Dr. Ramesh Chandra

Nanomaterials synthesis and Characterization || Electrochemistry || Materials Science || Nanotechnology || Green synthesis || MOFs materials & composite || Waste-management

RESEARCH INTEREST

Metal-Organic Frameworks (MOFs), Nanoparticles (NPs), Novel metal NPs sensitized MOx and their NPs@MOFs composites for the various applications such as Catalysis, Photocatalysis, Biomass conversion, Supercapacitor, Gas storage and Biomedical applications.

DOCTORAL RESEARCH TITLE

MODIFIED METAL ORGANIC-FRAMEWORKS: MULTI-CORE-SHELL COMPOSITES AS ADSORBENTS AND PHOTOCATALYSTS

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PRESENT ADDRESS: Department of Chemistry, University of Lucknow, Lucknow, India

LANGUAGES KNOWN

English, Hindi

Work Experience

Presently I am working as an Assistant Professor in the Department of Chemistry, University of Lucknow, Lucknow, India, from July 2022 to till now.

- Postdoctoral fellow from 29-07-2020 to 08-06-2022 at the Department of Chemistry Indian Institute of Technology Kanpur, India.
- Research Associate fellow from 08-01-2020 to 30-06-2020 at the Structural Engineering Division, CSIR-CBRI, Roorkee.
- Senior research fellow from 05-08-2016 to 04-08-2019 at the Department of Chemistry, Indian Institute of Technology Roorkee, India.
- Junior research fellow from 05-08-2014 to 04-08-2016 at the Department of Chemistry, Indian Institute of Technology Roorkee, India.
- Teaching assistantship for two years (06 months for Undergraduate (UG) and one and half years for postgraduate (PG)) at the Department of Chemistry, Indian Institute of Technology Roorkee, India.

Latest Education

Doctor of Philosophy in Chemistry from Indian Institute of Technology Roorkee, Roorkee, India (2014-2019)
M.Sc. Chemistry from Chhatrapati Shahu Ji Maharaj University Kanpur, UP, India. (UP) (2011-2013)

Skills

Sophisticated Instrument handling

- UV-visible Spectrophotometer
- Infra-Red Spectrophotometer
- Fluorescence Spectrophotometer
- UV- Diffuse Reflectance Spectrophotometer
- Cyclic Voltametry
- GC-MS

