

Dr. Komal M. Vyas

Designation : Assistant Professor

Specialization : Inorganic Chemistry

Address

Office : Department of Chemistry,
Sardar Patel University,
Vallabh Vidyanagar – 388120, Gujarat

Telephone : 9909801455

Date of Birth : 26/06/1987

E-mail : komal_vyas@spuvvn.edu

ORCID ID : orcid.org/0000-0002-4602-8186

Educational Qualifications

- Post-Doctoral Fellow, Indian Institute of Technology-Indore, June 2016 to July-2017
- Ph.D.(Inorganic Chemistry), The Maharaja Sayajirao University of Baroda, Vadodara, 2009-2013
- M.Sc.(Inorganic Chemistry), School of Sciences, Gujarat University, Ahmedabad, 2007-2009
- B.Sc.(Chemistry), Gujarat University, 2004-2007

Academic Experience

- Institute of Infrastructure, Technology, Research And Management (IITRAM), Ahmedabad, Gujarat, India
Duration : August 2013-May 2016
- Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar
Duration: July 2017 to till date

Research Area

Synthesis of organic molecules, Organometallic Chemistry, Coordination Chemistry, Medicinal Chemistry, Material Chemistry, Catalysis, Nano materials

Expertise : Inorganic Chemistry

No. of Publication

- Research Articles: 20
- Book: 01

List of Publications (Appendix)

List of Publications

Book

“Crystal structures of 4-acyl pyrazolone based metal complexes”, Scholar's press, Germany, 2013

Research Articles

1. K. M. Vyas, D. Sharma, S. K. J. Magani, S. M. Mobin, S. Mukhopadhyay, In vitro evaluation of cytotoxicity and antimetastatic properties of novel arene ruthenium (II)-tetrazolato compounds on human cancer cell lines, **Appl. Organomet. Chem.**, (2021) e6187.
2. K. M. Vyas, P. Mandal, R. Singh, S. M. Mobin, S. Mukhopadhyay, Arene-ruthenium(II)-phosphine complexes: Green catalysts for hydration of nitriles under mild conditions, *Inorg. Chem. Commun.*, 112 (2020) 107698.
3. J. Kumari, S. M. Mobin, S. Mukhopadhyay, K. M. Vyas, Efficient oxidation of benzene catalyzed by Cu(II) tetrazolato complexes under mild conditions, *Inorg. Chem. Commun.*, 105 (2019) 217-220.
4. P. Mandal, B. Kundu, K. Vyas, V. Sabu, A. Helen, S. Dhankhar, C. M. Nagaraja, K. Bhabak, D. Bhattacharjee, S. Mukhopadhyay, Ruthenium(II) Arene NSAID Complexes : Inhibition of Cyclooxygenase and Antiproliferative Activity Against Cancer Cell Lines, *Dalton Trans.*, 47 (2018), 517-527.
5. R. N. Jadeja, K. M. Vyas, K. K. Upadhyay, R. V. Devkar, “ In vitro apoptosis-inducing effect and gene expression profiles of mixed ligand Cu(II) complexes derived from 4-acyl pyrazolones on Human Lung Cancer cells”, *RSC Adv.*, 7 (2017) 17107–17116.
6. M. Saha, K. M. Vyas, L. M. D. R. S. Martins, N. M. R. Martins, A. J. L. Pombeiro, M. M. Shaikh, D. Bhattacharjee, K. P. Bhabak, S. Mukhopadhyay, “Copper(II) Tetrazolato Complexes: Role in Oxidation Catalysis and Protein Binding”, *Polyhedron*, 132 (2017) 53-63
7. K. M. Vyas, R. V. Devkar, A. Prajapati, R. N. Jadeja, “Pyrazolone incorporating bipyridyl metallointercalators as effective DNA, Protein and lung cancer targets: Synthesis, Characterization and in vitro biocidal evaluation” **Chem-Biol. Interact.**, 240 (2015) 250-266.

