Curriculum Vitae

(Dr. Dheeraj Kumar Shukla)



E-Mail: dheerajkumarshukla@gmail.com

Contact: +91- 87 95 225 992.

Objective:

Looking for better opportunities to continue with my interests without care of financial crisis to enhance my knowledge and skills. So that my abilities in teaching and research skills as well as could be properly utilized to fulfill my ambitions and shape me into a better researcher cum teacher to contribute my best to the science and society.

Personal Details:

Father's Name	:	Anil Shukla
Mother's Name	:	Jay Devee Shukla
Date of Birth	:	23 th August, 1986.
Marital Status	:	Single.
Gender	:	Male.
Nationality	:	Indian.
Phone Number	:	+91-8795225992.
Email	:	dheerajkumarshukla@gmail.com
Permanent Address	:	Village/Post- Sagarraipur, Jangiganj,
		Dist Sant Ravidas Nagar, Bhadohi - 221 310
		Uttar Pradesh, India.
Address for Correspondence :		c/o- Prof. K. N. Pathak
		(Professor Emeritus),
		Department of Physics, Panjab University,
		Sector- 12, Chandigarh (U. T.) - 140 016.

Educational Qualifications:

Course	Institution	University	Major Subjects/Topic	Percentage
Ph.D. in Physics	Dept. of Physics, Institute of Science	Banaras Hindu University, Varanasi	Some investigations in 1-form gauge theories and SUSY Quantum Mechanics	NA
M.Sc. Physics 2010	Department of Physics, Faculty of Science	Banaras Hindu University, Varanasi India	Nuclear & Particle Physics Specialization	CGPA: 7.50 (on 10 scale)
Bachelors of Science 2007	Kashi Naresh Govt. P. G. College, Gyanpur, Bhadohi, U. P.	Veer Bahadur Singh Purvanchal University, Jaunpur, U. P., India	Mathematics, Physics, Chemistry, Environmental Awareness	51%
Intermediate. 2004	Govt. Boys Higher Secondary School, Keolari, M. P.	M.P. Board, Bhopal, India	Mathematics, Physics, Chemistry, Hindi, English	86%
High School 2001	Govt. Boys Higher secondary School, Keolari, M. P.	M.P. Board, Bhopal, India.	Science, Mathematics, Social Science, Hindi, Sanskrit, English	75%

At Present :	Working as an RA with Prof. M. M. Gupta of the		
	Department of Physics, Panjab University,		
	Sector – 12, (U. T.), Chandigarh- 160 014.		
Other Achievements :	UGC-BSR Research Fellowship in Science for Meritorious Students		
	(RFSMS) (2012 – 2016), CSIR-NET (LS), 2012, NCC-LCPL, 2003.		

Main courses studied in Pre. - Ph. D. and Master's Degree:

- 1. Mathematical Physics.
- 2. Quantum Mechanics I & II.
- 3. Computational & Numerical Methods in Physics.
- 4. Classical Electrodynamics & Plasma Physics.
- 5. Atomic, Molecular Physics & Lasers.
- 6. Elements of Solid State Physics.
- 7. Elements of Nuclear Physics.
- 8. Semi Conductor Devices, Integrated Circuits and Communications.
- 9. Statistical Mechanics I & II.
- 10. Methods in Theoretical physics (GTR, Foundations of QM, Path Integral).
- 11. Nuclear Physics(Advance).
- 12. Relativistic QM and Field Theory.
- 13. Quantum Field Theory (Advance).
- 14. Mathematical Modelling.
- 15. Experimental Techniques.
- 16. **Labs**: General Physics & Optics, Electronics, Computational Programming, Nuclear Physics Laboratory.
- Studied Gravity, FRW Cosmology, SUSY, Preliminary String Theory, Gauge Theory, Renormalization, basic QCD, SUSY-QM, Differential Geometry, BRST co-homology, Advanced Nuclear Physics etc.

