

Curriculum vitae

Dr. Anil Kumar

Personal Details

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Professional Qualifications

- ❖ Post Doctoral Fellowship: Department of Chemistry, Texas A&M University, USA.
- ❖ Ph. D.: Department of Chemistry University of Jammu, Jammu 2008.
- ❖ M. Phil.: Department of Chemistry, University of Jammu, Jammu, 2002.
- ❖ Qualified NET
- ❖ Qualified GATE (HRD)

Employment History

- ❖ Professor, Department of chemistry & Chemical Sciences, Central University of Himachal Pradesh from 18th September, 2026-till date.
- ❖ Associate Professor at SMVD University from 26th October, 2020 to 16th September, 2026.
- ❖ Assistant Professor at SMVD University from 26th June, 2008 to 25th October, 2020.
- ❖ Assistant Professor (Contractual) at SMVD University from 13th August, 2007 to 25th June, 2008.

Personal Distinctions

1. **Raman Fellow:** Visited the Department of Chemistry, Texas A&M University, Texas, USA, as a Raman Fellow/Postdoctoral Fellow for one year on fully paid leave (With all allowances and increment benefit) from 29th September to 28th September 2015.
2. **Best Oral Presentation Award:** Received the Best Oral Presentation Award at the J&K Science Congress, jointly organized by the Department of Science and Technology (DST), Government of Jammu & Kashmir, and the Department of Science and Technology (DST), Government of India (2008).

VISITS ABROAD

1. Texas, USA Visiting Professor at Department of Chemistry, Texas A&M University, College Station, Texas, USA during 2014-2015 (One Year) and worked on project entitled "Werner Complexes as Hydrogen Bond Donor Catalysts for Enantioselective Synthesis."
2. London, United Kingdom: Delivered talk in 4th European Organic Chemistry Congress, during March 1-3, 2018: in London, United Kingdom.
3. Amsterdam, Netherland: Delivered talk in 2nd European Organic Chemistry Congress, during March 02-03 2017 in Amsterdam, Netherland.
4. Boston, MA, USA: Delivered talk in 250th American Chemical Society National Meeting during August 16-20, 2015.

5. Denver, Colorado USA: 249th American Chemical Society National Meeting during March 22-26 2015 (Poster Presentation).

Delivered Talk in International and National Conference (Selected)

1. International: Enantioselective Synthesis using Tris(1,2- diphenylethylenediamine)cobalt(III) Complexes, International Conference on Integrative Chemical Science for Health & Environment, ICHE-2023, October 6-8, **2023**, Deshbandhu College, New Delhi, India.
2. International (India): Synthesis of cobalt based Octahedral Werner complexes as Enantioselective catalysts, International Conference on Synthetic and Pharmaceutical Chemistry, September 16, **2023**, School of Pharmaceutical Sciences LPU, Punjab.
3. International: Development of Octahedral chiral-at-metal catalysts for Enantioselective synthesis International conference on Recent Innovations in Biotechnological, Chemical and Environmental Sciences MARCH 15-16, **2023**, Mohanlal Sukhadia University, Udaipur Rajasthan
4. National: Octahedral complexes for enantioselective catalysis in organic synthesis, National conference on Physics and Chemistry of matters, March 17, **2023**, Govt. Holkar science, Indore, (M. P.).
5. International: Octahedral Complexes as enantioselective catalysts in organic synthesis, March 1-3, **2018**: 4th European Organic Chemistry Congress, London, United Kingdom.
6. International: Syntheses of Families of Enantiopure and Diastereopure Octahedral Cobalt Catalysts and their utility in Organic Synthesis February 8-10, **2017**: 23rd ISCB international conference (ISCBC-2017) on Interface of Chemical Biology in Drug Research, SRM University, Kattankulathur, Tamil Nadu, India.
7. National: Synthesis and Spectroscopic Analysis of Chiral Octahedral Complexes, February 15- 17, **2017**: National Conference on Recent Advances on Materials Science and Spectroscopy organized by Department of Physics, SMVD University in Collaboration with Laser and Spectroscopy Society of India.
8. International: Chiral Octahedral Complexes as catalyst for enantioselective organic synthesis, March 2-3, **2017**: 2nd European Organic Chemistry Conference, Amsterdam, Netherlands.
9. International: Werner Complexes as chiral hydrogen bond donor catalyst for enantioselective synthesis" February 7, **2016**: 22nd ISCB international conference (ISCBC-2016), Recent trends in Affordable and sustainable drug discovery and developments, Uka Tarsadia University, Surat, Gujarat, India.
10. International: Chiral Werner Complexes as hydrogen bond donor catalysts for enantioselective organic syntheses August 16-20, **2015**: 250th American Chemical Society National Meeting, Boston, MA, USA.
11. International: Ring opening chemistry of epoxides with new carbon nucleophiles for the synthesis of novel γ -lactone and γ -lactams March 22-26, **2015**: 249th American Chemical Society National Meeting, Denver, CO, USA.
12. National: Environment Friendly Synthesis and Kinetic Resolution of α -Hydroxyphosphonates by Lipase, October 5- 6, **2013**: National conference on Energy, Environment and Biotechnology Research Department of Biotechnology, Mewar Institute, Ghaziabad.
13. International: A mild and efficient method for the regioselective epoxide ring opening February 20-22, **2010**: 11th International Conference of International Academy of Physical Sciences (CONIAPS XI) organized by the Allahabad University, Allahabad.
14. National: New Protocols for the Cis-Selective Synthesis of γ -Lactones in Aqueous Conditions.

