

Prof. Ram Bilash Choudhary (Associate Professor)

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Home Page:

<https://sites.google.com/view/ncml-research-group/home-page?pli=1>

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Google Scholar ID

🔍 <https://www.researchgate.net/profile/Ram-Choudhary-7>

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6637796700

Education

PH.D. (Faculty of Engineering & Technology) Punjab Technical University Jalandhar & IIP (CSIR) Dehradun, INDIA	Dec. 2006
M.TECH. (Surface Science & Tribo-Engineering) National Institute of Technology (NIT), Jamshedpur INDIA	June 1994
M.SC. (Physics with Specialization in Electronics) Department of Physics, Ranchi University Ranchi, INDIA	June 1990
B.SC. (Hons.) (Physics Honours, Chemistry and Maths) Department of Physics, LNMU Kameshwar Naagar Darbhanga, INDIA	May 1985

Research Interests

- ❖ Conductive Polymer Synthesis through Cationic/Anionic, Group Transfer Polymerization, Ziegler Natta, Free Radical, and Oxidative Step Growth Techniques tailored for Phase, Luster, Shape, Size, and Structural Modifications.
- ❖ Synthesis and Fabrication of Polymer Derived Organic and Inorganic Binary/Ternary Nanostructured Active Materials (ETL/ EML/ HTL) for their broad Applications in Organic PVs, Organic LEDs and Organic Sensors.
- ❖ Fabrication and Synthesis of Polymer Derived Organic-Inorganic Nanostructured Composites for its extensive Applications in Dielectric Capacitors, Ultracapacitors and Electrochemical Capacitor's Electrodes.
- ❖ Fabrication and Synthesis of the Organic Semiconductors π -Bonded Molecules/ Polymers as Conductive Organic Materials for their Applications in BJTs, JFETs, OFETs, OLEDs, OPVs and OSCs as well.
- ❖ Fabrication and Synthesis of Green Supercapacitor Electrode Materials from Porous Carbonic, Bio-Wastes, Agriculture-Wastes, Non-Edible Forest Agro-Products and Industrial Effluents for Ultracapacitors.
- ❖ Fabrication and Synthesis of the Graphenes, MXenes, CNTs and SVPs Derived Electrode Materials for Metallic Ion (*Li-Ion* & *Na-Ion*) Batteries widely used in Energy Storage Devices and Energy Storage Technology.
- ❖ Fabrication and Synthesis of the Green Precursors for Renewable and Sustainable Energy Storage Materials aimed towards their Applications in the Energy Storage Devices and Energy Storage Technology as well.
- ❖ Electrical, Electronic, Thermal and Photophysical Investigation of Polymer Derived Nanocomposite Materials for their Applications in Organic Sensors, Photovoltaic Cells and Organic Light Emitting Diodes.

Professional Experience

Teaching (Ph.D., M.Tech. & B.Tech. Level) ~26 Years

- ❖ April 2021- To Continue: Associate Professor, Indian Institute of Technology, IIT (ISM) Dhanbad (JH) India 06 Years
- ❖ May 2010 - March 2021: Assistant Professor, Indian Institute of Technology, IIT (ISM) Dhanbad (JH) India 11 Years
- ❖ September 2004-April 2010: Assistant Professor, Haryana Engineering College, Yamunanagar (HR) India 06 Years
- ❖ December 2001-August 2004: Senior Lecturer, Institute of Engg. & Emerging Technology Solan (HPTU) Shimla India 03 Years

Research (IIT, NIT, University & CSIR Lab.) ~32 Years

- ❖ May 2010-To Continue: Nanostructured Composite Material Laboratory (NCML) IIT (ISM) Dhanbad, India 17 Years
- ❖ September 2004-April 2010: Research Coordinator Haryana Engineering College Yamunanagar (HR) India 06 Years
- ❖ November 2001-October 2002: Res. Scientist, Chemical Engg. National Institute of Technology Jalandhar India 01 Years
- ❖ January 1994-February 2001: Research Associate, Indian Institute of Petroleum (CSIR Lab.) Dehradun, India 08 Years

