

Dr. Suram Singh

Designation : Assistant Professor

Subject : Physics

Area of Specialization : Nuclear Theoretical Physics

College : Govt. Degree College (Boys), Kathua

Email : suramsingh@gmail.com

Phone: 9419270371



Workshops, Seminars, Symposia and Conferences attended

(a) List of Workshops/Seminars/Symposia/Conferences attended with paper presentations:

1. Presented a research paper entitled “Microscopic Study of Positive Parity Yrast States in Neutron-Deficient $^{119,121}\text{Ba}$ Isotopes” in International Conference in Nuclear Physics with Energetic Heavy Ion Beams held at Department of Physics, Panjab University, Chandigarh w.e.f 15th –18th, March **2017**.
2. Presented a research paper entitled “Projected shell model description of positive parity bands on doubly odd ^{130}Pr nucleus.” in 12th JK Science Congress held on 2nd -4th March **2017** at University of Jammu.
3. Presented a research paper entitled “Band structure of proton-hole $^{111,113}\text{In}$ nuclei” in DAE Symposium on Nucl. Phys. held at Saha Institute of Nuclear Physics, Kolkata on 5-9 Dec., **2016**.
4. Presented a research paper entitled “Theoretical study of nuclear structure properties of odd mass $^{129-133}\text{Ba}$ isotopes” in National Conference on Role of Mathematics and Computer Science in Advancement of Physics held at Govt. Degree College, Kathua on 26th-27th Feb., **2016**.
5. Presented a research paper entitled “Study of Yrast Spectra of some Tellurium Isotopes by Using Crank-Hartree-Fock-Bogoliubov Model.” in 2nd National Symposium on “Interdisciplinary Sciences” held at GGM Science College, Jammu on 27th and 28th Feb., **2015**.
6. Presented a research paper entitled “Theoretical Study of $^{120-126}\text{Te}$ isotopes in the non-axial framework” in National Conference on “Emerging Challenges in Nuclear and Many-body Physics” on 10th and 11th Nov. **2014** at Department of Physics, University of Jammu, Jammu.
7. Presented a research paper entitled “Effects of Nuclear Radiation on Environment” in National Seminar on “Enviourment Studies: The New Frontier” held on 14th and 15th feb. **2014** at Govt. Degree College, Kathua.

8. Presented a research paper entitled “Projected Shell Model Study of ^{129}Ba ” in 101st Indian Science Congress held on 3rd to 7th Feb. **2014** at University of Jammu, Jammu.
9. Presented a research paper entitled “Structure of $^{121, 123}\text{I}$ in the Projected Shell Model” in International Symposium on Nuclear Physics held on 2nd -6th Dec. **2013** at BARC, Mumbai.
10. Presented a research paper entitled “Non axial Study of some even-even Te isotopes” in 9th JK Science Congress and Regional science Congress held on 1st -3rd Oct. **2013** at University of Kashmir, Srinagar.
11. Presented a research paper entitled “Theoretical Perspective of Nuclear Structure of Some Neutron Rich Isotones” in International Conference on Recent trends in Nuclear Physics held on November 19-21, **2012** at Chitkara University, Solan (H.P).
12. Presented a research paper entitled “Study of some odd mass Sr isotopes in the mass region $A \approx 100$ ” in a National workshop on “The Frontiers of Nuclear and Particle Physics” held on March 19-20, **2012** at Department of Physics, Aligarh Muslim University, Aligarh.
13. Presented a research paper entitled “Study of some even-even Tellurium isotopes in the Cranking framework” in National Symposium on “Interdisciplinary Sciences” held at GGM Science College, Jammu on March 2-3, **2012**.
14. Presented a research paper entitled “Study of some odd mass neutron deficient Xenon isotopes” in 7th JK Science Congress held on 13th -15th Oct. **2011** at University of Jammu, Jammu.
15. Presented a research paper entitled “Projected shell model study of the yrast bands of some odd-mass $N=63$ isotones” in DAE-BRNS National Symposium on Nuclear Physics held at Pilani (Rajasthan) during 20th-24th Dec. **2010**.
16. Presented a research paper entitled “Nuclear Structure Properties of $^{119,121}\text{Ba}$ ” in 5th JK Science Congress held on 8-10 February, **2010** at University of Jammu, Jammu.
17. Presented a research paper entitled “Nuclear structure properties of $^{123,125}\text{Xe}$ ” in Indian National Society National Seminar on “Nuclear Technology for Sustainable Development” organized at Thapar University, Patiala on October 10-11, **2009**.

