

## CURRICULUM – VITAE

**Name** Dr. Namrata

### **Personal Information:**

Present Position: Associate Professor

Official Address: Swami Shraddhanand College, Alipur, Delhi

E-mail address: namrata@ss.du.ac.in

Total Teaching Experience: 18 years

### **Ph.D.** Thesis titled

“Multiparticle production in interactions of 800GeV protons with emulsion nuclei” ;  
Supervisor : Prof. R. K. Shivpuri, Department of Physics and Astrophysics,  
University of Delhi, Delhi, India.

### **Fellowship and Awards:**

- (i) Joint National Eligibility Test (NET) in July 1995 and awarded Junior Research Fellowship (JRF) in Physical Science under the CSIR Fellowship Schemes
- (ii) Graduate Aptitude Test in Engineering (GATE) 1995, with percentile 92.3
- (iii) Member of organizing committee of Quest 2010-11 and 2011-12, held at University of Delhi
- (iv) Was a 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.**

## **Innovation Projects :**

**Completed** “Morphology Controlled Synthesis of Multiferroic Nanomaterials by Wet-Chemical Method and their Optoelectronic, Magnetoelectric and Photocatalytic Properties” SSNC-207.

**Ongoing** "High Luminescent and small band gap Quantum Dots", SSNC-305

**Research Interest:** Experimental High Energy Physics

## **LIST OF PUBLICATIONS**

1. “High-voltage planar Si detectors for high-energy physics experiments: comparison between metal-overhang and field-limiting ring techniques”, K. Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava, Ashish Kumar, Manoj Kumar Jha and R. K. Shivpuri, **Solid State Electronics** 48, 1587-1595 (2004).
2. “Simulation Study of irradiated Si sensors equipped with metal-overhang for applications in LHC environment”, S. Chatterji, A. Bhardwaj, K. Ranjan, Namrata, A.K. Srivastava, Ashish Kumar, Manoj Kumar Jha, S.L.Khanna and R. K. Shivpuri, **IEEE Trans. Nucl. Sci** 51(2), 298-312 (2004).
3. “Breakdown voltage analysis of neutron irradiated silicon detectors”, A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava, A. Kumar, M. K. Jha and R. K. Shivpuri, **Eur. Phys. J. AP.** 24, 171(2003).
4. “Analysis of interstrip capacitance of Si microstrip detector using simulation approach”, S. Chatterji, A. Bhardwaj, K. Ranjan, Namrata, A. K. Srivastava and R. K. Shivpuri, **Solid State Electronics** 47, 1491 (2003).
5. “Comparison of p<sup>+</sup>n junction Formed by BF<sub>2</sub><sup>+</sup> and Boron Implantation in Silicon Microstrip Detector with Low and High Thermal Budget: Impact of Fluorine on Electrical Characteristics”, Ajay K. Srivastava, A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, and R. K. Shivpuri, **Material Science in Semiconductor Processing** Vol.6, Issues 5-6, 555-559 (2003).

6. "A CAD investigation of Metal-overhang on multiple guard ring design for high voltage operation of Si sensors", A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Semicond. Sci. Technol.** 17, 1226 (2002).
7. "Performance characteristics of semi-insulator and dielectric passivated Si strip detectors", K. Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Physica Status Solidi (a)** 191(2), 658 (2002).
8. "Analysis and Comparison of the breakdown performance of Semi-insulator and dielectric passivated Si Strip detectors", K. Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Nuclear Instruments and Methods in Physical Research A** 495, 191 (2002).
9. "Charged particle multiplicity distributions in different rapidity windows in 800 GeV proton-nucleus interactions ", Namrata, A. Bhardwaj K. Ranjan, S. Chatterji, A. K. Srivastava, A. Kumar, M. K. Jha and R. K. Shivpuri,, **Eur. Phys. Journal A** 13, 405 (2002).
10. "Two Dimensional Breakdown Voltage Analysis and Optimal Design of Silicon Microstrip Detector Passivated by Dielectric", A. K. Srivastava, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Semicond. Sci. Technol.** 17, 427 (2002).
11. "Annealing behaviour of boron implanted defects in Si detector: impact on breakdown performance", S. Chatterji, K. Ranjan, A. Bhardwaj, Namrata, A. K. Srivastava and R. K. Shivpuri, **Eur. Phys. J. AP** 17, 223 (2002).
12. "A new approach to the optimal design of multiple field-limiting ring structures", A. Bharadwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Semicond. Sci. Technol.** 16, 849 (2001).
13. "Analysis and Optimal Design of Si Microstrip Detector with Overhanging Metal Electrode", K. Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, **Semicond. Sci. Technol.** 16, 635 (2001).
14. "Rapidity correlation in 800 Gev proton-nucleus interaction", Namrata, A. Bhardwaj K. Ranjan, S. Chatterji, A. K. Srivastava, A. Kumar, M. K. Jha and R. K. Shivpuri, **Eur. Phys. Journal A** 12, 9 (2001).

## CMS-NOTES

1. "Techniques of improving the Breakdown Voltage of Si Microstrip Preshower detector", A. Bharadwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, CMS-NOTE (CERN, Geneva), 2001/015.
2. "Analysis and Comparison of the breakdown performance of Semi-insulator and dielectric passivated Si Strip detectors", K. Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, CMS-NOTE (CERN, Geneva), 2002/014.