8. **Invited article for the special issue in honor of Prof. V. Leovac, K. M. Vyas**, R. N. Jadeja, D. Patel, R. V. Devkar, V. K. Gupta, "Effect of ligand substitution in pyrazolone based binary and ternary Cu(II) complexes on DNA Binding, Protein Binding and Anti-cancer activity on A549 Lung carcinoma cell lines" **Polyhedron** 80 (2014) 20–33.
9. **K. M. Vyas**, R. N. Jadeja, D. Patel, R. V. Devkar, V. K. Gupta, "New pyrazolone based ternary Cu(II) complex: Synthesis, characterization, crystal structure, DNA binding, protein binding and anti-cancer activity towards A549 human lung carcinoma cells with a minimum cytotoxicity to non-cancer cells" **Polyhedron** 65 (2013) 262-274.
10. N. Sharma, **K. M. Vyas**, R. N. Jadeja, R. Kant, V. K. Gupta, "(Z)-3-Methyl-4-[1-(4-methylanilino)-propylidene]-1-phenyl-1H-pyrazol-5(4H)-one" **Acta Cryst. E.**, 69 (2013) o1271.
11. Joseph V. A., **K. M. Vyas**, R. N. Jadeja, V. K. Gupta "Studies on DNA binding behavior of biologically active Cu(II) complexes of Schiff bases containing acyl pyrazolones and 2-ethanolamine" **J. Coord. Chem.**, 66 (2013) 1094–1106.
12. S. I. Thakore, J. Y. Soni, **K. Vyas**, R. N. Jadeja, R. V. Devkar, P. Rathore, "Synthesis and cytotoxicity evaluation of novel acylated starch nanoparticles" **Bioorg. Chem.** 46 (2013) 26-30.
13. R. N. Jadeja, **K. M. Vyas**, V. K. Gupta, R.G. Joshi, C. Ratna Prabha "Syntheses, characterization and molecular structures of calcium(II) and copper(II) complexes bearing O₂-chelate ligands: DNA binding, DNA cleavage and anti-microbial study" **Polyhedron** 31 (2012) 767-778.
14. R. N. Jadeja, S. Parihar, **K. Vyas**, V. K. Gupta, "Synthesis and crystal structure of a series of pyrazolone based Schiff base ligands and DNA binding studies of their Copper complexes" **J. Mol. Struct.**, 1013 (2012) 86–94.
15. N. Sharma, **K. M. Vyas**, R. N. Jadeja, Rajni Kant, V. K. Gupta, "2-Amino-7,7-dimethyl-5-oxo-4-(p-tolyl)-5,6,7,8-tetrahydro-4H-chromene-3-carbonitrile" **Acta Cryst. E.**, 68 (2012) o3036.
16. **K. M. Vyas**, V. K. Shah, R. N. Jadeja, "Synthesis and Characterization of Ni(II) complexes of some O,N donor Schiff bases derived from acyl pyrazolone analogues" **J. Coord. Chem.** 64 (2011) 1069–1081.
17. **K. M. Vyas**, R. N. Jadeja, V. K. Gupta, K. R. Surati, "Synthesis, characterization and crystal structure of some bidentate heterocyclic Schiff base ligands of 4-toluoyl pyrazolones and its mononuclear Cu(II) complexes" **J. Mol. Struct.** 990 (2011) 110–120.
18. **K. M. Vyas**, R. G. Joshi, R. N. Jadeja, C. Ratna Prabha, V. K. Gupta, "Synthesis, spectroscopic characterization and DNA nuclease activity of Cu(II) complexes derived from pyrazolone based NSO-donor Schiff base ligands" **Spectrochim. Acta A.**, 84 (2011) 256-268.
19. R. J. Yadav, **K. M. Vyas**, R. N. Jadeja, "Synthesis and spectral characterization of Cu(II) complexes of some Thio-Schiff bases of acyl pyrazolone analogues" **J. Coord. Chem.** 63 (2010) 1820–1831.

20. N. P. Moorjani, **K. M. Vyas**, R. N. Jadeja, “Synthesis & Characterization of Cu(II) complexes derived from acyl pyrazolones & 2-amino phenol” **PRAJÑĀ - Journal of Pure and Applied Sciences**, 18 (2010) 68-72.

List of Minor/ Major projects carried out

Project Title	Scheme	Funding Agency	Duration	Amount	Status
Studies on Transition Metal Complexes Catalyzed Industrially Important Reactions	UGC-BSR Research Start-Up Grant	UGC, New Delhi	2018-2020	10,00,000/-	Completed

Others

Research/Project Students

- Ph.D. Students: 02 (Ongoing)
- CPEPA Project Fellow: 01 (Completed)
- M.Sc. Project Students: 04 (Completed) 02 (Ongoing)