(b) List of Workshops/Seminars/Symposia/Conferences attended without paper presentations:

1. Attended one day Symposium on “Recent Advances and Modern Approaches in Physics of Materials” organized by Department of Physics, Govt. Degree College, Kathua on Dec. 10, **2014**.

2. Attended National Seminar on “Higher Education in J&K: Challenges and Perspectives” held at Govt. Degree College, Kathua on Dec. 22-23, **2012**.
3. Attended National Conference on “Population, Resources and Development” held at Govt. Degree College, Kathua on Nov. 27-28, **2012**.
4. Attended ISCAS National Symposium on “New Trends in Material Research” held at ISCAS Institute of Solid State & Materials Science, Jammu University Campus, Jammu during Nov. 18-20, **2010**.
5. Attended XXXIX National Seminar on Crystallography held at Department of Physics, University of Jammu on Oct. 25-27, **2010**.
6. Attended a National Seminar on “Contemporary Trends in Nuclear Physics” held at Department of Physics, Aligarh Muslim University, Aligarh (U.P) on Oct. 20-21, **2010**.
7. Attended a Seminar on “Semiconductor Nanomaterials and Devices” held at University of Jammu on March 25, **2010**.
8. Attended a School cum Workshop on “Nuclear Yrast and Near Yrast States” organized by Department of Physics, IIT, Roorkee during Oct. 26-30, **2009**.
9. Attended NAAC sponsored two day National Seminar on “Quality Concern in Higher Education to Meet the Global Challenges” held at Govt. College for Women Gandhi Nagar, Jammu on Oct. 12-13, **2009**.

Research Publications

(a) Journal Publications: 25

1. Rotational structure of odd-proton $^{103,105,107,109,111}\text{Tc}$ isotopic chain
(Amit Kumar, Dhanvir Singh, **Suram Singh**, Arun Bharti, G.H. Bhat and J.A. Sheikh)
Communicated to European Physical Journal A
2. Study of odd mass $^{115-125}\text{Sb}$ isotopes using angular-momentum projection technique
(Dhanvir Singh, Arun Bharti, Amit Kumar, **Suram Singh**, G. H. Bhat and J. A. Sheikh)
Communicated to International Journal of Modern Physics E
3. Investigation of the structure of core-coupled odd-proton Copper nuclei in fp_g valence space using the Projected Shell Model
(Anuradha Gupta, **Suram Singh**, Arun Bharti, S.K.Khosa, G. H. Bhat and J. A. Sheikh)
Eur. Phys. J. A 53, 15 (2017). [ITALY] [Impact Factor 2.343]
4. Study of nuclear structure of odd mass $^{119-127}\text{I}$ nuclei in a phenomenological approach
(Dhanvir Singh, Anuradha Gupta, Amit Kumar, Chetan Sharma, **Suram Singh**, S. K. Khosa, Arun Bharti, G. H. Bhat and J. A. Sheikh)