## Conference Reports and Papers /Posters Presented

1. "Synthesis of High Luminescent and Small Band Gap Quantum Dots", S. B. Tyagi, Namrata, M. Kharkwal et al..National Conference on "Emerging Trends and Future Challanges in Chemical Sciences" held on 3-4 Feb, 2016 organized by Kirorimal College, University of Delhi.
2. "Quantum Confinement and Size Controlled Synthesis of CdS Nanocrystals", S. B. Tyagi, Namrata, M. Kharkwal et al..National Conference on "Nanoscience - Opportunities and Challenges" held on 19-20 Feb, 2016 organized by Maitreyi College, University of Delhi.
3. "Controlled Synthesis of Ternary Chlcopyrite Nanocrystals with Tunable Band Gap", S. B. Tyagi, Namrata, M. Kharkwal et al..National Conference on "Chemistry : Environment and Harmonious Development" held on 7-8 April, 2016 organized by Shyam Lal College, University of Delhi.
4. "Influence of electrode geometry on electric field distribution within silicon microstrip detector", K.Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, Workshop on CMS at LHC held on 11-15 Dec., 2000 at TIFR, Mumbai, India.
5. "Breakdown Voltage analysis of field limiting ring structure", A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, Intelligent Nuclear Instrumentation (INIT) symposium held on 6-9 Feb., 2001 at BARC, Mumbai, India.
6. "Impact of radiation on breakdown performance of Si strip detectors", A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, International Workshop on Physics of Semiconductor Devices (IWPSD) held on 11-15 Dec., 2001 at SSPL, Delhi, India.

7. "Comparison of the passivants on the Breakdown Performance of Si strip detectors", K.Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, National Seminar on Physics of Materials for Electronic and Optoelectronic Devices held on 25-27 Feb., 2002 at J.N.Vyas University, Jodhpur, Rajasthan, India.
8. "The Effect of Metal-overhang on Si strip detectors with multiple guard rings", A.Bharadwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, National Seminar on Physics of Materials for Electronic and Optoelectronic Devices held on 25-27 Feb., 2002 at J.N.Vyas University, Jodhpur, Rajasthan, India.
9. "Comparison of  $p^+n$  junction Formed by  $BF_2^+$  and Boron Implantation in Silicon Microstrip Detector with Low and High Thermal Budget: Impact of Fluorine on Electrical Characteristics", Ajay K. Srivastava, A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, and R. K. Shivpuri, First International Conference on points defects and Non-stoichiometry (ISPN2003)" 20-22 March 2003, Sendai, Japan.
10. "Impact of harsh radiation on metal-overhang equipped sensors in the LHC environment", S. Chatterji, A. Bhardwaj, K. Ranjan, Namrata, A. K. Srivastava and R. K. Shivpuri, Presented orally in 2003 IEEE Nuclear Science Symposium and Medical Imaging Conference held during 19<sup>th</sup> –25<sup>th</sup> October,2003 at Portland, Oregon, USA.
11. "Impact of Metal Overhang and Guard Ring techniques on Breakdown voltage of Si strip sensors", K.Ranjan, A. Bhardwaj, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, 2003 IEEE Nuclear Science Symposium and Medical Imaging Conference held during 19<sup>th</sup> –25<sup>th</sup> October,2003 at Portland, Oregon, USA.
12. "Impact of Field Limiting Ring technique on Breakdown voltage of irradiated Si sensors", A. Bhardwaj, K. Ranjan, Namrata, S. Chatterji, A. K. Srivastava and R. K. Shivpuri, 2003 IEEE Nuclear Science Symposium and Medical Imaging Conference held during 19<sup>th</sup> –25<sup>th</sup> October,2003 at Portland, Oregon, USA.
13. "Parametric Inversion of Tri-axial Induction Logs in Anisotropic Media", A. Bhardwaj, Namrata , Richard Liu, Third National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries (MATEIT) January 30-31, 2010, New Convention Centre, University of Delhi North Campus.

## **Participation in conference, Seminars, Workshops**

- 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 National Seminar on "Electrical Energy: Safety and Conservation" held at Swami Shraddhanand College, University of Delhi on 9-10 April 2012.
- 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.
- Presented a paper entitled "Parametric Inversion of Tri-axial Induction Logs in Anisotropic Media" in the Third National Conference on "Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries" (MATEIT-2010) on January 30-31, 2010 at New Convention Centre, University of Delhi, Delhi.
- Participated in the three week Course "Base Camp for e-content development using EASYNOW techniques", organized during 12<sup>th</sup> September 2009 to 9<sup>th</sup> October 2009 at A.N.D. College, University of Delhi, Delhi.
- Attended One-Day National Seminar on "Forty Years of Kothari Commission Recommendations & Quality Science Education and Research in the New Millennium" at Convention Hall, Old Viceregal Lodge, University of Delhi, Delhi on December 4, 2006
- 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.

- Participated in One Day Workshop held at Inter Accelerator Science Centre, New Delhi on 5<sup>th</sup> Sep, 2005.
- Attended a workshop on CMS at LHC held on 11<sup>th</sup>-15<sup>th</sup> December 2000 at TIFR, Mumbai, India.

**Computer Literacy:**

(i) Programming Languages : C, C++, Pascal, Fortran etc.; Numerical Analysis; working knowledge of operating systems like Windows 2000, XP, Solaris, Linux, shell programming; working knowledge of website creation software; LaTeX software; Knowledge of Microprocessor and assembly language programming

(ii) 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.

(iii) **Re-designing** and **updating** of the college website: <http://ssncollege.com> done in 2009-2010