

## INDU BALA

- OBJECTIVE**
- To achieve excellence in the field of teaching and research through my skills, hard work and sincere efforts and to prove as a valuable asset for my country.
  - To work with a progressive organization of high repute in the field of chemistry to explore the new possibilities.

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- RESEARCH INTEREST**
- Design and synthesis of novel metal complexes and their bio-efficacy.
  - Development of novel fluorescent probes for sensing of potential analytes.

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- RESEARCH PROJECTS DURING Ph.D**
- I have submitted my thesis entitled "*Structural, photophysical and biological characterization of some transition metal complexes derived from tridentate schiff bases*" which includes the synthesis of biologically important metal complexes and their photophysical studies, under the supervision of Prof. Kiran Singh, Department of Chemistry, Kurukshetra University, Kurukshetra.

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- EDUCATIONAL QUALIFICATION**
- Ph.D (2023) from Department of Chemistry, Kurukshetra University, Kurukshetra
  - B.ed (2013) from University College of Education, Kurukshetra University, Kurukshetra with 68%.
  - M.Sc. Inorganic-Chemistry (2012) from Kurukshetra University, Kurukshetra with 65%.
  - B.Sc. Medical (2010) from University college Kurukshetra University, Kurukshetra with 74%.
  - 12<sup>th</sup> (2006) from C.B.S.E board with 70%.
  - 10<sup>th</sup> (2004) from C.B.S.E board with 78%.

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- TECHNICAL SKILLS**
- **Inorganic synthesis:** - Expertise in carrying out various synthetic reaction involving synthesis of metal complexes and their ligands
  - **Purification techniques:-** Purification of the organic/inorganic compound to using crystallization, distillation and different chromatographic techniques.
  - **Structure Elucidation:-** Interpretation of spectral data of <sup>1</sup>H NMR, <sup>13</sup>C NMR, IR, X-ray and Mass for characterizing the compounds synthesized.
  - **Photophysical studies:-** UV, fluorescence, 3D fluorescence.
  - **Windows operating system and application Softwares:-** MS Office, ACD,

Chembridgesoft (Chemdraw and Chembiobdraw), Origin. Scientific data retrieval from various search portals like Sci-finder Scholar, Google scholar, Scopus etc.

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**FELLOWSHIP  
AWARDED**

- UNIVERSITY RESEARCH FELLOWSHIP (31-03-2018 TO 29-03-2021)

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**CONTRIBUTION TO  
PEER REVIEWED  
JOURNALS**

1. Crystal structure, Hirshfeld surface and DFT based NBO, NLO, ECT and MEP of benzothiazole based hydrazine. Kiran Singh, Indu Bala, Ramesh Kataria. Chemical Physics, 2020, 538, 110873.
2. Exploration of structural, electrostatic and photophysical behaviour of novel Ni(II), Cu(II) and Zn(II) complexes, and their utility as potent antimicrobial agents. Indu Bala, Kiran Singh, Ramesh Kataria and Meena Sindhu. Applied Organometallic Chemistry, 36(6), 2022e6698.
3. Synthesis, crystal studies, antimicrobial activity, and BSA binding studies of metal complexes derived from pyridyl-based hydrazone: Multi-spectroscopic and DFT approach. Indu Bala, Kiran Singh, Ramesh Kataria and Meena Sindhu. Journal of Physics and chemistry of solids (<https://doi.org/10.1016/j.jpics.2022.111191>).
4. Structural investigations, DFT, anti-oxidant and  $\alpha$ -amylase inhibitory activity of metal complexes of benzothiazole based hydrazone. Kiran Singh, Indu Bala., J Incl Phenom Macrocycl Chem 103, 301–316 (2023).

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**CONFERENCE  
(ORGANISED/  
ATTENDED/  
PAPER PRESENTED)**

- Presented a poster entitled “Crystal structure, Hirshfeld surfaces and DFT based NBO, NLO, ECT and MEP of benzothiazole based hydrazine” in golden jubilee International Conference on New Millennia Agriculture- Novel Trends and Future Scenario at Chaudhary Charan Singh Haryana Agricultural University, Hisar on 6-8 November, 2019.
- Presented a poster entitled “Spectral studies of Cu(II) and Cd(II) complexes of 2-((2-(benzothiazole-2-yl)hydrazono)methyl-5-(diethylamino)phenol(BTH))” in 1st International Conference of Indian Science Congress Association Rohtak chapter on Science & Technology: Rural Development (ICSTRD-2020) on 4-5 March, 2020.
- Presented a poster entitled “Exploration of non-covalent interactions and photophysical behaviour in Ni(II), Cu(II) and Zn(II) crystals derived from the tridentate NNO based hydrazone” in 1st International Conference on Advanced Developments in Chemistry and Allied Sciences-2021 (ADCAS-21) organized by Department of Chemistry, Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Sonipat, India on 16-17 December, 2021.