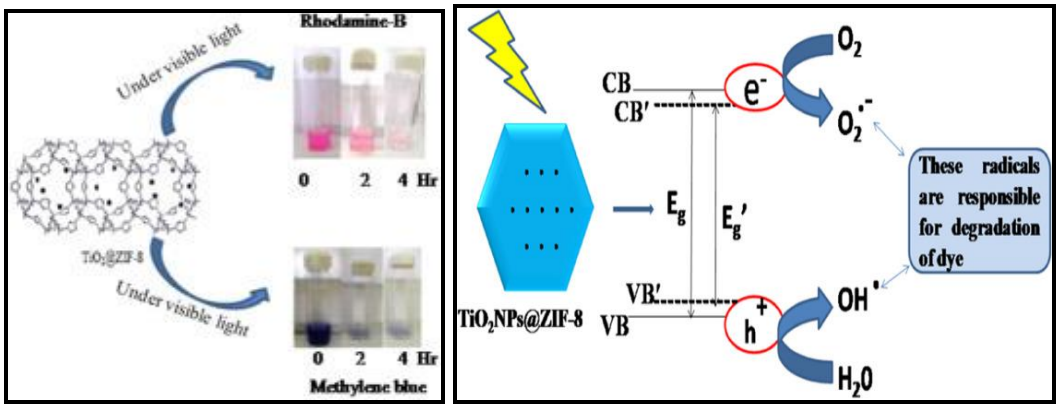
Software Skills

- ChemDraw. Ultra
- Olex2
- OrginPro
- Mercury
- WinGX
- X'Pert High Score Plus

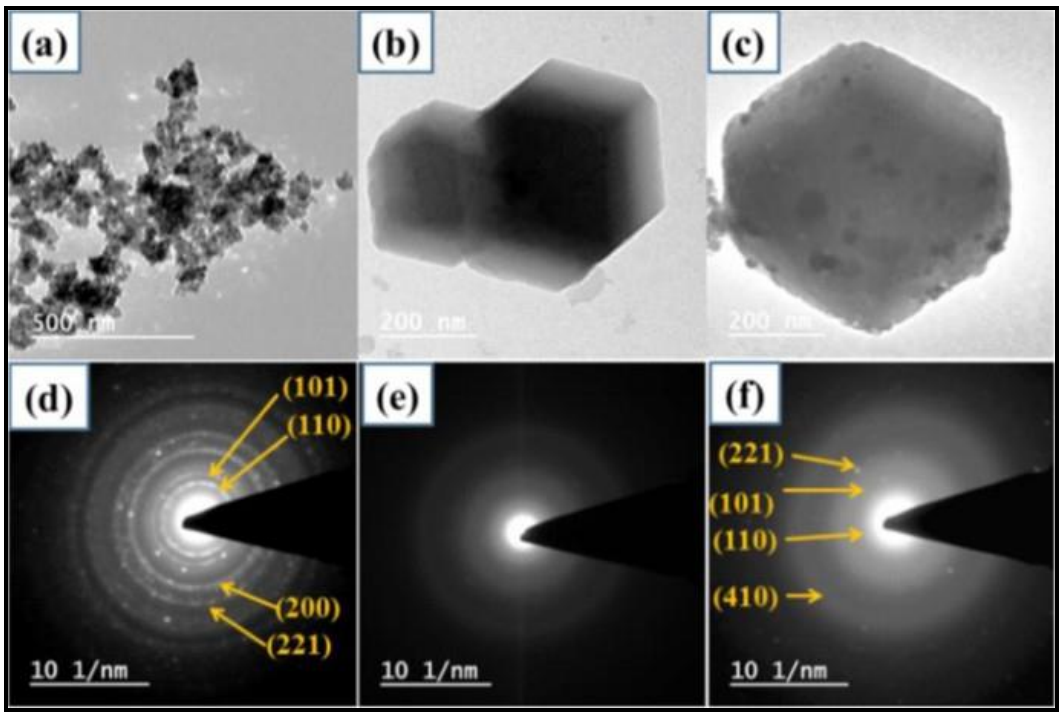
Peer Reviewed Publications

[1] **R. Chandra**, S. Mukhopadhyay and M. Nath. TiO_2@ZIF-8: A novel approach of modifying micro-environment for enhanced photo-catalytic dye degradation and high usability of TiO_2 nanoparticles. Materials Letters, 64, 571-574, 2016. http://dx.doi.org/10.1016/j.matlet.2015.11.018 (**Cite Score 5.6; IF: 2.7; Citation:111, Q1**)

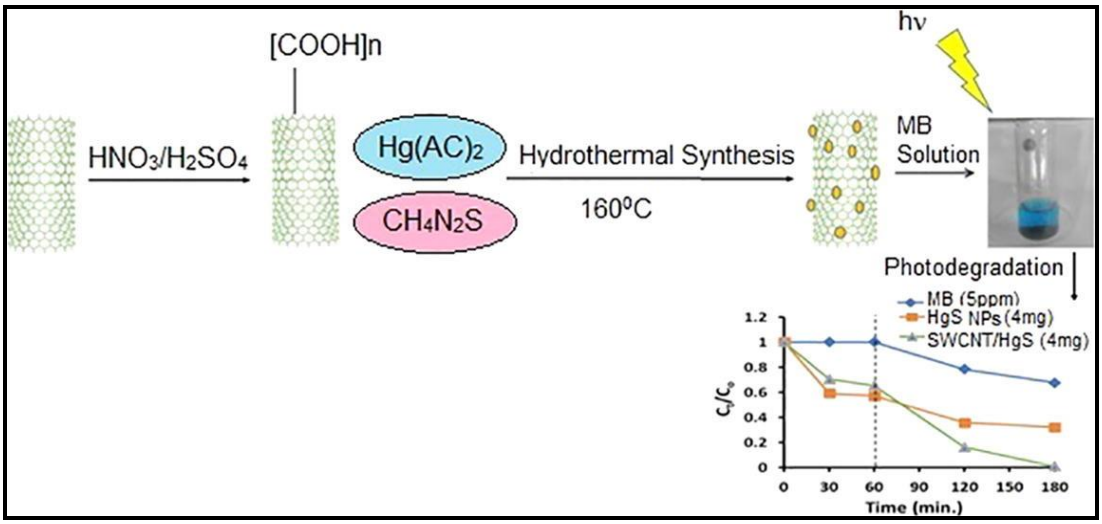
[2] **R. Chandra**, M. Nath. Multi-Core–shell TiO_2NPs@ZIF-8 Composite for Enhanced Photocatalytic Degradation and Adsorption of Methylene Blue and Rhodamine-B. ChemistrySelect, 2, 7711-7722, 2017. DOI: 10.1002/slct.201701195 (**Cite Score 3.3; IF: 1.9; Citation:49, Q2**)



