Dr. Girijesh Kumar Verma

Present Address:

Dr. Girijesh Kumar Verma
Assistant Professor
Department of Chemistry
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Education:

Degree	Subject	University	Year
B. Sc.	Zoology, Botany, Chemistry	Deen Dayal Upadhyay Gorakhpur University, Gorakhpur	2005
M. Sc.	Chemistry	Deen Dayal Upadhyay Gorakhpur University, Gorakhpur	2007
Ph. D.	Organic Synthesis	Banaras Hindu University, Varanasi, Uttar Pradesh	2015

Thesis Title: Synthesis of Heterocyclic Systems *via* Ketene-*S*,*S*-Acetals and Thioamides.

Thesis Supervisor: **Prof. Maya Shankar Singh**

Post Doctoral Experience:

UGC Sponsored Dr. D. S. Kothari Post Doctoral Fellow (2015-2018)

Objective: Transition metal (TM) catalyzed C–H bond activation leading to the C–C and C–heteroatom bond formation.

Mentor: **Prof.Diwan S. Rawat** at University of Delhi, Delhi-110 007

Teaching Experience:

Worked as **Teaching Assistant** at **Banaras Hindu University**, Varanasi: Academic Session **2013-14**.

Industrial Experience:

1	Worked as **Process Efficiency Officer** at **Sharp Mint Limited**, Bhiwadi (Unit) Alwar Rajsthan; Since **May 2021** to **Aug 2021**
2	Working as **Research Scientist** at **Giri Diagnostic Kits and Reagents Pvt Ltd**, Selaqui, Dehradoon, Uttarakhand: Since **Sept 2021** to **Nov 2022**.

Areas of Specialization	Design and synthesis of novel organic molecules *via* α-oxoketenedithioacetal, β-ketothioamide and β-oxodithioesters, multicomponent reactions leading to highly functionalized scaffolds under solvent and solvent free conditions. C-H activation Chemistry, Medicinal Chemistry (for novel drug candidates against **Cancer**), Synthesis of Chemiluminescent molecule, Aza Crown Ethers and D-Biotin based Bioconjugates.

Research Skills:

- Proficient in synthesis of various types of α-oxoketenedithioacetal, β-ketothioamide, β-oxodithioesters, dimethyl trithiocarbonate, terminal alkynes, Aza Crown Eters, Biotin based Bioconjugates etc.
- Total synthesis of novel drug candidates against cancer.
- Capable of performing McMurry reaction and Gabriel amine synthesis.
- Capable of performing reactions at 50 g scale with the help of Mechanical Stirrer.
- Experienced in carrying out Dry Reactions and Reactions at -78 °C using immersion cooler (Julabo).
- Highly conversant with modern experimental and analytical techniques such as thin-layer/column chromatography, flash chromatography and vacuum distillation.
- With the help of single crystal X-Ray Data I'm able to solve structure of small Organic Molecules.

Awards & Achievements:

(1) Awarded Junior Research Fellowship (Funding Agency UGC)	Dec 2008 (Availed 2009-11)
(2) Awarded Junior Research Fellowship (Funding Agency CSIR)	Jun 2009
(3) UGC-JRF extended to Senior Research Fellowship	Availed 2011-2014
(4) Dr. D. S. Kothari Post-Doctoral Fellowship (Funding Agency UGC)	Nov 2015 to Nov 2018
(5) Selected **Guest Faculty** at Department of Chemistry, University of Delhi	Oct. 2019 (Odd Semester)

List of Publications:

	Publications	**Reference, Impact Factor**
25	Cobalt Catalysed C—C Bond Formation and [2+2+2] Annulation of 1,3-Dicarbonyls to Terminal Alkynes. **G. K. Verma**, Manish Rawat, Diwan S. Rawat	*Eur. J. Org. Chem.* **2019**,4101-4104 3.261
24	1-(4-Methoxyphenyl)-3,3-bis(methylsulfanyl)-2-propen-1-one. (CCDC: 992399) **G. K. Verma**, M. S. Singh	*CSD Communication*, **2016** DOI: 10.5517/ccdc.csd.cc129nwx