5. A Systematic Analysis of $^{131-139}\text{Pm}$ Nuclei in a Self-Consistent Approach
(Deepti Sharma, Anuradha Gupta, **Suram Singh**, and Arun Bharti)
Chinese Journal of Physics 54 (2016) 42-50. **[Impact Factor 0.42]**.
6. Study of Positive Parity Yrast Bands in $^{157,159}\text{Gd}$ Nuclei
(Deepti Sharma, **Suram Singh** and Arun Bharti)
Journal of Biosphere 5 (2016) 16-19. **[INDIA]**
7. Projected shell model study of band structure of ^{90}Nb .
(Amit Kumar, Dhanvir Singh, Anuradha Gupta, **Suram Singh**, and Arun Bharti)
AIP Conf. Proc. 1738, 020337 (2016).
8. Theoretical study of band structure of odd-mass $^{115,117}\text{I}$ isotopes.
(Dhanvir Singh, Amit Kumar, Chetan Sharma, **Suram Singh**, and Arun Bharti)
AIP Conf. Proc. 1738, 020303 (2016).
9. Study of yrast structures in $^{55,57}\text{Cr}$.
(Anuradha Gupta, Amit Kumar, **Suram Singh**, and Arun Bharti)
AIP Conf. Proc. 1738, 020331 (2016).
10. Theoretical study of neutron-rich $^{107,109,111,113}\text{Rh}$ isotopes
(Amit Kumar, **Suram Singh**, S. K. Khosa, Arun Bharti, G. H. Bhat and J. A. Sheikh)
Int . J. Mod. Phys. E Vol. 24, No. 10 (2015) **SINGAPUR [Impact Factor 1.229]**
11. Quasi-particle structure of proton-hole cobalt isotopes
(Anuradha Gupta, Preeti Verma, **Suram Singh**, Arun Bharti, S.K.Khosa, G. H. Bhat and J. A. Sheikh)
Nucl. Phys. A 941 (2015) 48-65. **NORTH-HOLLAND [Impact Factor 1.258]**.
12. Investigation of band structure of $^{103,105}\text{Rh}$ using microscopic computational technique
(Amit Kumar, **Suram Singh**, and Arun Bharti)
AIP Conf. Proc. 1675, 030100 (2015).
13. Band Structure of Odd-mass Lanthanum Nuclei
(Deepti Sharma, Preeti Verma, **Suram Singh**, Arun Bharti and S. K. Khosa)
Int. J. Mod. Phys. E Vol. 23, No. 4 (2014) 1450020. **[SINGAPORE]**
[Impact Factor 1.229]
14. Projected Shell Model Study of Quasiparticle Structure of Arsenic Isotopes.
(Preeti Verma, Chetan Sharma, **Suram Singh**, Arun Bharti, S. K.Khosa, G.H.Bhat and J. A. Sheikh)
Nucl. Phys. A 918 (2013) 1-24. **NORTH -HOLLAND] [Impact Factor 1.258]**