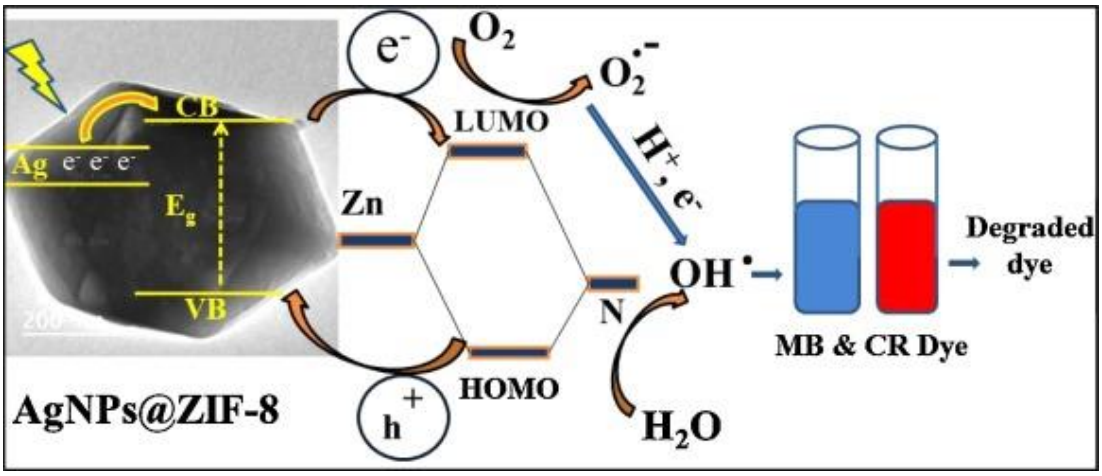
[3] **R. Chandra,** V. Singh, S. Tomar and M. Nath. Multi-core-shell composite SnO_2NPs@ZIF-8: potential antiviral agent and effective photocatalyst for waste-water treatment. Environmental Science and Pollution Research, 26, 23346–23358, 2019. https://doi.org/10.1007/s11356-019-05646-5 (**Cite Score 8.7; IF:NA; Citation:34, Q1**)



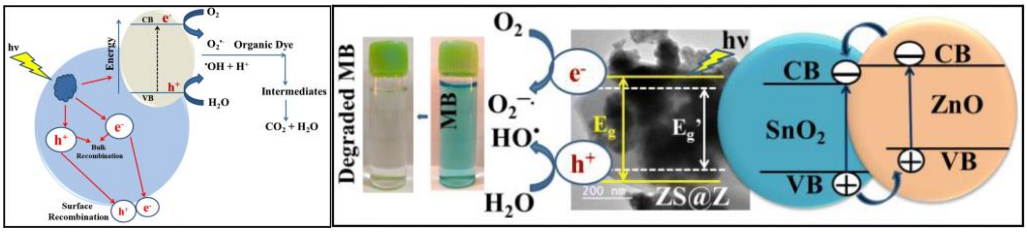
[4] P. K. Saini, N. Kumar, **R. Chandra**, M. Nath and A. K. Minocha. Facile synthesis of novel SWCNT/HgS nanohybrid: An effective photocatalyst for degradation of methylene blue. Materials Letters, 250, 5–8, 2019. https://doi.org/10.1016/j.matlet.2019.04.090 (**Cite Score 5.6; IF: 2.7; Citation:17, Q1**)



