Sitaram Acharya
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SUMMARY OF OUALIFICATIONS

Research experience in the fields of inorganic and organometallic chemistry and catalysis. Undergraduate chemistry teaching experience.

EDUCATION

2012: **Ph. D. in Chemistry**, University of Missouri-St. Louis, St. Louis, MO
2009: **Master of Science (M S) in Chemistry**, University of Missouri-St. Louis, St. Louis, MO
1996: **Master of Science (M. Sc.) in Chemistry**, Tribhuvan University, Kathmandu, Nepal

EXPERIENCE/SKILL

- Instructed Introductory Chemistry, General Chemistry and Quantitative Analysis classes.
- Instructed in X-ray Laboratory as a Teaching Assistant.

- Synthesized and characterized novel phosphine complexes, including *cis*-platin analogues, of platinum and palladium bearing water-soluble PTA ligands (PTA = 1,3,5-triaza-7-phosphaadamantane) and DAPTA ligands (DAPTA = *N*,*N*-diacetyl-1,3,5-triaza-7-phosphaadamantane).
- Synthesized selected silanes, siloles, silafluorenes, and germanium analogues.
- Investigated catalytic hydrosilylation and hydrogermylation reactions of a variety of unsaturated substrates such as alkenes, alkynes, ketones, and nitriles using group 10 metals-PTA complexes as pre-catalysts and utilizing different hydrosilanes including siloles and silafluorenes and their germanium analogues.
- Synthesized some dimers and oligomers, including those having potential optoelectronic and sensor properties, using hydrosilylation/germylation reactions using monodentate and bidentate phosphine complexes of platinum, palladium, and rhodium.
- Investigated biphasic catalysis using Pt-PTA complexes in hydrosilylation.
- Investigated a variety of cross-coupling reactions for the carbon-carbon bond formation using the palladium(II)-PTA complexes as pre-catalysts.
- Investigated the Si-H bond activation and dehydrogenative coupling reactions of a variety of primary and secondary hydrosilanes as well as silafluorenes using platinum(II) PTA, DAPTA, and other phosphine complexes having different steric and electronic properties.
- Synthesized and characterized a variety of molybdenum(0), molybdenum(IV), and molybdenum(VI) complexes and investigated catalytic epoxidation reactions utilizing them.
- Synthesized and characterized air and moisture sensitive bisphenolate complexes of bismuth, arsenic, and antimony and investigated C-H bond activation in solution using these complexes. Synthesized some molybdenum-calixarene complexes and used in epoxidation catalysis.
- Co-mentored undergraduate students in some of their research works.

- X-ray crystallography skills. SHELXTL crystallographic software package, XShell and XP.
- MuMultinuclear 1D and 2D NMR spectroscopy experiments, variable temperature NMR, solid state NMR, IR, Raman, UV-vis/Fluorescence spectroscopy experiments, GC/GC-MS, HPLC, LC-MS, column and flash chromatography, schlenk- line and glove box reactions/techniques, Kugelrohr, mass spectrometry, elemental analysis, TGA, EDS, and SEM experiments.
- Radiofrequency measurement, functional test, and environmentally-friendly recycling of electronic materials.
- ChemDraw, SigmaPlot, HySS, MestReNova, Mercury, Spartan, and ConQuest.

EMPLOYMENT HISTORY

Adjunct Faculty (Chemistry): Richland College, DCCCD, Dallas, TX

2015–2019: **Technical Assistant**, Genco Technological Solutions, and XPO, Fort Worth, TX
2014 – 2015: **System Analyst**, Horizon Technologies Inc., Sunnyvale, CA

2012–2014: **Research Associate**, Department of Chemistry, Texas Christian University, Fort Worth, TX
2007 – 2012: **Teaching Assistant,** Department of Chemistry, University of Missouri-St. Louis
1997– July 2007: **Lecturer and Faculty Coordinator**, Bhanubhakta Memorial College, Nepal

PUBLICATIONS

1. Braddock-Wilking, J.; Acharya, S.; Rath, N. P. "*Bis(alkynyl) PTA and DAPTA Complexes of Pt(II) and Pd(II).*" *Polyhedron* **2015**, *87*, 55-62.
2. Braddock-Wilking, J.; Acharya, S.; Rath, N. P. "*Synthesis and Characterization of Platinum(II) and Palladium(II)-PTA and DAPTA Complexes." Polyhedron* **2014**, *79*, 16-28.
3. Acharya, S.; Hanna, T. A. "*Epoxidation of Alkenes Catalyzed by some Molybdenum(0) and Molybdenum(IV) Complexes." Polyhedron* **2016**, *107*, 113-123.
4. Acharya, S. "*Synthesis of P-isopropylacetonate-N-methyl-1,3,5-triaza-7-phosphaadamantane." Chem. Res. J.* **2017**, *2(4)*, 98-103.
5. Gewali, M. B.; Wagle, P.; Tiwari, R. P.; Acharya, S. *"Principles of Chemistry (Text-Book)"*, Eds.; Vol. 1; Buddha Academic Publications: Kathmandu, Nepal, **2005**.
6. Gewali, M. B.; Tiwari, R. P., Acharya, S.; Ghimire, C. *"Principles of Chemistry (Text-Book)"*, Eds.; Vol. 2; Buddha Academic Publications: Kathmandu, Nepal, **2011**.
7. Acharya, S.; Singh, A. *"Practical Chemistry (Experimental Chemistry Text-Book)"*, Eds.; Vol. 1; Buddha Academic Publications: Kathmandu, Nepal, **2007**.
8. Acharya, S.; Singh, A. *"Practical Chemistry (Experimental Chemistry Text-Book, Qualitative Analysis)"*, Eds.; Vol. 2; Buddha Academic Publications: Kathmandu, Nepal, **2007**.
9. Acharya, S.; Braddock-Wilking, J. "*Palladium-PTA Complexes Catalyzed Suzuki-Miyaura Cross-Coupling Reactions." (Manuscript Submitted).*

