

## **MAYA VERMA**

PROFESSOR

DEPARTMENT OF PHYSICS

HANSRAJ COLLEGE

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Dedicated, enthusiastic and passionate physics educator, with over 17 years of academic and administrative experience at Hansraj College, University of Delhi. I am motivated to acquire and create new knowledge and to share these gains through teaching and research with undergraduate students.

## CAREER PROFILE

- Professor, Department of Physics, Hansraj College (June 2023-till date)
- Associate Professor, Department of Physics, Hansraj College (June 2020 June 2023)
- Assistant Professor (permanent), Department of Physics, Hansraj College (July 2010-June 2020)
- Assistant Professor (adhoc), Hansraj College (July 2008 July 2010)
- Assistant Professor (adhoc), Deen Dayal Upadhyay College (Feb-March 2008)
- Senior Research Fellow (SRF) CSIR ,(2007-08)
- Junior Research Fellow (JRF) CSIR, (2005 2007)

## EDUCATIONAL QUALIFICATION

- PhD, Department of Physics and Astrophysics, University of Delhi
   Thesis entitled "Dielectric and Ferroelectric Studies on Strontium Bismuth Niobate
   ceramics and films (2012) under supervision of Prof. K. Sreenivas
- M.Sc Physics, Department of Physics and Astrophysics, University of Delhi
- B.Sc (H) Physics, Miranda House, University of Delhi

## AWARDS & & DISTINCTIONS

- CSIR-UGC NET and JRF, June 2004
- Excellent Poster Award, first prize for the paper entitled "Thickness effects on the structural and Optical properties of Strontium Bismuth Niobate films" at Ramada Plaza Hotel, Jeju, Korea, June 28- July 1, 2010
- 8th prize in poster presentation in the one-day seminar on "Life and works of Prof. M.N. Saha and Prof. S.N. Bose, held at Jaypee Institute of Information Technology, Noida, Uttar Pradesh on 15th September'18
- Dr. Sarvepalli Radhakrishnan Best Teacher Award 2021 in 'PHYSICAL SCIENCE' conferred on 5th September, 2021 by Center for Professional Advancement.

