

## **RESUME**

### **Namrata**

Department of Physics  
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### **EDUCATION:**

- Ph.D. Thesis entitled “Multiparticle production in interactions of 800GeV protons with emulsion nuclei”, Department of Physics and Astrophysics, University of Delhi, Delhi, India, Feb. 2003
- M. Sc. Physics, 1993-95, Department of Physics and Astrophysics, University of Delhi, Delhi, India
- B. Sc. (Hons.) Physics, 1990-93, Hindu College, University of Delhi, Delhi, India

### **RESEARCH EXPERIENCE:**

- Development of the silicon-sensor characterization facility, which is only one of the 6 such facilities existing in the world, for testing state-of-the-art silicon-strip sensors for the next phase of the international collaborative experiment, CMS at CERN.
- Developing novel silicon detectors, like LGADs for future experiments.
- Developing radiation damage models for silicon detectors.
- **17 research publications** in refereed international scientific journals and more than 8 conference papers in national and international conferences.

### **RESEARCH PROJECTS:**

- “Assisting the development, installation, and commissioning of Sensor Qualification Centre SQC for Characterizing state-of-the-art silicon strip sensors for the international collaborative CMS Experiment”, Delhi University IoE FRP Project, Funding Agency: DU, Grant: 5 Lakhs, 2020-21.
- "High Luminescent and small band gap Quantum Dots", SSNC-305, Delhi University Innovation R&D Project, Funding Agency: DU, Grant: 5 Lakhs, 2015-16.
- “Morphology Controlled Synthesis of Multiferroic Nanomaterials by Wet-Chemical Method and their Optoelectronic, Magnetoelectric and Photocatalytic Properties” SSNC-207, Delhi University Innovation R&D Project, Funding Agency: DU, Grant: 5 Lakhs, 2013-14.

### **WORK EXPERIENCE:**

- Associate Professor, Department of Physics, Swami Shraddhanand College, University of Delhi, Delhi, November 2009 till date.
- Reader, Department of Physics, Swami Shraddhanand College, University of Delhi, Delhi, November 2006 – October 2009.
- Lecturer in Sr. Scale, Swami Shraddhanand College, University of Delhi, Delhi, November 2005 – October 2006.

### **ADMINISTRATIVE RESPONSIBILITIES:**

- Teacher-in-charge, Physics Department since June 2021

- Single Point of Contact (SPOC) for NPTEL of the college, since January 2021
- Member of the Admission Committee for Foreign Nationals, University of Delhi for academic session 2019-20.
- Convener of the Admission Committee for Foreign Nationals, University of Delhi for academic session 2018-19.
- Convener of the Admission Committee for Foreign Nationals, University of Delhi for academic session 2017-18
- Teacher-in-charge, Computer Science Department from January 2016 to May 2016.
- Teacher-in-charge, Physics Department from June 2015 to May 2016.
- Deputy Superintendent of Examinations during Dec 2014, December 2015, and May 2016.
- Member of the Governing Body of the college from April 02, 2015, for a period of one year.

#### **ACADEMIC ACHIEVEMENTS:**

- Joint National Eligibility Test (NET) in July 1995 and awarded Junior Research Fellowship (JRF) in Physical Science under the CSIR Fellowship Scheme.
- Graduate Aptitude Test in Engineering (GATE) 1995, with percentile 92.3.
- Awarded **Merit Certificate** under **National Scholarship Scheme** of Govt. of N.C.T. of Delhi in **1988**.

