Dr. Hemant Joshi

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Central University of Rajasthan, Ajmer, 335817.
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Behind head post office, Jjn. road,
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EDUCATION

Indian Institute of Technology Delhi, India
PhD in Organometallic Chemistry and Nanocatalysis
Supervisor – Prof. Ajai K. Singh
9.0 CGPA out of 10.00 (Course work) July 2010 - October 2015

Malaviya National Institute of Technology Jaipur, India
Master of Science in Chemistry
8.54 CGPA out of 10.00 July 2008 – June 2010

University of Rajasthan Jaipur, India
Bachelor of Science (Chemistry, Botany, Zoology)
73.11 Percent July 2005 – June 2008

Rajasthan Board of Secondary Education Ajmer, India
Senior Secondary in Biology
71.08 Percent March 2005

Rajasthan Board of Secondary Education Ajmer, India
Secondary
65.67 Percent June 2003

EXPERIENCE

Assistant Professor
Department of Chemistry, June 2019 – till date
Central University of Rajasthan, Ajmer
Rajasthan, India

Assistant Professor (DST Inspire Faculty)
Department of Chemistry, Aug. 2018 – June 2019
Birla Institute of Technology and Sciences Pilani (BITS Pilani),
Pilani Campus, Rajasthan, India

Postdoctoral Research Associate
Department of Chemistry, Texas A&M University,

College Station, Tx Feb. 2016 – Aug. 2018
Supervisor – Prof. John A. Gladysz

Postdoctoral Research Associate
Department of Chemistry, IIT Delhi, India March 2015 – Feb 2016
Supervisor – Prof. Ajai K. Singh

ACHIEVEMENTS

- Awarded "Thieme Chemistry Journals Award – 2025" for promising professors at the beginning of their career.
- Awarded "Startup Research Grant (SRG) by SERB, New Delhi, India.
- Awarded "DST Inspire Faculty Award" by Department of Science and Technology, Government of India.
- Awarded postdoctoral fellowship at Texas A&M University, College Station, USA.
- Actively reviewing manuscripts for ACS, RSC, Willey, and Elsevier Journals.
- Young scientist oral presentation award at MTIC-XV IIT Roorkee.
- Senior Research Fellow (UGC) July 2012 – Dec. 2014.
- Junior Research Fellow (UGC) July 2010 – July 2012.
- Qualified National Eligibility Test Dec. 2009 for Lectureship.

SPONSORED RESEARCH PROJECTS

1. **Title:** Synthesis of Metal Complexes of Mechanically Interlocked Molecules and their Applications (2018 - 2024)
   Sponsoring Agency: Department of Science and Technology, New Delhi, India (Under DST Inspire Faculty Scheme)
   Amount: 35 Lakhs Research Grant
2. **Title:** Intramolecular Secondary Interactions Controlled Molecular Rotors as Catalyst for Site Selective Annulation Reactions to Synthesize Energetically less Favored Isomers (2021 - 2023)
   Sponsoring Agency: Science and Engineering Research Board, New Delhi, India (Under SRG Scheme)
   Amount: 33 Lakhs Research Grant

TEACHING

- CHM 101 – Inorganic Chemistry-I
- CHM-202 – Analytical Chemistry
- CHM-301 – Inorganic Chemistry-II
- CHM-408 – Spectroscopic Methods of Structure Determination
- CHM-615 – Supramolecular Chemistry
- CHM 120 – Basic Inorganic Chemistry Laboratory-I

- CHM-220 – Analytical Chemistry Lab
- CHM-310 – Basic Inorganic Chemistry Laboratory-II
- CHM-460 – Inorganic Chemistry Laboratory II

PUBLICATIONS

In International Journals (*H-index – 24, Citations >1480*)

From Central University of Rajasthan, Aimer

1. S. Singh, S. Mahala, H. Sharma, M. Shekhawat, and **H Joshi***, Divergent catalytic routes to indoles from 2-(aminophenyl)ethanol and arylmethanols: insights into mechanism and selectivity. *Tetrahedron Lett.*, ***2026***, *176, 155951*.
2. S. Mahala, M. Shekhawat, S. Singh, N. Bhuvanesh, A. K. Sharma and **H Joshi***, Manganese(I) Pincer Complexes as Catalysts for Dehydrogenative Annulation: Direct Access to Biologically Relevant Heterocycles from Alcohols and 2'-Aminoacetophenones. *Organometallics*, ***2025***, *44, 2763–2776*.
3. S. Singh, S. B. Singh, S. Mahala, and **H Joshi***, Palladium(II) SeNSe Pincer Complex Mediated Regioselective Arylation of Thiophenes at Room Temperature. *J. Org. Chem.*, ***2025***, *90, 14272–14284*.
4. N. Mathur, M. Choudhary, A. K. Dwivedi, J. Nama, Shweta K. P., Manjunatha C., S. Sharma, P. Gupta, **H Joshi***, P. Roy, Versatility of Surfactant-Mediated $NiTe_2$ Nanoparticles: Unlocking Potential for Hydrogen Evolution Reaction, Supercapacitor, and Sustainable Green Catalysis. *Small*, ***2025***, *21, e07377*.
5. K. Yadav, S. Mahala, S. Singh, J. Joshi, **H Joshi***, Pd(II)-Catalyzed Dehydrogenative Annulation of 2-Arylimidazo[1,2-*a*]pyridines with Maleimides: Regioselectivity Switch and Photophysical Properties. *Chem. Eur. J.*, **2025**, *31, e202501883.*
6. S. Mahala, P. Rakesh, S. Singh, A. K. Sharma, **H Joshi***, Mn(I)-NNSe Pincer Complex Catalyzed Regioselective Synthesis of Bisindolylmethanes under Base and Solvent-Free Conditions. *AsianJOC*, ***2025***, *14, e00323*.
7. S. Singh, N. Yadav, S. Mahala, J. Yadav, K. Behera, G. K. Rao, **H Joshi***, and K. N. Sharma, Metal complexes featuring organotellurium ligands: synthesis, coordination behavior, and applications. *Dalton Trans.*, ***2025***, *54, 7970-8014*.
8. P. N. Swami, N. Meena, **H Joshi**, Aarzoo, R. K. Roy, K. Rangan, A. Kumar, Unsymmetrical NNE (E = S, Se) Pincer Palladium(II) Complexes: Syntheses, Structure, and Catalytic Activity in Decarboxylative Heteroarylation of Coumarin-3-carboxylic Acids. *Organometallics*, ***2025***, *44, 912-921*.