#### SPECIALIZATION .

## RESEARCH ARTICLES (SCOPUS/UGC CARE LISTED)

- "Modeling Radioactive Decay Series Phenomenon Involving First-Order Differential Equation and Visualizing Solutions Using Open-Source Software XCOS", Rashmi Menon, **Maya Verma**, Divya Haridas, Amit Tanwar, The Physics Educator, 2450005 (2024)
- "Investigating the effect of coolant on cooling rate of engine oil used in automobile industry using Arduino interfaced temperature sensor", Amit Kumar Pandey, Raghav Sharma, Nikhil, Divyanshu Choudhary, Neha Batra Bali, Maya Verma, Rashmi Menon, Amit Tanwar, Physics Education, 59, 025026 (2024)
- "Low temperature relaxor behaviour of SrBi1.5La0.5Nb2O9 ceramics", Rajni Jain, **Maya Verma**, Amit Tanwar, Rashmi Menon, Divya Haridas, Sandeep Mahajan, K. Sreenivas, Ferroelectrics, 618, 696-703 (2024) [impact factor: 0.8]
- "Solving exact solution of time independent Schrodinger wave equation and visualizing eigenfunctions using XCOS", Neha Batra Bali, Ritika Sachdeva, Pragati Ashdhir, **Maya Verma**, Divya Haridas, Rashmi Menon, Amit Tanwar, Physica Scripta, 99, 016101 (2023) [impact factor: 2.9]
- "Titanium dioxide-based nanoparticles and their applications in water remediation", Pratibha Tiwari, Maya Verma, Ambika, Hema Chutani, Pradeep Pratap Singh, Saraswati Kanodia, Tanushree Verma, Journal of Environmental Engineering and Science, 19, 46-54 (2023)
- "Effect of Annealing Temperature and Thickness on the Structural and Optical Properties of Strontium Bismuth Niobate Films", **Maya Verma**, Divya Haridas, Amit Tanwar, Rashmi Menon, Rajni Jain, K Sreenivas, Thin Solid Films, 776, 139885 (2023)[impact factor: 2.1]
- "Algorithm based determination of the Planck's constant", Smita Korpal, Anmol Aggarwal, Ajay Kumar Arora, Jyoti Anand, **Maya Verma**, Divya Haridas, Physics Education, 58 (4), 045003 (2023)
- "Study of structural and morphological properties of RF-sputtered SnO thin films and their effect on gassensing phenomenon", Ajay Kumar Arora, Sandeep Mahajan, Maya Verma, Divya Haridas, International Journal on Smart Sensing and Intelligent Systems, 16, 1-12 (2023)
- "Study of optical properties of SnO2 thin films and their influence on gas-sensing response", Divya Haridas, **Maya Verma**, Smita Korpal, Ajay Kumar Arora, Sandeep Mahajan, Amit Tanwar, Rashmi Menon, Emerging Materials Research, 11, 486-494 (2022) [impact factor: 2.2]
- "Effect of calcination temperature on structural, dielectric and piezoelectric properties of strontium bismuth niobate ceramics", **Maya Verma**, Amit Tanwar, Divya Haridas, Sandeep Mahajan, Rashmi Menon, Sudhanshu Kumar, K Sreenivas, Applied Physics A, 128, 1-8 (2022) [impact factor: 2.7]
- "Conduction mechanism in excess Bismuth doped Strontium Bismuth Niobate ceramics", **Maya Verma**, Divya Haridas, Amit Tanwar, Rashmi Menon, K. Sreenivas, Journal of Solid State Chemistry, 307, 122825 (2022) [impact factor: 3.3]
- "Phase evolution of strontium bismuth niobate ceramics by conventional solid-state reaction method",
   Maya Verma, Amit Tanwar, K. Sreenivas, Journal of Thermal Analysis and Calorimetry, 135, Issue 4, 2077-2087 (2019) [impact factor: 4.4]
- "Influence of lone pair on structural and electrical properties of Sb substituted Bismuth layered SrBi2Nb2O9 ceramics", **Maya Verma**, Amit Tanwar, K. Sreenivas, Materials Chemistry and Physics, 209, 159-164(2018) [impact factor: 4.6]
- "Effect of A-site substitution of strontium on dielectric and piezoelectric properties of bismuth layered CaBi4Ti4O15 ceramic", Amit Tanwar, **Maya Verma**, K. Sreenivas and Vinay Gupta, Materials Chemistry and Physics, 130, 95 (2011) [impact factor: 4.6]
- "Dielectric and ferroelectric properties of SrBi2Nb2O9 and SrBi1.9La0.1Nb2O9 ceramics", **Maya Verma**, Amit Tanwar, K. Sreenivas and Vinay Gupta, Ferroelectrics, 404, 233 (2010) [impact factor: 0.8]
- "Influence of La doping on structural and dielectric properties of SrBi2Nb2O9 ceramics", **Maya Verma**, K. Sreenivas and Vinay Gupta, J. Appl. Phy, 105, 024511 (2009) [impact factor: 3.2]