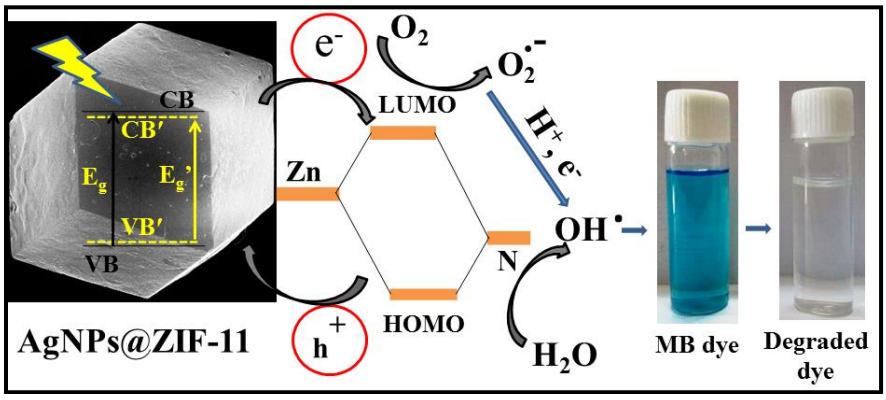
[5] **R. Chandra** and M. Nath. Controlled synthesis of AgNPs@ZIF-8 composite: Efficient heterogeneous photocatalyst for degradation of methylene blue and congo red. Journal of Water Process Engineering, 36, 101266, 2020. https://doi.org/10.1016/j.jwpe.2020.101266 (**Cite Score 10.7; IF: 6.3; Citation:55, Q1**)



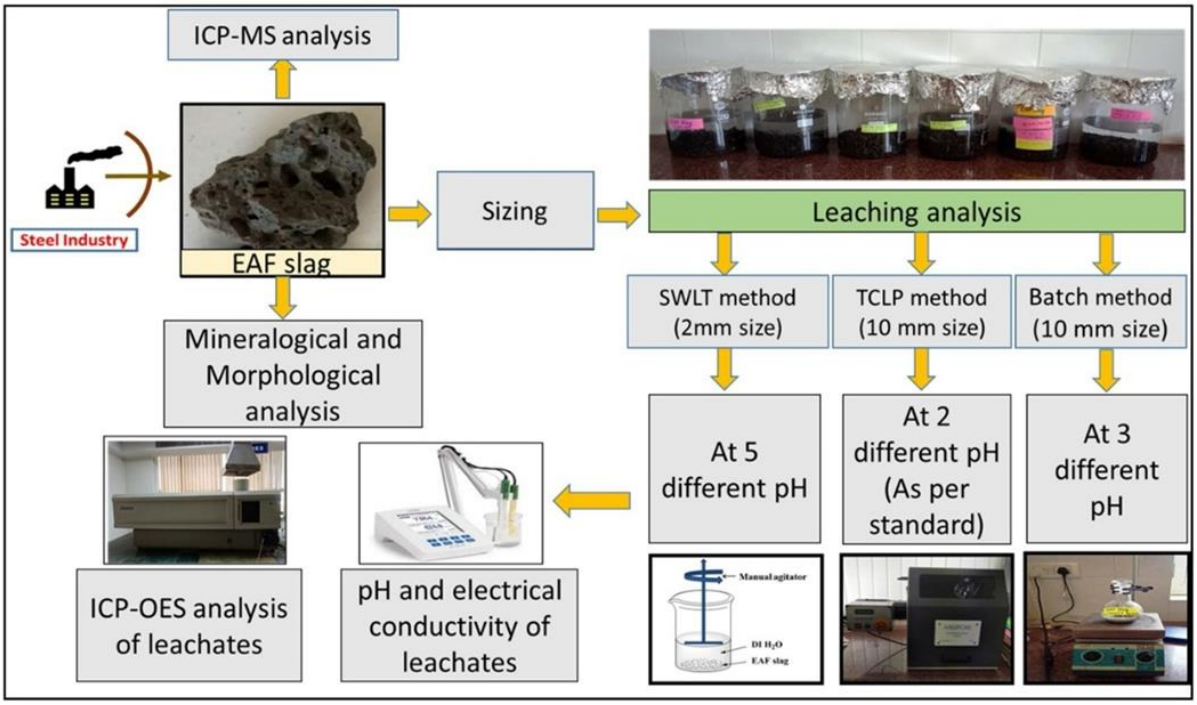
[6] **R. Chandra** and M. Nath. Facile synthesis of ZnO-SnO_2 anchored ZIF-8 nanocomposite: a potential photocatalyst. Environmental Science and Pollution Research, 27, 25103–25118, 2020. https://doi.org/10.1007/s11356-020-08936-5 (**Cite Score 8.7; IF:NA; Citation:11, Q1**)