Participation in Seminars/Conferences/Workshops

1. Oral presentation on “Versatile Arene-Ruthenium(II)-Phosphine Complexes: From Green Catalysts for Hydration of Nitriles to Anticancer Agents” at 26th ISCB International Conference (ISCBC-2020) held at Nirma University, Ahmedabad during January 22-24, 2020.
2. Oral presentation on “Flexible Piano-Stool Arene-Ruthenium(II) Complexes: From Green Catalysts to Antiproliferative Agents” at International Conference 7th Asian Network for Natural and Unnatural Materials (ANNUM IV) held at Gujarat University, Ahmedabad during September 27-29, 2019.
3. Oral presentation on “Synthesis, characterization and biological significance of Cu(II) complexes bearing heterocyclic ligands” at 25th ISCB International Conference (ISCBC-2019) held at Lucknow during January 12-14, 2019.
4. Oral presentation on “Arene-Ruthenium(II)-Phosphine Complexes: Highly Efficient Catalysts for Selective Hydration of Nitriles into Amides in Pure Aqueous Medium Under Mild Conditions” at 28th International Conference on Organometallic Chemistry (ICOMC-2018) held at Florence, Italy during July 15-20, 2018.
5. Two Day National Level Workshop on “Patent drafting, filing and processing criteria in India organized by Department of Chemistry, Sardar Patel University, V.V. Nagar during February 16-17, 2018.
6. 32nd Gujarat Science Congress, Theme: Science and Technology for Capacity Building & Inclusive Growth: The Role of Academies and Academia organized by CSMCRI and M. K. Bhavnagar University under the aegis of Gujarat Science

Academy held at Shree Zhaverchand Meghani Auditorium, Bhavnagar on February 4, 2018.

7. Oral presented on “Effect of ligand substitution in pyrazolone based binary and ternary Cu(II) complexes on DNA Binding, Protein Binding and Anti-cancer activity on A549 Lung carcinoma cell lines” at International Conference on “Chemistry-Frontiers & Challenges” held at Post Graduate and Research Department of Chemistry, PSGR Krishnammal College for Women, Coimbatore, Tamilnadu during February 5-7, 2014.
8. Oral presented on “Synthesis, Characterization, Crystal Structure, DNA Binding, Protein Binding and Anticancer activity of Novel ternary Cu(II) complex Derived From 4-Propionyl Pyrazolone and 2, 2' Bipyridyl Ligands” at the XXXI Annual Conference of the Indian Council of Chemists held at Department of Chemistry, Saurashtra University, Rajkot during December 26-28, 2012.
9. Oral presented “Novel efficient anti-cancer ternary Cu(II) complex containing pyrazolone based thiosemicarbazone and polypyridyl ligands: Synthesis, characterization, crystal structure, DNA binding, protein binding and anticancer activity towards A549 human lung carcinoma cells” at the Regional Science Congress 2012 held at the Department of Chemistry M. S. University of Baroda, Vadodara during September 15-16, 2012.
10. Oral presented on “Synthesis, characterization, crystal structure, DNA interaction and DNA cleavage activities of Copper(II) thiocyanato complex with 4-tolouyl pyrazolone and phenanthroline base” at the XXVI Gujarat Science Congress 2012 held at the Department of Chemistry, M. S. University of Baroda, Vadodara on February 26, 2012.
11. Poster presented on “Schiff bases derived from acyl pyrazolone and DNA nuclease of their copper complexes” at National Conference on Chemical Sciences in New Millennium held at the Department of Chemistry, Pacific College of Basic & Applied Sciences, Pacific University, Udaipur on 8th January, 2012.
12. One Day Seminar on Innovations in Collegiate Science Education and Research held at VP & RPTP Science College, V.V.Nagar on January 8, 2011.
13. A 5 Day School of Bioinorganic Chemistry held at the Department of Chemistry, M. S. University of Baroda during March 8-12, 2011.
14. National Conference on Chirality 2011 held at the Department of Chemistry, M. S. University of Baroda during December 2-3, 2011.
15. Poster presented on “Synthesis and Characterization of Ni(II) complexes of some O, N donor Schiff bases” at “Sixth All Gujarat Research Scholars Meet” held at the Department of Chemistry, M. S. University of Baroda on January 31, 2010.
16. National Workshop on Radiochemistry and Applications of Radioisotopes held at the Department of Chemistry, M. S. University of Baroda during January 4-12, 2010.
17. National Symposium on Emerging Horizons in Catalysis held at Department of Chemistry, Baroda Chapter during September 25-26, 2009.

Other Activities

1. Participated as an exhibitor and volunteer in Vibrant Gujarat-2015 & Celebration of Pravasi Bhartiya Divas organized by Government of India held at Ahmedabad during January 7-13, 2015.
2. Participated as volunteer in National Education Summit-2014 organized by Government of Gujarat held at Mahatma Mandir, Ahmedabad during January 10-11, 2014.
3. Participated as a volunteer in Summer Camp-2013 held at the University Pavilion at The M.S. University of Baroda, Vadodara during May 6-12, 2013.
4. Participated in Open House Science Fair in the celebration of 150th Birth Anniversary of MSU, Baroda during March 11-12, 2012.
5. Participated in Special Practical Demonstration Session for School Students organized at different schools by Department of Chemistry M. S. University of Baroda, Vadodara under the auspices of International Year of Chemistry 2011.