## INTERNATIONAL CONFERENCES

- Oral presentation "Photocatalytic activity of TiO2 for pollutants elimination", **Maya Verma**, in online International Conference on Emerging Trends in Chemical and Applied Sciences for Sustainable Future held on 30th October, 2021 organized by Department of Chemistry In association with IQAC, Hansraj College, University of Delhi
- Oral presentation "Effect of Antimony substitution on structural and dielectric properties of Strontium Bismuth Niobate ceramics" **Maya Verma**, V. Gupta and K. Sreenivas; 5th International Conference on Electroceramics Sydney, Australia 12 16 December 2011
- Poster presentation "Electrical conductivity studies on Strontium substituted bismuth layered CaBi4Ti4O15 ceramic" Amit Tanwar, Maya Verma, K. Sreenivas and Vinay Gupta, The 7th Asian Meeting on Ferroelectricity and the 7th Asian Meeting on Electro Ceramics, June 28 -July 1, 2010 Ramada Plaza Jeju Hotel, Jeju, Korea
- Poster presentation "Thickness effects on the structural and optical properties of Strontium Bismuth Niobate films", **Maya Verma**, K. Sreenivas and Vinay Gupta, The 7th Asian Meeting on Ferroelectricity and the 7th Asian Meeting on Electro Ceramics, June 28 -July 1, 2010 Ramada Plaza Jeju Hotel, Jeju, Korea
- Oral presentation "Electrical, ferroelectric and piezoelectric properties of La doped Strontium Bismuth Niobate ceramics" **Maya Verma**, K. Sreenivas and Vinay Gupta, The 7th Asian Meeting on Ferroelectricity and the 7th Asian Meeting on Electro Ceramics, June 28 July 1, 2010 Ramada Plaza Jeju Hotel, Jeju, Korea
- Oral Presentation "Structural and dielectric properties of La-doped Strontium Bismuth Niobate ceramics",
   Maya Verma, Vinay Gupta and K. Sreenivas; International conference on Advanced Materials and Applications-2007; 15-17 Nov., 2007 at Shivaji University, Kolhapur

## NATIONAL CONFERENCES

- Oral presentation "Innovative approaches to the use of energy resources: A need for higher education", **Maya Verma**, Romila Rawat Bisht, Anand Sonkar, Ambika, in the National Education Conclave organized by Hansraj college on 23-24 March; 2023 at Vigyan Bhawan, New Delhi
- Poster presentation "Effect of silver doping in TiO2 nanoparticles for water treatment application", Maya Verma. Pratibha Tiwari and Hema Chutani, in National conference on Advanced Materials: Theory and Applications, organied by Dept. of Physics & Electronics, Hansraj college during Sept. 26-28; 2019
- Poster presentation "Bose-Einstein Condensate: Fifth state of matter", **Maya Verma** and Divya Haridas, in One day seminar on "Life and Works of Prof. M.N. Saha and Prof. S.N. Bose" held at Jaypee Institute of Information Technology, Noida, Uttar Pradesh on 15th September'18
- Oral presentation "TiO2 nanoparticles for water treatment application", **Maya Verma**, in National workshop on "Nanotechnology: Emerging Frontiers & Emp; Applications, held on 30-31 January, 2017 at Shyamlal college, University of Delhi
- Poster presentation "Dielectric properties of La doped SrBi2Nb2O9 ceramics", **Maya Verma**, Vinay Gupta and K. Sreenivas; National Seminar on Electro ceramics (NSE-2007); 5-6 Nov., 2007 at G.V.M. Girls College, Sonepat.
- Poster presentation "Structural and Dielectric Studies on stoichiometric Strontium Bismuth Niobate ceramics", Maya Verma, Vinay Gupta and K. Sreenivas at 14th National Seminar on Ferroelectrics and Dielectrics (NSFD- XIV), 18-21 December, 2006 at Department of Physics & Meteorology, Indian Institute of Technology, Kharagpur.

### Abstract in book proceeding:

 "Effect of excess bismuth on the dielectric and piezoelectric properties of strontium bismuth niobate ceramics" Proceedings of the national conference on multifunctional advanced materials: abstracts of invited speakers, 2013

## CHAPTERS & BOOK REVIEW

- "Recent Advances in Alternative Sources of Energy" in the book Energy: Crises, Challenges and Solutions, WILEY Blackwell; USA (2022)
- E- chapter "Classical Theory of Radiation" virtual learning Environment, Inst. of Lifelong learning, University of Delhi, Delhi (ISSN 2349-154X) (2017)
- Reviewer for the book on Quantum Mechanics published by the Universities Press (India) Private Limited (2017)

## RESOURCE PERSON

- Resource Person in the training program conducted for Non-Teaching Staff on Measurements in Physical World" organized by Mahatma Hansraj Faculty Development Centre, Hansraj College , held on 19th –20th June, 2023
- Resource Person in the training program conducted for Non-Teaching Staff on "Basic Instrumentation Skills" organized by the Department of Physics & Electronics in collaboration with IQAC, On July 12th, 14th & 15th, 2022 at Department of Physics & Electronics, Hansraj College
- Resource Person for Winter School 2021 on "Understanding Crystal Structure by X-Ray Diffraction" held on 31st December 2021 – 8th January 2022 Organised by Department of Physics and Electronics Hansraj College, University of Delhi
- DU –Pre-entrance summer school- 2018, University of Delhi (01-06-2018 to 16-06-2018)