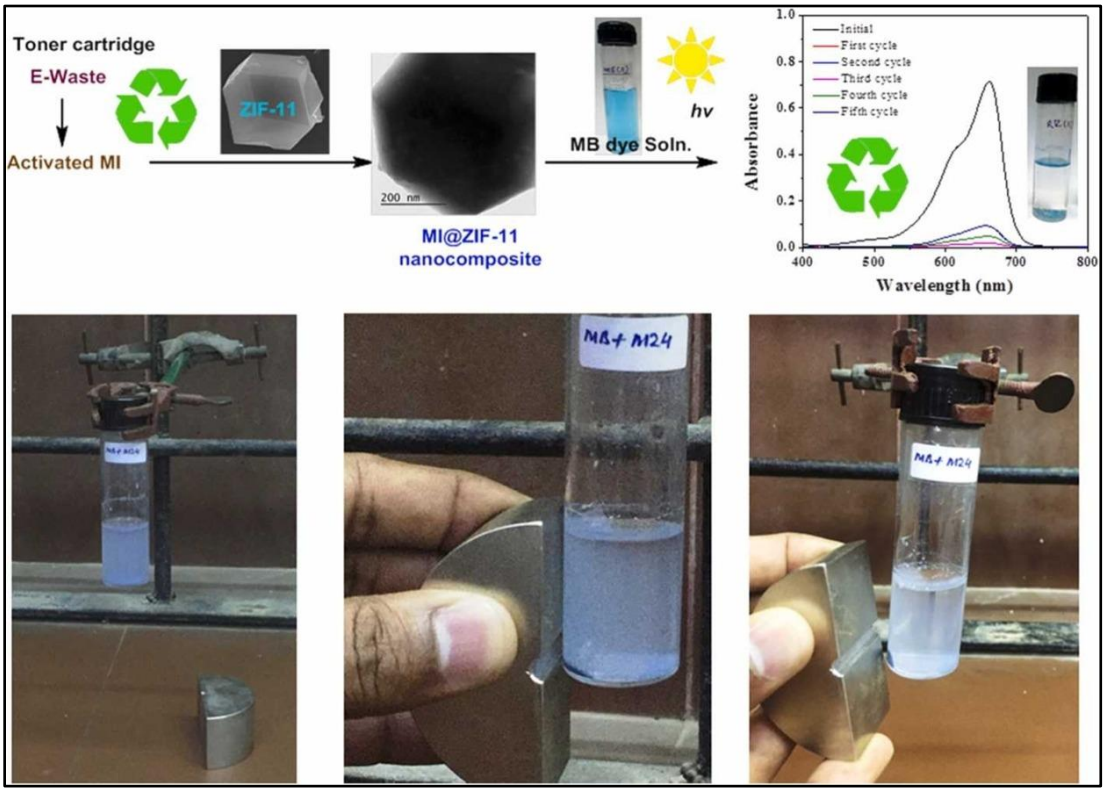
[7] **R. Chandra** and M. Nath. Facile Synthesis of Metal-Organic Framework (ZIF-11) and Ag NPs Encapsulated-ZIF-11 Composite as an Effective Heterogeneous Catalyst for Photodegradation of Methylene Blue. Applied Organometallic Chemistry, 34, e5951, 2020. https://doi.org/10.1002/aoc.5951 (**Cite Score 7.8; IF: 3.7; Citation:18, Q2**)