Projects /Visits Undergone:

- Completed my Master degree project on the topic "Understanding QGP Phase Diagram: A Theoretical Study" under the supervision of Prof. C. P. Singh (Professor Emeritus), Department of Physics, BHU, India.
- 2. Visited Dr. Suvrat Raju at HRI, Allahabad.
- 3. Visited Dr. Anirban Basu at HRI, Allahabad.
- Visited CMI & IMSc, Chennai for research purposes for two months starting from Jan. 15th to Feb. 28th, 2013.
- Visited Prof. T. Padmanabhan at IUCAA, Pune for a month starting from 15th February to 16th March, 2016.

- Visited Prof. Pankaj Sharan at Dept. of Physics, Jamia Millia Islamia, New Delhi from 15th May, 2016 to 6th August, 2016.
- Taught as an Assistant Professor at SSGS College, Sector- 26, Chandigarh form 08/08/2016 to 18/08/2016.

Summer Projects and School/Workshops/Conferences:

- 1. Participated in a 10 days *Workshop on "Gravitation and Cosmology"* held at HRI during May-2010.
- 2. Participated in the International conference "*New Trends In Field Theories (NTFT_2)*" held at BHU in Feb-2011.
- 3. Attended the "Summer School On Experimental Nuclear Physics" held at BHU from 5th-25th September-2011.
- 4. Cleared CSIR-NET, June 2012.
- 5. Presented my paper at Dept. of Physics, BHU for "6th One-day conference on New Trends in Research", 2012.
- Participated in International Conference on "*NTFT_3*" held at Physics Dept. BHU from 23-26 November, 2012.
- 7. Participated in *"High Energy Theoretical Physics SERC School-13"* held at Tezpur University, Assam for the period 17/06/2013 to 13/07/2013.
- 8. Presented my paper at "*NTFT_4*" at BHU, Varanasi, held during Nov. 1st to 5th, 2014.
- 9. Attended the "Autumn School on Cosmology" held at BITS, Pilani from Nov. 5th to 15th, 2013.
- 10. Participated in "*Instructional School for Lecturers on Geometric Topology*" by TIFR & IIT, Bombay from July 7th to 19th, 2014 held at DST- CIMS, BHU.
- 11. Presented my paper at Dept. of Physics, BHU for "7th One-day conference on New Trends in Research", 2014.
- 12. Participated in the XXIX Main School held at the BITS-Pilani Goa Campus, Goa during December 20, 2014 to January 8, 2015.
- 13. Delivered a talk on cosmology at Dept. of Physics, BHU for a "*Workshop on Light from Dark Side of the Universe*", held during March 17th to 20th, 2015.
- 14. Participated in the *Winter School on* ``*Beyond the Standard Model Physics*" at Dept. of Physics, BHU, held from 24th January to 14th February.
- 15. Presented my paper at "*NTFT*_5" at BHU, Varanasi, held during Nov. 6st to 10th, 2016.

Research Activities:

I have submitted my doctoral thesis in Theoretical High Energy Physics at Dept. of Physics, BHU, Varanasi. My area of research has been focused on, in particular, 1-Form Gauge Theories and N = 2 SUSY Quantum Mechanics. Here is a list of my research articles/papers published/communicated:

1. S. Krishna, D. Shukla, R. P. Malik

A Novel Observation in the <u>BRST</u> Approach to a Free Spinning Relativistic Particle *Int*. *J. Mod. Phys. A* **28**: 1350108 [p01-p14], 2013

arXiv:1210.7321 [hep-th].

T. Bhanja, **D. Shukla**, R. P. Malik
Novel symmetries in the modified version of two dimensional Proca theory
Eur. Phys. J. C 73: 2535 [p01-13], 2013
arXiv:1305.1013 [hep-th].

3. **D. Shukla,** T. Bhanja, R. P. Malik

Self-Dual Chiral Boson: Augmented Superfield Approach

Eur. Phys. J. C 74: 3025 [p01-p16], 2014

arXiv:1312.5521 [hep-th].