Recognitions/ Awards/ Fellowships

- ❖ ISTE Best Teacher Award Conferred in the ISTE Faculty Convention Forum at GGSESTC (Bokaro) 2025
- ❖ Elsevier's Top 2% Researchers from Indian Scientist Award Conferred by Elsevier Society (192934) 2024
- ❖ World's Top 2% Research Scientist Award Conferred by Stanford University, United Kingdom (UK) 2022
- ❖ Institute IMT Research Award (Indra Mohan Thapar Research Award) to the NCML Research Group 2022
- ❖ Prime Minister Research Fellowship Award, Govt. of India, New Delhi to the NCML Research Group 2020
- ❖ CEFIPRA Award (Raman-Charpak Fellowship, France) Lille University to the NCML Research Group 2019
- ❖ Institute IMT Research Award (Indra Mohan Thapar Research Award) to the NCML Research Group 2018
- ❖ Senior Contributing Editor Award, Colour Publication (Corporate Journal) Old Prabha Devi Mumbai 2005
- ❖ CSIR Research Associate Award, Indian Institute of Petroleum (IIP-CSIR Lab.) Mohkampur Dehradun 1995
- ❖ Jharkhand State Merit Fellowship, Department of Physics, Ranchi University (RU) Ranchi (Jharkhand) 1986

Research Projects & Consultancies

- ❖ DST-ANRF (SERB): Trend and Advances in Reforming Green Energy Technologies (TARGETs-2026) ~Rs. 24.48 L
- ❖ DST-SERB: Robust Supercapacitive Performance of Nanostructured Matrix for Battery Replacement ~Rs. 29.97 L
- ❖ FRS (IIT-ISM): An Investigation on the Electrical and Electronic Properties of the Conductive Polymers ~Rs. 7.00 L
- ❖ TEQIP-III Project: Carbon Based Nanocomposites for Electrical, Electronic and Optoelectronic Devices ~Rs. 2.00 L
- ❖ SERB (SEMAD-2019): Sustainable Energy Material & Devices, Brain Storming STC, DST New Delhi ~Rs. 3.00 L
- ❖ ONGC (REMTAI-2016): Renewable Energy Materials in Academia & Industry, T. Bhawan, Dehradun ~Rs. 1.86 L
- ❖ MNRE (ANREMT-2015): Advances in New & Renewable Energy Material & Technology, New Delhi ~Rs. 5.00 L
- ❖ MSTRCS (NAIR-2008): Nanotechnology Applications in Industry & Research, Haryana Chandigarh ~Rs. 3.45 L

Deputation Abroad (Academic Visits)

- ❖ Faculty of Science (REN-2023), United Science Group (USG), Mercure (CDG) Paris, FRANCE October 2023
- ❖ Faculty of Science (AFM-2017), N. Campus University of California, Los Angeles (UCLA) USA August 2017
- ❖ Faculty of Science (EMR-2015), Complutense Public University, Madrid (CUM) Alcala SPAIN February 2015
- ❖ Faculty of Science (GSTF-2013), National University of Singapore (NUS) Forum SINGAPORE February 2013

Ph.D. Supervisions (Sole Guidance)

PH.D. Awarded: Twelve (13)

- Dr. Sarfaraz Ansari: Transition Metal Oxides (TMOs) based Polymeric Nanohybrid B/T Materials for Supercapacitor Applications. Awarded: 2025
- Dr. Jayanta Bauri: Investigation on Optoelectronic Features of gC_3N_4 and PCz-Based Nanocomposites As Emissive Layer Material for Blue OLED Application. Awarded: 2025
- Dr. Sanjeev Kumar: Stannic Oxide Based Conducting Polymer Nanocomposites as Emissive Layer Materials for OLED Application. Awarded: 2024
- Dr. Debashish Nayak: Conductive Polymer Based ZnS Composites as Hole Transport and missive Layers for Polymer Light Emitting Diodes Awarded: 2024
- Dr. Gobind Mandal: Investigations on Conductive Polyaniline Derived Nanocomposites as Electron Transport Layer Materials for OLED Applications. Awarded: 2024
- Dr. (Mrs.) Bela Purty: Carbonic and Non- Carbonic Filler Reinforced Polymeric Composite as Electrode Materials for Supercapacitor Applications. Awarded: 2021
- Dr. Rajinder Singh Gill: Organic-Inorganic Hybrid Materials for their Application as Active Layer in Solar Cells. Awarded: 2021
- Dr. Ajeet Kumar Verma: Investigation on Polymeric Nanohybrid Materials for the Optoelectronic Device Applications. Awarded: 2021
- Dr. Mandira Majumder: Polypyrrole and Polyindole based Electrode Materials for Supercapacitor Applications. Awarded: 2021
- Dr. Rohit Kandulna: Conductive Polymer-based Nanocomposites as Electron Transport Layer for the Organic Light Emitting Diodes. Awarded: 2020
- Dr. Anukul Kishor Thakur: Organo-Inorganic Nanohybrid Electrode Materials for the Supercapacitor Applications Awarded: 2017
- Dr. Pranabi Maji: An Investigation on PMMA based Polymeric Nanocomposites for the Energy Storage Applications. Awarded: 2017
- Dr. Malati Manjhi: An Investigation on the Polyaniline (PANI) based Nanocomposites for Energy Storage Applications. Awarded: 2017

