

Jawahar Lal, Ph.D.



Assistant Professor

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Research Profile:

Research Interest—Development of new synthetic methodologies, Green and sustainable synthetic chemistry, Asymmetric catalysis, Heterocyclic synthesis, Metal mediated organic synthesis and Medicinal chemistry.

Research Experience:

- ◆ **Post-Doctoral Fellow**, University of Texas-Southwestern Medical Center, Dallas, Texas, USA (2010- 2014).
- ◆ **Research Scientist**, Jubilant Chemsys Ltd., Noida, U.P., India. (2007-2010)
- ◆ **Ph. D.** (Synthetic Organic Chemistry), M. L. Sukhadia University, Udaipur (Raj.), India. (2003-2007)

Teaching Experience:

- ◆ **Assistant Professor**, Department of Chemistry, School of Basic Science, SRM University, Haryana, (Aug. 2014 to Oct. 2015)

Publications/Patents:

1. O-Substituted hydroxyl amine reagents: an overview of recent synthetic advances. Shekh Sabir, Ganesh Kumar and **Jawahar L. Jat***, *Org. Biomol. Chem.*, **2018**, 16, 3314. (I.F. 3.56)
2. Aziridine Ring Opening: An Overview of Sustainable Methods. Shekh Sabir, Ganesh Kumar, Ved Prakash Verma, and **Jawahar L. Jat***. *ChemistrySelect* **2018**, 3, 3702. (I.F. = 1.5)
3. Unprotected Aziridines: A Synthetic Overview, Shekh Sabir, Ganesh Kumar, and **Jawahar L. Jat***. *Asian J. Org. Chem.* **2017**, 6, 782 – 793. (I.F. = 2.8)

4. "Direct Stereospecific Synthesis of Unprotected N-H and N-Me Aziridines from Olefins"
Jawahar L. Jat, Mahesh P. Paudyal, Hongyin Gao, Qing-Long Xu, Muhammed Yousufuddin, Deepa Devarajan, Daniel H. Ess, László Kürti* and John R. Falck.*
SCIENCE, 2014, 343, 61-65. (Impact factor = 41.05)

This work has been highlighted and covered as a:

- (i) **Science Perspective** : *Science*, 343, 33 (2014)
DOI: 10.1126/science.1248166
- (ii) **C&EN News**: *Chemical & Engineering News*, 92(1), January 06, 2014.
- (iii) **In the pipeline**:
http://pipeline.corante.com/archives/2014/01/03/easy_aziridines.php
- (iv) **Chemistry-world** :
(<http://www.rsc.org/chemistryworld/2014/01/simple-aziridine-route-introduce-nitrogen-drugs>)
- (v) **A Scalable Rhodium-Catalyzed Intermolecular Aziridination Reaction**: *Angew. Chem., Int. Ed.*, 2014, DOI: 10.1002/anie.201400502
- (vi) **F1000 Prime** (<http://f1000.com/prime/718226654>)
Recommended by Roger Freidinger
- (vii) **Protection not included**, *Nature Chemistry*, 6, 168 (2014)
doi:10.1038/nchem.1885.

5. "Regio- and Enantioselective Catalytic Monoepoxidation of Conjugated Dienes: Synthesis of Chiral Allylic Epoxides".
Jawahar L. Jat, Saroj Ranjan De , Ganesh Kumar ,Adeniyi Michael Adebesein , Shyam K. Gandham , and John R. Falck.
Org. Lett., **2015**, 17 (4), 1058–1061. (Impact factor = 6.3)
6. "Regio- and Stereoselective Mono epoxidation of Dienes using Methyltrioxorhenium: Synthesis of Allylic Epoxides." SarojRanjan De , Ganesh Kumar , **Jawahar L. Jat** , Saritha Birudaraju , Biao Lu , Rajkumar Manne , Narendra Puli , Adeniyi Michael Adebesein , and John R. Falck.
J. Org. Chem., **2014**, 79 (21), pp 10323–10333. (Impact factor = 4.6)
7. "Enantiomeric Separations of N–H/N–Me Aziridines Utilizing GC and HPLC". Lillian A. Frink, Muhammad A. Khan, Laszlo Kurti, John R. Falck, Mahesh P. Paudyal, **Jawahar L. Jat**, Daniel W. Armstrong.
Chromatographia, **2014**, 77, 1607-1612. (Impact factor = 1.4)
8. "Functional Characterization of Cytochrome P450-Derived Epoxyeicosatrienoic Acids (EETs) in Adipogenesis and Obesity". Weibin Zha, Matthew L. Edin, Kimberly C. Vendrov, Robert N. Schuck, Fred B. Lih, **Jawahar Lal Jat**, J. Alyce Bradbury, Laura M. DeGraff, Kunjie Hua, Kenneth B. Tomer, John R. Falck, Darryl C. Zeldin and Craig R. Lee.
Journal of Lipid Research, **2014**, 55, 2124-2136. (Impact factor = 4.38).
9. "PPAR α Activation Can Help Prevent and Treat Non–Small Cell Lung Cancer". Nataliya Skrypnik, Xiwu Chen, Wen Hu, Yan Su, Stacey Mont, Shilin Yang, Mahesha Gangadhariah, Shouzu Wei, John R. Falck, **Jawahar Lal Jat**, Roy Zent, Jorge H Capdevila, and Ambra Pozzi.
Cancer Res, **2014**, 74;621; doi: 10.1158/0008-5472. (Impact factor = 9.28).
10. "20-Iodo-14,15-epoxyeicosa-8(Z)-enoyl-3-azidophenylsulfonamide: Photoaffinity Labeling of a 14,15-Epoxyeicosatrienoic Acid Receptor". Yuenmu Chen , John R. Falck , Vijaya L. Manthati, **Jawahar Lal Jat** , and William B. Campbell.
Biochemistry, **2011**, 50, 3840-3848. (Impact factor = 3.42)
11. "Androgen-Dependent Hypertension Is Mediated by 20-Hydroxy-5,8,11,14-Eicosatetraenoic Acid–Induced Vascular Dysfunction. Role of Inhibitor of κ B Kinase". Cheng-Chia Wu, Jennifer Cheng, Frank Fan Zhang, Katherine H. Gotlinger, Mukul Kelkar, Yilun Zhang, **Jawahar L. Jat**, John R. Falck, Michal L. Schwartzman.
Hypertension, **2011**, 57, 788-794. (Impact factor =7.63)