4. D. Shukla, T. Bhanja, R. P. Malik

Canonical brackets of a toy model for the Hodge theory without its canonical conjugate momenta

Int. J. Mod. Phys. A 30: 1550115 [p01--p21], 2015

arXiv:1412.0215 [hep-th].

5. D. Shukla, T. Bhanja, R. P. Malik

Supervariable Approach to the Nilpotent Symmetries for a Toy Model of

the Hodge Theory

Advances in High Energy Physics, 2016: 2618150, 13 pages (2016)

arXiv:1407.6574 [hep-th].

6. S. Krishna, D. Shukla, R. P. Malik

An Interacting N = 2 Supersymmetric Quantum Mechanical Model:

Novel Symmetries

Int. J. Mod. Phys. A 31: 1650113 [p01--p23], 2016

arXiv:1505.06045 [hep-th].

7. **D. Shukla**, T. Bhanja, R. P. Malik

Supersymmetric Unitary Operator in QED with Dirac and Complex

Scalar Fields: Superfield Approach *Euro. Phys. Lett. (EPL)* **112**: 11001 [p01--p06], 2015 **arXiv:1508.06852** [hep-th]. 8. T. Bhanja, **D. Shukla**, R. P. Malik Superspace Unitary Operator in Superfield Approach to Non-Abelian Gauge Theory with Dirac Fields *Advances in High Energy Physics* **2016**: 6367545, 11 pages, 2016 **arXiv:1509.07319** [hep-th]. 9. Dheeraj Shukla, Kuldeep Kuamr Superunitary operator and BRST transformations for non-Abelian two-form **arXiv:1612.09545** [hep-th]. 10. Dheeraj Shukla Interior of Schwarzschild black hole as a relativistic free particle **arXiv:1402.3053** [hep-th], communicated.

Computer Skills:

- 1. Programming Knowledge: Operating Systems: Windows, Linux.
- 2. Computer Applications in MS- Office and knowledge of Internet.
- 3. Applications of Mathematica.

Experimental Techniques:

I am familiar with the following techniques.

- 1. Nuclear Physics Laboratory dealing with specially SSNTD, Surface Barrier Detector, Emulsion Track Detection, Spark Chambers, Scintillation Counters.
- 2. Handling with radioactive elements.

Personal Traits:

- 1. Belief in consultative style of functioning, able to work under stress conditions.
- 2. Optimistic and Self motivated.
- 3. Good Communication Skill and analytical knowledge.
- 4. Effective Time Management.
- 5. Positive attitude, Adaptability, Ability to learn things fast.
- 6. Very hard working, full of innovative thoughts and very good imagination power.

Values:

- 1. Trust worthy and Responsible.
- 2. I am a person full of arts but with very good scientific temperament and logic.
- 3. Flexible enough to adopt any new idea based on good logic and facts.

Hobbies/Interests:

- 1. Teaching with innovative methods.
- 2. Reading Biographies of Scientists and Science Articles.
- 3. Conducting science fairs for students and popularising the science at school level.
- 4. Promoting the good and interesting teaching skills for the tough subjects.
- 5. Travelling, gardening, drawings, reading, painting, singing, listening music, acting, writing blogs, plays, teaching, adventure, martial art, poetry, learning languages etc.
- 6. I have great interests in world history, archaeology, mythology, philosophy, mathematics, psychology, yog, etymology, languages, literature of all kinds, policies etc.

Language/Dialect Skills:

- 1. Hindi, Sanskrit, English, Panjabi.
- 2. Bhojpuri, Avadhi, Gondi.

Declaration:

I hereby declare that the information furnished above is true, correct and complete to the best of my knowledge.

Yours truly,

Place: Chandigarh, India.Date: 12/02/2017.

(Dheeraj Kumar Shukla)

Page **8** of **8**