




## Shivaji College Faculty Details Proforma

Title	Ms.	First Name	Bharti	Last Name		Photograph
<b>Designation</b>		Associate Professor				
<b>Address</b>		C8/210, Sector 8, Rohini, Delhi-110085				
<b>Office Phone No.</b>						
<b>Residence</b>						
<b>Mobile</b>		9818999997				
<b>Email</b>		bhartibaniwal9@gmail.com				
<b>Web-Page</b>						
<b>Educational Qualifications</b>		PhD				
<b>Degree</b>		<b>University/Institute</b>		<b>Year</b>		
Ph.D.		Mewar University, Rajasthan		2021		
M.Phil./M.Tech.						
PG		University of Delhi				
UG		University of Delhi				
<b>Any Other Qualification</b>		NET-JRF				
<b>Career Profile</b>						
<p><b>Working in Shivaji College as Associate Professor Physics from 25 March 2021 onwards.</b></p>						

Administrative Assignments
<p>Worked as Teacher In-Charge, Physics Department, Shivaji College from April 2015-March 2016</p> <p>Worked as Teacher In-Charge, Physics Department, Shivaji College from May 2020-April 2021.</p> <p>Member of Various Staff Council Committees.</p>
Areas of Interest/Specialisation
<p>Condensed Matter Physics, Supercapacitors</p>
Subjects Taught
<p>Microprocessor and Computer Fundamentals, Electricity and Magnetism, Mathematical Physics, Statistical Mechanics, Electronics, Thermal Physics, C++, Numerical Analysis, Modern Physics, waves and optics and Mechanics</p>
Innovation Project/Research Projects (Major Grants/Research Collaboration)
<p>Innovation Project sponsored by University of Delhi in 2013-15 under the title “Experimental Investigations on Ion – Conducting Polymer Gel Electrolytes Suitable for Applications in Electrochemical Devices.”</p>
Publications Profile ( <i>Research Papers/Books</i> )
<ul style="list-style-type: none"> <li>• Study of pristine and functionalized V<sub>2</sub>C and Mo<sub>2</sub>C MXenes as novel electrode material for supercapacitors, Journal of molecular graphics and modelling 118, 2023, 108366, <a href="https://doi.org/10.1016/j.jmglm.2022.108366">https://doi.org/10.1016/j.jmglm.2022.108366</a></li> <li>• Simple and rapid eco-friendly synthesis of NiO/RGO nanocomposites using guava leaf extract and their physicochemical characterization, Materials Today: Proceedings, 68(7), 2022, 2705-2714, <a href="https://doi.org/10.1016/j.matpr.2022.06.241">https://doi.org/10.1016/j.matpr.2022.06.241</a></li> <li>• Study of Quantum Capacitance of Pure and Functionalized Nb<sub>2</sub>C and Ti<sub>2</sub>C MXenes for Supercapacitor Applications, ECS Transactions, 107 (1) 1751-1760 (2022) 10.1149/10701.1751ecst ©The Electrochemical Society</li> <li>• Study of electrochemical properties of activated carbon electrode synthesized using bio-waste for supercapacitor applications, Biomass Conv. Bioref. (2022). <a href="https://doi.org/10.1007/s13399-021-02271-6">https://doi.org/10.1007/s13399-021-02271-6</a></li> </ul>

- Recent advancements in supercapacitors based on different electrode materials: Classifications, synthesis methods and comparative performance, Journal of Energy storage, 48, 2022, 103871 <https://doi.org/10.1016/j.est.2021.103871>
- Bioinspired synthesis of nickel oxide nanoparticles as electrode material for supercapacitor applications, Ionics, <https://doi.org/10.1007/s11581-021-04245-0>
- Bharti, Kumar, A., Ahmed, G., Gupta, M., Bocchetta, P., Adalati, R., Chandra, R. and Kumar, Y., "Theories and models of supercapacitors with recent advancements: Impact and interpretations", Nano Express. 2021; 2, 022004.
- DFT computation of Quantum Capacitance of pure and doped niobium nitrides for supercapacitor applications, Ceramics International, 2021.
- Determination of Quantum Capacitance of Niobium Nitrides Nb<sub>2</sub>N and Nb<sub>4</sub>N<sub>3</sub> for Supercapacitor applications, J. Compos. Sci. 2021, 5, 85.
- Physical properties of heteroatom doped graphene monolayers in relation to supercapacitive performance, IJPAP, 2020, 58, 885-891.

