Profile Page

Name	:	Dr Rakesh Kumar
Designation	:	Associate Professor
Department	:	Chemistry
Qualification	:	Postdoc Organic Chemistry (ETH Zurich Switzerland) PhD Organic Chemistry (The City University of New York) MSc Chemistry (IIT Roorkee) BSc (Himachal Pradesh University)
Address	:	Department of Chemistry Dr. B. R. Ambedkar NIT Jalandhar
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Research Interests :

Organic synthesis for medicinal and materials applications, Photoredox catalysis, Chemistry of arynes.

Other Profile Links :

Google Scholar Link :

Rakesh Kumar Click Here

Journal Publications :

Year	Journal	Publication
2022	Journal of Molecular Structure 2022, 1253,132285	S. Janeoo , Reenu , A.Saroa, R. Kumar, H. Kaur; Computational investigation of bioactive 2,3-diaryl quinolines using DFT method: FT-IR, NMR spectra, NBO, NLO, HOMO-LUMO transitions, and quantum-chemical properties
2022	Coordination Chemistry Reviews, 2022, 464, 214542	Ritika Jaryal, Rakesh Kumar, Sadhika Khullar; Mixed metal-metal organic frameworks (MM-MOFs) and their use as efficient photocatalysts for hydrogen evolution from water splitting reactions
2021	Journal of Molecular Structure, 2021, 1244, 130924	S. Janeoo, H. Kaur, G. Kaul, A. Akhir, S. Chopra, S. Banerjee, Reenu, V. Kumar, R. Kumar; Fluorine-containing 2,3-diaryl quinolines as potent inhibitors of methicillin and vancomycin-resistant Staphylococcus aureus: Synthesis, antibacterial activity and molecular docking studies
2020	Chemistry Select 2020, 5, 5172-5179.	M. Singh, Vaishali, R. Kumar, V Singh; Catalyst-free and metal-free approach towards synthesis of amide- and thioamide-linked ?-carboline-pyridine conjugates and estimation of their photophysical properties.

2018	European Journal of Medicinal Chemistry, 2018, 150, 864–875.	D. S. Reddy, M. Kongot, S. P.Netalkar, M. M. Karjogi, Rakesh Kumar, F. Avecilla, A. Kumar; Synthesis and evaluation of novel coumarin-oxime ethers as potential anti-tubercular agents: Their DNA cleavage ability and BSA interaction study.
2018	Advanced Synthesis & Catalysis 2018, 360, 2013-2019.	I. Kumar, R. Sharma, R. Kumar, Rakesh Kumar, U. Sharma; C70 Fullerene?Catalyzed Metal?Free Photocatalytic ipso?Hydroxylation of Aryl Boronic Acids: Synthesis of Phenols.
2018	Medicinal Chemistry, 2018, 14, 1-11	R. Kumar, R. Sharma, I. Kumar, P. Upadhyay, A. K. Dhiman, R. Kumar, R. Kumar, R. Purohit, D. Sahal, U. Sharma; Evaluation of Antiplasmodial Potential of C-2 and C-8 Modified Quinolines: in vitro and in silico Study.
2017	Journal of Organic Chemistry 2017, 82, 12307–12317.	A. K. Dhiman, R. Kumar, Rakesh Kumar,* U. Sharma* Synthesis of 2-substituted-3-(2-hydroxyaryl)quinolines and 4-(2-hydroxyaryl)acridines via benzyne chemistry.
2017	Asian Journal of Organic Chemistry, 2017, 6, 1043–1053.	R. Kumar, Rakesh Kumar, A. K. Dhiman, U. Sharma, Regioselective metal-free C(2)-H arylation of quinolone N-oxides with aryldiazonium salts/anilines under ambient conditions.
2016	Organic Letters 2016, 18, 184-187.	Rakesh Kumar, Eva H. Gleißner, Elisha Gabrielle V. Tiu, Y. Yamakoshi; C70 as a photocatalyst for oxidation of secondary benzylamines to imines.
2015	Nanoscale 2015,7, 6599-6607.	Rakesh Kumar, S. N. Ramakrishna, V. V. Naik, Z. Chu, M. E. Drew, N. D. Spencer, Y. Yamakoshi; Versatile method for AFM-tip functionalization with biomolecules: fishing a ligand by means of an in situ click reaction.
2015	Organic & Biomolecular Chemistry 2015, 13, 1536–1549.	Rakesh Kumar, G. Singh, L. J. Todaro,L. Yang, B. Zajc; E- or Z-selective synthesis of 4-fluorovinyl-1,2,3-triazoles with fluorinated second generationtriazole-substituted Julia-Kocienski reagent.
2013	Organic Letters 2013,15, 4086–4089.	G. Singh, Rakesh Kumar, J. Swett, B. Zajc; Modular synthesis of N-vinyl benzotriazoles.
2012	Journal of Organic Chemistry 2012,77, 8417–8427.	Rakesh Kumar, B. Zajc; Stereoselective synthesis of conjugated fluoroenynes.
2012	Organic & Biomolecular Chemistry 2012,10, 3164–3167.	S. Mandal, A. K. Ghosh, Rakesh Kumar, B. Zajc; Expedient synthesis of alpha-substituted fluoroethenes.
2011	Chemical Communications 2011, 47, 3891–3893.	Rakesh Kumar, P.Pradhan, B. Zajc; Facile synthesis of 4-vinyl-and 4-fluorovinyl-1,2,3-triazoles via bifunctional ‘click-olefination’ reagents.
2010	Synthesis 2010, 1822–1836.	B. Zajc, Rakesh Kumar; Synthesis of fluoroolefinsvia Julia–Kocienski olefination.