15. National: New routes for the Synthesis of tetrazolopyrimidines, November 18-20, **2010**: National Symposium on New Trends in Material Research ISCAS Institute of Solid State and materials Science, Jammu University Campus, Jammu.
16. National: Expedient synthesis of functionalized tetrahydropyridines September, 22-24, **2011**: Chemical Research Society of India, North Zone meeting, organized by department of Chemistry, University of Jammu.
17. National: Synthesis and biological activity of Pyrazoles, **2008**, 3rd J&K Science Conference, University of Jammu and State DST.

Professional Contributions

1. Evaluated Ph. D. and M. Phil. theses, as well as undergraduate (UG) dissertations, for various Universities.
2. Served as reviewer for several International peer-reviewed Journals
3. Conducted practical examinations for undergraduate (UG) and postgraduate (PG) students at various colleges and Universities.
4. Served as a paper setter for post graduate (PG) courses.
5. Life Member Indian Council of Chemists.
6. Life membership of Indian Council of Chemists and Biologists (LF 990/20).
7. Life membership of Chemical Research Society of India (CRSI).
8. Life membership of Indian Science Congress Association, Kolkata (L-40191)
9. Member American Chemical Society 2015-2016.

Teaching

Previously

Organic Chemistry-I
 Organocatalysis: A Recent Trend in Catalysis
 Instrumental Methods and Spectroscopic Techniques
 Conceptual Organic Chemistry
 Chemical bonding & Transition Elements
 Fundamentals of Physical Chemistry
 Applied Chemistry
 General Chemistry-I
 Chemistry for Biologists
 Analytical Approaches in Biotechnology

Currently

Spectroscopic Techniques
 Software base Data Analysis (Sharing basis)

Doctoral Thesis Supervision

06 students completed and 01 pursuing

University Administration (Previous)

- Head, School of Biotechnology, SMVD University from September 26, 2025 to September 14, 2026.
- Warden Kailash Hostel, SMVD University, 2008-2010 (Approximately, 2 years).

