

Curriculum vitae of Dr. Ritesh Kshetri

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Name & Affiliation: Dr. Ritesh Kshetri
Assistant Professor,
Department of Physics, University of Burdwan, Golapbag Academic Campus,
Bardhaman, West Bengal, Pin – 713104

E-mail: ritesh[dot]kshetri[at]gmail[dot]com
Webpage: <https://vidwan.inflibnet.ac.in/profile/195580>

Research Interests:

- (1) Nuclear Structure and Nuclear Astrophysics studies using gamma-ray and charged particle spectroscopy,
- (2) Theoretical studies using Nuclear models,
- (3) Radiation detectors - experimental characterisation and theoretical modeling,
- (4) Stellar modeling.

Author: 47 refereed international journal papers (including 8 single author papers), 2 books (with isbn),
10 refereed conference proc. papers (with doi), 8 refereed conf. proc. papers (with isbn).

Citation database	Author ID	H index	Total number of citations till date as per database
SCOPUS	14527079500	16	677
Web of Science Core Collection (Publons)	O-5262-2018	15	652

Others: Research Gate (h index – 16, citations – 773), Google Scholar (h index – 18, citations – 934)

- Awards:**
- (1) Prof. A.P. Patro memorial award for being adjudged the Best Student of the Post MSc Associateship Course 2002 - 2003 of Saha Institute of Nuclear Physics.
 - (2) Prof. C.V.K. Baba Best Thesis Award in Nuclear Physics (Indian Physics Association 2009). Ph.D thesis selected for best thesis presentation at International Symposium on Nuclear Physics, BARC, Mumbai.

Education:

B.Sc (Physics Honours): Bidhannagar Govt. College, University of Calcutta, 2000
M.Sc (Physics): Rajabazaar Science College, University of Calcutta, 2002
(Special papers – Nuclear Structure, Nuclear Reaction)
Post M.Sc (Physics): Saha Institute of Nuclear Physics (SINP), 2003, [1st class 1st position]
(Advanced papers – Nuclear Physics, Quantum Field Theory)
PhD(Sc.): University of Calcutta, dt. 29.04.2009 in Physics.
Title – “Shell structure and evolution of collectivity on and away from the stability line”.
Supervisor – Prof. M. Saha Sarkar, Nuclear Physics Division, SINP.

Specialist Certification:

Qualified GATE 2002 (MHRD, INDIA) with 99.10 percentile.

Qualified NET (CSIR, INDIA) with JRF two times – Dec 2001 and June 2002.

Research Project:

DST project titled “Modeling and response of detection systems for gamma spectroscopic studies” under SERB Young Scientist Scheme, 2015 - 2018. Project cost - INR 18.86 lakhs.

Employment:

- Dec 2016 – till date: Assistant Professor, Dept. of Physics, University of Burdwan (BU), Burdwan, INDIA.
- Feb 2013 – Dec 2016: Assistant Professor, Dept. of Physics, Sidho-Kanho-Birsha University (SKBU), Purulia, INDIA.
- Sept 2012 – Feb 2013: Post-doctoral Researcher at Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali del Sud (INFN LNS), Catania, ITALY.
- Dec 2010 – Aug 2012: Post-doctoral Researcher at Nuclear Physics Division, Saha Institute of Nuclear Physics (SINP), Kolkata, INDIA.
- Sept 2008 – Aug 2010: Post-doctoral Researcher at TRIUMF (Canada's national laboratory for particle and nuclear physics and accelerator-based science) and Simon Fraser University, Vancouver, CANADA.
- Mar 2007 – May 2007: Marie Curie Student at European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*), Trento, ITALY.
- Sept 2002 – Aug 2008: Research Fellow at Nuclear Physics Division, Saha Institute of Nuclear Physics, Kolkata, INDIA.

Other Academic Achievements:

- (1) Regarding PhD degree of research scholars, awarded – 04 (see below for research scholar details).
- (2) Reviewer of three International Journals – Measurement, Nuclear Instruments & Methods in Physics Research A, Diagnostic and Interventional Radiology.
- (3) Life member of two Professional Associations – IPA (Indian Physics Association) and INS (Indian Nuclear Society).
- (4) Biography is published in 10th, 11th and 12th editions of Marquis Who's Who in Science and Engineering.

