Rajasthan from JRF to SRF.
- External Expert for upgradation of Ph.D. student Karishma Meena from University

of Rajasthan from JRF to SRF.

Public Service/ University Service/ Consulting Activity

Curriculum Development

- Member of committee of courses, Department of Physics and Astrophysics, University of Delhi.
- Member, Course revision Committee for Mathematical physics III in Annual mode.
- Member, Course curriculum Committee from college for Applied Physical Science course.
- Member, core curriculum development committee for FYUP Physics courses appointed by Head, Department of Physics and Astrophysics, University of Delhi
- Member of curriculum development committee, Mathematical Physics papers I-IV, FYUP, University of Delhi.
- Member of curriculum development committee, Applied course ‘Applied Optics’ and course content for Physics Labs, FYUP, University of Delhi.
- Attended Workshop on curriculum revision of “Advanced Mathematical Physics” held on 26 Sep. 2018, at Department of Physics & Astrophysics, University of Delhi.
- Working Group Member for the revision of the Course titled Waves and Optics Course Code 42224412 in Programme(CBCS) B.Sc. Physical Science 2019.
- Working Group Member for the revision of the Course titled Waves and Optics Course Code 32221202 in Programme (CBCS) B.Sc.(H) Physics 2019.
- Working Group Member for the revision of the Course titled Waves and Optics Course Code 32225310 in Programme (CBCS) B.Sc.(H) Physics 2019.
- Working Group Member for the revision of the Course titled Electricity and Magnetism Course Code 32221201 in Programme (CBCS) B.Sc.(H) Physics 2019.
- Working Group Member for the revision of the Course titled Electricity and

Magnetism Course Code 32225101 in Programme (CBCS) B.Sc.(H) Physics 2019.

- **Working Group Member for the revision of the Course titled Electricity, Magnetism & EMT Course Code 42221201 in Programme (CBCS) B.Sc.Physical Science 2019**
- **Working Group Member for the revision of the Course titled Electrical circuits and Network Skills Course Code 32223903 in Programme (CBCS) B.Sc Physical Science 2019**
- **Working Group Member for the revision of the Course titled Applied Optics Course Code 32223908 in Programme (CBCS) B.Sc. Physical Science2019.**
- **Curriculum of Waves and optics paper, Physical Science in NEP syllabus**
- **Curriculum of Advanced Mathematical Physics I and II papers, Physics honours in NEP syllabus**

Review of Research Papers

Honorary Reviewer in following Journals of repute:

- **International journal “ PHOTONICS”.**
- **Proceedings of National Academy of Sciences India, Physical Sciences A**

Resource Person

- **Invited Talks on “optics” and conducted teacher’s workshop on 18.5.2015 and 20.5.2015 at Bal Bharati Public School Training Centre as an expert in optics to help solve the teaching difficulties of PGT’s.**
- **A talk “ Basics of Electronics: Components and Circuits” on 13th March 2018 in Inter-College “ Skill Enhancement Workshop for Laboratory Staff” held on 13-14th March 2018 at Kalindi College, University of Delhi.**
- **A talk “ Mechanical and Optical Instruments” on 14th March 2018 in Inter-College “ Skill Enhancement Workshop for Laboratory Staff” held on 13-14th March 2018 at Kalindi College, University of Delhi.**

- A talk “Overview of Mechanics and Thermal experiments including hands on practice” on 11th January 2019 in NAAC sponsored National Workshop “ Skill Enhancement at Institutions of Higher Learning: Training Today for Tomorrow” at Kalindi College, University of Delhi.
- A talk “Physics behind Electricity and Optics Labs with hands on session and troubleshooting” on 11th January 2019 in NAAC sponsored National Workshop “ Skill Enhancement at Institutions of Higher Learning: Training Today for Tomorrow” at Kalindi College, University of Delhi.
- Invited as Resource person for 3 sessions on ‘Waves and Optics’ in two-week summer programme for undergraduate students of the university from weaker sections of Society, 28 June 2019 organized by Department of Physics, University of Delhi.
- A talk “Waves and Optics I” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual& Problem-based Approach organized by the National Academy of Sciences India (NASI) - Delhi Chapter on 13.08-2020.
- A talk “Waves and Optics II” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual& Problem-based Approach organized by The National Academy of Sciences India (NASI) The National Academy of Sciences India (NASI)- Delhi Chapter on 14.08-2020
- A talk “Waves and Optics III” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual& Problem-based Approach organized by The National Academy of Sciences India (NASI)- Delhi Chapter On 16.08-2020.
- A talk “Waves and Optics IV” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual& Problem-based Approach organized By The National Academy of Sciences India (NASI)- Delhi Chapter on 17.08-2020.
- A talk “Mathematical Physics I, II” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual& Problem-based Approach (two talks) Organized by The National Academy of Sciences India (NASI)- Delhi Chapter 09.09-2020.

