



Brief Bio-Sketch



| Title | Dr. | First Name | Vikrant | Last Name | Kumar |
|--|---|------------|--|-----------|-------|
| Designation | Associate Professor and Teacher-in-Charge | | | | |
| Department | Chemistry | | | | |
| Address (Campus) | Acharya Narendra Dev College (University of Delhi) Govindpuri, Kalka Ji New Delhi -110019 | | | | |
| Residence | FCA-150, Chawla Colony, Ballabgarh, Faridabad, Pin-121007, Haryana | | | | |
| Contact No. (Campus) | +91-11-26294542, 26294540 (Fax), 9871776434 (Mob.) | | | | |
| Email | vikrantkumar@andc.du.ac.in | | | | |
| Web-Page | https://www.andcollege.du.ac.in/departments/chemistry/faculty | | | | |
| Academic Qualifications | Subject | Division | University/Board | | |
| Ph. D. (2007) | Inorganic Chemistry | – | Jamia Millia Islamia, New Delhi, India | | |
| M. Sc. (2002) | Inorganic Chemistry | First | C. C. S. University, Meerut, India | | |
| Research Interests / Specialization | | | | | |
| <p>The overall goal of his research is to provide excellence in the field of inorganic chemistry and Nanomaterials through a multi-disciplinary approach, including analytical, synthetic, inorganic and biochemical techniques. More specifically, he is developing synthetic coordination chemistry of transition metal ions and ligand design with focus on systems using amino acids/piprazine/imidazole-containing chelating ligands, complexes of deprotonated pyridine/pyrazine amide ligands, and bioinorganic synthetic model complexes of metalloenzyme active sites. Research covers extensive synthesis, molecular and electronic structural (magnetic, spectroscopic) characterization and antibacterial, antifungal activities. His contributions to inorganic chemistry are found in the areas:</p> <ol style="list-style-type: none">1. Bioinorganic Chemistry: Biomimetic Chemistry, Medicinal Chemistry, Nano-size clusters.2. Advanced materials: Bioactive Coordination Polymers–Approach towards making antimicrobial materials for advanced applications.3. Transition Metal Complexes in Catalysis: Applications include the production of fine chemicals, pharmaceuticals, renewable energy source and waste-treatment processes. | | | | | |
| Teaching Experience (Subjects/Courses Taught) | | | | | |
| Associate Professor | | | 18 March 2021 - Present | | |
| Assistant Professor | | | 18 March 2009 - 17 March 2021 | | |
| Department of Chemistry Acharya Narendra Dev College (University of Delhi) Govindpuri, Kalka Ji, New Delhi-110019 | | | | | |

Courses Taught (Theory/Practical) at the Undergraduate Level: Inorganic Chemistry, Analytical Chemistry to various Honors and Program Courses at their different levels.

Academic Staff College: Orientation/Refresher Course attended

Two-week inter-disciplinary RC/FDP “Managing Online Classes & Co- Creating MOOCS” 2-16 June 2021

TLC, Ramanujan College, University of Delhi, New Delhi

One Week Faculty Development Programme “Academic Writing” 18-24 Feb 2021

TLC, Ramanujan College, University of Delhi, New Delhi

Two-Week Interdisciplinary RC/FDP “Advanced Research Methodology Tools and Techniques”
30 Jan- 14 Feb 2021

TLC, Ramanujan College, University of Delhi

One week Workshop “Leadership Development Programme (LDP-2)” 19-25 Jan 2021

CPDHE-HRD Centre, University of Delhi, New Delhi

One week Workshop “Research Methodology (RM-2)” 06-12 Jan 2021

CPDHE-HRD Centre, University of Delhi, New Delhi

4 weeks “Refresher Course in Chemistry” 02-27 Jan 2017

UGC-HRD Centre, Jawaharlal Nehru University, New Delhi

4 weeks “Orientation Programme” 20 June-17 July 2014

UGC-HRD Centre, Kurukshetra University, Kurukshetra, Haryana

Academic/Research Honors

Raman Fellowship for Post Doctoral Research in USA Aug, 2014-Aug, 2015

Conducted research on **“Catalysts for Water Oxidation: Hope for Sustainable Energy”** awarded by the University Grants Commission, India at San Diego State University, San Diego, California, USA.