Teaching at Sidho-Kanho-Birsha University (2013 - 2016)

- Mathematical Physics (MSc 1st Semester 2014 - 2015)
- Group Theory (MSc 2nd Semester 2014 - 2015)
- Classical Mechanics (MSc 1st Semester 2014 - 2015)
- Basic Astrophysics (MSc 4th Semester 2014 - 2015)
- Basic Nuclear Physics (MSc 2nd and 3rd Semesters 2014 - 2016)
- Nonlinear Dynamics (MSc 4th Semester 2014 - 2015)
- Scientific manuscript writing, Ethics and Presentations (PhD Coursework 2015 - 2016)
- Basic and Advanced Electronics (MSc 2013, 2016)

Teaching at University of Burdwan (2016 till date)

- Plasma Physics (MSc 2nd Semester 2018 - 2019)
- Astrophysics (MSc 2nd semester 2018 – 2019, 3rd semester 2017 – till date)
- Nuclear Structure (PhD Coursework 2017 – till date)
- Gamma-ray Spectroscopy and Spectrometers (MPhil 2018)
- Error Analysis (NET preparation course 2017 - 2018)
- Nuclear Reaction and Experimental Nuclear Physics (MSc 3rd / 4th Semester 2017 – till date)
- Particle Physics (MSc 4th Semester 2019 - 2023)
- Quantum Field Theory (MSc 4th Semester 2017)

Short details about my Research Experience:

PhD work [5 yrs]: Both experimental and theoretical works were performed. Experimental part includes:

- (i) High energy characterisation of the Compton suppressed Clover detector,
- (ii) In-beam gamma-ray spectroscopic studies of high spin states of ^{35}Cl in mass 40 region, and
- (iii) X- and gamma- ray spectroscopic studies of fission fragments of ^{252}Cf spontaneous fission source in mass ^{132}Sn region.

The theoretical study supplemented the experimental findings using the microscopic Shell model and the phenomenological Particle Rotor model. Apart from my PhD thesis work, I have participated in various collaborative projects of our nuclear physics group and have actively participated in more than dozen experiments.

1st PDF at TRIUMF & Simon Fraser University (Vancouver, Canada) [2 yrs]: I proposed and performed an experiment at TRIUMF with ^{11}Be radioactive beam for the characterisation of TIGRESS detectors up to 8 MeV. I have participated in almost a dozen experiments on Nuclear Structure and Nuclear Astrophysics at TRIUMF using TIGRESS, 8pi, TUDA and other detector systems.

2nd PDF at Saha Institute of Nuclear Physics [1y 8m]: I have independently developed a formalism for modeling of various composite detectors including clover, cluster and spectrometer for INTEGRAL satellite. At present, I have **seven single author publications** and one joint paper with my PhD student on this work and I have given an invited talk in International Symposium on Nuclear Physics at BARC, Mumbai in Dec 2013. **Based on the work published in seven single author papers, I am preparing for the D.Sc thesis to be submitted to University of Calcutta.**

3rd PDF at INFN LNS (Catania, Italy) [5 m]: I have participated in an experiment for studying the $^{19}\text{F}(\alpha, p)^{22}\text{Ne}$ reaction via the Trojan Horse Method applied to the $^{19}\text{F} (^6\text{Li}, p \ ^{22}\text{Ne})^2\text{H}$ three-body reaction.

Research from 2013 onwards (as Faculty)

I am performing research on mathematical modeling and experimental studies of the response of composite germanium detectors. Motivated by the various shapes and configurations of detectors used in modern gamma arrays, we use probabilistic formalism to model the operation of a composite detector comprising of elements arranged in series and parallel combination of detectors. Considering up to four detector hit events, expressions for the performance parameters like the addback factor and the peak-to-total ratio have been obtained. The general trend of predicted values of the addback factor, the peak-to-total ratio and the fold distribution match with the available experimental data for other composite detectors. Our novel phenomenological approach could provide a guidance in designing new detectors for gamma-ray spectroscopy.

Together with my four PhD registered scholars [Pintu Bhattacharya, Pankaj Sarkar, Anneswa Chakraborty, Ankhi Samui], we have attended several national and international conferences where we presented oral and poster presentations. I have also given few invited talks. Recently, Pintu and Anneswa are awarded PhD degrees, while Ankhi and Pankaj have submitted their thesis.

Our group has published 13 refereed UGC recognised journal papers.

