

DR. RAMA SHANKAR SINGH

Principal at Dr. Manrakhan Lal Sahu Govt. College, Jamul, Bhilai, Durg (C.G.)

Date of Birth: 09/07/1963



Dr. Rama Shankar Singh

Principal, Dr. Manrakhan Lal Sahu Govt. College, Jamul, Bhilai, Durg (C.G.)

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[Photoconductivity](#) [Photoluminescence](#) [Nanocrystalline thin films](#) [Organic LEDs](#)
[Perovskite Solar Cells](#)

Cited by

All

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Summary

An experienced and accomplished academic leader with a strong background in Physics, holding an M.Sc. and Ph.D. Proven expertise in research, with a focus on nanotechnology, thin films, and luminescence. An active member of various academic councils and boards of studies, with extensive experience in teaching, research guidance, and institutional leadership.

Educational Qualification

- **Ph.D. in Physics**
- **M.Sc. in Physics**

Work Experience

Principal : Dr. Manrakhan Lal Sahu Govt. College, Jamul, Bhilai, Durg (C.G.) *November 5, 2024 (afternoon) – Present*

- Currently leading the college as Principal.

Professor : Govt. V.Y.T. PG Autonomous College, Durg (C.G.) *October 3, 2018 – November 5, 2024 (forenoon).*

- Served as a Professor, contributing to academic and research activities.

Professor : Govt. L.C.S. College, Ambagarh Chowki, Dist. – Rajnandgaon (C.G.) *September 1, 2016 – October 1, 2018*

- Held the position of Professor.

Assistant Professor : Govt. College, Utai, Dist. – Durg (C.G.) *May 9, 1994 – August 31, 2016*

- Served as an Assistant Professor for over two decades.

Assistant Professor : Govt. College, Gadarwara, Dist. – Narsinghpur, M.P. *September 29, 1993 – May 7, 1994*

- Began academic career as an Assistant Professor.
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Awards & Honors

- **United Group Research Paper Award** by United Group of Bangladesh (April 17, 2019).
 - **Organizing Secretary** for the webinar series "Worldwide effect of COVID on research and development" (June 24-26, 2020), organized by Govt. V.Y.T. PG Autonomous College, Durg and B.I.T. Durg.
 - **Chaired a session** at BITCON-2020 (November 20, 2020).
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Patents

- **Exploring the limits of Classical Mechanics in Quantum Systems** by Indian Utility and Innovation Patent (Application No : **202521075963 A**, Issue No : 34/2025 & Publication date : 22/8/2025).
 - **Advances in Rare-earth and Transition Metal-doped Inorganic Luminescent Materials : Design, Mechanisms, and Applications** by Indian Utility and Innovation Patent (Application No : **202521075615 A**, Issue No : 34/2025 & Publication date : 22/8/2025).
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Research & Academic Leadership

- **Member of Board of Studies:**
 - Durg University, Durg (August 2016 – Present)
 - BIT, Durg (2020 – Present)
 - Pt. R. S. University, Raipur (June 1, 2002 – May 31, 2005)

- **Member of Academic Council:**
 - Durg University, Durg (January 6, 2018 – Present)
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Completed Research Projects

- **Major Project (2011-2014):** Co-Investigator for "Studies on some chemically deposited nanocrystalline films doped with transition and rare-earth metallic ions," funded by UGC (Amount: Rs. 1,000,000).
 - **Minor Project (2010-2012):** Principal Investigator for "Structural and luminescence studies of chemically deposited rare-earth doped CdS-Se films," funded by UGC (Amount: Rs. 100,000).
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Ph.D. Students Awarded (as Supervisor)

- **Smt. Ritu Shrivastava (2016):** Thesis on "Investigations on nanocrystalline and bulk properties of some chemically deposited lanthanide doped (Cd-Zn)S films" from Pt. R. S. University, Raipur.
 - **Rishi Jaiswal (2017):** Thesis on "Studies on the effect of interfacial barriers on the characteristics of bilayer organic light emitting diodes" from Pt. R. S. University, Raipur.
 - **Kanchana Shahi (2019):** Thesis on "Synthesis and characterization of zinc oxide nano wires for heterojunction LEDs" from Pt. R. S. University, Raipur.
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Publications