Prof. Douglas B. Grotjahn, Department of Chemistry and Biochemistry, **San Diego State University**, San Diego, California, USA.

Science Academies' (IAsC-INSA-NASI) Summer Research Fellowship May-June, 2012

Conducted research on **“DNA Binding Studies of Copper Complexes”** supported by Indian Academy of Science (IAsC), Indian National Science Academy (INSA) and The National Academy of Science, India (NASI) collectively.

Prof. A.R. Chakravarty, Department of Inorganic and Physical Chemistry, **Indian Institute of Science**, Bangalore, India.

Visiting Young Scientist 04 Aug 08 to 31 Oct 08

Conducted research on **“Construction of metal substituted myoglobin and its mutants (Artificial metal-enzymes)”** supported by **“Global Center of Excellence”** in Chemistry of **Nagoya University, Japan**.

Prof. Y. Watanabe, Laboratory of Bioinorganic Chemistry, Department of Chemistry, Graduate School of Science, **Nagoya University, Japan**.

Research/ Academic Projects

The followings are ongoing/completed projects as **Principal Investigator**.

- 1) **Project Title:** Metal Complexes As Anticancer Agents: Synthesis, Characterization And Their Tumerogenesis Evaluation
Period: Three Years (**Completed**)
Funded By: Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India.
Amount: Rs. 16.11 Lakh
- 2) **Project Title:** Exploring useful bacteria from soil.
Period: One Year (**Completed**)
Funded By: Innovation Projects from Colleges Scheme, University of Delhi
Amount: Rs. Rs.10 Lakh
- 3) **Project Title:** Development of Novel Antifungal Soap Ingredient.
Period: One Year (**Completed**)
Funded By: The National Science & Technology Entrepreneurship Development Board, Department of Science and Technology (DST), Ministry of Science and Technology, Govt. of India.
Amount: Rs. 85,000/-

Summer Research Project:

Guided the following **Short Term Research Projects** (Summer Break) to promote innovation & research at UG/PG level

- 4) **Project Title:** Blending of nanocomposites. **Year 2023**
- 3) Mannich Reaction: A One-Pot Three-Component reaction catalyzed by Ruthenium (II) - chlorido-dimethylsulfoxide, $[RuCl_2(DMSO)_4]$ **Year 2016 (PG/M.Sc.)**.
Submitted to: Amity Institute of Applied Sciences, **Amity University** Uttar Pradesh *In partial fulfillment of requirements for the award of the Degree of M. Sc. (Applied Chemistry)*
Funded By: ELITE, Acharya Narendra Dev College (University of Delhi)
- 2) **Project Title:** Synthesis and spectral studies of Schiff base compounds. **Year 2010**
Funded By: Acharya Narendra Dev College (University of Delhi)
- 1) **Project Title:** Synthesis and spectral studies of substituted imidazoles catalyzed by *p*-toluene sulfonic acid. **Year 2009**

Publications

Peer Reviewed Book / Book Chapter

| S. No. | Year of Publication | Title | Publisher | Author/s |
|--------|---------------------|---|--|---|
| 1 | 2021 | Book: Herbs and Spices—New Processing Technologies. | IntechOpen United Kingdom | Vikrant Kumar , Deepak Mishra, Mukesh Chandra Joshi, Priyanka Mishra, Megha Tanwar |
| | | Chapter: <i>Syzygium aromaticum</i> : Medicinal Properties and Phytochemical Screening | ISBN: eBook (PDF) 978-1-83969-610-7 | |