PH.D. Ongoing: Eight (07)

Mr. Swagata Banerjee: Solid State Batteries (SSBs) for Energy Storage Devices and Environmental Protection	Pursuing 2022
Mr. Batistalang Myrthong: Conducting Polymer-based Nanocomposite Materials for the Supercapacitor Application	Pursuing 2022
Mr. Sandeepan Dutta: Polymeric Nanocomposites as Electrode Materials for the Supercapacitor Application.	Pursuing 2023
Mr. Abhishek Kumar: Polymer Derived Conducting Nanocomposite Materials for the Optoelectronic Device Applications.	Pursuing 2023
Mr. Pappu Kumar: Bio Resource Carbon Materials as Potentially Efficient Electrode for Supercapacitor Applications.	Pursuing 2024
Mr. Suraj Kumar: Micro-carbon Based Electrochemical Materials and Supercapacitive Devices.	Pursuing 2025
Mr. Prasad Dhali: Organo-Inorganic Optoelectronic (Photo-Sensor) and Photovoltaic ((Solar) Devices.	Pursuing 2025

Research Collaborations (International)

- ❖ Faculty of Science and Technology, Meijo University Tempaku-Ku Nagoya, Aichi 468-8502 Japan
- ❖ Fachbereich Physik, Universitat de Hamburg, UHH-MIN Jungiusstraße 9-11, 22607 Germany
- ❖ Faculty of Physics and Astronomy, College of Science; King Saud University (KSU), Saudi Arabia
- ❖ Faculty of Chemistry, University of Lille, CNRS France; Supercapacitor (Electrochemical Energy)
- ❖ Faculty of Engineering, Malaya University, KLMPR Malaysia; Surface Science & Interfacial Engg.
- ❖ Lodz University of Technology OPUS, NCN (OSF) Poland, Organic Optoelectronics (LED-QLED)

Research Collaborations (National)

- ❖ Department of Chemistry, Indian Institute of Technology-Banaras Hindu University (BHU) Varanasi
- ❖ Chemical & Material Science Division, Indian Institute of Petroleum (IIP) Mohkampur, Dehradun
- ❖ Functional Materials Group Department of Physics, National Institute of Technology (NIT) Rourkela
- ❖ Energy-Environment Centre, Department Chemical Engg. National Institute of Technology Jalandhar
- ❖ Centre of Excellence (Energy Storage) Department of Energy Scie. & Engg. Central University Ranchi
- ❖ Department of Physics, Muzaffarpur Institute of Technology Laxmi Chowk Brahmapura, Muzaffarpur
- ❖ Centre for Advanced Research in Polymeric Materials Laboratory (CARPM Lab.), CIPET Bhuvneshwar

Most Recent Research (SCI) Publications

Carbon Letters	2026	https://doi.org/10.1007/s42823-025-00992-6
Material Science	2025	https://doi.org/10.1007/s10853-025-11484-3
Optical Materials	2025	https://doi.org/10.1016/j.optmat.2025.117183
Materials Today Chemistry	2025	https://doi.org/10.1016/j.mtchem.2025.102711
Materials Science Materials in Electronic	2025	https://doi.org/10.1007/s10854-025-14407-9
Journal of Energy Storage	2025	https://doi.org/10.1016/j.est.2025.116182
Molecular Structure	2025	https://doi.org/10.1016/j.molstruc.2024.140471
Materials Research Bulletin	2025	https://doi.org/10.1016/j.materresbull.2024.113277
Future Batteries	2024	https://doi.org/10.1016/j.fub.2024.100010
Optical Materials	2024	https://doi.org/10.1016/j.optmat.2024.116120
Materials Science and Engineering-B	2024	https://doi.org/10.1016/j.mseb.2024.117650
Materials Science and Engineering-B	2024	https://doi.org/10.1016/j.mseb.2024.117271
Materials Science and Engineering-B	2024	https://doi.org/10.1016/j.mseb.2023.117118
Journal of Molecular Structure	2024	https://doi.org/10.1016/j.molstruc.2023.136199
Spectrochimica Acta Part-A	2023	https://doi.org/10.1016/j.saa.2023.123099
Optical Materials	2023	https://doi.org/10.1016/j.optmat.2023.114379
ACS Omega	2023	https://doi.org/10.1021/acsomega.3c03732
Optics & Electron	2023	https://doi.org/10.1016/j.ijleo.2023.171393
Spectrochimica Acta Part-A	2023	https://doi.org/10.1016/j.saa.2022.122162
Journal of Energy Storage	2023	https://doi.org/10.1016/j.est.2022.106446
Physical Chemistry Chemical Physics	2023	https://doi.org/10.1039/D3CP02637J
Physical Chemistry Chemical Physics	2023	https://doi.org/10.1039/D2CP03847A
Materials Science in Semiconductor Proc.	2023	https://doi.org/10.1016/j.mssp.2022.107205
Journal of Materials Science	2023	https://doi.org/10.1007/s10853-023-08572-7
Microelectronics Reliability	2023	https://doi.org/10.1016/j.microrel.2023.114959
Spectrochimica Acta Part-A	2023	https://doi.org/10.1016/j.saa.2023.123099
Journal of Energy Storage	2022	https://doi.org/10.1016/j.est.2021.103912
Materials Science in Semiconductor Proc.	2022	https://doi.org/10.1016/j.mssp.2021.106322
Polymer Bulletin	2022	https://doi.org/10.1007/s00289-021-03971-9
Optical Materials	2022	https://doi.org/10.1016/j.optmat.2022.112736
Inorganic Chemistry Communications	2022	https://doi.org/10.1016/j.inoche.2022.109824
Materials Science in Semiconductor Proc.	2022	https://doi.org/10.1016/j.mssp.2022.107000

