



RANCHI UNIVERSITY, RANCHI

Faculty Profile

- **Name of the Faculty Member::** Dr. (Mrs.) Sudha Singh
- **Department:** Univ. Department of Physics, Ranchi University, Ranchi
- **Designation :** Associate Professor & Head, University Department of Physics, Ranchi University
- **Level of Guidance & Teaching:** Ph. D. and M.Sc.
- **Qualification:** Ph. D.

Academic Qualifications:

Examination	Board/University	Subject	Year of Passing	Division/Class	% of Marks (Approx)
Matric	Bihar School Exam Board; Patna	Phys. Chem, Math	1972	First	66%
Intermediate	M.U, Bodh Gaya	Do	1974	First	61%
Graduation B.Sc. (Hons)	M.U, Bodh Gaya	Phys (Hons) with Chem & Math	1976	First Class First	74%
Post-Graduate (Physics)	M.U, Bodh Gaya	Physics	1978	First	74%
M.Phil					
Ph.D.	Ranchi Univ.	Theoretical Physics (Quantum Optics)	June, 1991		
Others					

Career Profile

Teaching experience in years	Area of Specialization	
	Teaching	Research
More than 40 Years	Nuclear Physics, Quantum Mechanics, Mathematical Physics. etc.	Theoretical Physics (Quantum Optics), Quantum Information

Research Guidance: M.Phil/Ph.D. /D.Sc. /D. Litt(May 2017 to till date):

No. of Ph.D. awarded during 2017-2022- 03(THREE)

Ph.D. ongoing- 01 (ONE)

<i>Name of Research Scholar</i>	<i>Registration No. & Date</i>	<i>Topic of research work</i>	<i>Present Status (No. of Ph.D. awarded)=03</i>
<i>Karuna Gilhare</i>	<i>12 July 2013</i>	<i>Study of non classical properties in radiation –matter interaction.</i>	<i>Ph.D awarded on 15September 2018</i>
<i>Arun Kumar</i>	<i>2 May 2014</i>	<i>Study of dynamical behavior in the non-linear atom-field interaction.</i>	<i>Ph.D awarded on 12 June 2020</i>
<i>Payal Raina</i>	<i>10 December 2015</i>	<i>High energy linear accelerator based IMRT and VMAT studies for deposited energy evaluation.</i>	<i>Ph.D awarded on 18 November 2020</i>
<i>Ph.D. ongoing- 01 (ONE)</i>			
<i>Nilofar Jahan Waris</i>	<i>14 December 2021</i>	<i>Study of non-classicality in atom – photon interactions involving non linearities.</i>	<i>Present Status (No. of Ph.D.)=01</i>

Books authored/Edited/Co-Author Chapter in Book (May 2017 to till date)

<i>Name of Books</i>	<i>Subject</i>	<i>Sole or Co-Author</i>	<i>ISBN</i>	<i>Date of Publication</i>	<i>Name of Publishers</i>

Number of Research papers published in Journals/Periodical (May 2017 to till date)

Total: 12 (National-03: International 09)

<i>Sr. No.</i>	<i>Title with page Nos.</i>	<i>ISSN</i>	<i>Name of Journal</i>	<i>Date of Publication</i>
NATIONAL JOURNALS-03 (THREE PUBLICATIONS)				
1.	Sudha Singh and Arun Kumar “Exact dynamics for a two-level atom interacting with intensity dependent single-mode quantized cavity field in a Kerr medium”.	,ISSN:2319-4227,	RUJOST	4, No.2(ii), July,2017,pp.129-134.
2.	Sudha Singh and Arun Kumar 2018. “Study of photon-Statistics in intensity dependent Jaynes-Cummings model.	ISSN 2348-8034, pp.374-379	GJESR(Global Journal of Engineering Sciences And Researches.)	2018 34, pp.374-379
3	Sudha Singh and Karuna Gilhare, Evolution of Atomic Entanglement for Different Cavity- Field Statistics in Single-Mode Two-Photon Process.	ISSN 1063-7761 ISSN 1090-6509, ISSN 1063-7761, 16 Accesses, 1 Citations, Imp. Factor-1.152H INDEX: 58	Journal of Experimental and Theoretical Physics	2018, Vol. 127, No. 3, pp. 391–397. © Pleiades
INTERNATIONAL JOURNALS=09 (NINE PUBLICATIONS)				
4	Sudha Singh and Karuna Gilhare, “Dynamical Properties of Intensity Dependent Two-Mode Raman Coupled Model in a Kerr Medium” .	(Electronic ISSN 1572-9575), Print ISSN 0020-7748 , 58:1721–1744, Impact Factor: 1.347, H-INDEX:65	International Journal of Theoretical Physics (Springer)	2019

