




**DEPARTMENT OF PHYSICS**  
**DYAL SINGH COLLEGE, UNIVERSITY OF DELHI**  
**FACULTY DETAIL**



Title	Dr.	First Name	ARPITA	Last Name	VAJPAYEE	Photograph
Designation	ASSISTANT PROFESSOR					
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Educational Qualifications						
Degree	Institution				Year	
B.Sc.	University of Rajasthan, Jaipur				2002	
M.Sc. (Physics)	University of Rajasthan, Jaipur				2005	
Ph.D.	University of Delhi, Delhi				2013	
NET-JRF	CSIR				2005	
Career Profile						
<p>(a) Worked as a Junior Research Fellow (JRF) in <i>National Physical Laboratory, New Delhi</i> from 6<sup>th</sup> March 2006 to 5<sup>th</sup> March 2008 (Two years)</p> <p>(b) Worked as a Senior Research Fellow (SRF) in <i>National Physical Laboratory, New Delhi</i> since 6<sup>th</sup> March 2008 to 2<sup>nd</sup> March 2011 (Three years)</p> <p>(c) Worked at <i>CNR-INFM-LAMIA lab, Genova, ITALY</i> for one month from 09/04/2010 to 09/05/2010 under a joint research project between CSIR(India)-CNR(Italy) on the activities of superconducting MgB<sub>2</sub> wires/tapes</p> <p>(d) Working as an Assistant Professor (Physics) in <i>Dyal Singh College, Delhi</i> from March 2011 to till date</p>						
Administrative Assignments (From 1 <sup>st</sup> July 2019 onwards)						
<p>(a) Convener, Physics Society (COSMOS), Dyal Singh College, University of Delhi</p> <p>(b) Member, NIRF committee, Dyal Singh College, University of Delhi</p> <p>(c) Coordinator Physics, DBT Star College Scheme committee, Department of Physics, Dyal Singh College</p> <p>(d) Member, Admission Committee, Department of Physics, Dyal Singh College, University of Delhi</p> <p>(e) Member, Physics Society (COSMOS), Dyal Singh College, University of Delhi</p> <p>(f) Member, Write-Off Committee (Physics), Department of Physics, Dyal Singh College, University of Delhi</p> <p>(g) Member, Committee for physical verification of STOCK of Physics department, Dyal Singh College</p> <p>(h) Member, Mentor-Mentee Committee, Department of Physics, Dyal Singh College, University of Delhi</p> <p>(i) Member, NAAC Committee, Department of Physics, Dyal Singh College, University of Delhi</p> <p>(j) Member, Library Committee, Department of Physics, Dyal Singh College, University of Delhi</p>						

- (k) Member, Alumni Association, Department of Physics, Dyal Singh College, University of Delhi  
 (l) Member, Parent Teacher Association (PTA), Department of Physics, Dyal Singh College, University of Delhi

#### Areas of Interest / Specialization

My research interest lies in the area of Superconductivity and Material Science i.e. synthesis and analysis of various physical properties of superconducting materials like MgB<sub>2</sub>, Y123, REFeAsO (RE= rare earth elements), FeTe/Se & SrFe<sub>2</sub>As<sub>2</sub> and improvement in superconducting properties via addition or substitution of nano-particles or other elements & compounds.

#### Subjects Taught

- |  |   |
|--|---|
| (1) Thermal Physics (Theory)                           | (1) Solid State Physics Lab                       |
| (2) Waves and Optics (Theory)                          | (2) Elements of Modern Physics Lab                |
| (3) Statistical Mechanics (Theory)                     | (3) Electromagnetic Theory Lab                    |
| (4) Renewable Energy and Energy Harvesting (Theory)    | (4) Thermal Physics and Statistical Mechanics Lab |
| (5) Mechanics (Theory)                                 | (5) Waves and Optics Lab                          |
| (6) Science and Society (Theory)                       | (6) Thermal Physics Lab                           |
| (7) Thermal Physics and Statistical Mechanics (Theory) | (7) Mechanics Lab                                 |
|  | (8) Digital Empowerment Lab                       |