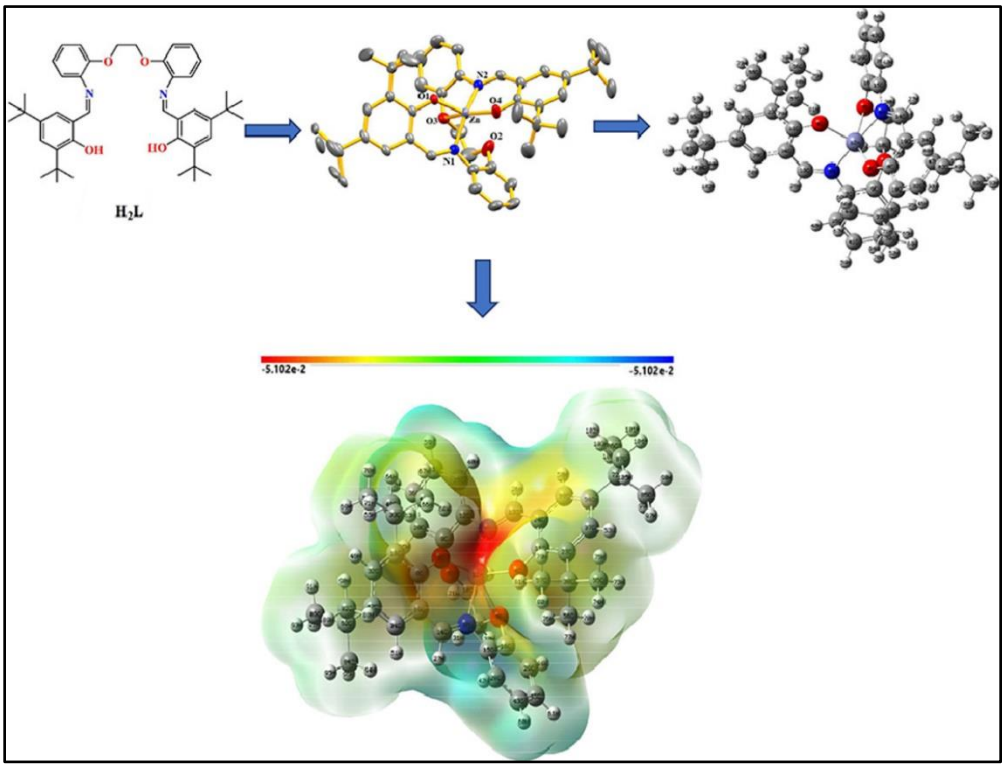
[8] S. K. Singh, P. Vashistha, **R. Chandra** and A. K. Rai. Study on Leaching of Electric Arc Furnace (EAF) Slag for its Sustainable Applications as Construction Material. Process Safety and Environmental Protection, 148, 1315-1326, 2021.
https://doi.org/10.1016/j.psep.2021.01.039. (**Cite Score 11.4; IF: 6.9; Citation:30, Q1**)



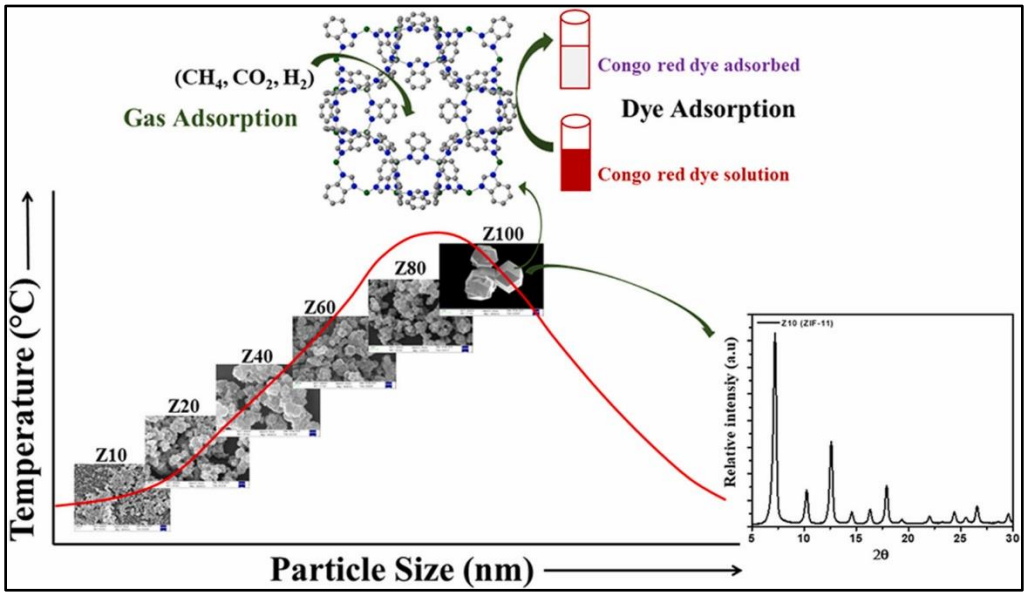
[9] **R. Chandra** and G. Anatharaman. Treating waste by waste: Remediation of methylene blue using core-shell MI@ ZIF-11 nanocomposites from waste toner powder. Process Safety and Environmental Protection, 168, 189-204, 2022.
https://doi.org/10.1016/j.psep.2022.09.076 (**Cite Score 11.4; IF: 6.9; Citation:4, Q1**)