9. S. Mahala, S. Singh, P. Rakesh, N. Bhuvanesh, and **H Joshi***, Manganese(I)-NNSe Pincer Complex Mediated Dehydrogenative Cyclization to Synthesize 2-Aryl-2,3-dihydroquinolin-4(1*H*)-ones. *J. Org. Chem.*, ***2025**, 90, 3789-3795***.**
10. Gaatha K., S. Kumar, A. Sharma, N. Bhuvanesh, P. Roy, and **H Joshi***, A *trans*-palladium dichloride complex with a bulky organosulfur ligand: syntheses, structure, and applications in catalytic alkylation of acetophenone and secondary alcohols using alcohols. *New J. Chem*, ***2025**, 49, 3956 - 3968***.**
11. S. Singh, S. Mahala, N. Bhuvanesh, and **H Joshi***, Pd(II) NCSe-pincer complexes for regioselective cross-dehydrogenative coupling of arylthiophenes with hetero(arenes). *Catal. Sci. Technol.*, ***2025**, 15, 523-536***.**
12. B. Goswami, R. Yadav, **H Joshi**, and P. Roy, Zirconium and Hafnium Complexes of Enantiopure Iminophosphonamides. *Eur. J. Inorg. Chem.*, ***2025***, 28, e202400627**.**
13. S. Bhatt, P. Malpani, S. S. Pati, N. Kumar, N. Bhuvanesh, **H Joshi*** and A. K. Sharma, Ruthenium Complexes of Phenylbenzothiazole-Quinoline based Ligands for Selective α-Olefination of Methylazaarenes. *Eur. J. Inorg. Chem.*, ***2025**, 28, e202400623***.**
14. D. Tanwar, S. Mahala, D. Ahluwalia, N. Bhuvanesh, **H Joshi*** and U. Kumar, Nickel Complexes Bearing Quinoline Derived NNS Donor Ligands as Catalytic Activators for *N*-alkylation of Anilines with Alcohols, *Chem. Asian J.*, **2024**, *e202400557*.
15. S. Mahala, N. Gupta, S. Singh, A. K. Sharma, N. Bhuvanesh, and **H Joshi***, Designing Cobalt(II) Complex for Chemoselective Synthesis of 2-Aryl-3-formyl indoles from Amino Alcohols and Alcohols, *Chem. Eur. J.*, **2024**, *30*, e202401698.
16. N. Mathur, S. Mahala, A. K. Khorwal, Y. Bitla, B. Goswami, P. Roy, and **H Joshi***, Magnetic Nickel Nanoparticles Supported on Oxidized Charcoal as a Recoverable Catalyst for *N*-Alkylation of Amines with Alcohols. *ACS Applied Nano Matter.*, **2024**, 7, 11159-11169.
17. S. Singh, S. Mahala, N. Bhuvanesh, and **H Joshi***, Palladium(II) NCS-Pincer Complexes Mediated Regioselective Cross Dehydrogenative Alkenation of 2-Arylthiophenes. *ChemCatChem*, **2024**, 16, e202400187.
18. S. Kumar, A. Sharma, S. Mahala, Gattha K., S. R. Reddy, T. Rom, A. Paul, P. Roy, and **H Joshi***, Macrocyclic Sulfur Ligand Stabilized Trans-Palladium Dichloride Complex: Syntheses, Structure, Chlorine Rotation, and Application in *α*-Olefination of Nitriles by Primary Alcohols. *Chem. Asian J.*, **2024**, *19*, e202300935.
19. S. Singh, V. N. Shinde, S. Kumar, N. Meena, N. Bhuvanesh, K. Rangan, A. Kumar, and **H Joshi***, Mono and Dinuclear Palladium Pincer Complexes of NNSe Ligand as a Catalyst for Decarboxylative Direct C–H Heteroarylation of (Hetero)arenes. *Chem. Asian J.*, **2023**, 18, e202300628.