Research Projects and Income

Year	Source of funds	Project title	Amount (Rs)
2011-2014	University Grants Commission (UGC), New Delhi, India.	Enantioselective Synthesis and Biological Screening of Some New β -blockers.	08 Lakhs (Approximate, revised)

Publications

Refereed Journal Articles

1. Insights into the Thermophysical and Spectroscopic Properties of L-Arginine and L-Threonine in Aqueous [Bmim][Cl] Media across Different Concentrations and Temperatures, Brij Mohan, Richu, **Anil Kumar**, Ashwani Kumar, *J. Chem. Eng. Data* **2026**, 71, 3904–3923.
2. Physicochemical, ultrasonic, transport and UV spectral investigations of L-ascorbic acid in aqueous [Bmim][Cl]/[Bmim][BF₄] media at several temperatures and concentrations, Brij Mohan, **Anil Kumar**, Ashwani Kumar *Journal of Molecular Liquids*, **2026**, 445,129209.
3. Unravelling the impact of saccharides (xylose/lactose) on the physicochemical properties of 1-butyl-3-methylimidazolium tetrafluoroborate in aqueous media through volumetric, ultrasonic and viscometric studies Brij Mohan, Qammer Majid, **Anil Kumar**, Ashwani Kumar *Journal of Molecular Liquids*, **2026**, 427, 129794.
4. Multi-component Domino Strategy for Regioselective Syntheses of Tetrahydrothiochromen-5-ones, Himani Gupta and **Anil Kumar**, *European Journal of Organic Chemistry* **2025**, 53, 1279-1304.
5. *Multi-component syntheses based on Beta-oxodithioesters*, Himani Gupta, Rashmi Sharma and **Anil Kumar**, *Synthetic communication* **2023** 53, 1279-1304.
6. *A Catalyst-free route for the green and efficient synthesis of 2H-chromene-2-thiones in Neutral Ionic Liquid*, Rashmi Sharma and **Anil Kumar**, *Tetrahedron Letter*, **2023**, 114, 154271.
7. *An expeditious and clean synthesis of novel benzotriazoletriazole conjugates via Copper catalyzed Azide-Alkyne cycloaddition click protocol (CuAAC)*, Rashmi Sharma and **Anil Kumar**, *J. Chem. Sci.* **2022**, 134:69.
8. *Development, method validation and simultaneous quantification of eleven bioactive natural products from high altitude Medicinal plant by high performance liquid chromatography* Alamgir Ahmad Dar, A Raina and **Anil Kumar**, *Biomedical Chromatography*, **2022**, 5408.
9. *Total Synthesis and Conformational Analysis of Naturally Occurring Lipovelutibols along with Lead Optimization of Lipovelutibol D*. Varun Pratap Singh, Anup Singh Pathania, Sonia Sharma, Fayaz Ahmed Malik, **Anil Kumar**, Deepika Singh, Ram A Vishwakarma *ACS Omega*, **2021**, 6, 6070- 6080.
10. *Chiral Tricationic Tris(1,2- diphenylethylenediamine) Cobalt(III) Hydrogen Bond Donor Catalysts with Defined Carbon/Metal Configurations; Matched/Mismatched Effects upon Enantioselectivities with Enantiomeric Chiral Counter Anions*. Connor Q. Kabes, William J. Maximuck, Subrata K. Ghosh, **Anil Kumar**, Nattamai Bhuvanesh, John A. Gladysz, *ACS Catalysis*, **2020**, 10, 3249- 3263.
11. *Cinchonine-driven multi-component domino Knoevenagel–Michael strategy: metal-free synthesis of quinoline-based 4H-pyran and tetrahydro-4H-chromene derivatives*, Parteek Kour and **Anil Kumar** *Res. Chem. Intermed.* **2020**, 46, 2025-2034.
12. An improved protocol for the synthesis of 3, 4-disubstituted isoxazol-5 (4 H)-ones through L- valine-mediated domino three-component strategy, Parteek Kour, Monika Ahuja, Pratibha Sharma, Ashok Kumar and **Anil Kumar**, *J. Chem. Sciences*, **2020**, 132:108, 1-10.

