

## ROHIT SINGH CHAUHAN (Organometallic Synthetic Chemist)

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RAEBARELI, UTTAR PRADESH  
INDIA -229001  
**Birth Place** : Raebareli, Uttarpradesh  
**Nationality** : Indian  
**Date of Birth** : 18<sup>th</sup> October, 1985



### Professional Experience:

- 2015- till now** Assistant Professor at K. J. Somaiya College of Science and Commerce (Autonomous College) University of Mumbai.
- 2014- 2015** Assistant Professor at Thakur College of Engineering and Technology, Mumbai.
- Theoretical and practical sessions for B.Tech. students (Applied Chemistry)
- 2013- 2014** Post-doctoral fellow Ecole Polytechnique, France, Advisor: Dr. Audrey Auffrant
- "Synthesis of various imino-phosphosilene ligand and stabilized Copper and Nickel complex in unusual oxidation states"**

### Academic Qualifications:

- 2007-2013** Ph.D. in Chemistry for dissertation titled **"Organometallic Chemistry of Platinum Group Metal Chalcogenolates: Synthesis, Structure and Spectroscopy"** from Bhabha Atomic Research Centre, Mumbai, Mumbai INDIA: Advisor: **Dr. V. K. Jain.**
- 2005-2007** M. Sc. (Chemistry) from Christ Church College, Kanpur, INDIA: with (66.8%)
- 2002-2005** B. Sc. (Chemistry, Zoology and Botany) from CSJM University, Kanpur, INDIA: with (72.4%).

### Awards and Achievements:

- **DST Young Scientist Start up Research Grant** (2016-2019)
- **Ecole Polytechnique** Research fellowship for postdoctoral work.
- Dr. D. S. Kothari Postdoctoral fellowship (UGC).
- Awarded international travel fellowship from DST Govt. of India for presenting the paper in the "GEOCOM CONCORD" France.
- Awarded CICS travel fellowship for RSC Conference on Inorganic Chemistry held in Manchester, UK.
- JRF and SRF award from Dept. of Atomic Energy.
- Second rank in M.Sc.(Chemistry) at college level
- First and second ranking in debate and essay writing in graduation level.
- 11<sup>th</sup> position in U.P. Board merit list in Secondary (state level).

### Research Summary:

- Design and synthesis of various new organo-selenium and organo-tellurium ligands and study their reactivity towards low valent metal precursors.
- Nanoparticle synthesis of binary and ternary metal systems from various metal molecular precursors.
- Synthesis and characterization of phosphosilene complexes and stabilization of metal in higher oxidation state (especially Cu(III), Ni(III), Mn(III) and Mn(IV) and study their catalytic property.
- Experience in conducting air, moisture sensitive and potentially hazardous reactions in lab. Familiarize

Contact: Dr. Rohit Singh Chauhan, Asst. Prof. Department of Chemistry, K.J. Somaiya College of Science and Commerce Ghatkopar (E), Mumbai-400077

in handling organometallic reagents and glove box operations.

- Experience in separating mixture of compounds using recrystallization, size exclusion and column chromatography techniques.

### Research & Technical Expertise:

#### Understanding of the dynamics of industrial research | Electrochemistry | Catalysis | Lab management

- Excellent skills in planning & organizing day-to-day research activities and resolving procedural problems as appropriate to the timely completion of research objectives. Ability to work independently as well as a part of the team.
- Innate ability in preparation of reports/presentations/new proposals and presenting papers at technical meetings while developing positive co-worker/customer/investigator relationships.
- Proactive and results-oriented approach with precise analytical technique, good laboratory hygiene, meticulous attention to detail and accuracy, excellent teamwork, technical writing and accurate data handling
- Expertise in characterization using various analytical techniques such as Multi nuclear NMR spectroscopy, Single crystal XRD, FT-IR and Mass spectrometry, and UV-Vis

### Scientific Publications:

#### Refereed Journal papers:

1. Tellurium(0) as a ligand: Synthesis and characterization of 2-pyridyltellurolates of platinum (II) and structures of  $[Pt\{2-Te-3-(R)C_5H_3N\}_2Te(PR'_3)]$  (R = H or Me).  
**R. S. Chauhan**, G. Kedarnath, A. Wadawale, A. M. Castro, R. A. Perez, V. K. Jain, W. Kaim  
**Inorg. Chem. 49 (2010) 4179-4185.**
2. Reactions of 2-telluropyridine ligands with (diphosphine) $Pt^0$  and (diphosphine) $PtCl_2$  complexes and isolation of different structural motifs of platinum(II) complexes.  
**R. S. Chauhan**, G. Kedarnath, A. Wadawale, A. L. Rheingold, A. M. Castro, R. A. Perez, V. K. Jain  
**Organometallics 31 (2012) 1743-1750.**
3. Reactivity of dipyrimidyl diselenides with  $[M(PPh_3)_4]$  and 2-pyrimidylchalcogenolates with  $[MCl_2(diphosphine)]$  (M = Pd or Pt)  
**R. S. Chauhan**, R. K. Sharma, G. Kedarnath, D. B. Cordes, A. M. Z. Slawin, V. K. Jain,  
**J. Organomet. Chem. 717 (2012) 180-186.**
4. Reactivity of 2-chalcogenopyridines with palladium-phosphine complexes: Isolation of different complexes depending on the nature of chalcogen atom  
**R. S. Chauhan**, G. Kedarnath, A. Wadawale, A. M. Z. Slawin, V. K. Jain  
**Dalton Trans. 42 (2013) 259-269.**
5. Oxidative addition reactions of nicotinamide based organoselenium compounds on  $[M(PPh_3)_4]$  (M = Pd or Pt) : An insight study for the formation of several isolable products  
**R. S. Chauhan**, C. P. Prabhu, P. P. Phandis, G. Kedarnath, J. A. Golen, A. L. Rheingold, V. K. Jain  
**J. Organomet. Chem. 723 (2013) 163-170.**