CONFERENCE PRESENTATIONS

A. Oral Presentation:

1. **Acharya, S.**; Braddock-Wilking, J.; Hanna, T. A., Rath, N. P. "*Investigation of Catalytic Activity of Transition Metal PTA Complexes"* **70th South West Regional ACS Meeting, Fort Worth, TX (November 19-22, 2014)**.
2. **Acharya, S.**; Hanna, T. A. "*Investigation of Catalytic Epoxidation Reactions Using some Molybdenum(0) and Molybdenum(IV) Complexes"* **69th South West Regional ACS Meeting, Waco, TX (November 17-20, 2013)**.
3. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Synthesis and Applications of PTA and DAPTA Complexes of Platinum and Palladium"* **46th Midwest/39th Great Lakes Joint Regional ACS Meeting, St. Louis, MO (October 19-22, 2011)**.
4. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Investigation of Catalytic Hydrosilylation Reactions Using Group 10 Metals PTA Complexes"* **16th International Silicon Symposium, McMaster University, Hamilton, Ontario, Canada (August 14-18, 2011)**.
5. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Some Novel Phosphine Complexes of Platinum and Palladium and Their Catalytic Applications"* **24th Missouri Inorganic Day, Missouri State University, Springfield, MO (April 30, 2011)**.
6. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Water Soluble Catalysts Bearing PTA Ligands and Applications in Catalytic Recycling"* **Department of Chemistry, Tribhuvan University, Nepal (Invited Talk, February 5, 2010)**.

B. Poster Presentation:

1. **Acharya, S.**. "*Synthesis of P-isopropylacetonate-N-methyl-1,3,5-triaza-7-phosphaadamantane"* **73rd Annual South West Regional ACS Meeting, Lubbock, TX (October 29-November 1, 2017)**.
2. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Synthesis and Catalytic Applications of Platinum(II) and Palladium(II) PTA and DAPTA Complexes"* **25th Missouri Inorganic Day, University of Missouri-St. Louis (May 5, 2012)**.
3. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Catalytic Applications of Group 10 Metals PTA Complexes in Hydrosilylation and Cross-Coupling Reactions"* **Graduate Research Fair, University of Missouri-St. Louis (April 18, 2011)**.
4. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Catalytic Applications of Group 10 Metals PTA Complexes in Hydrosilylation and Cross-Coupling Reactions"* **Chemistry Alumni Meeting,**

University of Missouri-St. Louis (April 16, 2011).

5. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Synthesis of Some Novel PTA complexes of Platinum and Palladium and Study of Their Catalytic Role in Hydrosilylation Reactions"* **Graduate Research Fair, University of Missouri-St. Louis (April 5, 2010)**.
6. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Investigation of Catalytic Hydrosilylation and Hydrogermylation Reactions Using a Platinum(II) PTA Complex"* **43rd National Silicon Symposium, University of Missouri-St. Louis (May 20-22, 2010)**.
7. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Investigation of Catalytic Hydrosilylation and Si-H Bond Activation Reactions Using Platinum(II) PTA Complexes"* **23rd Missouri Inorganic Day, Saint Louis University (May 8, 2010)**.
8. **Acharya, S.**; Braddock-Wilking, J.; Rath, N. P. "*Synthesis of cis-Dimethylbis(1,3,5-Triaza-7-Phosphaadamantane) Platinum(II) and Its Application in Hydrosilylation Reactions"* **22nd Missouri Inorganic Day, University of Missouri-Columbia (May 2, 2009)**.

PROFESSIONAL AFFILIATIONS AND OTHER ACTIVITIES

- American Chemical Society
- Sigma-Xi
- Nepal Chemical Society (2001 – 2008)
- *Reviewer:* International Journal of Chemistry, Pharma Research Library Journal, Bulletin of Chemical Society of Ethiopia.
- Judge: Undergraduate research presentation, ACS DFW Meeting in Miniature
- Judge: Sigma Xi Student Research Showcase.