

Personal Information **Dr. Rohit Kandulna**

📍 Present Address: Kather Toli, Old H.B. Road, Bahu Baazar Ranchi -834001, Jharkhand

📍 Permanent Address: Vill.- Banabira, P.O.- Marcha, P.S.- Rania, Dist.- Khunti- 835227, Jharkhand

☎ +91-9525871778/+91-9709130820

✉ rohikandulna4@gmail.com, rohikandulna@iiitranchi.ac.in
rohikandulna7@gmail.com,

Sex: Male | Date of Birth: 26/12/1993 | Nationality: Indian

[in https://www.linkedin.com/in/dr-rohit-kandulna-30687192/](https://www.linkedin.com/in/dr-rohit-kandulna-30687192/)

[📖 https://scholar.google.com/citations?user=8S76eVIAAAAJ&hl=en&oi=ao](https://scholar.google.com/citations?user=8S76eVIAAAAJ&hl=en&oi=ao)

[R^e https://www.researchgate.net/profile/Rohit-Kandulna](https://www.researchgate.net/profile/Rohit-Kandulna)

Educational Qualifications

- | | |
|-----------------------|---|
| July 2015 –April 2020 | Ph. D. (Physics) - Department of Physics.
Indian Institute of Technology (Indian School of Mines), Dhanbad. |
| July 2013 – May 2015 | Master of Science (M.Sc. in Applied Physics) Department of Physics, Indian Institute of Technology (Indian School of Mines), Dhanbad. (CGPA- 8.26) |
| July 2010 – May 2013 | Bachelor of Science (B.Sc. in Physics) (Honors) - Department of Physics, St. Xavier's College, Ranchi. (69.20 %) |
| July2008 – May 2010 | Intermediate Examination Certificate - (I.Sc.-Science)-St. Xavier's College, Ranchi. (61.30 %) |
| May 2008 | Secondary School Examination Certificate– (Matriculation) - St. Aloysius' High School, Ranchi. (87.40 %) |

Professional Experience: 04 years

1. May 2022- Till Date Assistant Professor of Physics at Indian Institute of Information Technology (IIIT) Ranchi, India.
2. March 2021-May 2022 Assistant Professor of Physics at University Department of Physics, Dr. Shyama Prasad Mukherjee University, Ranchi
3. March 2020-March 2021 Assistant Professor of Physics at GGSETC Chas, Bokaro, Jharkhand.
4. September 2019- February 2020 Assistant Professor of Physics at K.K. University, Bihar Sharif.

Administrative experience:

1. September 2022- Till Date: Coordinator, SAMARTH ERP, Indian Institute of Information Technology (IIIT) Ranchi, India.
2. January 2023- Till Date: Hostel warden, Type-III JUT Campus, Indian Institute of Information Technology (IIIT) Ranchi, India.
3. May 2023- Till Date: Faculty advisor of 1st year students of Section-A at Indian Institute of Information Technology (IIIT) Ranchi, India.

Research Interests:

Polymer Hybrid Nanocomposites (PHN)
Organic Light Emitting Diode (OLED)
Electron Transporting Layer (ETL)

Research Papers Published:

International Journal (SCI & Scopus indexed):