#### **Conference/Seminar/Faculty Development Programme/Workshop**

- Attended the online National Science Day program organized by IUAC, Delhi on 28 Feb 2021
- Attended the online national workshop on Challenges of Teaching Physics Laboratory
- Courses in Online Mode organized by Kalindi College, DU in association with Department of Physics and Astrophysics and NASI on 23-25th January 2021
- Attended 2 week FDP on "Research Methodology" sponsored by MHRD-Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching/Teaching Learning Centre, Ramanujan College, University of Delhi from October 01- October 15, 2020.
- One week Online Faculty Development Programme on ICT Enhanced teaching learning and creating MOOCs sponsored by MHRD-Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching/Teaching Learning Centre, Ramanujan College, University of Delhi from August 18- August 25, 2020.
- Attended and gave oral presentation in the national conference "NSRP-22" held in JNU from 8-10 November, 2019.
- Short Term Course on MOOCs, E-Learning and ICT sponsored by CPDHE(UGC-HRDC), University of Delhi, Delhi from 15/06/2019 to 21/06/2019.
- One Week Course on Disaster Management sponsored by UGC-HRDC, Jamia Millia Islamia, New Delhi from 26/2/2019 to 5/3/2019.
- One Week Course on Research Methodology sponsored by UGC-HRDC, Jamia Millia Islamia, New Delhi from 4/2/2019 to 9/2/2019.
- Attended National Seminar on "New Trends in Nanotechnology and applications NTNA-2018" in ARSD College, DU from 27-28<sup>th</sup> September, 2018.  
Attended and gave oral presentation in International conference "Recent developments in interdisciplinary research" organized by Physics Department, Hansraj College, DU on 2nd July 2018.
- Presented a paper on 13th April 2018 in the National conference held in Shivaji College, University of Delhi
- Attended Summer School organized by Jamia Millia Islamia, Delhi from 26th May 2016 to 15th June 2016
- Attended Winter School organized by Jamia Millia Islamia, Delhi from 17th Dec 2014-8th Jan 2015
- Attended Workshop on Science and Life organized by University of Delhi in 2013

#### **Research Guidance (Supervision of Doctoral Thesis/Dissertations)**

NA

**Awards and Distinctions**

**Gold Medalist in MSc Physics, University of Delhi**

**Memberships**

NA

**Other Academic Activities**

- **Convenor of International Webinar on “Era of Optical Atomic Clock.” co-hosted by physics department shivaji college on December 4 2020.**
- **Convenor of International Webinar on “Recent Trends in Material Science” held on 9 October 2020**
- **Convenor of International Webinar on “Mechanical Properties of Thin films.” Held on 23 April 2020**
- **Convenor of national Webinar on “Piezoelectric Flexible Nanogenerator : A New and Renewable Energy Source.” Held on 22 April 2020.**
- **Convenor of the BSc (H) students Lab visit to SSPL, DRDO, Delhi on 27 February 2020**
- **Convenor of Lecture Series on “Isotopes – The Wonder Tools” and inter college PowerPoint presentation competition on September 30, 2019.**
- **Convenor of Lecture Series on ‘Elementary Physics’ and inter college poster making competition held on 1st November 2018.**
- **Convenor of Physics Workshop on “Astrophysics, Cosmology & Computation” held on February 12, 2016, organized by Physics Department, Shivaji College, University of Delhi**
- **Convenor of Physics Department’s participation in the „INSPIRE” Program Organized by Shivaji College, University of Delhi in July 2015**

**Cultural/Extracurricular Activities**

- **Centre In Charge for NGPE examination**
- **Convenor of Physics Department's Annual Fest "Invenio 2019"**
- **Convenor of Physics Department's Annual Fest "Invenio 2015"**
- **Convenor of Physics Department's Annual Fest "Invenio 2016"**

**Signature of Faculty Member**