13. 14-Residue peptaibol velutibol A from *Trichoderma velutinum*: its structural and cytotoxic evaluation Varun Pratap Singh, Anup Singh Pathania, Manoj Kushwaha, Samsher Singh, Vandana Sharma, Fayaz A. Malik, Inshad A. Khan, **Anil Kumar**, Deepika Singh and Ram A. Vishwakarma **RSC Advances**, **2020**, 10, 31233-31242.
14. Chromatography-An Important Tool for Drug Discovery Alamgir Ahmad Dar, **Anil Kumar**, and Payare L Sangwan. **Journal of separation science** **2020** 43, (1), 105-119.
15. LiBr-catalyzed one-pot three-component domino strategy towards the construction of β -phosphonomalonates scaffolds in aqueous condition, Vikas Kumar, Parteek Kour and **Anil Kumar**, **Phosphorus, Sulfur, and Silicon and the Related Elements**, **2020**, 195, 607-613.
16. $\text{CeCl}_3 \cdot 7\text{H}_2\text{O}$ -catalysed hydrophosphonylation of aldehydes and ketones: An expeditious route to α -hydroxyphosphonates under solvent-free conditions, R Mahesh, Rupali Sharma, Parteek Kour, **Anil Kumar**. **Phosphorus, Sulfur, and Silicon and the Related Elements**, **2019**, 194, 1091-1097.
17. Synthesis and Computational Studies of Molecular Structure and Vibrational Spectra of 2-Amino-4-(4-Nitrophenyl)-4H-Pyrano-[3,2-H]-Quinolines Parteek Kour, Anil Kumar, Anshul Uppal, Yugal Khajuria, V.K. Singh **J. of Applied spectroscopy**, **2019**, 86, 715-725.
18. Method validation and simultaneous quantification of five triterpenoids from *Codonopsis ovata* by high-performance thin-layer Chromatography, Alamgir Ahmad Dar, Payare L Sangwan, Nasseb Singh and **Anil Kumar**. **JPC-Journal of Planar Chromatography-Modern TLC**, **2019**, 32(3), 251-256.
19. Isolation of depsipeptides and optimization for enhanced production of valinomycin from the North-western Himalayan cold desert strain *Streptomyces lavendulae* Varun P Singh, Richa Sharma, Vandana Sharma, Chand Raina, Kamal K Kapoor, **Anil Kumar**, Asha Chaubey, Deepika Singh, Ram A Vishwakarma. **J. Antibiotics**, **2019**, 72, 617-624.
20. A Simple and Efficient Approach for the Synthesis of 1, 3-Oxazolidines from β -Amino Alcohols Using Grinding Technique, Nasseb Singh, Alamgir Ahmad Dar and **Anil Kumar**, **Chemistry Select** **2018**, 3, 13675-13681.
21. A review on transition-metal mediated synthesis of quinolines. Rashmi Sharma, Parteek Kour, and Anil Kumar **J. Chem. Science**, **2018**, 130:73.
22. Synthesis, structural, vibrational, electronic, thermal and Fukui analysis of diethyl (hydroxy(4-methoxyphenyl) methyl) phosphonate, Anshul Uppal, Parteek Kour, **Anil Kumar**, Yugal Khajuria, **J. Molecular Structure**, **2018**, 1166, 218-227.
23. Lipovelutibols A–D: Cytotoxic Lipopeptaibols from the Himalayan Cold Habitat Fungus *Trichoderma Velutinum*, Varun Pratap Singh, Nalli Yedukondalu, Vandana Sharma, Manoj Kushwaha, Richa Sharma, Asha Chaubey, **Anil Kumar**, Deepika Singh and Ram A. Vishwakarma, **J. Nat. Prod.** **2018**, 81, 219-226.
24. Aqueous mortar-pestle grinding: an efficient, attractive and viable technique for the regioselective synthesis of β -amino alcohols, Nasseb Singh, Vijai K. Rai and Anil Kumar, **Comptes Rendus Chimie** **2018**, 21, 71-79.
25. Al(III) Chloride catalyzed Multi-Component Domino Strategy: Synthesis of Library of Dihydropyrimidines and Tetrahydropyrimidines, Parteek Kour, Varun P. Singh, Tajinder Singh and Anil Kumar, **Tetrahedron Letter** **2017**, 58, 4179-4185.
26. Synthesis of 2-amino-4H-chromen-4-ylphosphonates and β -phosphonomalonates via Tandem Knoevenagel-phospha-Michael reaction and antimicrobial evaluation of newly synthesized β -Phosphonomalonates, Parteek Kour, Rashmi Sharma, Reena Chib and **Anil Kumar** Vijai K. Rai, **Res. Chem. Intermed.** **2017**, 43, 7319-7329.
27. Syntheses of Families of Enantiopure and Diastereopure Cobalt Catalysts Derived from Trications of the Formula $[\text{Co}(\text{NH}_2\text{CHArCHArNH}_2)_3]^{3+}$ Subrata K Ghosh, Kyle G Lewis, **Anil Kumar** and John A Gladysz, **Inorganic Chemistry**, **2017**, 56, 2304-2320.