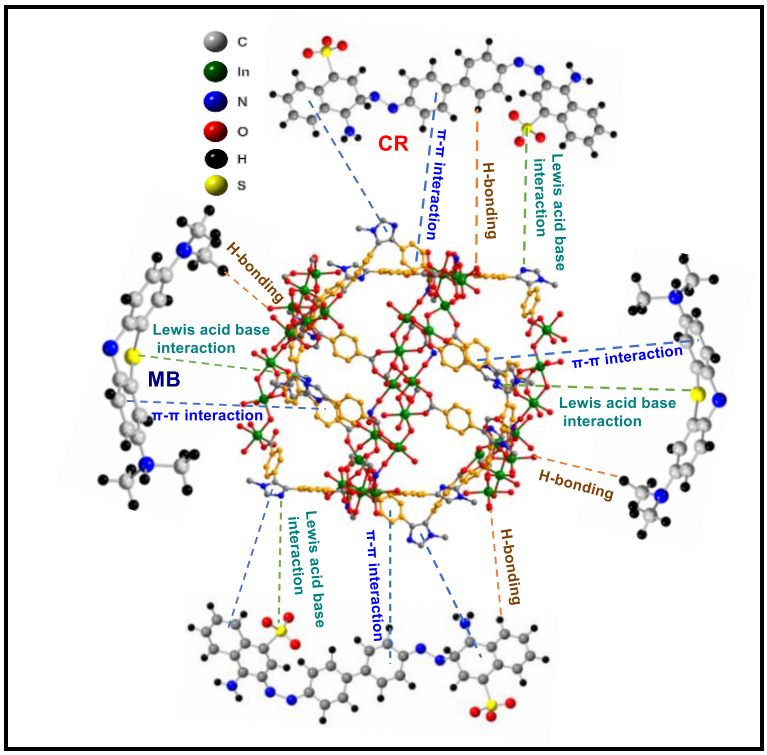
[10] M. Kumar, S. Ahmad, K. Khatoon, S. Javed, R. Singh, **R. Chandra**, H. Arora, A. Ali. Mononuclear Zn^{II} complex of a hexadentateiminophenolate-based O, O, N, N, O, O ligand: Experimental and theoretical vision. Chemical Physics Impact, 7, 100386, 2023. https://doi.org/10.1016/j.chphi.2023.100386 (**Cite Score 2.6; IF: 3.8; Citation:2, Q2**)



[11] P. Bhatia, **R. Chandra** and M. Nath. Controlled synthesis of ZIF-11 with varied particle size: Effective adsorbent for industrial pollutants and host for storage of gaseous CO_2, H_2 and CH_4. Materials Chemistry and Physics, 320, 129413, 2024.
https://doi.org/10.1016/j.matchemphys.2024.129413 (**Cite Score 8.7; IF: 4.3; Citation:NA, Q1**)



[12] **R. Chandra,** A. Rajora, S. Ojha, S. Kumar Sachan, and G. Anantharamana**.** Cuboctahedral In(Imtb)-NanoMOF: Sustainable Adsorbent for Efficient Sequestration of Congo red and Methylene Blue Pollutants and Potential Remediation for Wastewater Treatment. *under communication*.