20. P. N. Swami, N. Meena, **H. Joshi**, K. Rangan, A. Kumar, Design and Synthesis of a Palladium(II) Complex of a $C_{NHC}NN$ Pincer-Type N-Heterocyclic Carbene Ligand: Application towards the Oxidative Amidation of Aldehydes with 2-Aminopyridines. *Organometallics*, **2023**, 42, 2359-2368.
21. S. Bhatt, M. Rana, A. K. Sharma and **H. Joshi***, Ruthenium Complexes of Bidentate N, N-Ligand as Catalyst for Selective N-alkylation of Amines with Alcohols. *AsianJOC*, **2023**, *12*, e202300158.
22. S. Kumar, S. Singh, S. Mahala, P. Janjani, S. R. Reddy, T. Rom, A. K. Paul, P. Roy and **H. Joshi***, Palladium complex of macrocyclic selenium ligand: Catalyst for dehydroxymethylation of dihydroxy compounds. *Dalton. Trans.*, **2023**, *52*, 5110-5118.
23. S. Kumar, S. Singh, N. Mathur, P. Roy and **H. Joshi***, Titania Nanorods Supported Mercaptoundecanoic acid Grafted Palladium Nanoparticles as Highly Reusable Heterogeneous Catalyst for Substrate Dependent Ullmann Coupling and Debromination of Aryl Bromides. *Inorg. Chem*, **2023**, *62*, 3993-4002.
24. Y. Zhu, M. Stollenze, S. R. Zarcone, S. Kharel, **H. Joshi**, N. Bhuvanesh, J. H. Reibenspies, and J. Gladysz*, Syntheses, Homeomorphic and Configurational Isomerizations, and Structures of Macrocyclic Aliphatic Dibridgehead Diphosphines; Molecules that Turn Themselves Inside Out. *Chem. Sci*, **2022**, *13*, 13368-13386.
25. S. Bhatt, N. Meena, M. Kumar, N. Bhuvanesh, A. Kumar, A. K. Sharma and **H. Joshi***, Design and Syntheses of Ruthenium ENE (E = S, Se) Pincer Complexes: A Versatile System for Catalytic and Biological Applications. *Chem. Asian J.*, **2022**, *17*, e202200736.
26. S. Kumar, S. Kumari, S. Singh, P. J. Boruah, A. K. Paul, P. Roy, and **H. Joshi***, Oxidized Charcoal-Supported Thiol-Protected Palladium Nanoparticles for Cross Dehydrogenative Coupling of Heteroarenes. *ACS Applied Nano Matter.*, **2022**, 5, 2644-2654.
27. N. Meena, S. Kumar, V. N. Shinde, S. R. Reddy, Himanshi, N. Bhuvanesh, A. Kumar and **H. Joshi***, Bulky selenium ligand stabilized trans-palladium dichloride complexes as catalyst for silver-free decarboxylative coupling of coumarin-3-carboxylic acids. *Chem. Asin J.*, **2021**, 17, e202101199.
28. S. Kumar, S. Singh, J. Gadwal, P. Makar, and **H. Joshi***, Regioselective C-H arylation of imidazoles employing macrocyclic palladium(II) complex of organoselenium ligand. *J. Organomet. Chem.*, **2021**, 946-947, 121907.
29. N. Meena, S. Sharma, R. P. Bhatt, V. N. Shinde, A. P. Sunda, N. Bhuvanesh, A. Kumar and **H. Joshi***, A selenium coordinated palladium(II) trans-dichloride molecular rotor as a catalyst for site selective annulation of 2-arylimidazo[1,2-*a*]pyridines. *Chem. Commun.*, **2020**, 56, 10223-10227. *(Interview of Dr. Joshi in ChemComm Blog:*

https://blogs.rsc.org/cc/2020/08/14/chemcomm-milestones-hemant-joshi/?doing_wp_cron=1597640972.7117760181427001953125).

30. V. N. Shinde, N. Bhuvanesh, A. Kumar and **H. Joshi***, Design and Syntheses of Palladium Complexes of NNN/CNN Pincer Ligands: Catalyst for Cross Dehydrogenative Coupling Reaction of Heteroarenes. *Organometallics*, **2020**, 39, 324-333.
31. R. P. Bhatt, N. Bhuvanesh, K. N. Sharma and **H. Joshi***, Palladium Complexes of Thio/Seleno-Ether containing *N*-Heterocyclic Carbene: Efficient and Reusable Catalyst for Regioselective C-H Bond Arylation. *Eur. J. Inorg. Chem.*, **2020**, 2020, 532-540.
32. R. P. Bhatt, A. K. Sharma, Himanshi, N. Bhuvanesh, and **H. Joshi***, Palladium complexes of chalcogenoethanamine (S/Se) bidentate ligands: Applications in catalytic arylation of CH and OH bonds. *Polyhedron*, **2020**, 185, 114597.
33. A. K. Sharma, **H. Joshi**, and A. K. Singh, Catalysis with magnetically retrievable and recyclable nanoparticles layered with Pd(0) of C-C/C-O coupling in water. *RSC Adv.*, **2020**, 10, 6452–6459.

From BITS Pilani, Rajasthan

34. A. K. Sharma, **H. Joshi**, R. Bhaskar and A. K. Singh, Solvent tailored $Pd_3P_{0.95}$ nano catalyst for amide-nitrile inter-conversion, hydration of nitriles and transfer hydrogenation of >C=O bond. *Dalton Trans.*, **2019**, 48, 10962.
35. A. K. Sharma, **H. Joshi**, K. Ojha and A. K. Singh, Graphene oxide supported cobalt phosphide nanorods designed from a molecular complex for efficient hydrogen evolution at low overpotential. *Chem. Commun.*, **2019**, 55, 2186.

