



**Dr. Abhijeet Kumar**

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#### **✚ Present Address**

##### **Assistant Professor**

Department of Chemistry  
School of Physical Sciences  
Mahatma Gandhi Central University  
Motihari-845401, Bihar, India  
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#### **✚ Education**

##### **2009-2016: Ph.D. Chemistry**

Advisor: Prof. Madalli L. N. Rao

Indian Institute of Technology Kanpur (IITK), India

*Thesis Title: New methods for the synthesis of neoflavones, flavones, isoflavones, pyrazoles and pyrimidines involving triaryl bismuth reagents.*

##### **2006-2008: M.Sc., Chemistry (Organic Chemistry Specialization)**

Department of Chemistry

Faculty of Science, Banaras Hindu University (BHU), Varanasi, India

##### **2007: P.G. Diploma, Spectroscopy**

Department of Physics

Faculty of Science, Banaras Hindu University (BHU), Varanasi, India

##### **2003-2006: B.Sc. (Hons.), Chemistry**

Faculty of Science, Banaras Hindu University (BHU), Varanasi, India

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#### **✚ Awards and Fellowships**

**2019: Visiting Fellowship, JNCASR, Bangalore, India**

**2011-2014: Senior Research Fellowship (SRF)**

Council of Scientific and Industrial Research (CSIR), India

**2009-2011: Junior Research Fellowship (JRF)**

Council of Scientific and Industrial Research (CSIR), India

**2008: National Eligibility Test (NET), Chemical science**

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#### **✚ Teaching Experiences**

- **Oct. 2016-To Date: Assistant Professor (Permanent/Regular Position)**, Department of Chemistry, Mahatma Gandhi Central University, Motihari, Bihar, India
- **Aug. 2016-Sep. 2016: Temporary Faculty**, Department of Chemistry, National Institute of Technology Raipur, Raipur, India

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#### ✚ Courses Taught at UG and PG at Mahatma Gandhi Central University

Course Code	Course Title	Program
CHEM5006	Coupling reaction in Organic Synthesis	Ph.D.
CHEM4013	Catalysis and Green Chemistry	M.Sc.
CHEM4101	Heterocyclic Compounds and Medicinal Chemistry	M.Sc.
Chem4007	Inorganic Chemistry II	M.Sc.
CHEM4001	Analytical Chemistry	M.Sc.
CHEM3021	Green Chemistry	B.Sc.
CHEM3014	Organic Chemistry V	B.Sc.
CHEM3006	Organic Chemistry-II	B.Sc.
CHEM3003	Organic Chemistry – I	B.Sc.
CHEM3019	Molecular Spectroscopy	B.Sc.
CHEM3033	Atomic structure, Bonding & General Organic Chemistry	B.Sc.
CHEM3034	Thermodynamics, Equilibria & Functional Organic Chemistry I	B.Sc.
CHEM3037	Engineering Chemistry	B.Tech

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#### ✚ Industrial Experience (Dr. Reddy's Laboratories, India )

June, 2008-July 2009:

Assistant Manager, API (R&D)

Dr. Reddy's Laboratories, India

**Project:** *synthesis and process optimization of various steps involved in the synthesis of Amtolmetin which is an anti-inflammatory agent.*

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#### ✚ Summer Research Training

April-May 2007

National Institute of Oceanography, Goa

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#### ✚ Research Interests

Interested Mainly In Following Three Areas:

**Organometallic Chemistry:** *Development of novel methods for Carbon-Carbon and Carbon-hetero atom bond forming reactions*

**Green Chemistry:** *Green Approach in the synthesis of diverse varieties of compounds with medicinal and material importance.*

**Medicinal Chemistry:** *Design and synthesis of novel heterocyclic compounds and investigation of their biological activities.*

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#### ✚ List of Publications

1. Machine Learning Approaches and their Applications in Drug Discovery and Design  
Sonal Priya, Garima Tripathi, Dev Bukhsh Singh, Priyanka Jain, **Abhijeet Kumar**  
***Chemical Biology & Drug Design, 2022, 100, 136-153.***
2. Arylcoumarin perturbs SARS-CoV-2 pathogenesis by targeting the S-protein/ACE2 interaction  
Ruhar Singh, **Abhijeet Kumar**, Jitendra Subhash Rane, Rajni Khan, Garima Tripathi ,  
Amrendra K. Ajay , Amresh Prakash and Shashikant Ray  
***Scientific Report, 2022, 12, 17038.***