Book & Book Chapters

Book Chapter :

1. Recent Advancements in biopolymer-based electrolytes for asymmetric supercapacitors : a mini review in Role of Applied Sciences in Social Implications; Volume E : Physics & Electronics, ICRASSI2023, Probacell Press, pp 1-17, 2023; *Ashutosh Patel, S. K. Patel, R. S. Singh and D. K. Verma*

Research Journals

Authored and co-authored over **30 research papers** in various international and national journals with significant impact factors, including:

- *ACS Applied Nano Materials*, *Journal of Alloys & Compounds (Science Direct)*, *Journal of Saudi Chemical Society (Elsevier)*, and *Physica B: Condensed Matter*.
- Publications focus on topics such as **nanocrystalline thin films**, **luminescence**, **organic light-emitting diodes (OLEDs)**, and **nanowires**.
- Details of List of Publications :

S.N.	Title of Paper, Vol., Journal and Author/s Name	(Thomson-Reuter indexed) Impact Factor	Whether Scopus indexed
01.	Photoconductivity and photoluminescence studies of chemically deposited Cd(S-e):CdCl ₂ , Dy films, 5(12), 2008 , 377 – 388, Chalcogenide Letters, Romania; R. S. Singh and <i>S. Bhushan</i>	1.3	Yes
02.	Structural and optical properties of chemically deposited Cd(S–Se) : CdCl ₂ , Sm films, 32(2), 2009 , 125–133, Bulletin of Material Science, Springer; R. S. Singh and <i>S. Bhushan</i>	2.1	Yes
03.	Photoluminescence and photoconductivity in lanthanide doped chemically deposited CdS-Se films, 11(12), 2009 , 2115-2119, Journal of Opto-electronics and Advanced materials; R. S. Singh	0.5	Yes
04.	Studies on nano-crystalline properties of chemically deposited CdSe films, 7(6), 2010 , 375-381, Chalcogenide Letters, Romania; R. S. Singh	1.3	Yes
05.	Characterization and optical studies of Sm ³⁺ and Dy ³⁺ doped chemically deposited CdS-Se films, 6(6), 2010 , 211 – 219, Journal of Ovonic Research, Romania; R. S. Singh , <i>S. Bhushan</i> and <i>A. K. Singh</i>	1.1	Yes
06.	Structural and optical studies of chemically deposited CdS-Se films, 2(3), 2010 , 135 – 141, Journal of Non-Oxide Glasses, Romania; <i>R. S. Singh</i> and <i>S. Bhushan</i>	0	No
07.	Structural and optical studies on Pr ³⁺ doped chemically deposited Cd(Se-S) films, 12(11), 2011 , 2221 – 2225, Journal of Opto-electronics and Advanced Materials; R. S. Singh , <i>S. Bhushan</i> and <i>A. K. Singh</i>	0.5	Yes
08.	Characterization and optical properties of CdSe nano-crystalline thin films, 6(2), 2011 , 433 – 442, Digest Journal of Nanomaterials and Biostructures; R. S. Singh , <i>S. Bhushan</i> , <i>A. K. Singh</i> and <i>S. R. Deo</i>	1.3	Yes
09.	Synthesis and characterization of chemically deposited nano-crystalline CdSe thin film, 41, 2011 , 1346–1350, Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry (Taylor & Francis); <i>Y. R. Katre</i> , <i>A. Gupta</i> , <i>A. K. Singh</i> , <i>S. R. Deo</i> , <i>G. S. Thool</i> and R. S. Singh	0.784	Yes
10.	Synthesis and effect of post deposition thermal annealing on morphological and optical properties of ZnO thin film, 38 (8), 2012 , 2041-2049, Research on Chemical Intermediates (Springer); <i>Ajaya Kumar Singh</i> , <i>Gautam Sheel Thool</i> , <i>Soumya R. Deo</i> , R. S. Singh and <i>Ashish Gupta</i>	3.5	Yes
11.	Optical Characterization of the (Cd-Zn)S:CdCl ₂ Thin Film Deposited by CBD Method, 2(9), 2013 , 152-158, International Journal of Advancements in Research & Technology (IJART); R. S. Singh , <i>A. K. Singh</i> and <i>R. Shrivastava</i>	0	No
12.	Growth and characterization of nano-crystalline CdSe thin solid films,	3.5	Yes