15. Theoretical Overview of Backbending in Arsenic Isotopes.
(Preeti Verma, Chetan Sharma, **Suram Singh**, Arun Bharti and S. K.Khosa.)
AIP Conf. Proc. 1524, 97 (2013).
16. Theoretical Perspective of Nuclear Structure of Some Neutron Rich Isotones.
(Chetan Sharma, Preeti Verma, **Suram Singh**, Arun Bharti and S. K. Khosa)
AIP Conf. Proc. 1524, 101 (2013).
17. Microscopic study of deformation systematics in some isotones in the $A \approx 100$ mass region.
(Arun Bharti, Chetan Sharma, **Suram Singh** and S.K.Khosa)
J. Phys., IOP Conf. Series 381,012133 (2012).[U.K].
18. Microscopic analysis of band structures in odd mass $^{79-89}\text{Y}$ isotopes
(Chetan Sharma, Preeti Verma, **Suram Singh**, Arun Bharti and S. K. Khosa)
Eur. Phys. J. A 48, 138 (2012). [ITALY] [Impact Factor 2.343]
19. Microscopic insight into nuclear structure properties of Dysprosium nuclei.
(**Suram Singh**, Amita Dua, Chetan Sharma and Arun Bharti)
Journal of Biosphere 1 (2012) 38. [INDIA]
20. Microscopic study of deformation systematics in neutron-deficient ($N < 50$) strontium isotopes.
(Chetan Sharma, Anil Chandan, **Suram Singh** and Arun Bharti)
Journal of Biosphere 1 (2012) 30.[INDIA]
21. Theoretical investigation of positive parity band structure of Y and Nb isotopes
(Chetan Sharma, Preeti Verma, **Suram Singh**, Arun Bharti and S. K. Khosa)
Int. J. Mod. Phys. E Vol. 21, No. 10 (2012) 1250081.
[SINGAPORE] [Impact Factor 1.229]
22. Microscopic insight into the structure of Gallium isotopes.
(Preeti Verma, Chetan Sharma, **Suram Singh**, Arun Bharti and S. K.Khosa.)
Nucl.Phys.A 884-885 (2012) 1-20.
[Published in Nuclear physics A] [NORTH -HOLLAND] [Impact Factor 1.258]
23. Microscopic study of negative parity yrast states in the neutron-deficient $^{119-127}\text{Ba}$ isotopes.
(Arun Bharti, **Suram Singh** and S.K.Khosa)
Int. J. Mod. Phys. E Vol. 20, No. 5 (2011) 1183 [SINGAPORE] [Impact Factor 1.229]
24. Structure of negative parity yrast bands in the odd mass $^{125-131}\text{Ce}$ nuclei
(Arun Bharti, **Suram Singh** and S.K.Khosa) Pramana Journal of Physics 74 (2010) 525.

25. Microscopic study of low-lying yrast spectra and deformation systematics in neutron-rich $^{98-106}\text{Sr}$ isotopes
(Anil Chandan, **Suram Singh**, Arun Bharti and S.K. Khosa)
Pramana Journal of Physics 73 (2009) 657. [INDIA] [Impact Factor 0.65]

(b) SYMPOSIUM PROCEEDING PUBLICATIONS : 12

1. Band structure of proton-hole $^{111,113}\text{In}$ nuclei
(**Suram Singh**, Amit Kumar and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.61, (2016) 244.
2. Microscopic Study of $^{115,117}\text{Sb}$ in the Projected Shell Model
(Dhanvir Singh, Amit Kumar, Aman Priya, Chetan Sharma, **Suram Singh**, and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.61, (2016) 334.
3. Band structure of $^{109,111}\text{Tc}$ isotopes
(Amit Kumar, Dhanvir Singh, **Suram Singh**, and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.61, (2016) 244.
4. Investigation of nuclear structure of Cu nuclei
(Anuradha Gupta, Surbhi Gupta, **Suram Singh** and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.61, (2016) 172.
5. Structure of $^{121,123}\text{I}$ in the Projected Shell Model
(Dhanvir Singh, **Suram Singh**, Chetan Sharma and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.58, (2013) 96.
6. Study of High Spin States of Odd Mass $^{103-107}\text{Rh}$ Isotopes
(Amit Kumar, **Suram Singh**, Chetan Sharma, and Arun Bharti)
Proc. of the DAE International Symposium on Nucl. Phys. Vol.58, (2013) 94.
7. Theoretical analysis of structure of even-even $^{130-136}\text{Ba}$ nuclei.
(Preeti Verma, Chetan Sharma, **Suram Singh** and Arun Bharti)
Proc. of the DAE symposium on Nucl. Phys. Vol.57, (2012) 320.
8. Study of yrast bands in neutron-rich odd mass Strontium nuclei.
(Chetan Sharma, **Suram Singh** and Arun Bharti)
Proc. of the DAE symposium on Nucl. Phys. Vol.56, (2011) 412.
9. Band Structure of neutron-rich odd mass Dysprosium nuclei
(Deepti Sharma, **Suram Singh** and Arun Bharti)
Proc. of the DAE symposium on Nucl. Phys. Vol.56, (2011) 388.

