




DESHBANDHU COLLEGE
(UNIVERSITY OF DELHI)
KALKAJI, NEW DELHI - 110019
Faculty Details Proforma for College Website

Title	DR.	First Name	VIKRAM	Last Name	VERMA	Photograph
Designation	ASSISTANT PROFESSOR					
Address	Department of Physics, Deshbandhu College, Kalkaji, New delhi-110019					
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Residence						
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Email	vikramverma18@gmail.com ; vverma@db.du.ac.in					
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Educational Qualifications						
Degree	Institution	Year				
Ph.D.	UNIVERSITY OF ALLAHABAD	2015				
PG	UNIVERSITY OF ALLAHABAD	2007				
UG	EWING CHRISTIAN COLLEGE (UNIVERSITY OF ALLAHABAD)	2005				
Any other qualification	CSIR-NET	2009				
Career Profile						
<ul style="list-style-type: none">• Assistant Professor (adhoc) in Regional Institute of Education (NCERT), Bhopal. (2010-2011).• Teaching at UG Level in the Department of Physics, University of Allahabad, Prayagraj. (2011-2014)• Guest Faculty in CMP Degree College (University of Allahabad) Prayagraj. (2014-2015)• Guest Faculty in Department of Physics, University of Allahabad, Allahabad. (2015 -2016)• Research Associate, Jaypee Institute of Information Technology, Noida, Uttar Pradesh. (2016)• Guest Lecturer in Department of Physics, Dyal Singh College, University of Delhi, New Delhi. (2017-18)• Assistant Professor (adhoc) in Department of Physics, Deshbandhu College, University of Delhi, New Delhi. (From 25th January-2017 to continue).						
Administrative Assignments						
<ul style="list-style-type: none">• Co-convener, Physical Science Society, Deshbandhu College, University of Delhi.• Member of Discipline Committee, Deshbandhu College, University of Delhi.• B. Sc. (Hons.) Physics (First Semester) Admission- 2020-21 and 2021-22.						

Areas of Interest/Specialization**QUANTUM PHYSICS, QUANTUM INFORMATION THEORY, QUANTUM TELEPORTATION, CONDENSED MATTER PHYSICS****Subjects Taught**

At UG Level-Theory	At UG Level- Lab	At PG Level-Theory	At PG Level- Lab
Quantum Mechanics	Mechanics	Data Acquisition System	Condensed Matter Physics
Electromagnetic Theory	Optics		Non Linear Optics
Thermal Physics	Electricity and Magnetism		
Statistical Mechanics	Electronics		
Mechanics	Modern Physics		

Research Guidance

List against each head (If applicable):

1. Supervision of awarded Doctoral Thesis:
2. Supervision of Doctoral Thesis, under progress:
3. Supervision of awarded M.Phil. dissertations :
4. Supervision of M.Phil. dissertations, under progress:

Publications Profile**(a) Research papers published in Refereed/Peer Reviewed Journals:**

1. Hari Prakash and **Vikram Verma**: Minimum assured fidelity and minimum average fidelity in quantum teleportation of single qubit using non-maximally entangled states. **Quantum Inf. Process.** **11** (2012) 1951-1959. **Impact Factor = 2.433**
2. Hari Prakash and **Vikram Verma**: Non-Existence of Magic Basis and Existence of Magic Partial Bases for 2N Entangled Qubit States with $N > 1$. **J. Phys. A: Math. Theor.** **45** (2012) 395306. **Impact Factor = 1.996**
3. **Vikram Verma** and Hari Prakash: Standard Quantum Teleportation and Controlled Quantum Teleportation of Arbitrary N Qubit Information State. **Int. J. Theo. Phys.** **55** (2016) 2061-2070. **Impact Factor = 1.347**
4. M. Sisodiya, **V. Verma**, K. Thapiyal and A. Pathak: Teleportation of qubit using entangled non-orthogonal states: a comparative study. **Quantum Inf. Process.** **16** (2017) 76. **Impact Factor = 2.433**
5. **Vikram Verma**: Comment on "Bidirectional Quantum Teleportation of Two-Qubit State via Four-Qubit Cluster State. **Int. J. Theor. Phys.** **59** (2020) 3329 – 3335. **Impact Factor = 1.347**
6. **Vikram Verma**: Bidirectional quantum teleportation of two-qubit entangled state by using G-state as a quantum channel. **Phys. Scr.** **95** (2020) 115101. **Impact Factor = 2.487**
7. **Vikram Verma**: Bidirectional Quantum Teleportation and Cyclic Quantum Teleportation of Multi-Qubit Entangled States via G-State. **Int. J. Mod. Phys. B** **34** (28) (2020) 2050261. **Impact Factor = 1.219**
8. **Vikram Verma**: Cyclic quantum teleportation via GHZ-like state. **Mod. Phys. Lett. A** **35** (2020) 2050333. **Impact Factor = 2.066**
9. **Vikram Verma**: Bidirectional Quantum Teleportation by Using Two GHZ-States as the Quantum Channel. **IEEE Communications Letters** **25** (2021) 936-939. **Impact Factor = 3.419**
10. **Vikram Verma**: Cyclic quantum teleportation via G state. **Modern Physics Letter B** **35** (2021) 2150145. **Impact Factor = 1.668**