## **PROJECTS**

- College research project entitled "Utilization of organic solid waste for the synthesis of metal/metal oxide based nanomaterials for wastewater remediation" funded by the college Research and Development Cell in the session 2022-23
- DBT-Sponsored in-house minor Projects in the academic session 2016-17:
  - a. To design an off-balance Wheatstone Bridge and investigating the dependence of the bridge linearity and bridge sensitivity on circuit parameters.
  - b. To determine Specific Rotation of optically active substances.
  - c. Study of Structural Properties of using X-ray Diffraction.
- Innovation project entitled "Development of Visible Light Activated Photocatalyst for water treatment", funded by University of Delhi, 2015-16 (Amount sanctioned: Rs Five Lac only)

## CONFERENCES/ SEMINARS/ WORKSHOPS ORGANIZED

#### As a Coordinator

- Coordinator for the workshop on "How to plan for Start-up and legal & Ethical Steps" organized by Institution's Innovation Council, Hansraj College held on 27th April, 2024
- Coordinator for the workshop on "Problem Solution Fit and Product Market Fit" organized by Institution's Innovation Council, Hansraj College held on 23rd February, 2024
- Convener of the Seminar on "Statistics of Finite Level Systems" held on 22nd February 2024 organized by Department of Physics and Electronics, Hansraj College
- Co-convener of the workshop on "Waste To Wonder: A Vertical Garden From Used Plastic Bottles" organised by Garden Committe, Hansraj College in collaboration with Smiling Tree Foundation on 13th February, 2023
- Coordinator of the Seminar on Spherical Chicken in Vacuum: An Unconventional Path to a Scientific Career held on 5th January 2023 conducted by Department of Physics and Electronics in collaboration with Research and Development Cell and Internal Quality Assurance Cell
- Coordinator of webinar "Common Health Issues in Females: Healing through Ayurveda" organised by WDC Hansraj in association with Arogya Bharti, Delhi on 18 August 2021

- Coordinator of webinar "Observing the Wonder World using Fluorescence Spectroscopy and Microscopy", organised by Dept. of Physics and Electronics under aegis of IQAC, held on 11th May 2020.
- Coordinator of National conference on Advanced Materials: Theory and Applications organied by Dept. of Physics & Electronics, Hansraj college during Sept. 26-28; 2019

#### As a member

- Organizing committee member in One Week (Online) Faculty Development Programme on "Roadmap for Building New India with New Education Policy" (July 21 – July 25, 2021) in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College
- Organizing committee member in INSPIRE Programme (DST) from 12th to 16th December, 2017 held at Hansraj college, University of Delhi
- Organizing committee member in DBT sponsored workshop on "Characterization of materials by X-ray Diffraction" held on 23-24 February, 2016 at Dept. Of Physics and Electronics, Hans Raj college, University of Delhi
- Organizing committee member in DBT sponsored workshop on "Flourescence Studies of Organic Structures", held on 26-27 September'2014 at Dept of Physics & Electronics, Hans Raj college, University of Delhi
- Organizing committee member in DBT sponsored workshop on "Functional Analysis and Troubleshooting
  of Electronic Devices for Biotechnology and Biomedical Applications"; 12-14 March, 2014 at Dept. Of
  Physics & Electronics, HansRaj college