28. Aqueous microwave-assisted DMAP catalyzed synthesis of β -phosphonomalonates and 2-amino-4H-chromen-4-ylphosphonates via a domino Knoevenagel-phospha-Michael reaction, Parteek Kour, **Anil Kumar** and Vijai K. Rai, *Comptes Rendus Chimie*, **2017**, 20, 140-145.
29. Bi (NO₃)₃.5 H₂O catalyzed phosphorylation of aldehydes: an efficient route to α -hydroxyphosphonates, **Anil Kumar**, Shivali jamwal, Shahaba Khan, Nasseb Singh and Vijai K. Rai, *Phosphorus, Sulfur, and Silicon and the Related Elements*, **2017**, 192 (3), 381-385.
30. Optimization of nonribosomal peptides production by a psychrotrophic fungus: Trichoderma velutinum ACR-Pz, Richa Sharma, Varun P Singh, Deepika Singh, Farnaz Yusuf, **Anil Kumar**, Ram A Vishwakarma, Asha Chaubey, *Applied Microbiology and Technology*, **2016**, 100, 9091-9102.
31. Biologically active xanthenes from Codonopsis ovate, Alamgir A Dar, Nisar A Dangroo, Arun Raina, Arem Qayum, Shashank Singh, **Anil Kumar**, Payare L, Sangwan, *Phytochemistry*, **2016**, 132 102-108.
32. Tris(1,2-diphenylethylenediamine)cobalt(III) Complexes: Chiral Hydrogen Bond Donor Catalysts for Enantioselective α -Aminations of 1,3-Dicarbonyl Compounds **Anil Kumar**, Subrata K. Ghosh, and John A. Gladysz, *Org. Lett.*, **2016**, 18 (4), 760–763.
33. Isolation, cytotoxic evaluation, and simultaneous quantification of eight bioactive secondary metabolites from Cicermicophyllum by high performance thin-layer chromatography Alamgir A. Dar, Santosh K. Rath, Afnan Qaudri, Buddh Singh, Sheikh A. Tasduq, **Anil Kumar**, P. L. Sangwan, *J. Sep. Sci.* **2015** 00, 1–8.
34. Simultaneous quantification of eight bioactive secondary metabolites from Codonopsis ovate by validated high performance thin layer chromatography and their antioxidant profile, Alamgir A. Dar, P. L. Sangwan, Imran Khan, Nidhi Gupta, Afnan Qaudri, Sheikh A. Tasduq, Surinder, Kitchlu, **Anil Kumar**, Surrinder Koul, *Journal of Pharmaceutical and Biomedical Analysis*, **2014**, 100, 300–308.
35. Masked amino acid a new Cnuleophile for I₂-catalyzed stereoselective ring opening of epoxides in ionic liquid, Vijai K. Rai, Roopali Sharma and **Anil Kumar** *Tetrahedron Letter*, **2013**, 54, 1071-1075.
36. The First I₂ promoted Efficient Aminoacylation of Activated Aziridines in Ionic Liquids. Vijai K. Rai, Nihar Sharma and **Anil Kumar**, *Synlett*, **2013**, 24, 97-101.
37. An Efficient Ce(III)-Catalyzed Cis-Selective Synthetic Approach to γ -Lactones in Aqueous Media, Vijai K. Rai, Priya Tiku, **Anil Kumar**, *Synthetic communication*, **2012**, 3(6) 369-374.
38. Chiral resolution of differently substituted racemic acetyl-1-phenyl ethanol using lipase from Bacillus Subtilis, Indu Bhushan, **Anil Kumar**, Gourav Modi, Subika Jamwal, *Journal of Chemical Technology and Biotechnology* **2011**, 86, 315-318.
39. An unprecedented synthesis of γ -lactams via mercaptoacylation of aziridines in water, Vijai K. Rai, Prashant Kumar Rai, Swati Bajaj and **Anil Kumar**, *Green Chem.* **2011**, 13, 1217-1223.
40. Zinc-Mediated Reductive Cyclodimerization of α,β -Unsaturated Aryl Ketones Under Aqueous Conditions, **Anil Kumar**, Satish Kumar and Kamal K. Kapoor, *Aust. J. Chem.* **2007**, 60, 1-3.
41. Biologically active xanthenes from Codonopsis ovate, Alamgir A Dar, Nisar A Dangroo, Arun Raina, Arem Qayum, Shashank Singh, **Anil Kumar**, Payare L, Sangwan, *Phytochemistry*, **2016**, 132 102-108.