From Texas A&M University, College Station, USA

36. M. Stollenz, **H. Joshi**, A. Ehnbom, T. Fiedler, S. Kharel, J. H. Reibenspies, N. Bhuvanesh, M. B. Hall, J. A. Gladysz, Platinum Complexes Containing or Derived from Olefinic Phosphines $P(X)((CH_2)_6CH=CH_2)_2$; Ring Closing Metatheses, Structures, and *trans*/*cis* Isomerizations. *Polyhedron*, **2019,** 158, 325. (Invited article for the special issue in honor of Prof. William D. Jones).
37. S. Kharel,‡ **H. Joshi**,‡ N. Bhuvanesh and J. A. Gladysz, Syntheses, Structures, and Thermal Properties of Gyroscope Like Complexes Consisting of $PtCl_2$ Rotators Encased in Macrocyclic Dibridgehead Diphosphines $P((CH_2)_n)_3P$ with Extended Methylene Chains (n = 20/22/30), and Isomers Thereof. *Organometallics*, **2018**, 37, 2991. (‡ = equal contribution).
38. **H. Joshi**,‡ S. Kharel,‡ A. Ehnbom, K. Skopek, G. D. Hess, T. Fiedler, F. Hampel, N. Bhuvanesh, and J. A. Gladysz, Three Fold Intramolecular Ring Closing Alkene Metatheses of Square Planar Complexes with *cis* Phosphorus Donor Ligands $P(X(CH_2)_mCH=CH_2)_3$ (X/m = –/5-10, O/3-5); Syntheses, Structures, and Thermal Properties of Macrocyclic Dibridgehead Diphosphorus Complexes. *J. Am. Chem. Soc.*, **2018**, 140, 8463. (‡ = equal

contribution). (Highlighted on Front Cover of JACS, Selected as Spotlight Article by JACS *J. Am. Chem. Soc.*, **2018**, 140, 8357, Highlighted by College of Science, Texas A&M University (http://www.science.tamu.edu/news/story.php?story_ID=2018#.W1J9qdJKg2x), Highlighted by Texas A&M Today (https://today.tamu.edu/2018/07/18/texas-am-chemists-achieve-unprecedented-molecular-triple-jump-with-multi-ringed-metal-complexes/), Highlighted by National Science Foundation, USA (https://nsf.gov/news/news_summ.jsp?cntn_id=296059&org=NSF&from=news), Highlighted by EurekAlert, The Global Source for Science News (https://www.eurekalert.org/pub_releases/2018-07/tau-cau071218.php).

39. **H. Joshi**, S. Kharel, N. Bhuvanesh and J. A. Gladysz, Synthesis, Structure, and Reactivity of Doubly *trans*-Spanning bis(dialkylselenide) Complexes; A New Route to Diselenamacrocycles via Alkene Metathesis in Metal Coordination Spheres. *J. Organomet. Chem.*, **2018**, 875, 80. (Invited article for the special issue in honor of Prof. Richard J. Puddephatt).
40. S. Kharel, **H. Joshi**, S. Bierschenk, M. Stollenz, D. Taher, N. Bhuvanesh and J. A. Gladysz, Homeomorphic Isomerization as a Design Element in Container Molecules; Binding, Displacement, and Selective Transport of MCl_2 Species (M = Pt, Pd, Ni). *J. Am. Chem. Soc.*, **2017**, 139, 2172.
41. **H. Joshi**, S. K. Ghosh, and J. A. Gladysz, Enantioselective Additions of Stabilized Carbanions to Imines Generated from α-Amido Sulfones using Lipophilic Salts of Chiral tris(1,2-diphenylethylenediamine) Cobalt(III) Trications as Hydrogen Bond Donor Catalysts. *Synthesis*, **2017**, 49, 3905. (Invited article for special issue "Cobalt in Organic Synthesis", Highlighted on Organic Chemistry Portal Website. https://www.organic-chemistry.org/abstracts/lit5/971.shtm)

From IIT Delhi, New Delhi

42. A. K. Sharma, **H. Joshi**, R. Bhaskar, and A. K. Singh, Complexes of (η^5-Cp*) Ir(III) with 1-Benzyl-3-Phenylthio/selenomethyl-1,3-Dihydrobenzoimidazole-2-Thione/Selenone: Catalyst for Oxidation and 1,2-substituted Benzimidazole Synthesis. *Dalton Trans*, **2017**, 46, 2228.
43. A. K. Sharma, **H. Joshi**, R. Bhaskar, S. Kumar and A. K. Singh, Palladacycles of sulfated/selenatedschiff base of ferrocene-carboxaldehyde as catalysts for *O*-arylation and Suzuki–Miyaura coupling. *Dalton Trans*., **2017**, 46, 2485. (Most cited Organometallic chemistry work of 2017).
44. R. Bhaskar, **H. Joshi**, A. K. Sharma, and A. K. Singh, Reusable Catalyst for Transfer Hydrogenation of Aldehydes and Ketones Designed by Anchoring Palladium as Nano-Particles on Graphene Oxide Functionalized with Selenated Amine. *ACS Applied Materials & Interfaces*, **2017**, 9, 2223. (Highlighted as Most Read Materials Science & Engineering

Articles of Jan. 2017 by ACS. http://axial.acs.org/2017/03/03/materials-science-engineering/).