- A talk “Mathematical Physics III” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual & Problem-based Approach organized By The National Academy of Sciences India (NASI)- Delhi Chapter 10.09-2020
- A talk “Mathematical Physics IV” in 11-week Course (July 27, 2020 to October 11, 2020) on Learning Physics with Conceptual & Problem-based Approach organized by The National Academy of Sciences India (NASI)- Delhi Chapter on 11.09-2020.
- Judge in Colloquium.mp4, video making competition organized by Physithon, Physics Society. September 25-28, 2020
- A talk “Google- Reservoir & Challenges” in Skill enhancement by ICT learning in the period of Online Exchange organized by IQAC & Physics Department, Kalindi College on Dec 9, 2020.
- Evaluator in NAEST 2020 (Online Prelims of National Anveshika) Experimental Skill Test 2020 organized By National Anveshika Network of india, 13 Dec 2020
- A talk “Mechanics Laboratory “ in National Workshop on "Challenges of Teaching Physics Laboratory Courses in Online Mode" organized By IQAC & Physics Department of Kalindi College on 24.01.2021.
- A talk “Solid State Physics Laboratory “ in National Workshop on "Challenges of Teaching Physics Laboratory Courses in Online Mode" organized By IQAC & Physics Department of Kalindi College on 24.01.2021.
- A talk “Electromagnetic Theory Laboratory “ in National Workshop on "Challenges of Teaching Physics Laboratory Courses in Online Mode" organized By IQAC & Physics Department of Kalindi College on 24.01.2021.
- A talk "Innovative and Creative Approach to Optics Experiments at home”, in National Workshop on "Challenges of Teaching Physics Laboratory Courses in Online Mode Organized By IQAC & Physics Department of Kalindi College on 25.01.2021
- Evaluator in NAEST 2021 (Online Prelims of National Anveshika) Experimental Skill Test 2021 organized By National Anveshika Network of india.
- Resource person for evaluation of reports on experiments in the prelims round for NAEST, organized by NANI and IAPT during October 2022.

- Resource person for evaluation of reports on experiments in the prelims round for NAEST, organized by NANI and IAPT during October 2023.
- Resource person in National students' seminar organized by "Physithon– The Physics society", Department of Physics, Kalindi College on 19th-20th april, 2023.
- Two Invited talks on ‘Optics I’ and ‘Optics II’ in “Capacity Building Programme for KRPs in Single Major Subject Pattern in Physics” organized by Malaviya Mission Teacher Training Centre (formerly HRDC, JNU) from 5th March – 16th March, 2024 in collaboration with Commissionerate of Collegiate Education (CCE), Government of Andhra Pradesh.

Examination review

- Member of Examination review Committee constituted by the Committee of Courses of Physics to examine and finalize the model question papers and model problem sets.
- Convener of Waves and Optics paper in B.Sc.(H) Physics to prepare the model question paper, model problem set and conduct workshop appointed by the Committee of Courses of Physics

Professional Societies Memberships

Optical Society of America, Student Chapter

Member, Feedback Forum of reviewers , IEEE, USA

Life Member, IEEE

Life Member, IAPT

Life Member, SHAKTI

Projects (Major Grants / Collaborations)

Title of the projects(2015-16):

(1) Fiber Optic Pressure Sensor

(2) Simulations on Integrated Waveguides

in Collaboration with:

- (i) National Academy of Sciences, Delhi Chapter**
- (ii) Kalindi College, University of Delhi**

Title of the projects(2016-17):

- **Three projects funded by National Academy of Sciences India, Delhi Chapter**
 - (i) Experimental investigations on splice losses in Optical fibers**
 - (ii) Modeling of Plasmonic Waveguides**
 - (iii) Surface Plasmon Resonance based bio-chemical sensor**

Title of the projects (2017-18): “Study of Mode Excitation in Optical Waveguides”

Grants: Kalindi College (University of Delhi) through seed money for Research

- **Supervised M.Sc. Summer Project of Ms. Tanvi Gupta and Ms. Pooja Jangra, M.Sc. Students of Banasthali Vidyapeeth University.**
- **Presented project “Optical Fibers: A Powerful Alternative Energy Harvesting Technique” on “National Science Day 2018” celebration at Indian National Science Academy, New Delhi on 28 Feb. 2018 organized by “Indian National Science Academy, Delhi, Indian Academy of Sciences, Bengaluru and the University of Delhi”.**

Title of the projects (2018-19): “Optical Characterization of Semiconductor based light sources”

Project Code: 32/2018

Grants: Kalindi College, University of Delhi

Title of the projects (2019-20):

Title: “Propagation Characterization of Metamaterial based waveguides”

Project Code: 32/2018

Grants: Kalindi College, University of Delhi

Title of Project(2019-20): “An Exposition to e-content development for undergraduate students”

Grant: Kalindi College, University of Delhi

Title of Project (2021-22): Study of Numerical Methods for Computational Physics

Title of Project (2021-22): Study of Scientific Implementation in Python

Co-Principal Investigator, NASI Project 2022-23: “Science and Society”; Funding of Rs. One lac fifteen thousand from National Academy of Sciences India.

Physics Project 2022-23: Study of Numerical Methods for Computational Physics

Interdisciplinary Project (Physics & Computer Science) 2022-23

Title of the Project: Study of Scientific Implementation in Python

Physics Project 2023-24: A Comprehensive Study of Evolution and Modal Characteristics of Single Mode Optical Fibers

Interdisciplinary Project (Physics & History) 2023-24

“Indian Contribution to Science from Indus valley civilization to Vedic ages: A Historical Perspective

Principal Investigator, NASI Project 2024-25: “Science and Society”; Funding of Rs. One lac from National Academy of Sciences India.

Other Details

Founder Member of the Department of Physics. Rigorously involved in all round development of the Department and College. Set up a no. of experiments in physics labs for Annual, Semester, FYUP and CBCS modes for honours and programme courses.