List of Oral Presentations/ Invited Talks:

(in Symposium, Workshop and Schools including Seminars in various Institutions and experimental proposal presentations – highlighted talks are given outside India)

1. Spectroscopy of odd-Z Ta ($Z=73$) and Re ($Z=75$) nuclei - Experimental Proposal Presentation (PI: Prof. M. Saha Sarkar, SINP), Discussion Meeting on Clover Array Experiments using VEC, 10th February, 2004, VECC, Kolkata, India.
2. Evolution of collectivity in neutron-rich nuclei of ^{132}Sn region, Seminar at SERC School on Mean Field description of nuclei at IIT Bombay, India during March 15 – April 3, 2004.
3. Investigation of side-feeding intensity and time in ^{35}Cl and ^{38}Ar populated in an inverse reaction, Oral presentation at DAE-BRNS Symposium on Nuclear Physics, held at Banaras Hindu University, Banaras, India from December 6-10, 2004.
4. Spectroscopy of ^{35}Cl nucleus, Seminar at SERC School on Nuclear Dynamics At Low and Medium Energies and Nuclear Structure, held at VECC Kolkata, India during March 13 – April 2, 2006.
5. Spectroscopy of Isobaric Mass Triplets in sd shell, Experimental Proposal Presentation (PI: Prof. M. Saha Sarkar), Workshop on Nuclear Physics with LINAC Beams, held at IUAC, New Delhi, during Sept 14 - 15, 2006.
6. Spectroscopy of ^{169}Ta , Oral presentation at DAE-BRNS Symposium on Nuclear Physics, held at MS University, Baroda, India from December 11-15, 2006.
7. Spectroscopy of Isobaric Mass Triplets in sd shell, Experimental Proposal Presentation (PI: Prof. M. Saha Sarkar, SINP), Accelerator User's Committee Meeting, held at IUAC, New Delhi, India during Dec 16-18, 2006.
8. **High Spin Spectroscopy of ^{35}Cl with the Clover detectors**, ECT* Seminar as a part of Doctoral Training Programme 2007, held at Trento, Italy from 8th March 2007 to 1st June 2007.
9. **Evolution of Collectivity in neutron-rich nuclei of ^{132}Sn region**, ECT* Seminar as a part of Doctoral Training Programme 2007, held at Trento, Italy from 8th March 2007 to 1st June 2007.
10. **High Spin Spectroscopy of ^{35}Cl with the Clover detectors**, Seminar at ECT* Workshop on "Experiment-Theory Intersections in Modern Nuclear Structure", held at Trento, Italy from 23rd to 27th April 2007.
11. **High Spin Spectroscopy of ^{35}Cl with the Clover detectors**, Seminar at Department of Physics, University of Milano, Milan, Italy on 14th May 2007.
12. **High Spin Spectroscopy of ^{35}Cl with the Clover detectors**, Seminar at Istituto Nazionale di Fisica Nucleare, Sezione di Firenze, Florence, Italy on 25th May 2007.
13. Shell structure and evolution of collectivity on and away from the stability line, Pre - Ph.D Seminar at Physics Department, University of Calcutta, Kolkata, India on 27th Dec 2007.