23	Solvent-free one-pot efficient and highly regioselective access to functionalized thiazolopyridones from α-enolic dithioesters. A. Nagaraju, B. J. Ramulu, G. Shukla, A. Srivastava, **G. K. Verma**, M. S. Singh	*ARKIVOC* **2016**,*(ii)*,42-52 1.140
22	A facile and highly convergent approach to thiazolo [3,2-*a*] pyridines via one-pot multicomponent domino reaction under metal-free and solvent-free conditions. A. Nagaraju, B. J. Ramulu, G. Shukla, A. Srivastava, **G. K. Verma**, K. Raghuvanshi, M. S. Singh	*Tetrahedron* **2015**, *71*,3422–3427 2.457
21	Catalyst-free one-pot four-component domino reactions in water-PEG-400: Highly efficient and convergent approach to thiazoloquinoline scaffolds. A. Nagaraju, B. J. Ramulu, G. Shukla, A. Srivastava, **G. K. Verma**, K. Raghuvanshi, M. S. Singh	*Green Chem*. **2015,** *17*, 950 – 958 11.034
20	Synthesis of N-Functionalized/NH Multisubstituted Indoles, Thienopyrroles, Pyrroloindoles and Pyrazolopyrroles via Sequential One-Pot Base Mediated and Copper Catalyzed Inter-and Intramolecular Amination of 2-[2-Bromo (het) aryl]-3-(het) aryl-3-(methylthio) acrylonitriles. S. V. Kumar, B. Saraiah, G. Parameshwarappa, H. Ila, **G. K. Verma**	*J. Org. Chem*. **2014**, *79*, 7961−7978 4.198
19	$In(OTf)_3$-mediated dehydrative annulation of β-ketothioamides with phenylglyoxal: one-pot access to diversely functionalized pyrrol-2-thiones. **G. K. Verma**, G. Shukla, A. Nagaraju, A. Srivastava, M. S. Singh	*Tetrahedron Lett.* **2014**, *55*, 5182–5185 2.415
18	DMAP-promoted cascade C-S/C-N bonds formation approach to 1,3-thiazolidin-4-ones *via* annulation of *β*-ketothioamides with *a*-halocarboxylic acids at room temperature. **G. K. Verma**, G. Shukla, A. Nagaraju, A. Srivastava, M. S. Singh	*Tetrahedron* **2014,** *70*, 6980-6984 2.457
17	$In(OTf)_3$-catalysed one-pot versatile pyrrole synthesis through domino annulation of *α*-oxoketene-*N,S*-acetalswith nitroolefins. A. Srivastava, G. Shukla, A. Nagaraju, **G. K. Verma**, K. Raghuvanshi, R. C.	*Org. Biomol. Chem.* **2014**, *12*, 5484-5491 3.890

	F. Jones, M. S. Singh	
16	Easy access to α-hydroxyimino-β-oxodithioesters and application towards the synthesis of diverse 1, 4-thiazine-3-ones via reduction/annulation cascade. A. Nagaraju, G. Shukla, A. Srivastava, B. J. Ramulu, **G. K. Verma**, K. Raghuvanshi, M. S. Singh	*Tetrahedron* **2014**, 70, 3740-3746 2.457
15	A facile and straightforward synthesis of 1,2,3-thiadiazoles from a-enolicdithioesters via nitrosation/reduction/ diazotization/cyclization cascade in one-pot. A. Nagaraju, B. J. Ramulu, G. Shukla, A. Srivastava, **G. K. Verma**, K. Raghuvanshi , M. S. Singh	*Tetrahedron Lett.* **2014**, 55, 2430–2433 2.415
14	Regioselectivity in the ring opening of epoxides: A Metal-Free Cascade C-S/C-O Bonds Formation Approach to 1,3-Oxathiolan-2-ylidenes via Heteroannulation of *α*-Enolicdithioesters at Room Temperature. G. Shukla, A. Nagaraju, A. Srivastava, **G. K. Verma**, K. Raghuvanshi, M. S. Singh	*Synthesis* **2014**, 46, 1815-1822 3.019
13	DMAP-Promoted domino annulation of *β*-ketothioamides with internal alkynes: A highly regioselective access to functionalized 1, 3-thiazolidin-4-ones at room temperature. **G. K. Verma**, G. Shukla, A. Nagaraju, A. Srivastava, K. Raghuvanshi, M. S. Singh	*RSC Advances* **2014**, 4, 11640–11647 4.036
12	One-pot straightforward approach to 2, 3-disubstituted benzo/naphtho [*b*] furans via domino annulation of *α*-oxoketene dithioacetals and 1, 4-benzo/naphthoquinone mediated by $AlCl_3$ at room temperature. **G. K. Verma**, R. K. Verma, G. Shukla, A. Nagaraju, A. Srivastava, M. S. Singh	*Tetrahedron* **2013**, 69, 6612-6619 2.457
11	Construction of five-and six-membered heterocycles on both Cp rings of the ferrocene moiety of α-oxoketene-S, S-acetal and *β*-oxodithioester via heteroaromatic annulation. **G. K. Verma**, R. K. Verma, M. S. Singh	*RSC Advances* **2013**, 3, 245-252 4.036