Research Articles
In Indexed/ Peer Reviewed Journals

| S. No. | Year of Publication | Title | Journal | Author/s |
|--------|---------------------|---|---|---|
| 20. | 2023 | Configurational structure investigation of polyisobornyl methacrylate (pibma) using nuclear magnetic resonance techniques | <i>Eur. Chem. Bull.</i> , 12(4), 2556. 2023 doi.org/10.31838/ecb/2023.12.4.169 ISSN 2063-5346 | Deepika Khandelwal, Vikrant Kumar , Aarushi Singh, Shyam Lal, Ramesh Kumari, Sunita Hooda, Sanjeeta Rani and Manisha Verma |
| 19. | 2023 | Role of functionalized chitin-EDTA as a promising adsorbent for water purification | <i>Rasayan J. Chem.</i> , 16(2), 660, 2023 doi.org/10.31788/RJC.2023.1628289 ISSN: 0974-1496 e-ISSN: 0976-0083 | Manisha Verma, Drashya Gautam, Ravina Yadav, Vikrant Kumar , Sunita Hooda and Neelu Dheer |
| 18. | 2020 | Self-Nitrogen doped carbons aerogel derived from waste cigarette butts (cellulose acetate) for the adsorption of BPA: Kinetics and adsorption mechanisms | <i>J. King Saud Univ. - Science</i> , 32 (8), 3351, 2020 ISSN: 1018-3647 | Norah S. Alhokbany, Mu Naushad, Vikrant Kumar , Saad Al hatim, Saad M. Alshehri, Tansir Ahamad |
| 17. | 2020 | Ibuprofen-based chemosensor for efficient binding and sensing of Cu ²⁺ ion in aqueous medium | <i>J. Mol. Str.</i> 1199 (2020) 127003 ISSN: 0022-2860 | Shyam Lal, Kunal Prakash, Sunita Hooda, Vikrant Kumar* , Pramod Kumar |
| 16. | 2018 | Heteroleptic metal(II) complexes of curcumin and 2,2'-bipyridine: Synthesis, characterization, molecular modeling and preliminary antimicrobial investigation | <i>Rev. Roum. Chim.</i> , 63(4), 299, 2018 ISSN: 0035-3930 | Shyam LAL, Mukesh Chandra JOSHI, Sunita HOODA , Vikrant KUMAR* |
| 15. | 2018 | Acrylonitrile copolymer based membrane sensor for selective detection of Pb ²⁺ ions in aqueous medium | <i>Int. J. Adv. Ed. Res.</i> , 3 (2), 107, 2018. ISSN: 2455-6157 | Shyam Lal, Sunita Hooda, Ramesh Chandra, Vikrant Kumar , Vandana Uberoi, Geetu Gambhir, Drashya |
| 14. | 2017 | Sportsmen's energy package <i>Cordyceps sinensis</i> : Medicinal importance and responsible phytochemical constituents | <i>Am. J. Essent. Oil. Nat. Prod.</i> 5(2), 37, 2017. ISSN 2321-9114 | Yogesh Chandra Joshi, Mukesh Chandra Joshi, Vivek Chopra, Rakesh Kumar Joshi, Rajni Kant Sharma and Vikrant Kumar* |
| 13. | 2014 | Potent phosphatidylinositol 3-kinase inhibitors and their biology (Review article) | <i>Current Drug Discovery Tech.</i> 11, 1, 2014. ISSN: 1875-6220 | Mukesh Chandra Joshi, Krishan Kumar and Vikrant Kumar |