Book Chapters

[1] P. Bhatia, P. Bansal, **R. Chandra***. "Advancements in Metal Oxide/Polymer Nanocomposite Utilized as Photocatalysts for Wastewater Remediation." In: Verma, A., Gupta, H.S., Sethi, S.K. (eds) Hybrid Composite Materials. Springer, Singapore. **2024** https://doi.org/10.1007/978-981-97-2104-7_8

[2] **R. Chandra***, S. Kumar. "Assessing toxicity of p-chloroaniline: Current research and future perspectives." In: Jaspal Singh, R.D. Kaushik, Malvika Chawla (eds). Hazardous Chemicals: Overview, Toxicological Profile, Challenges, and Future Perspectives. Elsevier. **2025**, 483-492. https://doi.org/10.1016/B978-0-323-95235-4.00014-1.

[3] S. Parveen, **R. Chandra*** and S. Kumar. "Toxicological Aspects of Hazardous V_2O_5: Direction on Human Health, Environment Issue and Future Research." In: Jaspal Singh, R.D. Kaushik, Malvika Chawla (eds). Hazardous Chemicals: Overview, Toxicological Profile, Challenges, and Future Perspectives. Elsevier. 2025, 663-671. https://doi.org/10.1016/B978-0-323-95235-4.00013-X.

Conferences and Poster Presentation

[1] **R. Chandra** and M. Nath. Synthesis of TiO_2@ZIF-8 Composite and its Photocatalytic Activity for Degradation of Methylene Blue. (ICAM 2016): International Conference on Advanced Materials for Energy, Environment and Health at IIT Roorkee, Roorkee, 2016.

[2] **R. Chandra** and M. Nath. Novel Multi-Core-Shell SnO_2NPs@ZIF-8 Composite: A Potential Antiviral Inhibitor for Chikungunya Virus. (Su-Chem2018): International Conference on Sustainable Chemistry for Health, Environmental and Materials at CSIR, IICT Hyderabad, Hyderabad, 2018.

[3] M. Nath and **R. Chandra**. Core-Shell Based Composite SnO_2NPs@ZIF-8 as an Effective Photo-catalyst for Degradation of Methylene. (ICMAT): 9^{th} International conference on materials for advanced technologies, 18-23 June 2017 Suntec, organized by Material Research Society Singapore, Singapore, 2017.

[4] M. Nath and **R. Chandra**. Toluene Assisted Synthesis of ZIF-11 and Multi-Core-Shell AgNPs@ZIF-11 composite: As an Effective Photocatalyst for Industrial Pollutants. International conference in Berlin, Germany, Germany, 2019.

[5] P. Bhatia, **R. Chandra** and M. Nath. Temperature controlled synthesis of ZIF-11: as an efficient adsorbent for organic dyes. Internation conference on modern trends in inorganic chemistry (MTIC), 11-14 December, 2019, Organized by Indian Institute of Technology Guwahati, Guwahati, 2019

[6] **R. Chandra**. Green and Sustainable Approach for the Synthesis of CuO/Ag Nanocomposite for the Environmental Remediation. International Conference on Opto-electronic and Bio-inspired Nanomaterials (ICOBIN-2023), 4-6 December 2023, Organized by Indian Institute of Technology Roorkee, Roorkee, 2023.

Workshops

- Participated in the Annual Technical Festival of Indian Institute of Technology Roorkee-2015,
- Participated in "Workshop on Laboratory Safety -2014" Chemistry Department, Indian Institute of Technology Roorkee
- Participated in "Workshop on *ACS on Campus,* 2018, IIT Roorkee." Chemistry Department, Indian Institute of Technology Roorkee

Name of Referees

Names and complete postal addresses of 3 referees			
	Referee-1 (Ph.D. Supervisor)	Referee-2	Referee-3
Names & complete postal address	Prof. Mala Nath Department of Chemistry IIT Roorkee, Roorkee-247667, India	Prof. G. Anantharaman Department of Chemistry IIT Kanpur, Kanpur-208016, India	Prof. S.K. Singh Sr. Principal Scientist CSIR - Central Building Research Institute, Roorkee
Email:	mala.nath@cy.iitr.ac.in	garaman@iitk.ac.in	sksingh_cbri@yahoo.co.in
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Declaration:

I hereby declare that above mention all information is correct in my knowledge. In the verification of any information being found false or incorrect, then I will be responsible for that.

DATE: 25/11/2024

Ramesh Chandra

PLACE: Lucknow

RAMESH CHANDRA