	41, 2013 ,535-548, Research on Chemical Intermediates (Springer); R. S. Singh , A. Gupta A. K. Singh, S. R. Deo, L. Deshmukh and G. P. Pandey		
13.	Structural, morphological and optical studies on chemically deposited nano-crystalline CdZnSe thin films, 18, 2014 ,327-339, Journal of Saudi Chemical Society (Elsevier); Soumya R. Deo, Ajaya K. Singh, Lata Deshmukh, L. J. Paliwal and R. S. Singh and Rameshwar Adhikari	5.8	Yes
14.	Facile synthesis of flat crystal ZnO thin films by solution-grown method : A micro-structural investigation, 18(5), 2014 ,712-721, Journal of Saudi Chemical Society (Elsevier); Gautam Sheel Thool, Ajaya Kumar Singh, R.S. Singh , Ashish Gupta, Md. Abu Bin Hasan Susan	5.8	Yes
15.	Cu-implanted ZnO nano-rods array film : An aqueous synthetic approach, 618, 2015 ,421-427, Journal of Alloys & Compounds (Science Direct); Ajaya Kumar Singh, Gautam Sheel Thool, R.S. Singh , Surya Prakash Singh	6.5	Yes
16.	Characterization of CdZnS thin film grown by using different capping agents, 2(3), 2015 , Material Research Express (IOP Science); R. S. Singh , A. K. Singh Ritu Shrivastava and Subhash Shrivastava	2.2	Yes
17.	Studies on structural, morphological and optical behavior of chemically deposited Cd _{0.5} Pb _{0.5} S thin films, 126(20), 2015 ,2311-2317, Optik - International Journal for Light and Electron Optics (Elsevier); Soumya R. Deo, Ajaya K. Singh, Lata Deshmukh, L. J. Paliwal and R. S. Singh	3.1	Yes
18.	Synthesis and characterization of cerium-doped CdZnS nanoparticles, 89(11), 2015 ,1153-1159, Indian Journal of Physics (Springer); R Shrivastava, S. C. Shrivastava, R. S. Singh and AK Singh	1.7	Yes
19.	Studies on some chemically deposited Cd(Se-S) nano-crystalline thin films, IV(II), 2015 ,275-277, International Journal of Advanced Engineering Research and Studies; R. S. Singh	0	No
20.	Electroluminescence efficiency of bilayer organic light emitting diodes, 2, 2015 ,29-32, International Science Journal- DAMA; Rishi Jaiswal, V. K. Chandra, R. S. Singh , R. N. Baghel and B. P. Chandra	0	No
21.	Organic Solar Cells : Principles, Mechanism & Recent Developments, 4(1), 2015 ,171-175, International Journal of Advanced Research in Science & Engineering- (IJARSE); R. S. Singh	0	No
22.	Effect of interfacial barrier on the transient response of bilayer organic light emitting diodes, 5, 2015 ,451-453, International Journal of Luminescence and Applications (Elsevier); Rishi Jaiswal, Mohua Singh, R. S. Singh , R. N. Baghel and B. P. Chandra	0	No
23.	Electron-Hole Recombination Near the Interface of Bilayer OLEDs, 5(XII), 2017 ,71-75, International Journal for Research in Applied Science & Engineering Technology (IJRASET); Rishi Jaiswal, R. S. Singh and R. N. Baghel	0	No
24	An Innovative Approach For Recombination Efficiency in Bilayer OLEDs, 5(XI)4027, 2017 ,4031, International Journal for Research in Applied Science & Engineering Technology (IJRASET); Rishi Jaiswal, R. S. Singh and R. N. Baghel	0	No
25.	Optical and Structural Properties of Zinc Oxide Nanowires	0	No