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| 12. | 2012 | Synthesis <i>via</i> a multi-component condensation and spectral studies of substituted imidazoles catalyzed by <i>p</i> -toluene sulfonic acid. | <i>Res. J. Chem. Sc.</i> 2, 18, 2012 ISSN: 2231-606X | Vikrant Kumar*, Ritu Mamgain and Neha Singh |
| 11. | 2009 | Some O,O',O'',O'''-di/tetra aryldithioimidophonates transition metal complexes derived from catechol and bisphenole-A as antibacterial and antifungal agents | <i>Euro. J. Med. Chem.</i> , 44, 785, 2009. ISSN: 0223-5234 | Vikrant Kumar, Tansir Ahamad and Nahid Nishat |
| 10. | 2009 | New Class of Anti-microbial agents: Synthesis, Characterization and Anti-microbial Activities of Metal chelated Polyurea | <i>J. Biomed. Mat. Res. Part-A</i> , 88A, 288, 2009 ISSN:1552-4965 | Tansir Ahamad, Vikrant Kumar, Nahid Nishat |
| 09. | 2008 | Antimicrobial studies of N-N'-dicarboxydiethyloxamide and its Co(II), Ni(II), Cu(II) and Zn(II) complexes | <i>J. Coord. Chem.</i> , 61, 1036, 2008. | Vikrant Kumar, Tansir Ahamad and Nahid Nishat |
| 08. | 2008 | Synthesis, characterization and anti-microbial activity of poly (ethylene oxamide-N, N'-disuccinate) and its polymer metal complexes | <i>J. Coord. Chem.</i> , 61, 1423, 2008 | T. Ahamad, V. Kumar, S. Parveen and Nahid Nishat |
| 07. | 2008 | Organotin(IV) oxo-homoscorpionate: Preparation, characterization and antimicrobial properties | <i>J. Coord. Chem.</i> , 61, 1283, 2008. | Rajkumar Joshi, Parveen Kumar, Vikrant Kumar and A. A. Hashmi |
| 06. | 2007 | In vitro antibacterial and antifungal assay of poly-(ethylene oxamide-N, N'-diacetate) and its polymer metal complexes | <i>App. Organomet. Chem.</i> , 21, 1013, 2007 | Tansir Ahamad, Vikrant Kumar, Shadma Parveen and N. Nishat |
| 05. | 2007 | Synthesis, spectral and antimicrobial studies of novel macrocyclic ligand containing a piperazine moiety and its binuclear metal complexes | <i>J. Coord. Chem.</i> , 60, 85, 2007. | Nahid Nishat, M.M. Haq, Tansir Ahamad and Vikrant Kumar |
| 04. | 2006 | Synthesis, characterization and antimicrobial activity studies of N-N'-tetracarboxydiethyloxamide ligand and its metal(II) complexes | <i>J. Coord. Chem.</i> , 59, 1729, 2006 | Nahid Nishat, Rahisuddin, M.M. Haq and Vikrant Kumar |

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| 03. | 2006 | Synthesis, characterization and anti-microbial activity of transition metal chelated thiourea formaldehyde resin" | <i>Polymer International</i> , 55, 1398, 2006. | Tansir Ahamad, Vikrant Kumar and Nahid Nishat |
| 02. | 2006 | Synthesis, spectral and biological studies of organotin(IV) complexes of heteroscorpionates | <i>Appl. Organomet. Chem.</i> 20, 740, 2006. | Rajkumar Joshi, G. S. Sharma, Vikrant Kumar , A. A. Hashmi, Satyendra Kumar, R. Achila and M. Ejaz Hussain |
| 01 | 2006 | Pyrimidine-based 13- and 14-membered pentaazamacrocyclic ligands and their first row transition metal complexes: Synthesis, Characterization and Antimicrobial Studies | <i>Acta Univ. Palacki. Olomuc. Fac. Rer. Nat. Chemica</i> , 45, 52, 2006. | N. Nishat, Vikrant Kumar , M. Mazharul Haq and Rahis-ud-din |

Conference Publications (Few/Selected Only)

| Year of Publication | Title | Conference Details | Author/s |
|---------------------|---|--|--|
| 2015 16 Dec. | Spectroscopic analysis, molecular modeling and antimicrobial applications of Cu ^{II} heteroleptic metal complex bearing curcumin and 2,2'-bipyridine | National Conference on "Interdisciplinary Approaches in Chemical Sciences" (IACS-2015) Centre for Interdisciplinary Research In Basic Sciences, Jamia Millia Islamia, New Delhi - 110025 | Vikrant Kumar , Shyam Lal, M. C. Joshi, H. K. Rajour and Sunita Hooda |
| 2013 5-6 March | Science Conclave 2013 | Organized by YMCA University of Sc. and Tech., Faridabad, INDIA | Participated |
| 2012 12 Dec | Mono and Trinuclear Transition Metal.....Biological Activity Studies | Symposium on Nanotechnology: Interdisciplinary Aspects organized by YMCA University of Sc. and Tech., Faridabad, INDIA | on Vikrant Kumar |
| 2012 6-7 Sep | Enabling the Young: Redefining Education | The Academic Congress, University of Delhi, New Delhi, India | Participated |