For viewing complete list of the research publications, please click the link → [List of the Publications](#)

Academic & Research Outputs

PH.D. Degree Awarded-13 (Thirteen); PH.D. Currently Ongoing-07 (Seven); Total PH.D. Supervision-20 (Twenty)
SCI Journals: 139; Corporate Journals-52; Conf. Proceedings-26; Book-1; Book Chapters-9; Patents-2
B.Tech. Project Dissertation Thesis-4; M.Tech. Project Dissertation Thesis-2, M.Sc. Project D. Thesis: 28

Professional Memberships

- ❖ Indian Technical Education Society (ITES) Life Member, New Delhi
- ❖ American Chemical Society (ACS) Omega, United States of America (USA)
- ❖ Global Science & Technology Forum (GSTF) Life Member, Singapore
- ❖ Tribology (AFs/ AWs/ EPs) Society of India (TSI), Life Member, Hyderabad
- ❖ Electrochemical Society of India, Life Member, Indian Institute of Science, Bangalore
- ❖ Laser Spectroscopy Society of India, Life Member, Banaras Hindu University, Varanasi

Administrative Responsibilities

- ❖ Department Faculty Recruitment Committee, Department of Physics, IIT (ISM) Dhanbad (JH)
- ❖ Hostel Superintendent (Hostel Warden), Topaz Residential Hostel, IIT (ISM), Dhanbad (JH)
- ❖ Faculty In-Charge, B. Tech. (Preparatory), Department of Physics, IIT (ISM), Dhanbad (JH)
- ❖ Faculty In-Charge, Preparatory (SC/ST/EWS) Department of Physics, IIT (ISM) Dhanbad (JH)
- ❖ University Flying Squad, B.E./B.Tech Semester Exams., Kurukshetra University Kurukshetra (HR)
- ❖ Centre Superintendent, B.E./ B.Tech. Semester Exams., Kurukshetra University, Kurukshetra (HR)
- ❖ Research Coordinator, Centre for Advanced Technology (CAT) Haryana Engineering College (HR)

Guest Speakers/ Invited Talks

- ❖ Fabrication of Carbonaceous Materials and Energy Storage Devices, MMTTC Refresher Course, IIT Dhanbad (05.08.2025)
- ❖ Biomass/ Nature - Inspired Viable Electrode Materials for Electrochemical Energy Devices, AC2PM IIT Patna (08.12.2024)
- ❖ Nature-Inspired Carbon Electrode Materials as Green Precursors for Green Supercapacitors, E2M IIT Indore (12.07.2024)
- ❖ Mounting Horizon of Green Energy Material for Energy Storage Devices; REN-2023, Micurus Paris, France (25.10.2023)
- ❖ Recent Advances in Energy and Information Storage Systems; Webinar, ATAL-FDP-2020, GEC Bikaner (RJ) (01.09.2020)
- ❖ The Journey of Energy and Information Storage Modes; Webinar, CSIR-SRTP-2020, ACBS Shirmour (HP) (05.07.2020)