3. In silico identification and validation of triarylchromones as potential inhibitor against main protease of severe acute respiratory syndrome coronavirus 2  
Vaishali Chandel, Garima Tripathi, Seema A. Nayar, Brijesh Rathi, **Abhijeet Kumar**, and Dhruv Kumar  
*Journal of Biomolecular Structure and Dynamics*, 2022, 40, 8850-8865.
4. Room Temperature Ionic Liquids in Glycoscience: Opportunities and Challenges  
Sanchayita Rajkhowa, Raju R. Kale, Jyotirmoy Sarma, T. Prabhu, Abhijeet Kumar and Vinod K. Tiwari  
*Current Organic Chemistry*, 2021, 25, 2542-2578
5. Green Chemistry : Opportunity in Drug Discovery Research (Editorial-Part 1)  
Vinod K. Tiwari, **Abhijeet Kumar** and Sanchayita Rajkhowa  
*Current Organic Chemistry*, 2021, 25(13): 1455 – 1456.
6. Targeting virus–host interaction by novel pyrimidine derivative: an in silico approach towards discovery of potential drug against COVID-19  
Jitendra Subhash Rane, Preeti Pandey, Aroni Chatterjee, Rajni Khan, **Abhijeet Kumar**, Amresh Prakash & Shashikant Ray  
*Journal Of Biomolecular Structure And Dynamics*, 2021, 39, 5768-5778
7. Targeting SARS-CoV-2 spike protein of COVID-19 with naturally occurring phytochemicals: an in silico study for drug development  
Preeti Pandey, Jitendra Subhash Rane, Aroni Chatterjee, **Abhijeet Kumar**, Rajni Khan, Amresh Prakash & Shashikant Ray  
*Journal Of Biomolecular Structure And Dynamics*, 2021, 39, 6306–6316
8. Phytochemicals as Potential Curative Agents against Viral Infection: A Review  
Garima Tripathi, Anil K singh, **Abhijeet Kumar**  
*Current Organic Chemistry*, 2020, 24, 20, 2336-2366
9. Arylpyrazoles: Heterocyclic Scaffold of Immense Therapeutic Application  
Garima Tripathi, Anil K singh, **Abhijeet Kumar**  
*Current Organic Chemistry*, 2020, 24, 1555-1581
10. Novel 3,4-diarylpyrazole as prospective anti-cancerous agents  
Vivek Pandey, Garima Tripathi, Dhruv Kumar, **Abhijeet Kumar**, Pawan K. Dubey  
*Heliyon*, 2020, 6, e04397
11. Pot-economic Synthesis of Diarylpyrazoles and Pyrimidines involving Pd-catalyzed Cross-coupling of 3-Trifloxychromone and Triarylbiomuth  
**Abhijeet Kumar**, Maddali L. N. Rao  
*Journal of Chemical Sciences*, 2018, volume 130, Issue 12, 1-11
12. Pd-catalyzed cross-coupling study of bi-functional 3-bromo-4-trifloxy coumarins with triarylbiomuth reagents  
Maddali L. N. Rao, **Abhijeet Kumar**  
*Tetrahedron*, 2015, 71, 5137-5147 (Highlighted in ChemInform Volume 46, Issue 44, November, 2015).
13. Pd-Catalyzed chemo-selective mono-arylations and bis-arylations of functionalized 4-chlorocoumarins with triarylbiomuths as threefold arylating reagents.  
Maddali L. N. Rao, **Abhijeet Kumar**  
*Tetrahedron*, 2014, 70, 6995-7005 (Highlighted in ChemInform Volume 46, Issue 8, February, 2015)
14. Pd-catalyzed atom-economic couplings of triarylbiomuth reagents with 2-bromo- and 2,6-dibromo-chromones and synthesis of a medicinally important fisetin molecule

Maddali L. N. Rao, **Abhijeet Kumar**

*Tetrahedron Lett.*, **2014**, 55, 5764-5770

15. Synthesis and process optimization of Amtolmetin: an anti-inflammatory agent.  
L. A. Reddy, S. Chakraborty, R. Swapna, D. Bhalerao, G. C. Malakondaiah, M. Ravikumar, **Abhijeet Kumar**, G. S. Reddy, J. Naram, N. Dwivedi, A. Roy, V. Himabindu, B. Babu, A. Bhattacharya, R. Bandichhor  
*Org. Process Res. Dev.*, **2010**, 14, 362-368
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#### **Book Chapters**