	Fabricated by Hydrothermal Method, 4(5), 2017 ,715-719, International Journal for Research in Applied Science & Engineering Technology (IJRASET); <i>Kanchana Shahi , R. S. Singh and Ajaya Kumar Singh</i>		
26.	CdTe quantum-dot-modified ZnO nanowire heterostructure, 124, 2018 ,277-281, Applied Physics A Materials Science & Processing-Springer-Verlag GmbH Germany, part of Springer Nature; <i>Kanchana Shahi, R. S. Singh, Ajaya Kumar Singh, Maria Aleksandrova and Rabah Khenata</i>	2.8	Yes
27.	A Review on Fabrication of Polymer/ZnO Nanowires Hetero-junction Based Light Emitting Diode by Wet Chemistry Method, 3, 2018 , CCET Journal of Science and Engineering Education; <i>Kanchana Shahi, R. S. Singh and Ajaya Kumar Singh</i>	0	No
28.	Synthesis and characterization of PEDOT:PSS/ZnO nanowires heterojunction on ITO coated plastic substrate for light-emitting diodes, 15, 2019 ,394–399, Materials Today : Proceedings (Elsevier); <i>Kanchana Shahi , R. S. Singh , Narendra P. Singh , Maria Aleksandrova and Ajaya Kumar Singh</i>	3.1	Yes
29.	Synthesis of Ag nanoparticle-decorated ZnO nanorods adopting the low-temperature hydrothermal method, 49, 2020 , 637–642, Journal of Electronic Materials (Springer Link); <i>Kanchana Shahi, R. S. Singh, Jai Singh, Maria Aleksandrova and Ajaya Kumar Singh</i>	2.5	Yes
30.	The influence of different complexing agents on the properties of tin dioxide (SnO ₂) deposited thin films through chemical bath approach, 650, 2023 ,414520, Physica B: Condensed Matter; <i>Ajaya Kumar Singh N. Jaishree, Ayesha Hashmi, Y.R. Katre, Rama Shankar Singh, Jai Singh, Amit Srivastava</i>	2.8	Yes
31.	Effects of Annealing and Silar Cycles on the Structural and Optical Properties of NiO-ZnO Nanocomposite Thin Films, 13(07), 2024 , International Journal of Engineering Research and Technology (IJERT); <i>Sandeep Kumar Soni, R. S. Singh and Pankaj Soni</i>	0	Yes
32.	Review on recent advancements in the role of electrolytes and electrode materials on supercapacitor performances, 19(188), 2024 , Discover Nano (Springer Nature Link); <i>Ashutosh Patel, Suresh Kumar Patel, R. S. Singh and R. P. Patel</i>	4.5	Yes
33.	Fe ²⁺ - and Mn ²⁺ -Codoped CsPbCl ₃ Perovskite Nanocrystals for Enhancing Stability and Photophysical Performances, 8(26), 2025 , ACS Applied Nano Materials (American Chemical Society); <i>Aditi Banjare, Dinabandhu Patra, Kamatham Narayanaswamy, Mahesh Kumar Ravva, Rama Shankar Singh, Surya Prakash Singh and Ajaya Kumar Singh</i>	5.5	Yes
34.	Characterization and properties of NiO-ZnO nanocrystalline thin films on glass substrates deposited by SILAR technique; 18(3), 2025 ,423-432, International Journal of Nanoelectronics and Materials (IJNeaM), Universiti Malaysia Perlis; <i>Sandeep Kumar Soni, R. S. Singh and Pankaj Soni</i>	0.5	Yes

Conference & Workshop Participation

Participated in and presented papers at numerous national and international conferences and workshops, including:

