


FACULTY PROFILE PROFORMA

Title (Ms/Mr/Dr/Prof)	Dr.	First Name	Pushpa	Last Name	Bindal	Photograph
Designation	Associate 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-till now			
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.**
- **Member of governing body of the college in 1997.**
- **Secretary of staff association of the college in 1997**
- **Convener, Criterion II 'Teaching, Learning and Evaluation Criterion', SSR report.**
- **Convener, Addendum to Criterion II in SSR.**
- **Convener, AQAR 2017-18, 2018-19, Criterion II.**
- **Presiding Officer, Internal Complaints Committee**
- **Convener, Central Moderation Committee**
- **Convener, IBSD Committee**
- **Convener, Antakshari Club**
- **Interim Convener, Fee Review Committee 2018.**
- **Convener, Prize Committee 2019**
- **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.**

- **Co-convener Sciences, Golden jubilee year celebration committee.**
- **Convener, Prospectus Committee, 2015, 2016.**
- **Member, Work load Committee since September 2014.**
- **Member, Fee revision Committee, 2016, 2017.**
- **Member, Leave Committee**
- **Member, Building 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.

Institutional and Social Responsibilities

- 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, Lehren 2003-04.
- Judged Paper Reading and poster making Competition several times.
- Judged Miss Fresher Contest in 1996.
- Internal Judge, Mehndi Competition Lehren 2018, 2019.
- Convener, Sound, Light and Mike Committee : Inter College festival Lehren 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 north campus, University of Delhi.**
- **Referred students to IITD, TIFR, PRL Ahmedabad and Universities abroad for summer projects and Ph.D.**

Teaching Experiences (Subject/Courses taught)

Total teaching experience – 26.5 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
1.	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.	
2.	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.	
3.	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.	
4.	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).	
5.	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).	
6.	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>.

7. 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.
8. 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.
9. 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.
10. 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..
11. 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.
12. 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.
13. 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
14. 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.

15. 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. ISSN 1572-817X, Doi: 10.1007/s11082-010-9413-x.
16. 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).
17. 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).
18. 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).
19. 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).
20. Triranjita Srivastava, Pushpa Bindal, Priyanka, Anuradha, Priyam and Priscilla, "Electromagnetic Wave Propagation in Photonic Structures: Dielectric and Metallo-Dielectric Waveguides," *Technology Letters A; Materials and Ultrasonics*, ISSN: 2348-8131, pp. 23-28, 2017.
21. Triranjita Srivastava, Pushpa Bindal, Asmita Deep and Ashima Sharda, "A Comparative Study of Numerical Methods for Analysing Planar Plasmonic Waveguides," *Technology Letters A; Materials and Ultrasonics*, ISSN: 2348-8131, pp. 37-40, 2017.
22. Pushpa Bindal, Triranjita Srivastava, Ananya and Aastha Dhankhar, "Experimental Study of Microbending Losses in Optical Fiber," *Technology Letters A; Materials and Ultrasonics*, ISSN: 2348-8131, pp. 37-40, 2017.
23. Pushpa Bindal, Triranjita Srivastava, Sujata, Anju and Diksha Tandon,

“Study of Propagation Characteristics of Optical Fibers: Experiment and Simulation,” *Technology Letters A; Materials and Ultrasonics*, ISSN: 2348-8131, pp. 33-36, 2017.

24. 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).

25. 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).

26. Pushpa Bindal, Triranjita Srivastava, “Experimental Investigations on Splice Losses in Optical Fibers,” *Yearly Academic Journal, Kalindi College*, Vol. 16, (2017) (ISSN no: 2348-9014).

27. Pushpa Bindal and Triranjita Srivastava, “Experimental Investigations on excited modes planar optical waveguide” *Yearly Academic Journal*, Vol. XVIII, pp. 38-42, ISSN: 2348-9014, 2019.

28. 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.

29. 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 .

30. 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.

Paper Presentations in National 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.**

Books/ Chapters

- 1. Pushpa Bindal, Propagation characteristics of Diffused Optical Channel Waveguides and Devices (Doctoral e-thesis).
<http://eprint.iitd.ac.in>**
- 2. 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
- 3. Article on workshop “ Light” , published as book chapter in special IYL book by Optical Society of India, 2016.**

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, Ist 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
- National Seminar organized by Department of Sanskrit, 11-12 August 2016.
- 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.

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.
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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, ILL, 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*”.**

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. PhysicalScience 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.PhysicalScience2019.**

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 Talk on “optics” and conducted teacher’s workshop on 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**

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

Students Involved: 11 Students from B. Sc. (H) Physics IIIrd year are involved in the projects

Student Investigators Project 1: Astha, Ananya, Sujata, Diksha and Anju; 5

students of B.Sc.(H) Physics III yr

Student Investigators Project 2: Priyanka, Anuradha, Asmita, Ashima, Priyam and Priscilla; 6 students of B.Sc.(H) Physics III yr

Grants and Collaborations:

- (i) **Rs. 15000/ by National Academy of Sciences, Delhi Chapter**
- (ii) **Rs. 25000/ by Kalindi College, University of Delhi**

- **Three student 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**

Students Involved: 6 Students from B. Sc. (H) Physics -Shatakshi, Divita, Vaivaswati, Shiwangi, Kanchan, Shikha.

Grants and Collaborations:

Rs. 25000/ by National Academy of Sciences, Delhi Chapter

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

Students Involved: 8 students (Shiwangi Puri, Divita Gautam, Shikha Bajaj, Shatakshi Chamoli, Vaivaswati Joshi, Kanchan Garg) from B.Sc. (H) Physics IIIrd yr.

Grants: Rs. 17,500/- by Kalindi College (University of Delhi) through seed money for Research

- **Supervised M.Sc. Summer Training 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: Rs. 8,000/- by Kalindi College, University of Delhi

Student Involved: 8 students (Ishita Mittal, Pinki, Megha Verma, Himanshi Soni, Megha, Purnima, Neha, Shikha Chandra) from B.Sc. (H) Physics IIIrd yr.

Principal Investigators for all projects:

(1) Dr. Pushpa Bindal

Associate Professor

Department of Physics

Kalindi College

(2) Dr. Triranjita Srivastava

Assistant Professor

Department of Physics

Kalindi College

Title of the projects (2019-20 ongoing):

Title: “Propagation Characterization of Metamaterial based waveguides”

Project Code: 32/2018

Grants: Rs. 8,000/- by Kalindi College, University of Delhi

Student Involved: 8 students (Ishita Mittal, Pinki, Megha Verma, Himanshi Soni, Megha, Purnima, Neha, Shikha Chandra) from B.Sc. (H) Physics IIIrd yr.

Title: “An Exposition to e-content development for undergraduate students”

Principal Investigators: Dr. Pushpa Bindal, Dr. Triranjita Srivastava and Ms. Ritika Pant

Student Investigators: 04 students from B.Sc. (H) Physics IIInd year and 04 students from B.Sc. (H) Journalism IInd year

Grant: Received Rs. 12,000/- from seed money research grant, “Kalindi College, University of Delhi”

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.