10. Projected shell model study of the yrast bands of some odd-mass N=63 isotones
(**Suram Singh**, Richa, Chetan Sharma, Arun Bharti and S.K.Khosa)
Proc. of DAE Symp on Nucl. Phys. Vol.55 (2010)132.
11. Study of deformation systematics in some N=60 isotones.
(Chetan Sharma, Arun Bharti, **Suram Singh** and S. K. Khosa)
Proc. of DAE Symp on Nucl. Phys. Vol.55(2010)128.
12. Nuclear structure properties of some neutron-deficient cerium nuclei
Arun Bharti, **Suram Singh**, and S.K.Khosa,
Proceedings of the DAE-BRNS International Symposium on Nuclear Physics
Vol.54, 146 (2009) .

(C) Other Publications

1. Radioactive Waste Management
(Amit Kumar, Jasvinder Singh and **Suram Singh**)
Shrinkhala, Vol. II, Issue II, Page No. 22 (2014) (India)

Book Publications

1. Co-authored a book entitled “**Solid State Physics, Electronics and Quantum Optics**” with ISBN 978-93-81768-39-6 in the year 2015.
2. Co-authored a book entitled “**B.Sc. Practical Physics Vol-1**” with ISBN 978-93-81768-46-4 in the year 2016.

Patents

- Nil

Research Projects (Minor / Major Project)

- UGC recommended a Minor Research Project on topic “Theoretical Analysis of Nuclear Structure of Transitional Nuclei Around the Mass Number A ~ 120” of cost 1.47 Lakh.

Academic Qualifications

| Examination Passed | Board/ University | Subjects | Year | Division / Grade / Merit |
|--------------------|----------------------|----------|------|-----------------------------|
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|-----------------------------------|---------------------|--|------|-------------|
| SSC | J & K State Board | English, Maths, Hindi, Science, Social Science | 1997 | Ist |
| Higher Secondary | J & K State Board | Physics, Maths, Chemistry, English | 1999 | Distinction |
| Bachelor's Degree(s) | University of Jammu | Physics, Maths, Chemistry, English | 2002 | Distinction |
| Master's Degree(s) (M.A/M.Sc.) | University of Jammu | Physics | 2004 | Ist |
| NET/SLET | CSIR-UGC | Physics | 2006 | -- |
| Other Diploma / Certificates etc. | -- | -- | -- | -- |

Research Experience

| Research Stage | Title of Work /Thesis | University where the work was carried out | Year |
|---------------------------|---|---|------|
| M. Phil or equivalent | Study of Some Even-Even Tellurium Isotopes in the Cranking Framework | University of Jammu, Jammu | 2006 |
| Ph.D. | Comparative Study Of Some Odd and Even Isotopic Mass Chains in the Mass Region A=120-150 in the Projected Shell Model Framework | University of Jammu, Jammu | 2011 |
| D.Sc/D.Litt. | -- | -- | -- |
| Training (Please specify) | -- | -- | -- |

Teaching Experience

| Courses Taught | Name of the University/ College/Institution | Duration |
|--|---|-------------|
| iv) U.G. (B.A./B.Sc. etc.) | S. P. College, Srinagar | Two Years |
| (B.A./B.Sc. etc. Hons.) | Govt. Degree College (Boys), Kathua | Seven Years |
| v) P.G. (M.A./M.Sc.,etc.) | -- | -- |
| vii) Any other(e.g Women Study, Skill Development , Add on courses, Coaching (JUET, CET) etc) | -- | -- |

Extension Work / Community Service

- Worked as NSS Programme Officer for three years w.e.f July 2011 to May 2014.
- Organized a Two day National Conference on **“Role of Mathematics and Computer Science in Advancement of Physics”** sponsored by SERB, DST, GOI and UGC on 26th and 27th Feb. 2016 at Govt. Degree College, Kathua and acted as Convener of the conference.

- Associate Editor of Referred Journal “Journal of Biosphere” with ISSN 2278-3342.

Dr. Suram Singh