14. **Characterisation of Compton suppressed Clover detectors for high energy gamma-rays**, Oral presentation at 46th Winter Nuclear and Particle Physics Conference, Banff, Alberta, Canada on 15th Feb 2009.
15. **Study of $T = 1$ isospin triplets of mass 30 and 34**, Experimental Proposal Presentation (PI: Dr. R. Kshetri), Meeting of the Legnaro National Laboratories (LNL) Program Advisory Committee, July 9-10, 2009, held at LNL, Italy.
16. **Characterization of TIGRESS detectors for high energy gamma-rays up to 8 MeV, Invited talk** at The fourth TIGRESS science workshop, July 10-12th, held at Simon Fraser university, Burnaby, Canada.
17. **Study of $T = 1$ isospin triplet of mass 28**, Experimental Proposal Presentation (PI: Dr. R. Kshetri), TRIUMF Subatomic Physics Evaluation Committee Meeting, July 29-30, held at TRIUMF, Canada.
18. High energy response of gamma-ray detectors, Seminar given at VECC during October 2010.
19. TIGRESS detectors and their response for high energy gamma-rays, Seminar given at SINP during October 2010.
20. **High energy response of TIGRESS detectors**, Talk given at 6th European Summer school on experimental nuclear astrophysics during Sept 18-27 2011, held at Santa Tecla Palace, Acireale, Italy.
21. Modeling of Composite detectors: A probabilistic approach, Seminar at Nuclear Physics Division, Saha Institute of Nuclear Physics, 21st December 2011.
22. A probabilistic approach for understanding the operation of the spectrometer for INTEGRAL satellite, Young Physicists' Colloquium (YPC 2012) talk at Saha Institute of Nuclear Physics on 17th August 2012.
23. A novel approach for modeling the cluster detector and the SPI spectrometer, **Plenary talk** at International Symposium on Nuclear Physics, held at BARC, Mumbai from Dec 02 – 06, 2013.
24. High energy photon spectroscopy using state of the art photon detectors, Oral presentation at Optics and Photonics conference, held at Sidho-Kanho-Birsha University from 29-30 Sept 2015.
25. Understanding the operation of miniball, cluster and SPI detectors, Oral presentation at International Conference on Recent Trends in Mathematical Sciences and Applications, held at Dept. of Mathematics, University of Burdwan from 9-11 Feb 2016.
26. Mathematical modelling of composite germanium detectors, Seminar presentation at Orientation Programme at UGC HRDC, Jadavpur University from 17 Feb – 15 Mar 2016.
27. Nuclear Structure Studies using state-of-the-art detector systems, **Invited talk** at 8th Vidyasagar - Satyendranath Bose National Workshop 2017 held at Vidyasagar University from 17 – 19 March 2017.
28. Gamma-ray spectroscopic studies using state-of-the-art detector systems, **Invited talk** at "Acquaintance program on Accelerator-based Research" held on 7th April 2017, organized at Department of Physics, Visva-Bharati.
29. Experimental Characterisation of TIGRESS detectors, Seminar presentation at Refresher Course, UGC HRDC, University of Burdwan from 4 July – 24 July 2017.

LIST OF PUBLICATIONS (five sections)

Total papers in UGC listed journals – 57 (details below)

Refereed International Journal Papers (also UGC listed journals) - 47

1. Characterisation of a Compton Suppressed Clover Detector for High Energy Gamma Rays (> 11 MeV), M. Saha Sarkar, Ritesh Kshetri, Rajarshi Raut, A. Mukherjee, Mandira Sinha, Maitreyi Ray, A. Goswami, Subinit Roy, P. Basu, H. Majumder, S. Bhattacharya and B. Dasmahapatra. Nuclear Instruments and Methods A 556 (2006) 266
2. Evolution of collectivity in neutron-rich nuclei in the ^{132}Sn region, Ritesh Kshetri, M. Saha Sarkar and S. Sarkar. Physical Review C 74 (2006) 034314
3. Band structure in ^{83}Rb from lifetime measurements, S. Ganguly, P. Banerjee, I. Ray, R. Kshetri, S. Bhattacharya, M. Saha Sarkar, A. Goswami, S. Muralithar, R.P. Singh, R. Kumar, R.K. Bhowmik. Nuclear Physics A 768 (2006) 43
4. High spin states in ^{143}Sm , R.Raut, S.Ganguly, R. Kshetri, P. Banerjee, S. Bhattacharya, A. Mukherjee, G. Mukherjee, M. Saha Sarkar, A. Goswami, G. Gangopadhyay, S. Mukhopadhyay, Krishichayan, A. Chakraborty, S.S. Ghughre, T. Bhattacharjee and S.K. Basu. Physical Review C 73 (2006) 044305
5. High Spin Structure of ^{35}Cl and the sd - fp shell gap, Ritesh Kshetri, M. Saha Sarkar, Indrani Ray, P. Banerjee, S. Sarkar, Rajarshi Raut, A. Goswami, J.M. Chatterjee, S. Chattopadhyay, U. Datta Pramanik, A. Mukherjee, C.C. Dey, S. Bhattacharya, B. Dasmahapatra, Samit Bhowal, G. Gangopadhyay, P. Datta, H.C. Jain, R.K. Bhowmik, S. Muralithar, R.P. Singh, R.Kumar. Nuclear Physics A 781 (2007) 277
6. Study of Intruder band in ^{112}Sn , S. Ganguly, P. Banerjee, I. Ray, R. Kshetri, R.Raut, S. Bhattacharya, M. Saha Sarkar, A. Goswami, S. Mukhopadhyay, A. Mukherjee, G. Mukherjee, S. K. Basu. Nuclear Physics A 789 (2007) 1
7. Study of yrast band in ^{155}Tm , R. Raut, S.Bhowal, S. Ganguly, R. Kshetri, P. Banerjee, S. Bhattacharya, R.K. Bhowmik, B. Dasmahapatra, G. Gangopadhyay, A. Mukherjee, S. Muralithar, M. Saha Sarkar, R.P. Singh, A. Goswami. Nuclear Physics A 794 (2007) 1
8. Indication of Onset of Collectivity in ^{30}P , Indrani Ray, Moumita Roy Basu, Ritesh Kshetri, M. Saha Sarkar, S. Sarkar, P. Banerjee, S. Chattopadhyay, C.C. Dey, A. Goswami, J.M. Chatterjee, A. Mukherjee, S. Bhattacharya, B. Dasmahapatra, P. Datta, H.C. Jain, R.K. Bhowmik, S. Muralithar, R.P. Singh. Physical Review C 76 (2007) 034315
9. Experimental study of the 2p 2h band in ^{111}Sn , S. Ganguly, P. Banerjee, I. Ray, R. Kshetri, R. Raut, S. Bhattacharya, M. Saha Sarkar, A. Goswami, and S. K. Basu. Physical Review C 78 (2008) 037301
10. Fusion cross sections for $^6\text{Li} + ^{24}\text{Mg}$ reactions at energies below and above the barrier, M. Ray, A. Mukherjee, M. K. Pradhan, Ritesh Kshetri, M. Saha Sarkar, R. Palit, I. Majumdar, P. K. Joshi, H.C. Jain and B. Dasmahapatra. Physical Review C 78 (2008) 064617