45. K. N. Sharma, A. K. Sharma, **H. Joshi**, and A. K. Singh, Polymeric Complex of 1-Phenylsulfanyl/selenylmethyl-1H-Benzotriazole with Ag(I): Pre-catalyst for A^3 Coupling Resulting Propargylamines on a Gram/Lab Scale. *ChemSelect*, **2016**, 1, 3573.
46. S. Gupta, **H. Joshi**, N. Jain, and A. K. Singh, $Cu_6Se_{4.5}$ Nanoparticles from a Single Source Precursor: Recyclable and Efficient Catalyst for Cross-Dehydrogenative Coupling of Tertiary Amines with Terminal Alkynes. *J. Mol. Catal. A: Chemical*, **2016**, 423, 135.
47. M. P. Singh, F. Saleem, G. K. Rao, S. Kumar, **H. Joshi**, and A. K. Singh, Palladacycles of unsymmetrical (N, C−, E)(E= S/Se) pincers based on indole: their synthesis, structure and application in the catalysis of Heck coupling and allylation of aldehydes. *Dalton Trans.* **2016**, 45, 6718.
48. K. N. Sharma, **H. Joshi**, O. Prakash, A. K. Sharma, R. Bhaskar, and A. K. Singh, Pyrazole-Stabilized Dinuclear Palladium (II) Chalcogenolates Formed by Oxidative Addition of Bis [2-(4-bromopyrazol-1-yl) ethyl] Dichalcogenides to Palladium (II)–Tailoring of Pd–S/Se Nanoparticles. *Eur. J. Inorg. Chem.* **2015**, 4829.
49. **H. Joshi**, O. Prakash, A. K. Sharma, K. N. Sharma, and A. K. Singh, Suzuki Coupling Reactions Catalyzed with Palladacycles and Palladium (II) Complexes of 2-Thiophenemethylamine-Based Schiff Bases: Examples of Divergent Pathways for the Same Ligand. *Eur. J. Inorg. Chem.* **2015**, 1542.
50. O. Prakash, **H. Joshi**, K. N. Sharma, and A. K. Singh, Catalytic Synthesis of Bi/Teraryl in Aqueous Medium using Palladium(II) Complexes Designed with 2-(Pyridine-2-ylmethyl sulfanyl)benzoic acid. *Eur. J. Inorg. Chem.* **2015**, 520.
51. O. Prakash, **H. Joshi**, U. Kumar, A. K. Sharma and A. K. Singh, Acridine based (S,N,S) pincer ligand: designing of silver(I) complexes for efficient activation of A^3(aldehyde, alkyne and amine) coupling. *Dalton Trans*., **2015**, 44, 1962.
52. O. Prakash, **H. Joshi**, K. N. Sharma, P. L. Gupta and A. K. Singh, Transfer Hydrogenation (pH independent) of Ketones and Aldehydes in Water with Glycerol: Ru, Rh and Ir Catalysts with COOH Group Near Metal on (Phenylthio)methyl-2-Pyridine Scaffold. *Organometallics*, **2014**, 33, 3804.
53. A. K. Sharma, **H. Joshi**, K. N. Sharma, P. L. Gupta, and A. K. Singh, 2-Propanol Vs Glycerol as Hydrogen Source in Catalytic Activation of Transfer Hydrogenation with (η^6-benzene)Ru(II) Complexes of Unsymmetrical Bidentate Chalcogen Ligands. *Organometallics*, **2014**, 33, 3629.
54. **H. Joshi**, K. N. Sharma, A. K. Sharma, O. Prakash, A. Kumar and A. K. Singh, Magnetite nanoparticles coated with ruthenium *via* SePh layer as a magnetically retrievable catalyst for

the selective synthesis of primary amides in an aqueous medium. *Dalton Trans.*, **2014**, 43, 12365.