11. **Vikram Verma**: Bidirectional controlled quantum teleportation of multi-qubit entangled states via five-qubit entangled state. *Phys. Scr.* **96** (2021) 035105. **Impact Factor = 2.487**
12. **Vikram Verma**: Improved Quantum Teleportation of Ten-qubit State based on the Cluster State Quantum Channel. *International Journal of Theoretical Physics* **60** (2021) 397-401. **Impact Factor = 1.347**
13. **Vikram Verma**: Symmetric and Asymmetric Cyclic Controlled Quantum Teleportation via Nine-Qubit Entangled State. *Modern Physics Letter B* **35** (2021) 2150249. **Impact Factor = 1.668**
14. **Vikram Verma** and Ajay Yadav: Comment on "Quantum controlled Teleportation of Bell state Using Seven-Qubit Entangled State". *International Journal of Theoretical Physics* **60** (2021) 348-354. **Impact Factor = 1.347**
15. **Vikram Verma**, Dheeraj Yadav, D. K. Mishra: Improvement on Cyclic Controlled Teleportation by Using a Seven-Qubit Entangled State. *Optical and Quantum Electronics* **53** (2021) 1-11. **Impact Factor = 2.084**
16. **Vikram Verma**, Nidhi Singh, Ravi S. Singh: Improvement on Quantum Teleportation of Three and Four Qubit States Using Multi-Qubit Cluster States. *Int. J. Theor. Phys.* **60** (2021) 3973-3981. **Impact Factor = 1.708**
17. Necati Celik and **Vikram Verma**: Quantum Information Transformation from One Particle onto another Particle by Using Hybrid and Hyper Entangled States. *Sch. J. Phys. Math. Stat.* **9** (2022) 21-25. **Impact Factor = 2.0**
18. **Vikram Verma** and Mitali Sisodia: Two-way \leftrightarrow quantum communication using four-qubit cluster state: Mutual exchange of quantum information. *Mod. Phys. Lett A* **37** (2022) 2250020. **Impact Factor = 2.006.**

(b) Research papers published in Refereed/Peer Reviewed Conferences Proceedings:

19. **V. Verma** and H. Prakash, "Quantum Teleportation of Single Qubit Mixed Information using WernerLike State as Resource," in *12th International Conference on Fiber Optics and Photonics*, OSA Technical Digest (online) (Optical Society of America, 2014), paper S5A.82.

<http://www.opticsinfobase.org/abstract.cfm?URI=Photonics2014S5A.82>

Conference Organization/Presentations

➤ **Organization of a Conferences/Lectures/Webinars**

- Member of organizing committee in *International Conference on Light Quanta: Modern Perspectives & Applications*, held on December 14-16, 2015 at Department of Physics, University of Allahabad, Allahabad.
- Member of organizing committee in *International Conference on Physics, Society and Technology (ICPST-2019)*, held on January 17-19, 2019 at Deshbandhu College, University of Delhi, New Delhi, India.
- **Co-convener**, online lecture on "Sound of Gravity" organized by Physical Science Society and IQAC, Deshbandhu College, University of Delhi, New Delhi. (10th September-2021)

- **Co-convener**, online lecture on “Nano Materials-impact, challenges and applications” organized by Physical Science Society and IQAC, Deshbandhu College, University of Delhi, New Delhi. (11th October-2021)
- **Co-convener**, online lecture on “Charged Particle: an introduction” organized by Physical Science Society and IQAC, Deshbandhu College, University of Delhi, New Delhi. (08th October-2021)
- **Coordinator**, Online lecture on “*Intellectual Property Right Awareness Program*” organized by the Department of Physics, Deshbandhu College (University of Delhi), Kalkaji New Delhi under the aegis of IQAC, DBT Star College Scheme, Physical Science Society and YUVA in collaboration with Office of the Controller General of Patents, Design & Trade Marks, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry, Government of India under the initiative of the Government “*Azadi ka Amrit Mahotsav*” and National Intellectual Property Awareness Mission. (12th January-2022)

➤ **Participation in National/ International Conferences as Paper (Oral/Poster) Presenter:**