#### Research Guidance

NA

#### Publications Profile (Mention total no. and details from 1<sup>st</sup> July 2019 onwards only)

(1) "Design, synthesis, molecular docking, and DFT studies on novel melatonin and isatin-based azole derivatives" Keshav Kumar Saini, Ravindra Kumar Upadhyay, Ravi Kant, Arpita Vajpayee, Kalpana Jain, Amit Kumar, Lalita S. Kumar, and Rakesh Kumar; **RSC Advances** 13, 27525 (2023)

From 2006 onwards:

Total Number of publications in International Journals – 31

Research Papers in Indian Journals – 03

Research Papers Presented in Conferences - 05

#### Conference Organization/ Presentations (From 1<sup>st</sup> July 2019 onwards)

##### Conferences/ Seminars/ Events/ Competitions organized

- Convenor, Two day academic event comprising of a seminar on "Application of Plasma Physics in the biomedical and energy sector" followed by a power point presentation competition from 31<sup>st</sup> April, 2024 to 1<sup>st</sup> May, 2024
- Convenor, Seminar and Hands on Demonstrations of Semiconductor Materials and Electronic Devices alongside India's Techade-Chips initiative on 13<sup>th</sup> March, 2024
- Member, Organizing team "Science Fair 2024" on 28<sup>th</sup> - 29<sup>th</sup> Feb, 2024 at Dyal Singh College
- Convenor, Seminar on "Nobel Prize 2020 in Physics: Perspective of Quantum Black Hole(s)" and Freshers' Welcome on 16<sup>th</sup> October, 2023
- Seminar on "Uncovering the Mysteries of Creation" and Farewell & Fresher's welcome function on 12<sup>th</sup>

April, 2023 at Dyal Singh College (Member, Organizing Committee)

- LOGO designing Competition and Power Point Presentation Competition on 11<sup>th</sup> April, 2023 at Dyal Singh College (Member, Organizing Committee)
- Seminar on “Sustainable Energy Harvesting Using Photovoltaic” on 31<sup>st</sup> Jan, 2023 at Dyal Singh College (Member, Organizing Committee)
- Poster making competition on 22<sup>nd</sup> Aug, 2022 at Dyal Singh College (Member, Organizing Committee)
- Seminar on “Aspects of Light Measurement” on 21<sup>st</sup> April, 2022 at Dyal Singh College (Member, Organizing Committee)
- Webinar on “How can theoretical physics help with pandemics?” on 11<sup>th</sup> March, 2022 at Dyal Singh College (Member, Organizing Committee)
- Webinar on “Soft and squishy materials and how to think about them” on 11<sup>th</sup> Nov, 2021 at Dyal Singh College (Member, Organizing Committee)
- One day seminar on “Synthesis and characterization of advanced functional materials” on 19<sup>th</sup> April, 2021 (in online mode) at Dyal Singh College (Member, Organizing Committee)
- Organized an intra- college Power Point Presentation competition on various Physics topics on 29<sup>th</sup> January, 2020 at Dyal Singh College (Member, Organizing Committee)
- Seminar on ‘CLIMATE CHANGE’ on 13<sup>th</sup> Sep, 2019 at Dyal Singh College (Member, Organizing Committee)
- Lecture by Prof. Ajoy K. Ghatak (Professor Retired, IIT Delhi) on “ $E = mc^2$ ” on 11<sup>th</sup> Feb, 2019 at Dyal Singh College (Member, Organizing Committee)
- Seminar on ‘WHAT IS A PHOTON?’, Power Point Presentation Competition and Poster making competition on 25<sup>th</sup> Feb, 2019 at Dyal Singh College (Member, Organizing Committee)