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6. Bis phosphine palladium(II) mesityl chalcogenolate complexes: Synthesis and structure of [Pd(SeMes)<sub>2</sub>(dppe)]  
**R. S. Chauhan**, G. Kedarnath, J. A. Golen, A. L. Rheingold, V. K. Jain  
*Ind. J. Chem.* **18 A (2013) 42-43.**
7. Cis configured bis phosphine platinum(II) chalcogenolate complexes: Structures and a comparative NMR study  
**R. S. Chauhan**, G. Kedarnath, A. Wadawale, J. A. Golen, A. L. Rheingold, D. K. Maity, V. K. Jain  
*J. Organomet. Chem.* **737 (2013) 40-46.**
8. New vistas in the ligand chemistry of tellurium with platinum group metals  
**R. S. Chauhan**, V. K. Jain,  
*Coordination Chem. Review* **306 (2016) 270-301.**
9. Synthesis and characterization of heterobimetallic complexes with pyridyl selenolato ligands. Crystal structure of [{Pt(C<sub>5</sub>H<sub>4</sub>N)(SeC<sub>5</sub>H<sub>4</sub>N)(dppp)}]ZnCl<sub>2</sub>  
**R. S. Chauhan\***, N. Shivran, A. M. Z. Slawin, J. Woolins  
*J. Organomet. Chem.* **830C (2017) 180-186.**
10. Electronic Structures of Mono-Oxidized Copper and Nickel Phosphasalen Complexes  
I. M. Marín, T. Cheisson, **R. S. Chauhan**, C. Herrero, M. Cordier, C. Clavaguéra, G. Nocton, and A. Auffrant  
*Chemistry - A European Journal* **23 (2017).17940-17953.**
11. Emerging trends in organotelluroate chemistry derived from platinoids  
**R. S. Chauhan**, Neelam Shivran; *RSC Advances* **7 (2017) 55175-55198.**
12. Reactivity of hemilabile pyridyl- and methyl-substituted pyrimidylselenolates with [MCl<sub>2</sub>(dppf)] (M = Pd, Pt; dppf = bis(diphenylphosphino)ferrocene)  
**R. S. Chauhan**, D. B. Cordes, A. M. Z. Slawin, S. Yadav, C. Dash *Inorganica Chimica Acta* **478 (2018) 125-129.**
13. Synthesis of palladium telluroate complexes derived from hemi-labile telluroate ligands and studies their reactivity as gas sensing materials  
**R. S. Chauhan**, A. Kumar, P. Prabhu  
*Inorganica Chimica Acta* DOI: [10.1016/j.ica.2018.12.047](https://doi.org/10.1016/j.ica.2018.12.047) (Accepted ASAP)
14. Copper Complexes of Arylselenolate based Ligands: Synthesis and Catalytic Activity in Azide-Alkyne Cycloaddition Reactions  
**R. S. Chauhan**, D. Oza, S. Yadav, C. Dash, A. M. Z. Slawin, N. Shivran  
*New Journal of Chemistry*, DOI: [10.1039/C8NJ04602F](https://doi.org/10.1039/C8NJ04602F) (Accepted ASAP)

### Conferences papers: (7)

1. Structural and spectroscopic characterization of platinum complex with C-substituted (pyridyltelluro)-bis(diphenylphosphino)methane (Poster presentation)  
**R. S. Chauhan**, G. Kedarnath, A. Wadawale, V. K. Jain
2. Reactions of 2-Chalcogenopyridine with palladium phosphine complexes “3rd Asian Conference on Coordination Chemistry” 17-20 Oct 2011, Indian Habitat Centre, New (Poster presentation)  
**R. S. Chauhan**, G. Kedarnath, A. M. Z. Slawin, V. K. Jain
3. Main group metal chalcogenolate complexes and their utility as molecular precursors for metal chalcogenides (Oral presentation) “National symposium on Frontier in Main-Group and Organometallic chemistry”, 19-20 December 2011, IISC, Bangalore.  
R. K. Sharma, **R. S. Chauhan**, G. Kedarnath, A. Wadawale, V. K. Jain
4. Organometallic chemistry of platinum group metal chalcogenolates : Synthesis, Structures and Spectroscopy “24th Research Scholar Meet-2012”, 17-18 February, 2012, SIES College of Arts, Science and Commerce, Mumbai. (**Oral presentation**)  
**R. S. Chauhan**, G. Kedarnath, V. K. Jain
5. Organometallic chemistry of platinum group metal complexes derived from various hemilabile chalcogenolate ligands : Synthesis, spectroscopy and structures “GECOM CONCOORD 2012” 3-8 June 2012, Metabief, France (**Oral presentation**)  
**R. S. Chauhan**, G. Kedarnath, V. K. Jain
6. Preparation of Copper chalcogenides nanoparticles by single source precursor’s method. New Horizon in Chemical and Environmental Science, K. B. Patil College, Vashi.  
**R. S. Chauhan, Jaidip Wable, Avinash Pardhi, Nutan Navelkar**
7. Nano-chemistry: A scintillated prospect of Science. New Horizon in Chemical catalysis and Environmental Science, K. B. Patil College, Vashi. **R. S. Chauhan**, Jaidip Wable, Nutan Navelkar