1. **R. Kandulna**, R.B. Choudhary, P. Maji, Ag-doped ZnO Reinforced Polymeric Ag:ZnO/PMMA Nanocomposites as Electron Transporting Layer for OLED Application, *J. Inorg. Organomet. Polym. Mater.* 27 (2017) 1760-1769.
2. **R. Kandulna**, R.B. Choudhary, Robust electron transport properties of PANI/PPY/ZnO polymeric nanocomposites for OLED applications, *Optik- Int. J. Light Elect. Opt.* 144 (2017) 40-48.
3. **R. Kandulna**, R.B. Choudhary, Concentration dependent behaviors of ZnO reinforced PVA-ZnO nanocomposites as electron transport materials for OLED application, *Polym. Bull.* 75 (2018) 3089-3107.
4. **R. Kandulna**, R.B. Choudhary, R. Singh, B. Purty, PMMA-TiO₂ based polymeric nanocomposite material for electron transport layer in OLED application, *J. Mater. Sci: Mater. Electron.* 29 (2018) 5893- 5907.
5. **R. Kandulna**, R.B. Choudhary, R. Singh, Free exciton absorptions and quasi-reversible redox actions in PPY-PANI-ZnO nanocomposites as ETL for OLEDs and electrode material for supercapacitors, *J. Inorg. Organomet. Polym. Mater.* 29 (2019) 730-744.
6. **R. Kandulna**, R.B. Choudhary, 2-D rGO impregnated circular-tetragonal-bipyramidal structure of PPY-TiO₂-rGO nanocomposite as ETL for OLED and supercapacitor electrode materials, *Mater. Sci. Semiconducting Process.* 94 (2019) 86-96.
7. R. Singh, R.B. Choudhary, **R. Kandulna**, Delocalization of π electrons and trapping action of ZnO nanoparticles in PPY matrix for hybrid solar cell application, *J. Mole. Struct.* 1156 (2018) 633-644.
8. R. Singh, R.B. Choudhary, **R. Kandulna**, Robust Optical and Electrical Properties of TiO₂ -sensitized Polymeric (PANI-TiO₂) Nanocomposites for Hybrid Solar Cell Application, *Bull. Mater. Sci.* 42 (2019) 202-215
9. R. Singh, R.B. Choudhary, **R. Kandulna**, Optical band gap tuning and thermal properties of PMMA-ZnO sensitized polymers for efficient exciton generation in solar cell application, *Mater. Sci. Semiconducting Process.* 103 (2019) 104623-104627.
10. R.B. Choudhary, **R. Kandulna**, M. Majumder, G. Mandal, Electronics with Plastics, Foils and Fabrics: The Ensuing Flexible and Hybrid Electronics, *COJ Elec. Communicat.* 1(1) (2018) 1-7 COJEC.000505.2018.
11. **R. Kandulna**^{*}, Rimpi, U. Das, R.B. Choudhary, B. Kachhap, A. Sharma, Enriched properties of polypyrrole-copper oxide-reduced graphene oxide (PPY-CuO-rGO) hybrid nanocomposite for organic light emitting diodes (OLEDs) as electron transport layer (ETL) material, *Optik- Int. J. Light Elect. Opt.* 292 (2023) 171393
12. R. Goyal , **R. Kandulna**^{*}, U. Das , B. Kachhap, Properties evaluation of PPY-CuO incorporated GO as electron transporting layer material for OLED application, *Poly. Sci., Series B*, (2023), DOI: 10.1134/S1560090423701208
13. Rimpi, **R. Kandulna**^{*}, U. Das, B. Kachhap, J. Choudhary, Augmented behaviors of OLED as ETL based on PPY and PEDOT:PSS hybrid organic-inorganic nanocomposites: A review, *Eur. Chem. Bull.* 12 (2023) 11191-11206.
14. U. Das, **R. Kandulna**^{*}, Rimpi, B. Kachhap, J. Choudhary, Structural, optical and electrical properties evaluation of PPY-CuO nanocomposite for OLED as electron transport layer material, *Eur. Chem. Bull.* 12 (2023) 2169-2183.
15. **R. Kandulna**, G. Mandal, R.B. Choudhary, Recent advances in high performance OLED, *J. Power Sources (Communicated)*.
16. **R. Kandulna**, R.B. Choudhary, D. Nayak, B. Kachhap, Dielectric and electrochemical properties of PPY-CuO-rGO nanocomposites, *J. mater. Sci. Engg. B (Communicated)*.

International Conference Proceedings (Scopus indexed):

1. **R. Kandulna**, R.B. Choudhary, R. Singh, TiO₂ reinforced PMMA-TiO₂ nanocomposite for its application in organic light emitting diode (OLED) as electron transport layer material, *AIP Conference Proceedings*, 1942 (2018) 110057.

2. **R. Kandulna**, R.B. Choudhary, R. Singh, Synthesis and characterization of PPY-PANI-ZnO hybrid nanocomposites for OLEDs applications as electron transport layer, *Advance material proceeding*, 2019, 4(2), 72-76
3. **R. Kandulna**, R.B. Choudhary, R. Singh, Robust properties of PPY-TiO₂-rGO nanocomposite as electron transporting layer material for the application in OLED devices, *Mater. Today: proceedings*, 24 (2020) 859-868.
4. **R. Kandulna**, R.B. Choudhary, R. Singh, D. Nayak, Augmented properties for PPY-PANI-ZnO nanocomposite as electron transport layer material for organic light emitting diode (OLED) application, *AIP Conference Proceedings*, 2115 (2019) 030439.
5. B. Purty, R.B. Choudhary, **R. Kandulna**, R. Singh, Binder free MnO₂/PIn electrode material for supercapacitor application, *AIP Conference Proceedings*, 1953 (2018) 030178.
6. R. Singh, R.B. Choudhary, **R. Kandulna**, Optical band gap tuning and electrical properties of polyaniline and its nanocomposites for hybrid solar cell application, *AIP Conference Proceedings*, 1953 (2018) 030179.
7. B. Purty, R.B. Choudhary, **R. Kandulna**, R. Singh, Remarkable enhancement in electrochemical capacitance value of AgZnO/PANI composite for supercapacitor application, *AIP Conference Proceedings*, 2115 (2019) 030588.
8. G. Mandal, R.B. Choudhary, **R. Kandulna**, A. Verma, D. Nayak, Robust optoelectronic properties of PANI-Y₂O₃ nanocomposite as electron transport layer in OLEDs, *AIP Conference Proceedings*, 2220 (2020) 020085.
9. D. Nayak, R.B. Choudhary, **R. Kandulna**, G. Mandal, Investigation of structural, optical and electrical performance of ZnS sensitized PMMA nanocomposite as an emissive layer for OLED application, *AIP Conference Proceedings*, 2100 (2020) 020017.