Book Chapters

1. Microwave-assisted heterocyclics, Parteek Kour and **Anil Kumar** In: Green Sustainable process for chemical and Environmental Engineering Science Editor(s), Inamuddin, Rajender Boddula and Abdulah M. Asiri **2020**, 359-414 (*Elsevier Publisher*).

2. Sonochemical protocol for catalyst-free organic synthesis Rashmi Sharma and **Anil Kumar**, In: Green Sustainable Process for Chemical and Environmental Engineering and Science, Editor(s), Inamuddin, Rajender Boddula and Abdulah M. Asiri, **2020**, 43-70 (**Elsevier Publisher**).
3. Effect of Nanoparticles on Oxidative Damage and Antioxidant Defense System in Plants. Savita Sharma, Vivek K. Singh, **Anil Kumar** and Sharada Mallubhotla In: Molecular Plant Abiotic Stress: Biology and Biotechnology Editor(s): Dr Aryadeep Roychoudhury and Dr Durgesh Tripathi, **2019**, (**Wiley Publishers**).
4. Role of Silver Nanoparticles in Treatment of Plant Diseases, Jyotsna Sharma, Vivek K. Singh, **Anil Kumar**, Raju Shankarayan and Sharada Mallubhotla. In: Microbial Biotechnology: Application in Food and Pharmacology, Volume 2; Eds. Jayanta Kumar Patra, Gitishree Das and Han-Seung Shin; **2018**, 447-466 (**Springer Science**).
5. Exploring Plant-Mediated Copper, Iron, Titanium and Cerium Oxide Nanoparticles and Their Impacts, Anuja Koul, **Anil Kumar**, Vivek K. Singh, Durgesh K. Tripathi and Sharada Mallubhotla. In: Nanomaterials in Plants, Algae, and Microorganisms: Concepts and Controversies, Volume 1; Eds. Durgesh K. Tripathi, Parvaiz Ahmad, Shivesh Sharma, D.K. Chauhan and N.K. Dubey, **2018**, 175-194 (**Elsevier Publishers**).
6. Recent Developments and Applications of Novel Analytical Techniques for Analysis of Plant Materials, Vivek K. Singh, Vinay Kumar, Ram Prakash, Jittender Sharma, **Anil Kumar** and Prashant Singh, In: Technological Advancements in plant Sciences, **2016**, 17-44 (**Nova Publishers**).