10	DMAP mediated one-pot domino thienannulation: a versatile, regioselective and green mechanochemical route to naphtho [2, 3-*b*] thiophenes. G. Shukla, **G. K. Verma**, A. Nagaraju, R. K. Verma, K. Raghuvanshi, M. S. Singh	*RSC Advances* **2013**, 3, 13811-13817 4.036
9	*β*-Oxodithioesters **G. K. Verma**	*Synlett* **2013**, 24, 1021-1022 2.206
8	Eco-efficient, regioselective and rapid access to 4,5-disubstituted 1,2,3-thiadiazoles via [3+2] cycloaddition of *α*-enolicdithioesters with tosyl azide under solvent-free conditions. M. S. Singh, A. Nagaraju, **G. K. Verma**, G. Shukla, R. K. Verma, A. Srivastava, K. Raghuvanshi	*Green Chemistry* **2013**, 15, 954-962 11.034
7	4-Dimethylamino Pyridine-Promoted One-Pot Three-Component Regioselective Synthesis of Highly Functionalized 4-*H*-Thiopyrans via Heteroannulation of *β*-Oxodithioesters. R. K. Verma, **G. K. Verma**, G. Shukla, A. Nagaraju, M. S. Singh	*ACS Combinatorial science* **2012**, 14, 224-230 3.381
6	An efficient one-pot three-component synthesis of functionalized pyrimido [4,5-*b*] quinolines and indeno fused pyrido [2,3-*d*] pyrimidines in water. **G. K. Verma**, K. Raghuvanshi, R. Kumar, M. S. Singh	*Tetrahedron Lett.* **2012**, 53, 399-402 2.415
5	Molecular docking and in vitro antileishmanial evaluation of chromene-2-thione analogues. R. K. Verma, V. K. Prajapati, **G. K. Verma**, D. Chakraborty, S. Sundar, M. Rai, V. K. Dubey, M. S. Singh	*ACS Med. Chem.* Lett. **2012**, 3, 243-247 4.632
4	$InCl_3$ catalyzed domino route to 2-*H*-chromene-2-ones via [4+2] annulation of 2-hydroxyarylaldehydes with α-oxoketene dithioacetal under solvent-free conditions. R. K. Verma, **G. K. Verma**, G. Shukla, M. S. Singh	*RSC Advances* **2012**, 2, 2413-2421 4.036
3	Solvent-free sonochemical one-pot three-component synthesis of 2-*H*-indazolo [2,1- *b*] phthalazine-1,6,11-triones and 1-*H*-pyrazolo [1, 2-*b*]	*Tetrahedron Lett.* **2011**, 52, 7195-7198

	phthalazine-5,10-diones. G. Shukla, R. K. Verma, **G. K. Verma**, M. S. Singh	2.415
2	An efficient one-pot solvent-free synthesis and photophysical properties of 9-aryl/alkyl-octahydroxanthene-1,8-diones. **G. K. Verma**, K. Raghuvanshi, R. K. Verma, P. Dwivedi, M. S. Singh	*Tetrahedron* **2011**, 67, 3698-3704 2. 641
1	An expedient route to highly functionalized 2-*H*-chromene-2-thiones via ring annulation of *β*-oxodithioesters catalyzed by $InCl_3$ under solvent-free conditions. R. K. Verma, **G. K. Verma**, K. Raghuvanshi, M. S. Singh	*Tetrahedron* **2011**, 67, 584-589 2. 641