1. **Chapter Title:** *Combined targeting autophagy and metabolism for cancer therapy*  
Garima Tripathi, Shambhavi Mishra, Ambarish Priyadarshan, Anil Kumar Singh, **Abhijeet Kumar** and Satya Narayan Sahu  
**Year:** 2022, Page No.: 215-238  
**Book:** Autophagy and Metabolism: Potential Target for Cancer Therapy-  
**Publisher:** Elsevier
  2. **Chapter Title:** *Synthesis of Biologically Relevant Heterocyclic Skeletons under Solvent-Free Condition.*  
Garima Tripathi, **Abhijeet Kumar**, S. Rajkhowa, Vinod K. Tiwari  
**Year:** 2021, Page No.: 421-459  
**Book:** Green Synthetic Approaches for Biologically Relevant Heterocycles (Second Edition)  
**Publisher:** Elsevier
  3. **Chapter Title:** *Role of Phytochemicals in Cancer Cell Metabolism Regulation*  
**Abhijeet Kumar**, Anil Kumar Singh, M.K. Gautam, Garima Tripathi  
**Year:** 2020, Page No.: 167-184  
**Book:** Cancer Cell Metabolism: A Potential Target for Cancer Therapy  
**Publisher:** Springer, Singapore
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#### **Book (Authored)**

**Title:** *Green Chemistry: Introduction, Application and Scope*

**Authors:** Vinod K. Tiwari, Abhijeet Kumar, Sanchayita Rajkhowa, Garima Tripathi, Anil Kumar Singh

**Year:** 2022

**ISBN:** 9789811927331

**Publisher:** Springer Nature Singapore

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#### **Editorial/Reviewer's Assignments**

1. **Guest Editor(s) (Thematic Issue):** Vinod Kumar Tiwari, Sanchayita Rajkhowa, **Abhijeet Kumar**  
Title of thematic issue: *Green Chemistry: Opportunity in Drug Discovery Research (Part 1 & 2) Current Organic Chemistry*, 2021, Volume 25, Issue 13,
2. **Reviewer for Research Articles:** ACS Omega (American Chemical Society), Computational Toxicology (Elsevier), *Journal of Functional Foods* (Elsevier); *Process Biochemistry* (Elsevier), *Molecular Diversity* (Springer), *Journal of Chemical Science* (Indian Academy of Sciences and Springer), *Frontiers in Endocrinology* (Frontiers), *Journal of Chemistry* (Hindawi).
3. **Reviewed** the table of contents of book titled "*Spectrometric Identification of Organic Compounds*" 8th edition by Robert M. Silverstein, Francis X. Webster, David J. Kiemle, David L. Bryce.

4. **Reviewed** the contents of book titled "*Foundations of College Chemistry*" 16e by Morris Hein, Susan Arena, Cary Willard
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#### **Dissertation/Thesis Supervision**

**Ph.D.:** 01 (Ongoing)

**M.Sc.:** 05 (Completed)

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#### **Faculty Development Programmes**

1. Successfully completed one week (**29 November, 2022 - 13 December, 2022**) **Two Weeks Refresher Course in Chemistry** organized by Teaching Learning Centre, Ramanujan College, University of Delhi
  2. Successfully completed one week (**14th July to 20th July 2021**) **Online National Faculty Development Program** on "**Assessment and Evaluation in Higher Education**" organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) of Ministry of Education.
  3. Successfully completed one week (**18 February, 2021 - 24 February, 2021**) **Faculty Development Programme** on "**Academic Writing**" organized by Teaching Learning Centre, Ramanujan College, University of Delhi.
  4. Successfully completed 8 Weeks course equivalent to one week **Faculty Development Programme** on "**Computer Aided Drug Design**" organized by NPTEL- AICTE, funded by ministry of HRD, GoI.
  5. Successfully completed **One Week National Faculty Development Program** with grade 'A' during **12-16 August 2020** on "**Developing Multimedia enriched Powerful Presentations**" organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) of MHRD.
  6. Successfully completed "**COVID-19 Contact Tracing**" course authorized by Johns Hopkins University and offered through Coursera on 07.07.2020.
  7. Successfully completed the **ARPIT Course for Career Advancement Scheme (CAS)** promotion "**Online Refresher Course in Chemistry for Higher Education**" with an "A" Grade in the proctored examination held on 16.02.2020 Sri Guru Tegh Bahadur Khalsa College, University of Delhi through Swayam ARPIT Online Course Certification.
  8. Participated in "**Science Leadership Workshop**" from June 22-June 28, 2020 organized by Central University of Punjab, Bathinda, INDIA
  9. Completed **QIP Short-Term Course on "Application of Fluorescence Spectroscopy"** at IIT Kanpur (05.02.2019-09.02.2019)
  10. Completed "**119th Orientation Programme**" UGC-HRDC, University of Allahabad, U.P. 2018 (30.03.2018-26.04.2018) as a part of faculty development programme with **A** grade.
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#### **Invited Lectures**

1. At International Seminar on "*Chemistry of the Environment and Salvation of Human Civilization*" on 3-4 February, 2023 organized by PG Department of Chemistry, Tilka Manjhi Bhagalpur University (TMBU) and Bhagalpur Chapter, Indian Chemical Society
2. At National Webinar on "*Medicinal Chemistry for The Society*" organized by PG Department of Chemistry, Tilka Manjhi Bhagalpur University (TMBU) and Bhagalpur Chapter, Indian Chemical Society on 06 December, 2020.