12. "Synthesis and characterization of biologically significant 5, 5'-(1, 4-phenylene)bis(1-N-alkoxyphthalimido-3-aryl-2-pyrazoline) derivatives". **Jawahar Lal Jat**, Swati Ojha, Dinesh Bhambi, Neelam Dhakar, G.L.Talesara.
Journal of Enzyme inhibition and Medicinal chemistry, **2008**, 23(6), 882-887. (Impact factor = 2.38)

Patent Publication:

1. "Direct stereospecific synthesis of unprotected aziridines from olefins".
WO2015103505 A2, (Jul 9, 2015)

Conferences/Seminars/Symposium/Presentations:

Invited Talk

- ◆ National conference on contemporary facets in organic synthesis 2017, Dept. Of Chemistry, IIT Roorkee, U.K. (22-24 Dec. 2017).
- ◆ National conference on Renewable Energy: Present and future perspectives in Research and Industries (RE-2018), Aryakul College of Pharmacy and Research, Lucknow.(28 Feb-1 March, 2018)
- ◆ International conference on recent trends in Chemical Science, Govt. Engineering College, Bikaner, Rajasthan (12-13 Jan. 2017)
- ◆ National conference on "Role of Analytical Techniques in Advanced Scientific Research" National P.G. College, Lucknow. (19th & 20th March 2016)

Oral/Poster Presentation

- ◆ International conference on updates in cancer Prevention and Research (ICUCPR-2017) from 14-16 Feb 2017, BBAU, Lucknow. (Poster)
- ◆ International conference on Frontiers at the chemistry-Allied Sciences Interfaces (FCASI-2017) from 22-23 July 2017, Raj. University, Jaipur. (Oral)
- ◆ International conference on Nanoscience and Nanotechnology (ICNN-2017) from 22-24 Sep. 2017, BBAU, Lucknow. (Poster)
- ◆ *Bis-Functionalization of Olefins: Direct Synthesis of vic-Functionalized Amines.* **Jawahar L. Jat**, Mahesh P. Paudyal, Hongyin Gao, Qing-Long Xu, Craig Keene, László Kürti, and J. R. Falck. 247 ACS national meeting & exposition, Dallas, Tx, United States, March 16-20, **2014.(Selected for Sci-mix)**

- ◆ Biomimetic Total Synthesis of Nigriganoside A. Adeniyi M Adebesein, **Jawahar L Jat**, Ganesh L Kumar, Shyam K Gandham, Rami R Neelapu, John R Falck. 247 ACS national meeting & exposition, Dallas, Tx, United States, March 16-20, **2014. (Selected for Sci-mix)**
- ◆ The Elusive Direct N-H Aziridination of Alkenes: A Rh-Catalyzed Process. Mahesh P. Paudyal, **Jawahar L. Jat**, Hongyin Gao, Qing-Long Xu, Daniel H. Ess, László Kürti, and J. R. Falck* OMCOS 17 (17th IUPAC International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis), 28 July-01-August-**2013**. Colorado State University, Ft. Collins, United States Of America.
- ◆ Stereospecific Distal Epoxidation: Approach to Nigriganoside, **Jawahar L. Jat**, Ganesh Kumar, Saroj Ranjan De, Adeniyi M. Adebesein and J. R. Falck. 243 ACS national meeting & exposition, San Diego, CA, United States, March 25-29, **2012**.
- ◆ Orally active epoxyeicosatrienoic acid (EET) analogs attenuate cisplatin-induced nephrotoxicity by reducing oxidative stress, inflammation, and endoplasmic reticulum stress. M. A.H. Khan, Ran Jing, **Jawahar L. Jat**, Vijay L. Manthati, John R. Falck, John.D. Imig. 14th International Winter Eicosanoid Conference, Baltimore, Maryland, USA, March 11-12, **2012**.
- ◆ Distal epoxidation of 1,3-dienol esters. Ganesh Kumar, Saroj Ranjan De, **Jawahar L. Jat**, Raj kumar, Sarita, B., Bio Lu and J. R. Falck. 241 ACS national meeting & exposition, Anaheim, CA, United States, March 27-31, **2011**.
- ◆ Novel Epoxyeicosatrienoic Acid Analogs Increase Sodium Excretion and Lower Blood Pressure in Hypertension, M. A.H. Khan, V.L. Manthati, **Jawahar L. Jat**, J.R. Falck, W.B. Campbell and J.D. Imig, Experimental Biology meeting (EB 2011), Washington, DC, United states. April 9-13, **2011**.
- ◆ “20-Iodo-14,15-Epoxyeicosa-8(Z)-Enoyl-3-Azidophenylsulfonamide: Photoaffinity Labeling of a 14, 15- Epoxyeicosatrienoic Acid Receptor” Welch foundation 56th conference on chemical research “advances in transition metal catalyzed reactions” October 22-23, **2012**, Hilton houston north, houston, Texas. USA.

Funding/On-going Research Project:

1. Start-Up Research Grant (Young Scientists):

DST- SERB, New Delhi, 2016-2019.

2. UGC-BSR (FRPS): UGC, New Delhi, 2017-2019.