- **Indo-US Workshop on “Elliptical Galaxies: Structure & Dynamics” at IUCAA, Pune (1995).**
- **Workshop on ‘Astronomical Image Processing & Internet’ at Univ. of Kerala Thiruvananthapuram, Kerala (1996).**
- **Workshop on “Dynamics at the centre of Galaxies” at IUCAA Pune (1996).**
- **State Level Seminar on “Modern developments in Information Technology” at St. Thomas college Bhilai (1997).**
- **State Level Seminar-cum-Workshop on “Frontiers in Electronics” at St. Thomas College Bhilai (2003).**
- **Short Term Course on “Maintenance of Electronic Instruments” conducted by Western Regional Instrumentation Centre (WRIC) Mumbai at Pt. R. S. Univ. Raipur (2004).**
- **National Workshop on “Scientific & Technological Shabdawali” conducted by MHRD New Delhi at Kalyan College Bhilai (2008).**
- **National Conf. on “Recent Advances in Nanoscience & Nanotechnology” [NCRANT-2009] at SSCET Bhilai (2009).**
- **National conf. on “Luminescence and its Applications” (NCLA-2009) at Indian Association for the Cultivation of Science Kolkata, W. Bengal (2009).**
- **National Workshop on “Physics & Applications of Luminescence to Nanoscience, Radiation Dosimetry & Geology” [NWPAL-2009] at SSCET Bhilai (2009).**
- **Short Term Course in Organic Electronics at IIT Kanpur (2010).**
- **International Conference on Luminescence and its Applications (ICLA, 2015) at PES Uni., Bangalore (2015).**
- **International Conference on Recent Trends in Science and Engineering (ICRTSE, 2016) at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2016).**
- **UGC sponsored “करियर निर्माण में भौतिक शास्त्र की उपादेयता” at Govt. D.T. College Utai, Durg (C.G.) (2016).**
- **UGC sponsored “Fundamentals of Particle Physics – The Standard Model” at Govt. Digvijay P.G. College, Rajnandgaon (C.G.) (2016).**
- **National workshop on “Entrepreneurships in renewable energy technologies for Chhattisgarh tribals” at Pt. R. S. Univ., Raipur (C.G.) (2016).**
- **National Conference - oral presentation on “Effect of interfacial barriers on the recombination efficiency in bilayer OLEDs” at IICT-Hyderabad & MGNIRSA Hyderabad (2017).**
- **National Conference - paper presentation on “Electron transport in quantum dots” at Bhilai Institute of Technology, Durg (C.G.) (2017).**
- **National Conference - paper presentation on “Synthesis and characterization of MEHPPV and ZnO Nanowires heterojunction for Light emitting diodes” at Digvijay P. G. College, Rajnandgaon-NSAAPS (2018).**
- **National Conference - paper presentation on “Curved phase spaces and Quantum Relativity” at Digvijay P. G. College, Rajnandgaon-NSAAPS (2018).**
- **Student Solar Ambassadors Workshop organized globally to commemorate 150th birth anniversary of Mahatma Gandhi (2019).**

- **DST Inspire Internship Science Camp as an Assistant Co-ordinator/Member of Organising Committee at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2020).**
- **National Workshop on Novel Materials and Medical Imaging Phosphors at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2020).**
- **National Conference – Proceedings of BITCON 2020 – “Thermal characterization of microcellular silicon elastomer nanocomposites with effect of nano-graphite” at BIT, Bhilai (2020).**
- **Session Chair in National Conference on Luminescence and its Applications NCLA-2021 “Hybrid mode” at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2021).**
- **National Conference on Emerging Materials & Nanotechnology (NCEMN-2022) at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2022).**
- **Faculty Development Program on ‘Indian Knowledge System’ at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2023).**
- **Chairperson in International Conference on Recent Trends in Science and Engineering at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2024).**
- **International Conference on Recent Trends in Science and Engineering at IIT-Bhilai & Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2024).**
- **International Conference on Material Science for Sustainable Development at Govt. V.Y.T.P.G. Aut. College, Durg (C.G.) (2025).**
- **Workshop on ‘A Roadmap to Quality Education’ by Higher Education Department, Chhattisgarh Govt., Raipur (C.G.) (2025).**
- **National Seminar on ‘Exploration and validation of Indian Knowledge System’ at Govt. Kaktiya PG College, Jagdalpur (C.G.) (2025).**