## ADMINISTRATIVE ASSIGNMENTS (AT COLLEGE LEVEL)

- Liaison Officer, (OBC), Hansraj College (2021 till date)
- Admission Convener, Sciences (2020-21)
- Teacher-In-Charge, Department of Physics & Electronics (2020-21)
- Convener/Co-Convener, ECA committee (2021-22, 2018-19, 2017-18, 2016-17)
- Nodal Officer, Azadi ka Amrut Mahotsava (2021-22)
- Convener, Program council (2022-23)
- Superintendent, theory Examinations, May-June 2014
- Dy. Coordinator, Central Evaluation centre-HRC (2016-17)
- Co- convener Annual Day (2018-19)
- Convener, Student Welfare committee (2014-15)
- Convener, LUMEN- Physics & Electronics society (2018-19, 2011-12)
- Superintendent- Practical Examinations, Department of Physics & Electronics (2020-21)
- Convener, Department Purchase Committee (2021-22, 2015-16)
- Presenter, Department NAAC presentation (2016-17)
- Member, NAAC Committee- Criterion 2 (2022-23)
- Member, Environment Awareness Committee (2023-24, 2022-23, 2019-20, 2018-19,2015-16)
- Member, Garden Committee (2023-24, 2022-23)
- Member, Department Infrastructure Committee (2015 onwards)
- Member, Students' Welfare Committee (2021-22, 2013-14, 2011-12)
- Member, Grievance Committee (2021-22, 2020-21)
- Member, Women's Development Committee (2021-22)

- Member, Admission Committee (2021-22)
- Member, Academic Affair Committee (2015-16, 2013-14)
- Member, Department Administrative Committee (2021-22, 2019-20)
- Member, Department Workload & Time Table Committee (2025-26, 2021-22, 2017-18,2012-13)
- Member, Department Monitoring Committee (2021-22, 2020-21)
- Member, Workload Committee (2020-21)
- Member, Central Purchase Committee (2020-21)
- Member, Department Admissions (2019-20, 2015-16, 2014-15
- Member, Department Purchase committee (2018-19, 2014-15, 2013-14, 2011-12)
- Member, Annual Prize Distribution Committee (2017-18)
- Member, Canteen Committee (2017-18, 2016-17)

## DUTIES AT UNIVERSITY LEVEL

- Head examiner and paper setter for the papers assigned by the university
- Practical Examination duties (Internal/external) assigned by the university
- Member in Steering Committee for Under-graduate syllabus Revision for the paper "Statistical Mechanics"
- Delhi University centralized ECA certificate evaluation under Debate (Hindi & English) category 2021-22
- Delhi University centralized ECA trials for creative writing (Hindi & English) category 2018-19
- Delhi University centralized ECA trials for theatre (Dramatics and Street Play) 2017-18, 2016-17

# ORIENTATION COURSES/ REFRESHER COURSES/ FACULTY DEVELOPMENT PROGRAMMES/ WORKSHOPS (LAST 5 YEARS)

- Faculty Development Program on Rietveld Refinement of X-Ray Diffraction organized by Centre for Advanced Computational Research, Delhi from 14th- 20th February 2024 via online mode
- One-Week Faculty Development Program "Python with Data Analytics" from 7-13 August, 2023 organized by Teaching Learning Centre, Ramanujan College, University of Delhi
- One-Week Online National Faculty Development Program "Python: Essentials, Programming and Analytics" jointly organized by University of Delhi and Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi held from 27th October to 03rd November 2022
- One week (Online) Interdisciplinary Faculty Development Programme on "Waste Management During Pandemic and Its Impact on Circular Economy" (22nd November– 26th November, 2021) organised by Departments of Chemistry and Commerce, Hansraj College in collaboration with Mahatma Hansraj Faculty Development Centre
- One week e-Workshop on "Materials and their Characterization", organised by Department of Physics, Maharaja Agrasen University, Solan, HP from June 14-19, 2021
- One week Faculty development programme on "Systematic Literature Review and Meta Analysis" organised by Teaching Learning Centre, Ramanujan College, University of Delhi, under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMNMTT) from 06-12 May, 2021