55. O. Prakash, K. N. Sharma, **H. Joshi**, P. L. Gupta and A. K. Singh, Half-sandwich rhodium/ iridium(III) complexes designed with Cp* and 1,2-bis(phenylchalcogenomethyl) benzene as catalysts for transfer hydrogenation in glycerol. *Organometallics*, **2014**, 33, 2535.
56. O. Prakash, K. N. Sharma, **H. Joshi**, P. L. Gupta and A. K. Singh, (η^5-Cp*)Rh/Ir(III) complexes with bis(chalcogenoethers) (E, E′ ligands; E = S/Se; E′ = S/Se): Synthesis, structure and applications in catalytic oppenauer-type oxidation and transfer hydrogenation. *Organometallics*, **2014**, 33, 983.
57. **H. Joshi**, K. N. Sharma, A. K. Sharma and A. K. Singh, Palladium-phosphorous/sulfur nanoparticles (NPs) decorated on graphene oxide: synthesis using same precursor for NPs and catalytic applications in Suzuki-Miyaura coupling. *Nanoscale*, **2014**, 6, 4588. (Appeared as most read article).
58. K. N. Sharma, **H. Joshi**, A. K. Sharma, O. Prakash and A. K. Singh, Single source precursor routes for synthesis of PdTe nanorods and particles: solvent dependent control on shapes. *Chem. Commun.*, **2013**, 49, 9344.
59. **H. Joshi**, K. N. Sharma, A. K. Sharma, O. Prakash and A. K. Singh, Graphene oxide grafted with $Pd_{17}Se_{15}$ nano-particles generated from a single source precursor as a recyclable and efficient catalyst for C–O coupling in *O*-arylation at room temperature. *Chem. Commun.*, **2013**, *49*, 7483. (Highlighted on Cover Page, Highlighted by cheminform abstract).
60. K. N. Sharma, **H. Joshi**, A. K. Sharma, O. Prakash and A. K. Singh, Selenium-containing *N*-heterocyclic carbenes and their first palladium(II) complexes: Synthesis, structure and pendent alkyl chain length dependent catalytic activity for Suzuki–Miyaura coupling. *Organometallics*, **2013**, 32, 2443. (Listed among "Most Read Articles" published by *Organometallics*).
61. O. Prakash, K. N. Sharma, **H. Joshi**, P. L. Gupta and A. K. Singh, Half sandwich complexes of chalcogenated pyridine based bi-(N, S/Se) and terdentate (N, S/Se, N) ligands with (η^6-benzene)ruthenium(II): synthesis, structure and catalysis of transfer hydrogenation of ketones and oxidation of alcohols. *Dalton Trans.*, **2013**, 42, 8736.
62. **H. Joshi**, K. N. Sharma, V. V. Singh, P. Singh and A. K. Singh, Selenium containing imidazolium salt in designing single source precursors for silver bromide and selenide nano-particles. *Dalton Trans.*, **2013**, 42, 2366. (Listed among "Most Read Articles" published by Dalton Transaction).
63. K. N. Sharma, **H. Joshi**, V. V. Singh, P. Singh and A. K. Singh, Palladium(II) complexes of pyrazolatedthio/selenoethers: syntheses, structures, single source precursors of Pd_4Se and

PdSe nano-particles and potential for catalyzing Suzuki–Miyaura coupling. *Dalton Trans.*, **2013**, 42, 3908.

Book Chapters

1. S. Singh, S. Mahala, P. Rakesh, **H. Joshi**, Synthesis and catalytic applications of palladium pincer complexes of organoselenium ligands, RSC Organometallic Chemistry Volume 46, DOI: https://doi.org/10.1039/9781837070725.
2. K. N. Sharma, J. Yadav, Komal, S. Singh, **H. Joshi**, K. K. Behera, Antiviral application of MXenes, *Elsevier*, **2024**, Pages 501-523.
3. P. Roy, H. Joshi, TiO_2 Nanotubes: Synthesis, Properties, and Applications, *Taylor and Francis*, **2024**, ISBN: 97781003473749.

Invited Talks

1. **H. Joshi**, Sterically Bulky Ligands Controlled Palladium-Catalyzed Regioselective Organic Transformations. 28th ISCB International Conference (ISCBC-2022), Marwadi University, Rajkot, 08-10, January 2024.
2. **H. Joshi**, *Trans*-Palladium Dichloride Molecular Rotors: Dynamic Behavior, Chlorine Rotation and Applications in Site-selective Organic Transformations. Frontiers at the Chemistry: Allied Sciences Interface (FCASI-2023), University of Rajasthan, Jaipur, 20-21 April 2023.
3. **H. Joshi**, *Trans*-Palladium Dichloride Complex of Organoselenium Ligand as Catalyst for Reverse Regioselective Annulation of 2-Arylimidazo[1,2-a]pyridines. Trends in Organometallic Chemistry, ACS Organometallics, 28th, November 2022.
4. **H. Joshi**, Molecular Rotors for Site-selective Organic Transformations. 27th ISCB International Conference (ISCBC-2022), BIT Mesra, Ranchi, 16-19, November 2022.
5. **H. Joshi**, A Molecular Rotor Possessing a Cl-Pd-Cl "Spoke" on a Se-Pd-Se "Axle": Efficient Catalyst for Regioselective C-5 Arylation of Imidazoles. **26th ISCB International Conference (ISCBC-2020)**, Nirma University Ahmedabad, 22-24, January 2020.
6. **H. Joshi**, Dibridgehead Diphosphine Cage as Molecular Receptor for Precious Metal Capture and Transport. **25th ISCB International Conference (ISCBC-2019),** CDRI Lucknow, 12-14, January 2019.
7. **H. Joshi**, Molecular Double-Dutch: Multiring Metal Complexes that Really Know how to Jump. **Frontiers at the Chemistry-Allied Sciences Interface (FCASI-2018),** University of Rajasthan, Jaipur, 21-22, December 2018.