#### **Conferences/Faculty Development Programme/Workshops/Refresher Courses Attended**

- National Workshop on “Challenges of Teaching Physics Laboratory Courses in Online Mode”, from 23<sup>rd</sup> to 25<sup>th</sup> Jan, 2021 - Organized by Kalindi College, Univ. of Delhi and The National Academy of Sciences India (NASI), Delhi Chapter
- Workshop on “Programming and Software Tools for UG Courses”, from 19<sup>th</sup> to 21<sup>st</sup> Mar 2021 - Organized by Department of Physics and Electronics, Rajdhani College, University of Delhi
- National Science Day program on 28<sup>th</sup> Feb, 2021 - organized by Inter-University Accelerator Centre (IUAC), New Delhi
- Webinar on “Introduction to COMSOL Multiphysics - 25<sup>th</sup> Mar, 2021 - Organized by Deshbandhu College, University of Delhi
- Interdisciplinary Faculty Development Programme on ‘Interdisciplinary Studies and Higher Education: Prospects and Challenges’ - July 26-31, 2021 - organized by Dyal Singh College & Mahatma Hansraj Faculty Development Centre, Hansraj College, University of Delhi
- Faculty Development Programme on “Materials Characterization: Experimental And Theoretical Aspects” – September 20-24, 2021 - organized by Mahatma Hansraj Faculty Development Centre, Hansraj College, University of Delhi

- Webinar on “Revisiting the Laws of Thermodynamics” – 3<sup>rd</sup> July, 2021 – organized by Indian Association of Physics Teachers (IAPT), Regional Council (Delhi & Haryana)
- Workshop for college teachers teaching the Physics (Hons.) papers – 4<sup>th</sup> Nov, 2022 – organized by Department of Physics & Astrophysics, University of Delhi
- Workshop on “Optics, evolution and demo on the assembly of Telescopes” and “A night gazing session” – October 17<sup>th</sup>, 2022 – by Gargi College and National Academy of Sciences India (NASI)
- Faculty Development Programme on “Principles of Radiation Detection and Measurement and Experimental Techniques” – 3<sup>rd</sup> to 9<sup>th</sup> April, 2023, organized by Ramjas College collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi
- Faculty Induction Programme from 20<sup>th</sup> June to 19<sup>th</sup> July, 2023 organised by Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi
- Faculty Induction/Orientation Programme for “Faculty in Universities/Colleges/Institutes of Higher Education” from 21<sup>st</sup> Aug, 2023 to 19<sup>th</sup> Sept, 2023 Organised by Teaching Learning Centre, Ramanujan College, University of Delhi, in collaboration with Dhote Bandhu Science College, Gondia, Maharashtra
- Two-week Interdisciplinary Refresher Course on ADVANCED RESEARCH METHODOLOGY from 21<sup>st</sup> Nov, 2023 to 5<sup>th</sup> Dec, 2023 organised by Teaching Learning Centre, Ramanujan College (under the aegis of PMMMMNMTT)
- One-week Faculty Development Program (FDP) on “DEVELOPING MOOCS” from 25<sup>th</sup> Dec, 2023 to 31<sup>st</sup> Dec, 2023 organised by Teaching Learning Centre, Ramanujan College (under the aegis of PMMMMNMTT)
- Two - week refresher course in “PHYSICS” from 30<sup>th</sup> Mar, 2024 to 12<sup>th</sup> Apr, 2024 organised by Teaching Learning Centre, Ramanujan College, University of Delhi
- Faculty Development Program (FDP) on Density Functional Theory Computation of Molecules using Gaussian (DFT-G) from 14<sup>th</sup> May, 2024 to 20<sup>th</sup> May, 2024 organised by Centre for Advanced Computational Research, New Delhi (registered under Ministry of SME)

**Research Projects (Major Grants/Research Collaboration) (From 1<sup>st</sup> July 2019 onwards)**

NA

**Awards and Distinctions (From 1<sup>st</sup> July 2019 onwards)**

NA

**Association With Professional Bodies**

NA

**Other Activities like MOOCs/ Patents etc. (From 1<sup>st</sup> July 2019 onwards)**

NA

*Arpita*

Signature of Faculty Member