11. Structure of dipole bands in ^{106}In , A.Y. Deo, R. Palit, Z. Naik, S. Sihotra, S. Kumar, P.K. Joshi, I. Mazumdar, R. Chakrabarti, R. Kshetri, D. Mehta and H.C. Jain. *Physical Review C* 79 (2009) 067304
12. High spin states and isomeric decays in doubly-odd ^{208}Fr , D. Kanjilal, S. Bhattacharya, A. Goswami, R. Kshetri, R. Raut, S. Saha, R.K. Bhowmik, J. Gehlot, S. Muralithar, R.P. Singh, G. Jnaneswari, G. Mukherjee, B. Mukherjee. *Nuclear Physics A* 842 (2010) 1
13. SHARC: Silicon Highly-segmented Array for Reactions and Coulex used in conjunction with the TIGRESS γ -ray spectrometer, C Aa Diget, S P Fox, A Smith, S Williams, M Porter-Peden, L. Achouri, P Adsley, H Al-Falou, R A E Austin, G C Ball, J C Blackmon, S Brown, W N Catford, A.A. Chen, R M Churchman, J. Dech, D Di Valentino, M Djongolov, B R Fulton, A Garnsworthy, G. Hackman, U Hager, R. Kshetri, L. Kurchaninov, A M Laird, J -P Martin, M Matos, J N Orce, N A Orr, C J Pearson, C Ruiz, F Sarazin, S Sjue, D. Smalley, C E Svensson, M Taggart, E Tardiff and G.L. Wilson. *JINST* 6 (2011) P02005
14. Fusion of ^6Li with ^{159}Tb at near-barrier energies, M. K. Pradhan, A. Mukherjee, P. Basu, A. Goswami, R. Kshetri, Subinit Roy, P. Roy Chowdhury, and M. Saha Sarkar, *Physical Review C* 83 (2011) 064606
15. First observation of high spin states and isomeric decay in ^{210}Fr , D. Kanjilal, S. Saha, S. Bhattacharya, A. Goswami, R. Kshetri, R. Raut, S. Muralithar, R. P. Singh, G. Mukherjee, and B. Mukherjee. *Physical Review C* 84 (2011) 064321
16. Onset of deformation at $N = 112$ in Bi nuclei, H. Pai, G. Mukherjee, R. Raut, S. K. Basu, A. Goswami, S. Chanda, T. Bhattacharjee, S. Bhattacharyya, C. Bhattacharya, S. Bhattacharya, S. R. Banerjee, S. Kundu, K. Banerjee, A. Dey, T. K. Rana, J. K. Meena, D. Gupta, S. Mukhopadhyay, Srijit Bhattacharya, Sudeb Bhattacharya, S. Ganguly, R. Kshetri, M. K. Pradhan. *Physical Review C* 85 (2012) 064317
17. Reorientation-effect measurement of the $(21+E2\ 21+)$ matrix element in ^{10}Be , J. N. Orce, T. E. Drake, M. K. Djongolov, P. Navrátil, S. Triambak, G. C. Ball, H. Al Falou, R. Churchman, D. S. Cross, P. Finlay, C. Forssén, A. B. Garnsworthy, P. E. Garrett, G. Hackman, A. B. Hayes, R. Kshetri, J. Lassen, K. G. Leach, R. Li, J. Meissner, C. J. Pearson, E. T. Rand, F. Sarazin, S. K. L. Sjue, M. A. Stoyer, C. S. Sumithrarachchi, C. E. Svensson, E. R. Tardiff, A. Teigelhoefer, S. J. Williams, J. Wong, and C. Y. Wu. *Physical Review C* 86 (2012) 041303
18. High-Precision Measurement of the ^{19}Ne Half-Life and Implications for Right-Handed Weak Currents, S. Triambak, P. Finlay, C. S. Sumithrarachchi, G. Hackman, G. C. Ball, P. E. Garrett, C. E. Svensson, D. S. Cross, A. B. Garnsworthy, R. Kshetri, J. N. Orce, M. R. Pearson, E. R. Tardiff, H. Al-Falou, R. A. E. Austin, R. Churchman, M. K. Djongolov, R. D'Entremont, C. Kierans, L. Milovanovic, S. O'Hagan, S. Reeve, S. K. L. Sjue, and S. J. Williams, *Physical Review Letters* 109 (2012) 042301
19. Modeling an array of encapsulated germanium detectors, R. Kshetri, *JINST* 7 (2012) P04008
20. A first principle approach for clover detector, R. Kshetri, *JINST* 7 (2012) P08015
21. Modeling of clover detector in addback mode, R. Kshetri, *JINST* 7 (2012) P07008,
22. A first principle approach for encapsulated type composite detectors, R. Kshetri, *JINST* 7 (2012) P07006