3. At International Webinar entitled International Webinar On “Recent Advances in Chemical Sciences for Human Kind (RACSHK-2020)” at T. N. B. College, TMBU, Bhagalpur, Bihar on June 14, 2020.
  4. At International Webinar entitled “Recent Problem and Prospects of COVID-19” organized by Govt. V. Y. T. PG Autonomous College, Durg, Chhattisgarh on May 31, 2020.
  5. At National Webinar lecture series entitled “Recent challenges associated with COVID-19 and its possible solutions: A chemist’s overview” organized by S. M. College Bhagalpur (A constituent unit of T. M. Bhagalpur University) on May 27-28, 2020.
  6. At National Seminar entitled “Relevance of Periodic Table in Innovative Research and Chemical Education” on 14th September, 2019 at P.G. Department of Chemistry, TMBU Bhagalpur, Bihar, India.
  7. Invited lecture in one day symposium on “Analytical Techniques: Application and Its Scope” at Department of Chemistry, T. N. B. College, Tilka Manjhi Bhagalpur University (TMBU), Bhagalpur on 15.09.2018.
  8. Invited lecture on “Role of Organic Synthesis and Biotechnology in Drug Discovery” at M.G. I. M. T, Lucknow (Affiliated to G.B.T.U, Lucknow, U.P.) on 07.02.2017.
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#### Participation in Seminar/Conference/Symposium

1. Oral Presentation in International E-conference on Multifunctional Materials and Environment (E-ICMME-21) organized by University Department of Chemistry Lalit Narayan Mithila University Darbhanga Bihar on 01-02 February, 2021.
  2. Participated in International E-Conference on Frontiers at The Chemistry - Allied Sciences Interface (e -FCASI-2020, June 30, 2020) jointly organized by ISCB, CRSI, University of Rajasthan on June 30, 2020.
  3. Convener: Distinguished Lecture by Waterman of India “ Shri Rajendra Singh”; 17<sup>th</sup> October, 2019
  4. Organized National Symposium on “Recent Trends in Chemical Sciences (RTCS-2019)” as Convener on March 1, 2019.
  5. Participated in National Seminar on “Vigyan Shikshan Me Nainoprodhyogiki Shabdawali Ki Bhumika” at T. N. B. College, Bhagalpur on 26 and 27 February, 2019.
  6. Oral Presentation at international conference on “Frontiers at the Chemistry - Allied Sciences” (FCASI 2018), Department of Chemistry, University of Rajasthan, Jaipur, India, (21.12.2018-23.12.2018).
  7. Poster Presentation at “International Conference on Chemistry for Human Development (ICCHD-2018)”, Heritage Institute of Technology, Kolkata, January, 2018
  8. Poster presentation at international conference “13th Eurasia Conference on Chemical Sciences”, IISc Bangalore, India, December, 2014.
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#### Academic and Administrative Achievements

1. **Convener:** Research Advisory Committee (RAC), Department of Chemistry, Mahatma Gandhi Central University
2. **Member:** Departmental Research Committee (DRC), Department of Chemistry, Mahatma Gandhi Central University
3. **Member:** Board of Studies, Department of Chemistry, School of Physical Sciences,

Mahatma Gandhi Central University from December 11, 2020 onwards.

4. **Member:** *School Board*, School of Physical Sciences, Mahatma Gandhi Central University from 28 August, 2020 onwards.
  5. **Special Invitee:** Board of Studies, Department of Chemistry, Mahatma Gandhi Central University from 28 August, 2020.
  6. **Assistant Centre Superintendent (ACS):** Mid-semester Examination 2017, Mahatma Gandhi Central University
  7. **Chairman:** Flying Squad: End Semester Examination, Mahatma Gandhi Central University
  8. **Co-Coordinator:** Time Table Committee in 2017, Mahatma Gandhi Central University
  9. **Co-Coordinator:** Committee for NAAC in 2017, Mahatma Gandhi Central University
  10. **Member:** Examination Ordinance Drafting Committee, Mahatma Gandhi Central University
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