Book Chapter:

1 D. S. Rawat, G. K. Verma "**Six-membered Rings with 1,2,4-Oxygen or Sulfur Atoms**" in the book series "**Comprehensive Heterocyclic Chemistry**" Elsevier Science, Edition IV, Vol 9, 2022, 542-585; Online (Since 29 June 2021) https://www.sciencedirect.com/science/article/pii/B9780128186558000950?via%3Dihub.

2 Bhanu Pratap Singh Gautam, Girijesh Kumar Verma, Nidhi Sharma, Himanshu Pandey, Virendra Kumar, Manjul Gondwal"**Mixed valence π-Conjugated Coordination Polymers for OLEDs**" in the Book "**Organic Light Emitting Diode (OLED) Toward Smart Lighting and Displays Technologies: Material Design Strategies, Challenges and Future Perspectives** "*Edited By* Laxman Singh, Rituraj Dubey, R. N. Rai; *Published by* CRC Press, Taylor and Francis 2023, 149-174.

eBook ISBN: **9781003260417**; Hard Copy ISBN: **9781032197036**

3 Manjul Gondwal, Sarita Kalakoti, Rakesh Kumar Verma, Bhanu Pratap Singh Gautam, Indresh Kunar Pandey,Girijesh Kunar Verma "**Environmental Hazards in the Himalaya**" in *Edited By*. Deepak Pant, Sanjesh Kumar, Gurpreet Singh, "**Natural Hazards in Himalaya**" *Published by*"The Shambhavi. M. Associates"*Printed at*: Aargon Press, Delhi 2023, 31-46.

ISBN: **978-81-951370-2-2**;

4 Navneet Kishore, Manjul Gondwal, Ravindra Soni, Girijesh Kumar Verma, Roshan Lal and Bhanu Pratap Singh Gautam, "**Physical and Chemical Processes of Marine Environment**" in "**Current Status of Marine Water Microbiology**" *Edited By* Ravindra Soni, Deep Chandra Suyal, Lourdes Morales-Oyervides, Mireille Fouillaud, *Published by* Springer, Singapore, pp 3-25 (2023).

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Seminars, Symposiums & Conferences

Poster/Oral Presentations

International

5	*Presented Poster* at "ACS on Campus" Conference" held at University of Delhi, Delhi.	February 05, 2018
4	*Presented Poster*at "*24th ISCB International Conference (ISCBC-2018)*" held at Manipal University Jaipur, Rajsthan.	January 11–13, 2018
3	*Presented Poster*at "*XIII J-NOST*" held at Banaras Hindu University, Varanasi.	November 9–12, 2017
2	*Presented Poster* at "*2nd UK-India MedChem Congress*" organized by CSIR-Indian Institute of Chemical Technology, Hyderabad.	March 22–23, 2013
1	*Presented Poster*at5th International Symposium on "*Drug Development for Orphan/Neglected Diseases*" held at CSIR-Central Drug Research Institute, Lucknow.	February 26–28, 2013

National

3	*Oral Lecture* at National Symposium on "*Chemistry and Environment (NSCE – 2013)*" organized by Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi.	March 15–16, 2013
2	*Presented Poster*at "*15th CRSI National Symposium in Chemistry*" held at Banaras Hindu University, Varanasi.	February 01–03, 2013
1	*Presented Poster*at "*12th CRSI National Symposium in Chemistry & 4th CRSI-RSC Symposium in Chemistry*" held at IICT & NIPER, Hyderabad.	February 04–07, 2010

Declaration:

I hereby declare, that the information furnished above is true, correct and complete to the best of my knowledge.

March 2024 **Dr. Girijesh Kumar Verma**