23. From a single encapsulated detector to the spectrometer for INTEGRAL satellite: predicting the peak-to-total ratio at high gamma-energies, R Kshetri, JINST 7 (2012) P12007
24. A novel approach for predicting the response of the spectrometer for INTEGRAL satellite, R. Kshetri, Applied Radiation and Isotopes 75 (2013) 30
25. Inelastic scattering of ^9Li and excitation mechanism of its first excited state, H.Al Falou, R. Kanungo, C. Andreoiu, D.S. Cross, B. Davids, M. Djongolov, A.T. Gallant, N. Galinski, D. Howell, R. Kshetri, D. Niamir, J.N. Orce, A.C. Shotter, S. Sjue, I. Tanihata, I.J. Thompson, S. Triambak, M. Uchida, P. Walden, R.B. Wiringa, Physics Letters B 721 (2013) 224.
26. Importance of the $1n$ -stripping process in the $6\text{Li} + ^{159}\text{Tb}$ reaction, M.K. Pradhan, A. Mukherjee, Subinit Roy, P. Basu, A. Goswami, R. Kshetri, R. Palit, V.V. Parkar, M. Ray, M. Saha Sarkar, S. Santra, Physical Review C 88 (2013) 064603.
27. High spin spectroscopy in ^{34}Cl , Abhijit Bisoi, M. Saha Sarkar, S. Sarkar, S. Ray, D. Pramanik, R. Kshetri, Somnath Nag, K. Selvakumar, P. Singh, A. Goswami, S. Saha, J. Sethi, T. Trivedi, B.S. Naidu, R. Donthi, V. Nanal, R. Palit, Physical Review C 89 (2014) 024303.
28. Two-neutron transfer reaction mechanisms in $^{12}\text{C}(^6\text{He}, ^4\text{He})^{14}\text{C}$ using a realistic three-body ^6He model, D. Smalley, F. Sarazin, F.M. Nunes, B.A. Brown, P. Adsley, H. Al-Falou, C. Andreoiu, B. Baartman, G.C. Ball, J.C. Blackmon, H.C. Boston, W.N. Catford, S. Chagnon-Lessard, A. Chester, R.M. Churchman, D. S. Cross, C.Aa. Diget, D.Di Valentino, S.P. Fox, B. R. Fulton, A. Garnsworthy, G. Hackman, U. Hager, R. Kshetri, J.N. Orce, N.A. Orr, E. Paul, M. Pearson, E.T. Rand, J. Rees, S. Sjue, C. E. Svensson, E. Tardiff, A. Diaz Varela, S.J. Williams, S. Yates, Physical Review C 89 (2014) 024602.
29. Collective Excitations in ^{33}S , Abhijit Bisoi, M. Saha Sarkar, S. Sarkar, S. Ray, D. Pramanik, R. Kshetri, Somnath Nag, K. Selvakumar, P. Singh, A. Goswami, S. Saha, J. Sethi, T. Trivedi, B.S. Naidu, R. Donthi, V. Nanal, R. Palit, Physical Review C 90 (2014) 024328.
30. Performance comparison for modes of operation and suppression cases of the clover detector, R. Kshetri, JINST 9 (2014) T10001.
31. Lifetime measurements of states in ^{15}O , N. Galinski, S.K.L. Sjue, G.C. Ball, D.S. Cross, B. Davids, H. Al Falou, A.B. Garnsworthy, G. Hackman, U. Hager, D.A. Howell, M. Jones, R. Kanungo, R. Kshetri, K. G. Leach, J.R. Leslie, M. Moukaddam, J.N. Orce, E.T. Rand, C. Ruiz, G. Ruprecht, M.A. Schumaker, C.E. Svensson, S. Triambak, C.D. Unsworth, Physical Review C 90 (2014) 035803.
32. Performance comparison for modes of operation and suppression cases of the clover detector, Ritesh Kshetri and Pintu Bhattacharya, Pramana journal of physics 83 (2014) 817.
33. Fold distributions at clover, crystal and segment levels for segmented clover detectors, R. Kshetri and P. Bhattacharya, JINST 9 (2014) T10005.
34. Analysis of the effects of pair production for the suppressed clover detector, R. Kshetri, JINST 9 (2014) T11001
35. Shape coexistence in ^{153}Ho , Dibyadyuti Pramanik, S. Sarkar, M. Saha Sarkar, Abhijit Bisoi, Sudatta Ray, Shinjinee Dasgupta, A. Chakraborty, Krishichayan, Ritesh Kshetri, Indrani Ray, S.