In Conferences

1. Palladium Anchorded on Graphene Oxide and Fe_3O_4 as Catalyst for *O*-Arylation Reaction. **H. Joshi** and A. K. Singh, **American Chemical Society on Campus Event (ACSOC-2015)**, IIT Delhi, 31 Sep-01 Oct, 2015. **(Oral Presentation)**
2. Palladium(II) complexes of selenated*N*-heterocyclic carbene ligands: pendent alkyl chain length dependent catalytic C−C coupling reaction. **H. Joshi**, K. N. Sharma and A. K. Singh, **Recent Advancements in Chemical Sciences (RAICS-2015)**, MNIT Jaipur, 21-23 August, 2015. **(Oral Presentation)**
3. Participation in **Indian Roadshow Workshop,** Organized by Royal Society of Chemistry, IIT Delhi, Nov. 4, 2014.
4. Graphene Oxide Grafted With PdP_2 and Pd_4S Nanoparticles Generated From a Single Source Precursor: Catalyst For Suzuki-Miyaura Coupling Reaction. **H. Joshi**, K. N. Sharma, A. Sharma, and A. K. Singh, **International Conference on Nano Science and Technology (ICONSAT-2014)**, INST Mohali, 3-5 March, 2014. **(Poster Presentation)**
5. Palladium-Phosphorous/Sulfur Nanoparticles (NPs) Decorated On Graphene Oxide: Synthesis Using Same Precursor for NPs and Catalytic Applications in Suzuki-Miyaura coupling Reaction. **H. Joshi**, A. K. Singh, **Chemistry at the Interface of Innovative Researches in Science and Technology (CIIRST 2014),** Allahabad, 27-28 Feb 2014. **(Oral Presentation)**
6. $Pd_{17}Se_{15}$ Nano-Particles Grafted Graphene Oxide: Efficient and Recyclable Catalyst for C−O Coupling. **H. Joshi**, K. N. Sharma, A. Sharma and A. K. Singh, **Modern Trends in Inorganic Chemistry (MTIC-XV)**, IIT Roorkee, Dec. 13-16, 2013. **(Young Scientist Oral Presentation)**
7. 2-hydroxy-4-methoxy benzophenone and 2-hydroxy acetophenone with 2-thiophene methyl amine: Designing, Pd(II) complexes for efficient Suzuki-Miyaura C-C coupling reaction. **H. Joshi**, K. N. Sharma, and A. K. Singh, **New Directions in Chemical Sciences (NDCS-2012)**, IIT Delhi, New Delhi, India, Dec. 7-9, 2012. **(Poster Presentation)**
8. Palladium(II) complexes of O, N, S, Se hybrid ligands for efficient Suzuki-Miyaura C-C coupling reaction. **H. Joshi**, G. K. Rao, F. Saleem and A. K. Singh, **3rd Asian Conference on Coordination Chemistry (ACCC-3)**, India Habitat Center, New Delhi, India, October 17−20, 2011. **(Poster Presentation)**
9. Participation in **National Review and Coordination Meeting of Nano Mission Council (NSNT 2011)**, IIT Delhi, Feb. 25-27, **2011.**

OTHER ACADEMIC PARTICIPATION/CONTRIBUTIONS

1. Member, University purchase committee for academic year 2023-24, Central University of Rajasthan.
2. Member, Board of Studies, Department of Chemistry, Central University of Rajasthan.
3. Member, Board of Studies, Department of Chemistry, Sophia College Ajmer, Rajasthan.

4. Participated in two weeks faculty development program (07th Feb to 21st Feb 2024) by Teaching Learning Center @ Ramanujan College, Delhi University with "A^+" grade.
5. Participated in nine days professional development program (07th Sep to 17th Sep 2022) by IGNU, New Delhi with "A^+" grade.
6. Participated in four weeks induction training program (20th Jan to 16th Feb 2021) by Teaching Learning Center @ Central University of Rajasthan with "A^+" grade.
7. Participated in one week faculty development program on "Implementation of New Education Policy 2020: Role of Faculty Members of HEIs" (04th Nov to 08th Nov 2020) by Teaching Learning Center @ Central University of Rajasthan.
8. Participated in one week faculty development program (25th May to 29th May 2020) by J.C. Bose University of Science and Technology, YMCA, Faridabad and Guru Angad Dev Teaching Learning Centre, New Delhi with "A" grade.
9. External expert for MSc Project Evaluation of Department of Physics, Central University of Rajasthan for the May 2022 Session.

RESEARCH MENTORSHIP

S. No.	Name of the Student	Program	Year/Status	Title of thesis/project
1	Sohan Singh	PhD	Thesis Submitted	Metal Complexes of Organochalcogen Pincer Ligands: Design, Synthesis, and Applications in Catalysis of Organic Reactions
2	Sunil Kumar	PhD	Degree Awarded	Molecular Rotors and Metal Nanostructures: Design, Synthesis and Application in Catalysis of Organic Reaction
3	Suman Mahala	PhD	Nov 2022-till date	Base Metal Complexes of Organochalcogen Pincer Ligands: Design, Syntheses and their Utility in Organic Transformations
4	Sonu Kanwar	PhD	2025 – till date	Catalytic Applications of Transition Metal–Pincer Architectures in Modern Organic Synthesis
5	Vijay Choudhary	PhD	2025 – till date	Transition-Metal Complexes of Organochalcogen Ligands as Multifunctional Catalysts for Organic and Electrochemical Reactions
6	Ramprasad Bhatt	Project Fellow	Jan 2019-June 2019	Palladium Complexes of Organochalcogen Ligands: Applications in C-H Activation Reactions
7	Gaatha K.	Project Fellow	Feb 2023- Dec 2023	Molecular Rotors for Site-Selective Organic Synthesis
8	Palak Rakesh	Internship	2024-2025	Manganese Pincer Complexes Catalyzed Organic Transformation