Conference Publications :

Year	Conference	Publication
2022	Advanced Functional Materials: Future Perspectives 2022	Ritika Jaryal, Sadhika Khullar, Rakesh Kumar; Effect of solvent and acid on the morphology of the b-ketoenamine- linked covalent organic frameworks (COFs); Materials Today: Proceedings
2022	Polymer & Mediterranean Fiber International Conference 2021	B. S. Kaith, Rohit; R. Kumar; Psyllium Polysaccharide-Based Hydrogels as Smart Biomaterials: Review; Materials Today: Proceedings, 2022, DOI: org/10.1016/j.matpr.2022.01.051
2016	International Conference on Organic Synthesis (ICOS 21), IIT Mumbai, India	Rakesh Kumar, Y. Yamakoshi; C70 as an efficient photocatalyst for oxidation of benzylic amines to imines.

2016	International Conference on Science: Emerging Scenario and Future Challenges (SESFC-2016), Dharamsala, India	Rakesh Kumar; Highly efficient photooxidation of benzylic amines to imines using C70 photocatalyst.
2014	Swiss Chemical Society Conference, Zurich, Switzerland.	Rakesh Kumar, S. N. Ramakrishna, N. D. Spencer, Y. Yamakoshi; AFM tip functionalization by in situ click reaction.
2010	240th American Chemical Society Meeting, Boston, USA.	Rakesh Kumar, B. Zajc; Synthesis of regiospecifically fluorinated fluorovinyltriazoles.
2008	236th American Chemical Society Meeting, Philadelphia, USA.	Rakesh Kumar, B. Zajc; High yield, stereoselective synthesis of fluoroenynes.

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISSN No.	Year
Book Chapter	Metal- and Carbon-Based Nano-Frameworks as Catalysts for Supercapacitance and Fuel Industry	Springer Nature	Ritika Jaryal, Rakesh Kumar, and Sadhika Khullar		2022

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI	Research	Ru(II)-catalyzed tandem oxidative cyclization–trifluoromethylation of enamines and synthesis of analogs of bioactive compounds	SERB, India	03.2016	03.2019	INR 33.5 Lacs	Completed	
PI	Research	Transition metal-free arylation of N-heterocycles using chemistry of arynes.	FOSTECT, Vietnam	05.2019	05.2021	VND 200 Millions	Completed	