Ganguly, M. K. Pradhan, M. Ray Basu, R. Raut, G. Ganguly, S. S. Ghugre, A. K. Sinha, S. K. Basu, S. Bhattacharya, A. Mukherjee, P. Banerjee, and A. Goswami. Physical Review C 94 (2016) 024311

36. First Measurement of the $^{19}\text{F}(\alpha, p)^{22}\text{Ne}$ Reaction at Energies of Astrophysical Relevance, R. G. Pizzone, G. D'Agata, M. La Cognata, I. Indelicato, C. Spitaleri, S. Blagus, S. Cherubini, P. Figuera, L. Grassi, G. L. Guardo, M. Gulino, S. Hayakawa, R. Kshetri, L. Lamia, M. Lattuada, T. Mijatović, M. Milin, Đ. Miljanić, L. Preolec, G. G. Rapisarda, S. Romano, M. L. Sergi, N. Skukan, N. Soić, V. Tokić, A. Tumino, and M. Uroić, The Astrophysical Journal 836 (2017) 57

37. Reorientation-effect measurement of the first 2^+ state in ^{12}C : Confirmation of oblate deformation, M. Kumar Raju, J.N. Orce, P.Navrátíl, G.C.Ball, T.E.Drake, S.Triambak, G. Hackman, C.J.Pearson, K.J. Abrahams, E.H.Akakpo, H.AlFalou, R. Churchman, D.S.Cross, M.K.Djongolov, N.Erasmus, P.Finlay, A.B.Garnsworthy, P.E.Garrett, D.G.Jenkins, R. Kshetri, K.G. Leach, S.Masango, D.L.Mavela, C.V.Mehl, M.J.Mokgolobotho, C.Ngwetsheni, G.G.O'Neill, E.T.Rand, S.K.L.Sjue, C.S. Sumithrarachchi, C.E. Svensson, E.R.Tardiff, S.J.Williams, J.Wong, Physics Letters B 777 (2018) 250

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Profile of four research scholars of Dr. Ritesh Kshetri's group

PINTU BHATTACHARYA



- MSc (Vidyasagar Univ. 2011),
- NET, GATE qualified 2011-12,
- completed SKBU PhD coursework 2015,
- Assistant Professor at L. N. College, Bhagwanpur, Bihar from 2017 till date
- PhD(Sc) thesis - "Modeling and Response studies of Composite Germanium detectors" from Sidho-Kanho-Birsha University (to be awarded 2023 under sole supervision)

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1. Fold distributions at clover, crystal and segment levels for segmented clover detectors, R. Kshetri and P. Bhattacharya, JINST 9 (2014) T10005.
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01. "Fold Distribution at Clover and Segmented levels for Segmented Clover Detector", R. Kshetri and P. Bhattacharya, DAE-BRNS Conference On Frontiers In Gamma Ray Spectroscopy-2015, held at VECC, Kolkata from 18-20 February 2015.
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03. "Analytical calculation of gamma-ray detector efficiencies", P. Bhattacharya and R. Kshetri, International Conference on Recent Trends in Mathematical Sciences and Applications, held at Dept. of Mathematics, University of Burdwan from 9-11 February 2016.