1. Hari Prakash and **Vikram Verma** , “Minimum Assured Fidelity in Quantum Teleportation of Single Qubit using Non-Maximally Entangled States and its Relationship with Concurrence” , National Laser Symposium (NLS-09), *Bhabha Atomic Research Centre (BARC), Mumbai* on January 13-16, 2010. (Poster presentation)
2. Hari Prakash and **Vikram Verma**, “A precise and Simple Protocol for Standard Quantum teleportation of an Arbitrary N-Qubit State”, International Conference on Advances in Modeling, Optimization and Computing (AMOC2011)” Department of Mathematics, *Indian Institute of Technology Roorkee, Roorkee-247 667 (U.K.), India*, on December 5 - 7, 2011.(Oral presentation)
3. Hari Prakash and **Vikram Verma**, “Existence of Partial-Magic Bases for Four Entangled Qubits”, 3rd International Conference on Current Developments in Atomic, Molecular, Optical & Nano Physics (CDAMOP 2011), Department of Physics and Astrophysics, *University of Delhi, Delhi – 110007 (INDIA)* on December 14-16, 2011. (Poster presentation)
4. **Vikram Verma** and Hari Prakash, “Entanglement Swapping giving Entanglement greater of those of the Two Initial Entangled Pairs and Generation of χ -type Entangled State of 4-Parties”, Rajarshi Udai Pratap Singh Memorial 2nd International Workshop on Spectroscopic Signature of Molecular Complexes /Ions in Our Atmosphere and Beyond organized by Udai Pratap Autonomous College, Varanasi-221002, India in collaboration with Department of Applied Physics, *IT BHU, Varanasi, India*. February 7-10, 2012, (Oral presentation)
5. Hari Prakash and **Vikram Verma**, “Maximal Average Fidelity in Quantum Teleportation of Single Qubit Mixed Information State by Using Two Qubits X-State as Resource” , 13th Asian Quantum Information Science Conference (August 25-30, 2013), *IMS Chennai, India*. (Poster presentation)
6. **Vikram Verma** and Hari Prakash, “Perfect Controlled Quantum Teleportation of an arbitrary N-qubit Information State”, International Conference on Light Quanta: Modern Perspectives & Applications organized by Physics Department, *University of Allahabad, Allahabad-211002*. December 14-16, 2015 (Poster presentation)

Research Projects (Major Grants/Research Collaboration)

International Collaborations:

- ❖ **Prof. Necati Celik.** Gümüşhane University, Faculty of Engineering and Natural Sciences, Department of Physics Engineering 29100, Gümüşhane, Turkey
- ❖ **Prof. EL-Sayed Abdel-Khalek Mohamed,** Mathematics Department, Faculty of Science, Sohag University, 82524 Sohag, Egypt.

National Collaborations:

- ❖ **Prof. D. K. Mishra.** Department of Physics, Institute of Science, Banaras Hindu University, Varanasi - 221 005, India.
- ❖ **Prof. R. S. Singh.** Department of Physics, DDU Gorakhpur University, Gorakhpur (U.P.) – 273009, India.

Awards and Distinctions

“Best Poster Presentation” award in International Conference on Light Quanta: Modern Perspectives & Applications, held on December 14-16, 2015 at Department of Physics, University of Allahabad, Allahabad.

Association With Professional Bodies

- *Editing*
- *Reviewing: Reviewer of various peer reviewed International Journals.*
- *Advisory*
- *Committees and Boards*
- *Memberships*
- *Office Bearer*

Other Activities

- **Evaluator**, National Talent search Examination named Vidyarthi Vigyan Manthan (VVM), State Level Examination Organized by Vigyan Prasar in association with National Council of Educational Research and Training (NCERT) and Vijnana Bharati (VIBHA) in Deshbandhu College, Kalkaji New Delhi-110019. (19th January-2020)

Invited Lectures:

- Delivered an *Invited lecture* on the topic "Maxwell's Equations" for UG Students of **Amity Institute of Applied Sciences**, on 19th October, 2020 from 1.00 pm to 2.00 pm on MS team.

Webinars Attended:

1. Webinar on **“Search, Research and Publication Ethics”** Organized by DBC Library and IQAC, Deshbandhu College, University of Delhi held on **24th July-2020.**
2. International Webinar : **“COVID 19 : An Opportunity for Technological Resurgence”** organised by Department of Physics ,Saroj Lal Ji Mehrotra Science Faculty, Prayagraj, U.P. India held on **8th July,2020.**
3. Webinar on **“Covid-19 ke samay me Samaj me Siksha ki Chunautiyan va Samadhan”** organized by Acharya Narendra Dev Teacher training (P.G.) College, Sitapur (U.P.) held on **17th June-2020.**
4. National webinar on **“Fractals and Its Applications in Real Life”** organised by the **Department of Mathematics** and **IQAC** of Deshbandhu College, University of Delhi on August 25, 2020.

(Dr. Vikram Verma)

Signature of Faculty Member