National Journal:

1. B. Kachhap, K. Kandir, **R. Kandulna**, Study of ethnomedicinal uses of plants found in Khunti district of Jharkhand for relieving chronic kidney disease, *RUJOST*, 5 & 6, 2020-2021, 1-6.
2. **R. Kandulna**, U. Das, Rimpi, B. Kachhap, N. Prasad, Hybrid Polymeric Nanocomposites Based High Performance OLEDs: A Review, *Shodh Sankalp Journal (ISSN 2582-9033)*, 1(3) (2021) 16-34.
3. B. Kachhap, K. Kandir, **R. Kandulna**, Comparative study of moisture content of ethnomedicinal plants used in Ranchi district of Jharkhand for curing chronic kidney injury, *Biospectra (ISSN:0973-7057)*, 17 (2022) 73-76.

Academic Outreach Program (Workshop/FDP):

1. **Co-ordinator** of "International Workshop on Photonics and Optoelectronics Devices (IWPOD)-2024 on 26th - 30th January, 2024 at Indian Institute of Information Technology Ranchi.

Seminar Presented/Attended:

Research Paper Presentation on International Conferences:

- International Topical Conference on Charged Particles Collisions and Electronic processes in Atoms, Molecules and Materials (q-PaCE 2016), January 09-11, 2016, Organized by Department of Applied Physics, Indian Institute of Technology (ISM), Dhanbad, India.
- International Conference on Merging Materials and Applications (ICEMA- 2017), February 20-22, 2017, Organized by University of Allahabad
- International conference of Nanomaterials and Nanotechnology (ICNANO-2017), March 01-03, 2017, Organized by Vinoba Bhave Research Institute, Saidabad, Allahabad.
- DAE SSPS 2017 (62nd DAE Solid State Physics Symposium), December 26-31, 2017, Organized by BARC, Mumbai, India.
- IConAMMA 2018 on International Conference on "Advances in Materials and Manufacturing Applications, August 16- 19, 2018 organized by Department of Mechanical Engineering, Amrita School of Engineering, Bengaluru Campus.
- DAE SSPS 2018 (63rd DAE Solid State Physics Symposium), December 18-22, 2018, Organized by Guru Jambheshwar University, Hisar, Haryana.

- Modern Approaches in Science & Technology (ICMAST 2022), April 4, 2020, Organized by GD Goenka University, Haryana.

Presentation on National Conference:

- 23 National Conference on Liquid Crystals (NCLC-2016), December 07-09, 2016, Organized by Department of Applied Physics, Indian Institute of Technology (ISM), Dhanbad, India.
- XXXIII Annual IAPT Convention and National Symposium, October 28-31, 2018, Organized by Department of Applied Physics, Ranchi University, Ranchi.

Training / Internship/ FDP/ Webinar Attended:

- Summer project on: Synthesis and Characterization of ZnCuO and ZnNiO Thin Film, 10th May to 3rd July 2014, at National Institute of Foundry and Forge Technology, Hatia, Ranchi.
- Summer project on: Synthesis and Characterization of Zinc Oxide (ZnO) Aerogel, August 2014 to May 2015, at IIT(ISM) Dhanbad.
- 1st international Faculty Development Program (FDP) on “Application of ICT Based Digital Technology on Classroom Management for Enhancing Teaching Learning Process”, From 25- 27 May 2020 at GGSESTC Chas, Bokaro.
- 1st International Conference on “Application of Digital Technology on Information Communication Technology (ICT) Based Teaching Learning Process (AODTOICTBTLP-2020), From 25- 27 May 2020 at GGSESTC Chas, Bokaro.
- Webinar on Role of Technological Institutions for Atmanirbhar Bharat by State Project Implementation Unit-Uttar Pradesh on 9th July 2020.
- 2nd International Webinar/FDP on “Impact of Block Chain Technology and Management in COVID-19” From 17- 18 August 2020 at GGSESTC Chas, Bokaro.

Fellowships and Awards:

- “A” Certificate in National Cadet Corps (NCC) by Ministry of Defence, Government of India in 2006.
- Meritorious Award by Aloysius Old Boys Association (AOBA) in 2008.
- Special Meritorious Award by Dr. Ambedkar National Merit Award in 2011.
- Junior Research Fellow by Indian Institute of Technology (ISM), Dhanbad in (2015-2017).
- Senior Research Fellow by Indian Institute of Technology (ISM), Dhanbad in (2017-2019).