5	Sudha Singh and C H Raymond Ooi, "Dynamics of Kerr-like medium with two mode intensity-dependent cavity fields".	Online ISSN: 1555-6611, Print ISSN: 1054-660X. Impact Factor:1.36 Citescore-2.4, Citations2, h-index: 65	Laser Phys. (IOP Publishing): 29	(2019) 015202 (12pp).
6	Sudha Singh and Payal Raina "Study of high energy radiotherapy beams and analysis of its characteristics in water".	ISSN:2319-4227, Vol.4, No.2,	RUJOST,	July,2017,pp.123-128.
7	Sudha Singh Payal Raina and O P Gurjar "Dosimetric comparison of IMRT plans optimized with equivalent uniform dose and target penalty on tongue cancer patient".	ISSN:2394-7780,Vol.6,Issue2(I),	International Journal of Advance and Innovative Research,	March-June, 2019, pp.32-38.
8	Sudha Singh and Payal Raina and O P Gurjar "Point Dose Measurement for Verification of Treatment Planning System using an Indigenous Heterogeneous Pelvis Phantom for Clarkson, Convolution, Superposition, and Fast Superposition Algorithms".	ISSN: 2251-7200, Volume 9, doi.org/10.31661/jbpe.v9i0.1185. Citescore1.5, h-index: 05	J Biomed Phys Eng,	Issue 6, December 2019, Pages 613-620,
9	Payal Raina and Sudha Singh, Rajanigandha Tudu , Rashmi Singh , Anup Kumar " Volumetric modulated arc therapy: a dosimetric comparison with dynamic IMRT and step-and-shoot IMRT" .	ISSN:1460-3969 , Citescore-0.6, h-index-14	Journal of Radiotherapy in Practice (Cambridge University Press 2019)	13 November 2019, pp. 393-398, Print publication: Volume 19 / Issue 4 / December 2020.

10	Sudha Singh, Payal Raina, Om Prakash Gurjar , <i>'Dosimetric Study of an Indigenous and Heterogeneous Pelvic Phantom for Radiotherapy Quality Assurance'</i> .	ISSN:1735-160X, E-ISSN:1735-7241,	<i>Iranian Journal of Medical Physics</i>	Volume 17, Issue 2, March and April 2020, Pages 120-125 Cite Score 1.1, SJR 0.233, SNIP-0.876, h-index: 9
11	Sudha Singh and Arun Kumar "Result of cavity-field statistics on atomic entanglement in intensity dependent two-photon process."	ISSN:2319-4227, Vol.5 & 6, No.1 &2,	RUJOST	2021, pp.139-146.
12	Payal Raina and Sudha Singh, "Comparison between Three-Dimensional Conformal Radiation Therapy (3DCRT) and Intensity-Modulated Radiation Therapy (IMRT) for Radiotherapy of Cervical Carcinoma: A Heterogeneous Phantom Study".	ISSN: 2251-7200 doi.org/10.31661/jbpe.v6i10.1185 Citescore 1.5, h-index: 05	J Biomed Phys Eng, published online	6- 09-2021.

No. of seminars/conferences/workshop attended/organised (May 2017 to till date):

<i>Seminar/Conference</i>	<i>Date of Participation</i>	<i>National/International</i>
Presented paper in the International Conference on Quantum and Non-linear Optics (QNO- 2018),	on 2-5 February, 2018,	<i>International Conference on Quantum and Non-linear Optics (QNO- 2018), on 2-5 February, 2018, held at Kuala Lumpur, Malaysia.</i>
DELIVERED INVITED TALKS		
International Conference on Quantum and Non-linear Optics (QNO-2019) held at Kuala Lumpur, Malaysia.	February, 2019,	

No. of FIP/refresher courses/summer trainings attended/organised (May 2017 to till date):

<i>Date</i>	<i>Period</i>	<i>Venue</i>

Any other academic, administrative and socially relevant contributions/consultancy and awards :

1) Reviewed papers from various International Journal like on receiving review assignment .

2) Member of Board of studies for Physics / Electronics and Communication courses.

3) Moderation work carried in Physics .

4) Life Member of Indian Physics Association, T.I.F.R., Mumbai.

5) .Life Member of Laser and Spectroscopy Society of India, B.H.U. Varanasi.

6) Life Members of Indian Association of Physics Teachers, Kanpur.