

# Curriculum Vitae

## Dr. Sadhana Singh

06/01/92, Female, Indian

Ph.D., Department of Chemistry

Indian Institute of Technology Kanpur

Kanpur - 208016, India

E-mail: [ssadhana005@gmail.com](mailto:ssadhana005@gmail.com)

Mobile: 9044501933



## EDUCATION

### 2016 – 2023

**Doctor of Philosophy** in Chemistry, Indian Institute of Technology Kanpur, Department of Chemistry, Kanpur, India, **9/10 CGPA**.

Doctoral Thesis: “Formamidine/Triazapentadiene-Based Metal Complexes: Synthesis, Structure, Reactivity and Catalytic Activity”

### 2013 – 2015

**Master of Science** in Chemistry, Specialization: Inorganic chemistry, organic chemistry physical chemistry, environmental chemistry, C.S.J.M University, India.

### 2010 – 2013

**Bachelor of Science** in Chemistry, Physics, Mathematics, CSJM University, India.

### 2009 – 2010

**10+2** with Physics, Chemistry, Mathematics, Central Board of Secondary Education.

### 2007 – 2008

**10<sup>th</sup>** Central Board of Secondary Education.

## SCHOLASTIC ACHIEVEMENTS

**1/2018 – 12/2020** Senior Research Fellowship (**SRF**), Council of Scientific and Industrial Research, Govt. of India

**1/2016 – 12/2017** Junior Research Fellowship (**JRF**), Council of Scientific and Industrial Research, Govt. of India

**23/3/2016** – Graduate Aptitude Test Engineering (**GATE**), All India Rank **1493**, Gate Score-**416**,

**18/12/2016** – Qualified National Eligibility Test (**NET**), All India Rank **41**, **Lectureship**, University Grant Commission, Govt. of India

## PUBLICATIONS

1. *Eur. J. Inorg. Chem*, **2021**, 4560-4565  
**Efficient Synthesis of Cu(II)- N-Heterocyclic Carbene Complexes in Water and Their Activity Towards Aerobic Alcohol Oxidation**
2. *Inorg. Chem*, **2022**, *61*, 9, 3811-3815  
**Cyclic Palladium Formamidinate: Synthesis, Structure, Reactivity, and Application to Suzuki-Miyaura Cross-Coupling**
3. *Manuscript to be communicated*  
**Palladium-formamidine complexes: Syntheses, Structure and Catalytic Activity**
4. *Manuscript to be communicated*  
**Synthesis of Palladium-formamidinate Complex and its Reactivity Towards Small Molecules Activation**
5. *Manuscript to be communicated*  
**Structural diversity of group 12 (Zn, Cd, Hg) Metal-formamidine Complexes: Syntheses, Structure, Stability, and its Antibacterial Activity**

## RESEARCH EXPERIENCE/SKILLS

- Synthesis of ligands and transition metal complexes, ranging from milligrams to preparative scale, including handling of inert conditions (**Schlenk line technique**) and the purification of compounds by Column Chromatography
- Handling of **Glove box** and have experience in cutting sodium, making sodium wire, also have experience to dry the solvents (THF, DCM, Acetonitrile, Hexane, Toluene, Methanol/ethanol, Ether, Pentane)
- Handling of GC-MS ( Gas Chromatography-mass Spectrometry)
- Characterization of compounds using NMR, IR, CHN-Analysis, ESI-MS, TGA
- Growing crystals and elucidation of structure by Single crystal X-ray diffraction (**SCXRD**) technique using OLEX, SHELXTL, WINGX, Mercury, Diamond and Ortep
- Expertise in softwares and online applications like EndNote, Sci-Finder, Origin Pro, Mestro Nova NMR, JEOL Delta software for NMR, Chem Draw, mMass, Microsoft Office etc.
- Documentation of records and writing research articles for publications
- Acquainted with small molecule activation like Carbon dioxide (CO<sub>2</sub>), Carbon disulphide (CS<sub>2</sub>), Nitriles, Isothiocyanates
- Knowledge of two languages: **Hindi** (Native), and **English** (Professional)

## TEACHING AND SUPERVISION EXPERIENCE

**2017 – 2022** Guided three postgraduate students for M.Sc dissertation, Department of Chemistry, IIT Kanpur, India

**2018 – 2019** Teaching Associate (TA) in CHM 443A (BS-MS), CHM 101A, B.Tech Lab, Department of Chemistry, IIT Kanpur, India

## CONFERENCES AND SYMPOSIUM

**2019** – Attended ‘**Chemical Research Society of India**’ (CRSI) conference Department of chemistry IIT Kanpur, India

**2020** – Attended a seminar on “Bruker Single Crystal X-ray Diffraction and User Training”

**2020** – Attended international symposium on “Organometallic Chemistry and Catalysis” IITK/LCC-CNRS joint CEFIPRA/IFCPAR, Department of chemistry IITK, India

**2021** – Presented a Poster in **Research Scholar Day (RSD)** Department of Chemistry, IITK, India

## EXTRACURRICULAR ACTIVITIES/Hobbies

**2018 – 2019** Worked as a volunteer in **freshers (Y18, Y19 batches)** Department of chemistry IIT Kanpur, India

**2019 – 2020** Worked as a volunteer in ‘**Chemical Research Society of India**’ (CRSI) conference Department of chemistry IIT Kanpur, India

Swimming, Basket ball and Athletic (**regional sports meet**).

## DECLARATION

I hereby declare that the above-furnished particulars are true to the best of my knowledge and belief.

Dr. Sadhana Singh