MASTERS'S STUDENT'S RESEARCH PROJECTS

S. No.	Name of the Student	Program	Year/Status	Title of thesis/project
1	Anuradha Dixit	Int MSc (5Y)	May 2020	Design and Synthesis of Macrocyclic Molecular Machines
2	Gyan Chand Bhandari	Int MSc (5Y)	May 2020	Design and Synthesis of Ruthenium Complex of SeNSe Pincer Ligand and their Applications in Catalysis
3	Himanshi	Int MSc (5Y)	May 2020	Design and Syntheses of Secondary Interactions Controlled Molecular Rotors
5	Jitendra Gadwal	Int MSc Bed (3Y)	May 2020	Design and Syntheses of Macrocyclic Metal Complexes of Organoselenium Ligands
6	Yogita Varshney	Int MSc Bed (3Y)	May 2021	A Study of the Attitude of Chemistry Teachers Towards Pedagogic use of Information Technology at Senior Secondary Level
7	Akshanjali Maurya	MSc (2Y)	May 2021	Palladium Nanoparticles Grafted on Thiol Functionalized Titanium Oxide Nanotubes as catalyst for Suzuki Miyaura Coupling Reactions
8	Mukesh Kumar	MSc (2Y)	May 2021	Ruthenium Complexes of ENE (E = S, Se) Pincer Ligands: A Versatile Catalyst for Transfer Hydrogenation of Carbonyl Compound, Oppenauer type Oxidation and N-alkylation of Amines
9	Parvesh Makar	MSc (2Y)	May 2021	Design and Synthesis of Sterically Bulky Tripodal Nitrogen Ligand Coordinated Palladium Dichloride Molecular Rotor
10	Prastuti Agrawal	MSc (2Y)	May 2022	Palladium Complex of NNSe Pincer Ligand: Applications in Decarboxylative C-H Bond Arylation of Heteroarenes
11	Rahul	MSc (2Y)	May 2022	Macrocyclic Chalcogen Ligand Coordinated Palladium Dichloride Molecular Rotor: Study of Rotational Behavior and Catalytic Applications
12	Muhajir P K	MSc (2Y)	May 2022	Pincer Palladium Complexes of ECN (E= S/Se) Schiff Base Ligands: Applications in Cross-Dehydrogenative Coupling Reaction
13	Chhavi Gautam	Int. MSc BEd (3Y)	May 2022	Palladium Complexes of ECN (E = S/ Se) Pincer Ligands: Applications in Catalytic Organic Transformations
14	Lokesh Kumar	Int. MSc BEd (3Y)	May 2022	Ring Closing Alkene Metathesis as a Tool for Synthesis of Macrocyclic Selenium Ligand Coordinated Palladium Dichloride Molecular Rotor
15	Ashutosh Sharma	Int MSc (5Y)	May 2023	Design and Synthesis of Bulky Macrocyclic Organosulfur Ligand Stabilized trans-palladium Dichloride Molecular Rotor and its Utilization in α- Olefination of Nitriles by Primary Alcohols
16	Aditi Gautam	Int. MSc BEd (3Y)	May 2023	Design, Synthesis, and Characterization of NNSe Pincer Ligand and Manganese Pincer Complex and it's Application for α-Olefination of Nitriles using Primary

				Alcohols
17	Nitika	Int. MSc BEd (3Y)	May 2023	Design, Syntheses and Characterization of NCS Based Palladium Pincer Complexes
18	Navya Gupta	MSc (2Y)	Aug 2023	NNSe type Cobalt Pincer Catalysed Novel Synthesis of 2-Phenyl-3-formyl Indole
19	Mukul	MSc (2Y)	Aug 2023	Designing, Syntheses, and Characterization of NCE(E=S/Se) Based Binuclear Pincer Ligands and Their Complexes
20	Himani Sharma	MSc (2Y)	May 2024	Cobalt Complex Catalyzed Synthesis of 3,3'-(Phenylmethylene)bis(1H-indole)
21	Neeraj Kumar	MSc (2Y)	May 2024	Manganese NNSe Pincer Complex Mediated Synthesis of 4-Quinolones from 2-Aminoacetophenones and Benzyl Alcohols
22	Gunjan Soni	Int. MSc BEd (3Y)	May 2024	Design, Synthesis and Characterization of NNS-Manganese Pincer Complexes and their Applications in Synthesis of 2-Phenylquinazoline-4(3H)-One
23	Mayank Shekhawat	Int. MSc BEd (3Y)	May 2025	Manganese(I) Complexes Catalyzed Dehydrogenative Annulation of 2-Arylimidazopyridines with Maleimides
24	Megha Kumari	Int. MSc BEd (3Y)	May 2025	Palladium Pincer Complex of SeNS Tridentate Ligand as Catalyst for C-H Activation Reaction
25	Tushar Parewa	Int. MSc BEd (3Y)	May 2025	Designing Palladium Pincer Complex of Tridentate SeNTe Ligand
26	Anita Meena	MSc (2Y)	May 2025	Designing Nickel Complexes of NNE (E = S, Se, Te) Pincer type Ligands
27	Satyendra Bahadur	Int. MSc. (5Y)	May 2025	Designing SeNSe-Pd (II) Pincer Complex as Catalyst for Regioselective C-4 Arylation of Thiophene Derivatives

PERSONAL BIODATA

Date of Birth	02nd Feb. 1989
Sex	Male
Marital Status	Married
Languages Known	English, Hindi
Nationality	Indian