04. "A Model Based Approach For Investigating Escape Peak Efficiency at Clover Level", P. Bhattacharya and R. Kshetri, National Conference on Frontiers of Physics, held at Dept. of Physics, University of Burdwan from 30-31 March 2017.
05. "Illustration of Intrinsic Efficiency at Clover Level", P. Bhattacharya and R. Kshetri, National Conference On Recent Advances In Physical Sciences, held at R.N. College, Hajipur from 12-13 October 2019.
06. "A Model Based Approach for Investigating Escape Peak Efficiency at clover level", P. Bhattacharya and R. Kshetri, 4th Regional Science & Technology Congress (Western Region), held at University of Burdwan from 9-10 December 2019.
07. "A first principle approach of modelling the pyramidal composite gamma detector", P. Bhattacharya and R. Kshetri, 8th Bihar Science Conference 2019, An International Conference on Science & Technology, held at Patna University from 3-5 December 2020.

ANNESWA CHAKRABORTY



- MSc (Sidho-Kanho-Birsha Univ. 2014),
- DST project assistant: 2015-2016
- Guest Lecturer at JK College, Purulia 2016-18
- completed SKBU PhD coursework 2017
- PhD(Sc) thesis - "Understanding the Operation of Radiation Detectors through Phenomenological Modelling" from Sidho-Kanho-Birsha University (awarded 2023 under joint supervision with Dr. A.S. Patra)

Research publications in UGC recognized Journals (3):

1. Modeling of U-shaped composite detectors, A. Chakraborty, R. Kshetri, A.S. Patra, JINST 16 (2021) T12006.
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09. "Modeling various shapes of parallel combination of gamma-ray detectors" (Oral presentation), A. Chakraborty and R. Kshetri, National Seminar on Condensed Matter Physics including Laser Applications (NSCMPLA-2020), held at Dept. of Physics, University of Burdwan, February 13-14, 2020.

ANKHI SAMUI



- MSc (Sidho-Kanho-Birsha Univ. 2015),
- working on Detector modeling and simulation from August 2014 and completed her MSc project on this topic
- Guest Lecturer at JK College, Purulia 2016
- completed BU PhD coursework 2017
- PhD(Sc) thesis - "Radiation Detector Modeling for Gamma Spectroscopic Studies" from University of Burdwan (awarded 2023 under sole supervision)

Research publications in UGC recognized Journals (5):

1. Understanding the operation of gamma-ray detectors arranged in the shape of a pyramid, A Samui and R Kshetri, JINST 14 (2019) T09008
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06. "Modeling and spectroscopy with series combination of gamma-ray detectors" (Poster presentation), A. Samui and R. Kshetri, National Seminar on Recent Trends in Condensed Matter Physics including Laser Applications (NSCMPLA-2019), held at Dept. of Physics, University of Burdwan January 16-18, 2019.
07. "An anisotropic scattering model for the high resolution high energy photon spectrometer" (Oral presentation), A. Samui and R. Kshetri, Second International Conference on Frontiers in Industrial and Applied Mathematics (FIAM – 2019), held at Dept. of applied science (Mathematics), Galgotias College of Engineering & Technology, Greater Noida, U.P. December 21-22, 2019.
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PANKAJ SARKAR



- MSc (Univ. of North Bengal 2000), NET qualified
- Assistant Professor at JK College, Purulia from 2005
- working on Detector modeling from November 2014,
- completed SKBU PhD coursework 2015,
- registered for PhD under sole supervision in 2016,
- PhD(Sc) thesis - "Theoretical Studies of the Response of Gamma-ray Detectors" from Sidho-Kanho-Birsha University (to be awarded 2024 under sole supervision)

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5. "Understanding the operation of the Spectrometer for Integral Satellite", P. Sarkar and R. Kshetri, Exploring the Cosmos: A National Conference on Relativistic Universe, held at Dept. of Physics, University of North Bengal from 27-28 February 2020.