Reviewer of Journals:

- Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Elsevier (SCIE).
- ACS Applied Engineering Materials, ACS (SCIE).

External Expert/Examiner:

- M.Sc. Physics Dissertation (SEM-IV), Department of Physics, DSPMU Ranchi.
- B.Sc. Physics Practical Examination (SEM-IV), Department of Physics, DSPMU Ranchi.

Teaching Experience:

2022- Till Date:	Teacher and mentor of B.Tech. (SEM-I, II, IV) students, IIIT Ranchi
2021-2022:	Teacher and mentor of B.Sc. (SEM- I) and M.Sc. (SEM- I) students, Department of Physics, DSPMU, Ranchi.
2020-2021:	Teacher and mentor of B.Sc. (SEM- III, IV, V, VI) and M.Sc. (SEM- I, II) students, Department of Physics, DSPMU, Ranchi.
2019-2020:	Teacher and mentor of B.Tech. (Engineering Physics I/II) students, at GGSETC Bokaro.
2019-2020:	Teacher and mentor of B.Tech., B.Sc. and M.Sc. students, Department of Physics, K.K. University, Bihar Sharif.
2016-2017:	Teaching Assistant for Preparatory students, Department of Physics, IIT-ISM Dhanbad.

- 2015-2019: Teaching Assistant in taking tutorials and evaluation of assignments for B.Tech. Engg. Physics, Department of Physics, IIT-ISM Dhanbad
- 2015-2019: Teaching Assistant in taking lab classes in B.Tech. Integrated M.Sc./M.Sc. Tech and M.Sc. students, Department of Physics, IIT-ISM, Dhanbad.

Subjects Taught in Even & Odd Semester:

- Electrostatics and Magnetism
- Analog Electronics and Application.
- Statistical Mechanics.
- Electromagnetic Theory
- Electronics.
- Solid State Physics.
- Quantum Mechanics.
- Semiconductor Physics.
- Mechanics
- Laser
- Engineering Physics
- Electrical Technology
- Environmental Science and Green Technology

Ph.D. Scholar Supervised (Co-Guide): 02

- Mr. Umashankar Das- “Polymer nanocomposites for the application of electron transport/emissive layer in OLED devices” (Awarded)
- Mrs. Rimpi- “Organic-inorganic nanocomposites for the application for electron transport layer (ETL) in optoelectronic device application.” (Awarded)

M.Tech./M.Sc. Students Supervised: 06

- Mr. Ravi Ranjan Sharma- Dissertation on Superconductivity.
- Mr. Rajkumar Oraon- Dissertation on on Solar cells.
- Mr. Shubhankar Shit-. Dissertation on Laser.
- Miss Ruby Kumari- Dissertation on Battery.
- Mr. Shahid Ansari- Dissertation on Laser a noon to modern era.
- Miss Sapna Kumari Manjhi- Dissertation on Solar Cells.

Computer Skills:

- MS-Office: MS-Word, MS-Excel, MS-PowerPoint, Latex.
- Operating Systems: Linux, Windows, DOS, Mac.
- Programming and software: JAVA, C, C++, FORTRAN 77, 95, MATLAB, ORIGIN, CIE, etc.
- Certificate course in DCA+DTP from June 2012 to June 2013 at ESS EMM Computers, Ranchi.
- Certificate course in C, C++, MS-office, MS-Dos, Logo in 2008 at St. Aloysius' H/S, Ranchi.

Any Other Information:

- **Academic achievements:** ISM M.Sc. (Applied physics) Entrance Exam. (2013): - 1st.
- **Strength:** Punctuality, consistency in work, sincere, hard working.
- **Interest:** Reading books, listening music, playing cricket.
- Member of Indian Association of Physics Teachers (IAPT).
- Member of International Association of Advanced Materials (IAAM).
- Member of BOS, Department of Physics, DSPMU, Ranchi.

References and Academic Advisor:

- Prof. (Dr.) Ram Bilash Choudhary (**Ph.D. Supervisor**)
Associate Professor
Department of Physics
IIT-ISM Dhanbad
Email ID: - rbchoudhary@iitism.ac.in
Phone No.: - 9471191381

- Prof. (Dr.) Bobby Kachappilly Antony
Professor
Department of Physics
IIT-ISM Dhanbad
Email ID: - bobby@iitism.ac.in
Phone No.: - 9470194795

- Prof. (Dr.) Josemon Jacob
Professor
Department of Materials Science and Engineering
Indian Institute of Technology Delhi
Email ID: - jacob@mse.iitd.ac.in
Phone No.: - +91-11-2659- 1425

Declaration:

I hereby declare that all the information given above is true to my knowledge.

Date: Ranchi
Place: 20/03/2024


(Dr. Rohit Kandulna)