PI	Research	New anti-malarial agents: synthesis, anti-malarial evaluation of modified quinolines and their molecular modeling with parasite proteins.	VGST, Govt. of Karnataka, India	08.2018	08.2019	INR 5.0 Lacs	Completed	

Events Organized :

Category	Type	Title	Venue	From	To	Designation
One-day wokshop	National	Water Technology	Punjab Engineering College (Deemed to be University) Chandigarh	08.08.2018	08.08.2018	Organizing Secretary
STC	National	Chemistry for Engineering Applications	Dr B R Ambedkar National Institute of Technology Jalandhar	14-09-2020	18-09-2020	Coordinator
Conference	National	Sustainable Environment: Challenges and Opportunities	Dr B R Ambedkar National Institute of Technology Jalandhar	08-09-2021	09-09-2021	Organizing Secretary
Conference	International	Advanced Functional Materials: Future Perspectives	NIT Jalandhar	06-08-2022	08-08-2022	Organizing Secretary

Professional Affiliations :

Designation	Organization
Lifetime Member	Indian Chemical Society
Lifetime Member	Him Science Congress Association
Lifetime Member	Asian Polymer Association

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Ms. Shashi Janeoo	Transition-metal arylations of heterocycles for applications in medicine and materials	Ongoing	4th	Prof. Harminder Kaur, PEC Chandigarh
Ms. Ritika Jaryal	Organic synthesis for environmental applications	Ongoing	3rd	Dr. Sadhika Khullar
Mr. Naveen Banyal	Exploration of Chemo- and Regio-selectivities of Aldo-X Bifunctional Building Blocks Towards The Synthesis of ?-Carboline Based Molecular Architectures	Ongoing	3rd	Dr. Virender Singh, CUP Bhatinda
Mr. Rohit	Hydrogels	Ongoing	2nd	Prof. B. S. Kaith
Shubhanjali choudhary	Photoredox catalysis	Ongoing	2022	

Ms. Shubhanjali Choudhary	Photoredox catalysis	Ongoing	2022	

PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Anmol Aggarwal	N-Heterocycle-Iridium complexes for optoelectronic applications	Completed	2022	
Sidhuja Joshi	Chemistry of Aryne Intermediates for Synthesis of Polycyclic N-heteroaromatics	Completed	2022	
Tanisha Yadav	Exploration of Chemistry of Arynes for Synthesis of Pyridine and Quinoline Fused Pyrans	Completed	2021	
Tanu	Synthesis of Benzofuropyridines and Benzofuro Quinolines via Chemistry of Arynes	Completed	2021	
Jarsha Jaleel	Transition-Metal Free Approach for Arylation of Adenine Nucleosides Using Arene Diazonium Salts	Completed	2021	
Prashant Kumar	Synthesis of 2-Arylbenzothiazole-Carbazole Hybrid Molecules via Sulfur Insertion Strategy	Completed	2020	Dr. Virender
Akanksha Mathur	Catalyst-free Approach Towards Synthesis of Luminescent ?-Carboline Tethered Aurones	Completed	2020	Dr. Virender Singh, CUP Bhatinda
Pragati Sharma	Tandem arylation-cyclization of N-heteroarenes using chemistry of arynes	Ongoing		
Prateek Kumar	Covalent organic frameworks for dye adsorption	Ongoing		
Rahul	Covalent organic frameworks for iodine capture	Ongoing		

Admin. Responsiblities :

Position Held	Organization	From	To
Hostel Warden	Mega Hostel Boys-A	08-03-2021	Till date
Liaison Officer OBC	Dr B R Ambedkar National Institute of Technology Jalandhar	02-03-2021	Till date

Award and Honours :

Title	Activity	Given by	Year
Axelrod Scholarship	Teaching and Research	The City College of New York	2011
Excellence in Research Award	Research	The City University of New York	2011
Excellence in Teaching Award	Teaching	The City College of New York	2009