- Three days National Workshop on "Challenges of Teaching Physics Laboratory Courses in Online Mode" organised by Department of Physics, in association with Department of Physics & Astrophysics, University of Delhi and the National Academy of Sciences India (NASI), Delhi Chapter on 23-25 January, 2021
- Two weeks Faculty Development Programme on"Managing online classes and co-creating MOOCs 3.0" from July 25- August 10, 2020 organised by Teaching Learning Centre, Ramanujan college, University of Delhi.
- Three days National Online Experimental Workshop Simulation in Physics (NEWSP:2020) Organised by Indian Association of Physics Teachers- Asian Physics Olympiad Cell (IAPT- APhO Cell) from July 10-12, 2020.
- One Week online Faculty Development Programme on "Open Source Tools for Research" from June 08 June 14, 2020, organised by Teaching Learning Centre, Ramanujan college, University of Delhi
- One Week online Faculty Development Programme on "RESEARCH METHODOLOGY: TOOLS & TECHNIQUES" under Pandit Madan Mohan Malviya National Mission on Teachers and Training Scheme of MHRD, Govt. of India held from 5 th-11th June, 2020 at ARSD College, University of Delhi.
- Two weeks online workshop on "Comprehensive e-Learning to e-Training guide for Administrative Work" from May 25 June 05, 2020, organised by Teaching Learning Centre, Ramanujan college, University of Delhi

# CONFERENCES/ SEMINARS / WEBINARS ATTENDED (LAST 5 YEARS)

- Participated in the seminar on The Magnificent Two Relativity and Quantum Theory in pursuit of understanding the Universe held on 21st March 2024 at Hansraj College conducted by Department of Physics and Electronics
- Participated in One-Day National Workshop on ShodhShuddhi / PDS(Special Training on DrillBit)" held on February 15th, 2024, Organized by Delhi University Library System, University of Delhi,
- Participated in the workshop on "Motivational Talk On Point No 3 of the Prime Ministers 10 Point Agenda on DRR DISASTER RISK REDUCTION WOMENS LEADERSHIP AND EMPOWERMENT" on 20 Apr 2023 organized by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India
- Participated in One Day Symposium on "Road ahead for HEI's Accreditation under NEP" (07th April, 2022) organised by IQAC, Hansraj College in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College.
- "Understanding Plagiarism Detection Software Ouriginal" organized by University of Delhi in Association With eGalactic Pune on 28th January, 2022
- Discover Emerald resources for your academic excellence & research organised by University of Delhi in collaboration with emerald publishing on 18th January,2022
- IP Awareness/Training program under National Intellectual property Awareness mission on 12th January, 2022
- Online workshop on Virtual Labs held on 4th October 2021 on MS-Teams conducted by Department of Physics and Electronics in collaboration with Indian Institute of Technology, Delhi
- Webinar on "New Initiatives in Examination and Evaluation by University of Delhi" organised by Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi, held on 10th July,2021
- National Webinar entitled "Implementation of Academic Bank of Credits" organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education on 10th July 2021.

- Webinar on "OBE: Examination & Evaluation" organised by Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi, held on 22nd June, 2021
- Webinar on "Basic Documentation for Teachers" organised in collaboration with IQAC, Hansraj College, University of Delhi, under PARAMARSH, held on 22nd June, 2020
- Online workshop entitled" SAHAJAYOGA Meditation" organised by IQAC and Atman, Shri Ram College of Commerce, University of Delhi on June 14, 2020
- Webinar on "Quest for Quality: Ranking and Accreditation" organized by internal quality assurance cell (IQAC), Hansraj College on May 23,2020
- Webinar on "Role of ICC and Prevention, Prohibition and Redressal of Sexual Harassment of Workmen at Workplace" organized by internal complaints committee, Hansraj College on May 22,2020.
- Webinar on Emerging Trends in E-Learning: Complete Classroom and Evaluation Process using MOODLE LMS" organized by the Internal Quality Assurance Cell (IQAC) and Department of Botany, Swami Shraddhanand College, University of Delhi on May 18, 2020.

### MEMBERSHIP/ FELLOWSHIP OF LEARNED BODIES

- Life member of the Indian Association of Physics Teachers (IAPT)
- Life member of the Indian society of Analytical Scientists (ISAS) [LMT-2016/12]

#### PERSONAL DETAILS

Father's Name: Sh. Jai Singh Verma

Date and Place of Birth: 18-07-1977; Delhi

Marital Status: Married

Nationality: Indian