- ❖ Challenges and opportunities in polymeric nanohybrid material for EOES devices; Web-AKSU Satna (MP) (03.07.2020)
- ❖ Geothermal energy: A reliable source of renewable and alternate energy system; (FDP-TEQIP) GEC Bikaner (18.12.2019)
- ❖ University education and research contribution to the energy security; ARES (FDP-TEQIP-III) GEC Bikaner (19.12.2019)
- ❖ Global Perspectives in Energy & Information Storage Materials & Devices; (ICC-2019), DOC-GEC Bikaner (15.10.2019)
- ❖ Energy & Information Storage Devices: Perspective in Materials & Technologies; (TEQIP) ABVIET Shimla (16.08.2019)
- ❖ Nano-Bio Materials & Bioluminescent Properties: Optics-Organisms; Appl. Physics (FDC-4), IIT Dhanbad (02.06.2018)
- ❖ Polymers for Electronic & Optoelectronic Devices: Recent Advances; Appl. Physics (FDC-3), IIT Dhanbad (01.05.2017)
- ❖ Polymeric Electronic Materials and High Frequency Energy Harvesting; Electronics (FDC-2), IIT Dhanbad (07.01.2017)
- ❖ Nano Filler Reinforced Polymeric Binary/Ternary Nanocomposites; Department of Physics, IIT Patna, BR (28.12.2016)
- ❖ Non-linearity in Carbon & Polymer Based Composite Materials; Physics (NDCA-2016) NIT Durgapur, WB (13.07.2016)
- ❖ Polymeric Contamination in Water-Mechanism of Remedial Action; Chemical Engineering, NIT Jalandhar, (21.06.2016)
- ❖ Polymeric Composite Materials & Laser Technology Applications; Appl. Physics (LTAE-16), ISM Dhanbad, (24.05.2016)
- ❖ Geothermal Energy: Green and Renewable Source of Energy; Applied Physics (FDC-1), IIT-ISM Dhanbad, (24.03.2016)
- ❖ Polymeric Nanocomposite Materials: Market & Technology; Mechanical Engineering, IIT-ISM Dhanbad, (21.09.2015)
- ❖ Dielectric Spectroscopy of Conductive Polymeric Materials; Applied Sciences, MMMUT Gorakhpur (UP) (27.03.2015)
- ❖ Polymeric Nanocomposite Materials & Energy Conversion Device; Physics, Jubilee College, Hazaribagh, (09.01.2015)
- ❖ Nanomaterials and Nanotechnology: The Current R & D Status; Department of Physics, IIT Roorkee, (22.02.2008)
- ❖ Functional Nanomaterials & its Applications in Electronic Devices; Department of Physics, IIT Roorkee, (26.05.2005)
- ❖ Recent Advances in Laser Technology and its Useful Applications; Applied Science, NITTTR Chandigarh, (16.03.2004)

Reviewer for Peer View SCI Journals

- ❖ Journal of Power Sources (JPS) Elsevier Publication
 - ❖ Journal of Energy Storage (EST) Elsevier Publication
 - ❖ Journal of Optical Materials (OM) Elsevier Publication
 - ❖ Diamond & Related Materials Elsevier Publication
 - ❖ Applied Energy Materials (AEM) ACS Publication
 - ❖ Journal of Scientific Report (SCREP) Nature Publication
 - ❖ Journal of Chemical Engg. (JCHE)) Springer Publication
 - ❖ Journal of the SN Applied Science, Elsevier Publication
 - ❖ Journal of Polymer Bulletin (JPBLT) Springer Publication
 - ❖ Journal of Applied Surface Science, Elsevier Publication
 - ❖ Journal of Material Letters (JMTLET) Elsevier Publication
 - ❖ Journal of Ceramic International (JCI) Elsevier Publication
 - ❖ Journal of Synthetic Metals (SYNMET) Elsevier Publication
 - ❖ Journal of Polymer Research (JPOL), Springer Publication
 - ❖ Bulletin of Electrical Engineering (BEE)) Springer Publication
 - ❖ Journal of Electro-analytical Chemistry, Elsevier Publication
 - ❖ Journal of Alloys and Composite (JALCOM) Elsevier Publication
 - ❖ Journal of Material Research Bulletin (MRB) Elsevier Publication
 - ❖ Journal of Material Science Electronics (MSE) Elsevier Publication
 - ❖ Journal of Processing and Application of Ceramics (PAC) Publication
 - ❖ Journal of Nanostructures in Chemistry (JNSC), Springer Publication
 - ❖ Journal of ACS Applied Energy, American Chemical Society Publication
 - ❖ International Journal for Light and Electron Optics, Elsevier Publication
 - ❖ International Journal for Physics & Chemistry of Solid, Elsevier Publication
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