Contribution in Conference/Seminar/Workshops

1. Organizing Secretary, One Day National Seminar on Paradigms and Opportunities for Cross Disciplinary Research in Science with A Focus on National Development organized by Sardar Patel University, V. V. Nagar and sponsored by Indian Science Congress association (ISCA) on March 6, 2021.
2. Organizing committee member, National Workshop on Therapeutic and Material Characterization (NWTMC-2020) organized by Department of Chemistry, Sardar Patel University, V. V. Nagar, March 12-18, 2020.
3. Organizing committee member, National Seminar on Applied Polymer Science and Technology (NSAPST-2020) organized by Department of Chemistry, Sardar Patel University, V. V. Nagar, January 28-29, 2020.
4. Organizing committee member, National Conference on Novel Chemical Systems for Therapeutic and Energy Applications (NCSTEA-2019) organized by Department of Chemistry, Sardar Patel University, V. V. Nagar, March 1-2, 2019.
5. Organizing committee member, National Seminar on Applied Polymer Science and Technology (NSAPST-2019) organized by Department of Chemistry, Sardar Patel University, V. V. Nagar, January, 24-25, 2019.
6. Organizing committee member, Two Day National Level Workshop on Patent drafting, filing and processing criteria in India organized by Department of Chemistry, Sardar Patel University, V. V. Nagar, February 16-17, 2018.

Training programs

1. Certificate Course on “Nurturing Innovation and Startup Ecosystem (NISE)” organized by Gujarat Student Startup and Innovation Hub (*i-Hub*)
2. “One Day Faculty Development Program on STI Connect Forum for R & D Proposals on State Priority Areas with Frontiers Areas of S & T” organized by S. P. University, Ahmedabad, jointly sponsored by RUSA & GUJCOST on January 17, 2020.
3. “One Day Faculty Development Program on STI Connect Forum for R & D Proposals on State Priority Areas with Frontiers Areas of S & T” organized by UGC-HRDC, Gujarat University, Ahmedabad, jointly sponsored by RUSA & GUJCOST on November 26, 2019.
4. “Refresher Course in Chemistry” organized by HRDC, Gujarat University, Ahmedabad during November 18-December 01, 2019.
5. “3rd Faculty Development Program” organized by UGC-HRDC, S.P.University, Vallabh Vidyanagar during December 03-07, 2018.
6. “90th Orientation Programme” organized by HRDC, Gujarat University, Ahmedabad during October 23-November 19, 2017.
7. “1st International Faculty Development Program” organized by UGC-HRDC, S.P.University, Vallabh Vidyanagar during 01-02 August, 2017.

Positions at SPU

1. Nodal Officer, Student Startup and Innovation Program (SSIP), SPU-SSIP-
2. Navadhārā funded by Govt. of Gujarat
3. Ex-Officio, Chemical Society, Department of Chemistry, Sardar Patel University
4. Coordinator, Women Cell, Department of Chemistry, Sardar Patel University

Honors

Fellowships:

- Institute Post-Doctoral Fellowship
Funded by: Indian Institute of Technology-Indore
Duration: 08-06-2016 to 10-07-2017
- Alembic Research Fellowship
Funded by: Alembic Pvt. Ltd., Vadodara
Duration: 01-12-2009 to 29-12-2011
- University Research Fellowship
Funded by: The M. S. University of Baroda, Vadodara
Duration: 30-12-2011 to 07-08-2012

Awards:

- International Travel Support under Young Scientist category by DST-SERB, Govt. of India for presenting research work at 28th International Conference on Organometallic Chemistry (ICOMC-2018), Florence, Italy during 15-20 July, 2018.
- Award: “Young Scientist Award”, 2012 Conference: XXXI Annual Conference of the Indian Council of Chemists
- Prof. Talati Parivar Prize, Award for the report on research work carried out during 2009-10.

Life Membership:

- Indian Society of Chemists and Biologists
- Catalysis Society of India

Highlights of achievements

- K. M. Vyas, R. N. Jadeja, D. Patel, R. V. Devkar, V. K. Gupta, Polyhedron 65 (2013) 262-274 article was appeared in “The Most Downloaded Articles from ScienceDirect in last 3 months” in November, 2013.
- Invited article for the special issue in honor of Prof. V. Leovac, K. M. Vyas, R. N. Jadeja, D. Patel, R. V. Devkar, V. K. Gupta, “Effect of ligand substitution in pyrazolone based binary and ternary Cu(II) complexes on DNA Binding, Protein Binding and Anti-cancer activity on A549 Lung carcinoma cell lines” Polyhedron 80 (2014) 20–33.