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| 2011 10-13 Dec | Click Reaction Synthesis of Bioactive Formyl 3 rd International conference on Ritu Mangain and Ferrocene Thiosemicarbazone Derivatives and Their Implication As Novel Antiamoebic Heterocyclic Chemistry Agents | Vikrant Kumar, Neha Singh organized by University of Rajasthan, India |
| 2011 23 Feb | Successive entrapping of <i>Nigella sativa</i> to thermosensitive N-isopropylacrylamide-co-vinyl pyrrolidone (NIPAAm-Co-VP) polymeric micelles and its antibacterial study | Tatva'11, organized by Suruchi Suri, Delhi Technical Deepak Yadav, University, India Kuldeep Singh, M. Samim and Vikrant Kumar |
| 2011 31 Jan -02 Feb | Open Paradigms in Education | International Conference "OPEN 2011" organized by A. N. D. College (DU), India Participated |
| 2010 12-13 Feb | Synthesis <i>via</i> a multi-component condensation and spectral studies of substituted imidazoles catalyzed by recoverable <i>p</i> -toluene sulfonic acid | Chemistry in Biology: The Future of Life Sciences organized by Swati Jha and Preeti Jha A. N. D. College |
| 2007 27-28 Jan | Chelating Agents and their Applications in Heavy Metal Toxicity | SEMT-007 organized by Vikrant Kumar, AIIMS New Delhi, India. Nahid Nishat |
| 2003 | Synthesis of New Schiff Base Macrocyclic Ligand and Its Complexes with Cr, Mn, Fe, Co, Ni, and Zn | National Symposium on Current Trends in Chemical Research and Nahid Nishat Guwahati, India. Vikrant Kumar |

Professional Societies Memberships

Indian Chemical Society (2006)

Professional Affiliations and Activities

Teacher-in-Charge, Chemistry Department, Acharya Narendra Dev College (D. U.)

Governing Body Member (Teacher Representative), Acharya Narendra Dev College (D. U.)

Liaison Officer (PwD), Acharya Narendra Dev College (D. U.)

Election Officer, Student Council – 2017 Acharya Narendra Dev College (D. U.)

Convener, Grievance Committee for SC/ST/OBC/PwD candidates, Acharya Narendra Dev College (D. U.)

Judge, Student Research Symposium (SRS)-2015, Graduate and Research Affairs, Division of Research Affairs, San Diego State University, San Diego, USA.

Jury Member, National Level Exhibition and Project Competition (NLEPC), 2013 under INSPIRE Program of Deptt. of Science and Technology, Ministry of Sc. and Tech., Govt. of India.

Convener, Equal Opportunity Cell, Acharya Narendra Dev College (D. U.)

Member, Career Counseling Cell, Acharya Narendra Dev College (D. U.)

Member, Fellowship Programs and Awards Committee, Acharya Narendra Dev College, (D. U.)

Workshops/Short Term Courses Attended/Organized (Majors Only)

- “Instrumental Techniques for Chemical and Material Analysis (ITCMA - 2016)” organized by PEC University of Technology, Chandigarh. 06-11 June, 2016
- “Workshop on Application of Free/Open Source Software in Science teaching and research” organized by A. N. D. College (University of Delhi) & NRCFOSS, Anna University Chennai. 14-15 April, 2010
- “Easy Now-1: A Workshop on Multimedia Content Development” organized by Acharya Narendra Dev College (University of Delhi) & Commonwealth Educational Media Centre for Asia. 20-25 April, 2009
- “Analytical Techniques and Instrumentation” organized by Center for Entrepreneurship & Career Oriented Program & University of Delhi, New Delhi. 26 Dec 2003 - 15 Jan, 2004

Sports activities

Besides all his scientific and academic interests, he is equally enthusiastic in sports. Year 2017, he embodied his passion and chose to perform in **10-, 25- & 50-Meter Pistol Events (Para Category)**. In accordance with the rules of the International Shooting Union and National Rifle Association of India, he is “**Renowned Shot**”.

List of competitions won –

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| • Haryana Shooting Championship | 23/07 – 01/08/2019 | New Delhi |
| 50 M Free Pistol - Silver Medal | | |
| 25 M Sports Pistol - Gold Medal | | |
| • 62 nd National Shooting Championship | | |
| 10 M Qualified – Renowned Shot | 15/11 – 07/12/2018 | Thiruvananthapuram, Kerala |
| • 38 th North Zone Shooting Championship Para 2018 | | |
| 25 M Silver Medal | 25-10 to 01-11-2018 | Dehradun, UK. |
| • 61 st National Shooting Championship Competitions Para 2017 | | |
| 10 M Qualified – Renowned Shot | 11/12-31/12/2017 | Thiruvananthapuram, Kerala |