#### **COURSE/PROGRAMME ATTENDED:**

- Attended a 2-week Faculty Development Programme on “Managing Online Classes and Co-Creating MOOCs 3.0” from July 25 to Aug 10, 2020, organized by Teaching Learning Centre, Ramanujan College, under the aegis of MHRD, PMMMNMTT
- Successfully completed online course “Introduction to Psychology”, authorized by Yale University, USA, and offered through Coursera.
- Participated in Online Lecture on Electrostatics-II by Prof. H.S. Mani on July 25, 2020 organized by Indian Association of Physics Teachers and Delhi State Science Teachers’ Forum.
- Participated in Online Lecture on Electrostatics-I by Prof. H.S. Mani on July 18, 2020 organized by Indian Association of Physics Teachers and Delhi State Science Teachers’ Forum.
- Attended PHYSTAT – Flavor 2020 between 19-21 October 2020, conducted by CERN.
- Attended a Short-Term Course entitled "Advances in Nuclear and Particle Physics: Present and Future" from 8th to 12th Feb, 2016 organized by Department of Physics, NIT Jalandhar, Punjab.
- Participated in Second National Workshop on "Quantum Mechanics: Theory and Application" held at Deen Dayal Updhyaya College, University of Delhi, on 22-23 October 2010.
- Participated in a three-week Course “Base Camp for application of Easy Now techniques for e-content development”, organized during 12th September 2009 to 9th October 2009 at A.N.D. College, University of Delhi, Delhi.
- Attended the First “National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries” (MATEIT-2006) held at Deen Dayal Upadhyaya College, University of Delhi from 22<sup>nd</sup> to 25<sup>th</sup> March 2006.
- Attended a One Day Seminar on UGC-Inflibnet at Deen Dayal Upadhyaya College, University of Delhi, in Feb 2006.
- Attended a workshop on CMS at LHC held on 11<sup>th</sup>-15<sup>th</sup> December 2000 at TIFR, Mumbai, India.
- Attended Physics Olympiad Exposure Camp at the Homi Bhabha Centre for Science Education (TIFR), Mumbai from December 3 to 7, 2018

## **LITERARY, CULTURAL OR OTHER ACTIVITIES:**

- Co-convenor, Alumni Association since 2013
  - Organized First Alumni Meet held as part of Golden Jubilee Celebration of the college February 2017
  - Organized Series of talks by alumnus during February to April 2021
- Judge, CBSE National level Science Exhibition held at Mount Abu Public School, Rohini, Delhi from 10<sup>th</sup> -12<sup>th</sup> February 2018
- Convenor, Organizing Committee of the Orientation programme on "Energy Materials" held on 14<sup>th</sup>, March 2016
- Convener, Library Automation Committee (2015- 2016)
- Jury member for 3<sup>rd</sup> National Level Exhibition and Project Competition (NLEPC)- 2013 under INSPIRE Awards component of Department of Science and Technology held during **October 08-10, 2013**.
- Worked on a project "**UH Campus Supercomputer Project**", based on Volunteer Computing using BOINC at Department of Computer Science, University of Houston, TX, USA between October 2007, and June 2009.

## **INVITED LECTURES:**

- Delivered a talk at DST sponsored Inspire Science camp on 16<sup>th</sup> March 2017 at HNB Garhwal University, Uttarakhand, titled "Volunteer Computing using BOINC@LHC"

## **SKILLS:**

- Experience in algorithm design and scientific programming, strong computational and analytical skills
- Programming Languages: Python, C, C++, Pascal, Fortran etc.
- *Application Software*: TCAD tools, PSPICE, SCILAB, LaTeX, Microsoft Office

## **MEMBERSHIP FELLOWSHIP OF LEARNED BODIES / SOCIETIES:**

- Member of the RD50 Collaboration, <https://rd50.web.cern.ch/rd50/>
- Life Member of Indian Association of Physics Teachers (IAPT).

## **PUBLICATIONS**

### **Seminal Publications in peer-reviewed Journals in past 5 years:**

1. Radiation hardness studies of thin and low bulk resistivity LGADs, Geetika Jain, Chakresh Jain, Saumya Saumya, Namrata Agrawal, Ashutosh Bhardwaj, Kirti Ranjan, Semicond. Sci. Technol. 36 (2021) 065016.
2. TCAD silicon device simulation for high level of radiation damage, N. Agrawal, K. Androsov, A. Bhardwaj, M.A. Ciocci, M.T. Grippo, C. Jain, A. Kumar, A. Messineo, S. Parolia, K. Ranjan, S. Saumya, A. Sisodia and S. Sondh, JINST, 15 (2020) C05066.
3. Modeling of neutron radiation-induced defects in silicon particle detectors, Chakresh Jain, Saumya Saumya, Geetika Jain, Ranjeet Dalal, Namrata Agrawal, Ashutosh Bhardwaj and Kirti Ranjan, Semicond. Sci. Technol. 35 (2020) 045021.