

Jawahar Lal (Ph.D.)

Assistant Professor

Department of Chemistry

Babasaheb Bhimrao Ambedkar University

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Educational Qualification:

Degree	Organization	Year of Award
B.Sc.	University College of Science, M. L. S. University, Udaipur, Rajasthan.	2001
M.Sc.	University College of Science, M. L. S. University, Udaipur, Rajasthan.	2003
Ph.D.	University College of Science, M. L. S. University, Udaipur, Rajasthan.	2007
Post-Doctoral Training	University of Texas Southwestern Medical Center, Dallas, Texas, USA.	2010-2014

Professional Experience: (In Years):

Teaching Experience: 06 years

Research Experience: 13 years

Teaching Experience:

- ◆ **Assistant Professor**, Department of Chemistry, School of Basic Science, SRM University, Haryana, (Aug. 2014 to Oct. 2015)
- ◆ **Assistant Professor**, Department of Chemistry, School of Physical and Decision Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, U.P., India. (Nov.2015 to Continue)

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)

Area of Research:

Field of Specialization: Synthetic Organic Chemistry

- ❖ Development of novel and efficient synthetic methodologies for the synthesis of value-added compounds.
- ❖ Green and Sustainable Synthetic Chemistry
- ❖ Medicinal Chemistry

Research Interest

- ❖ Our Group is focused on the development of novel and efficient methodologies in organic synthesis. We are particularly interested in those reactions which involve *N*- and *O*- insertion into carbon chain.
- ❖ Application of these developed methods to address the problem in the synthesis of complex molecules possessing interesting medicinal properties.

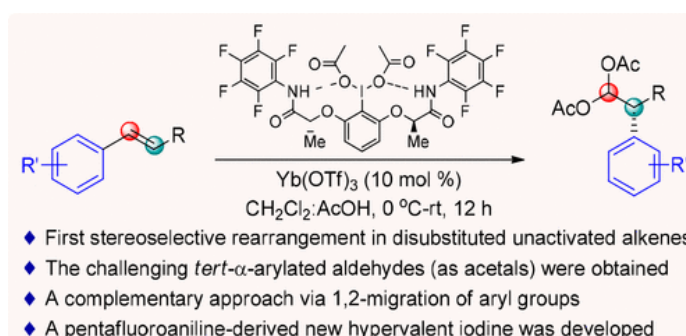
Research/Consultancy Grant:

Title of Projects	Funding Agency	Duration	Total Grant	Role (PI/CO-PI)
Novel and Straight Regio and Stereoselective Constructions of Unprotected Vinyl and Alkynyl Aziridines	Science and Engineering Research Board (SERB)	2016-2019	27.5 Lac	PI
Synthetic Transformation of NH/N-alkyl Aziridines	University Grant Commission (UGC-BSR)	2017-2019	10.0 Lac	PI

Publications:

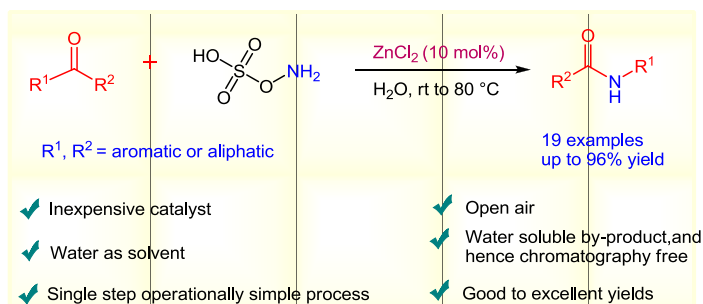
1. Stereoselective Oxidative Rearrangement of Disubstituted Unactivated Alkenes Using Hypervalent Iodine(III) Reagent.

Chandra Bhan Pandey, Tazeen Azaz, Ram Subhawan Verma, Monika Mishra, **Jawahar L. Jat**, Bhoopendra Tiwari. *J. Org. Chem.* **2020**, 85, 15, 10175–10181. (I.F. 4.4)



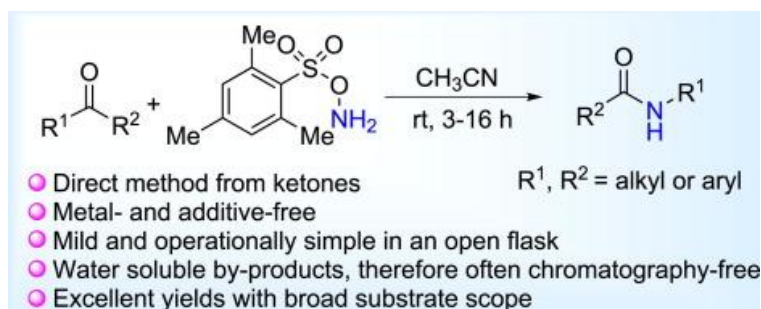
2. Zinc(II)-Catalyzed Synthesis of Secondary Amides from Ketones via Beckmann Rearrangement Using Hydroxylamine-O-sulfonic Acid in Aqueous Media.

Verma, Saumya; Kumar, Puneet; Khatana, Anil K.; Chandra, Dinesh; Yadav, Ajay K.; Tiwari, Bhoopendra; **Jat, Jawahar L***. *Synthesis*, **2020**, 52 (21), 3272-3276. (I.F. 2.7)



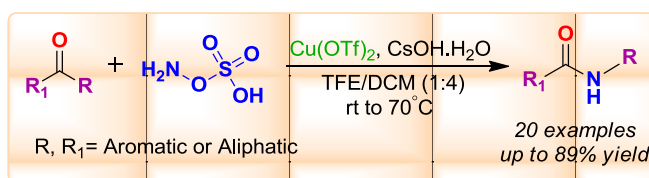
[Invited article]

3. Direct synthesis of secondary amides from ketones through Beckmann rearrangement using *O*-(mesitylsulfonyl)hydroxylamine.
Dinesh Chandra, Saumya Verma, ChandraBhan Pandey, Ajay K. Yadav, Puneet Kumar, Bhoopendra Tiwari, **Jawahar L. Jat***. *Tetrahedron Lett.*, **2020**, 61(18), 151822. (I.F. 2.3)



4. Cu(OTf)₂-Catalyzed Beckmann Rearrangement of Ketones Using Hydroxylamine-*O*-sulfonic Acid (HOSA).

Munnuri, Sailu; Verma, Saumya; Chandra, Dinesh; Anugu, Raghunath Reddy; Falck, John R.; **Jat, Jawahar L***. *Synthesis*, **2019**, 51(19), 3709-3714. (I.F. 2.7)



- One pot, operationally simple ● Water soluble by-product
 ● Open flask ● Secondary amide directly from ketone
 ● Excellent yields, broad scope ● Wide functional group tolerance

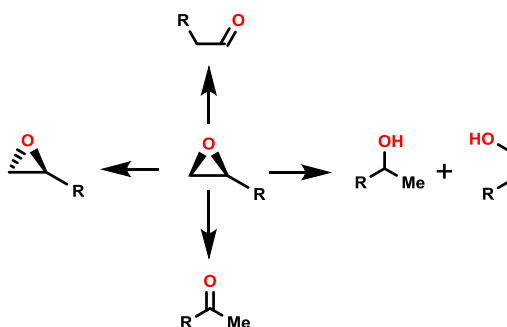
This work has been highlighted in Synfact and Organic Chemistry Portal:

(i) <https://www.thieme.de/en/thieme-chemistry/synform-news-cu-catalyzed-beckmann-rearrangement-of-ketones-145867.htm>

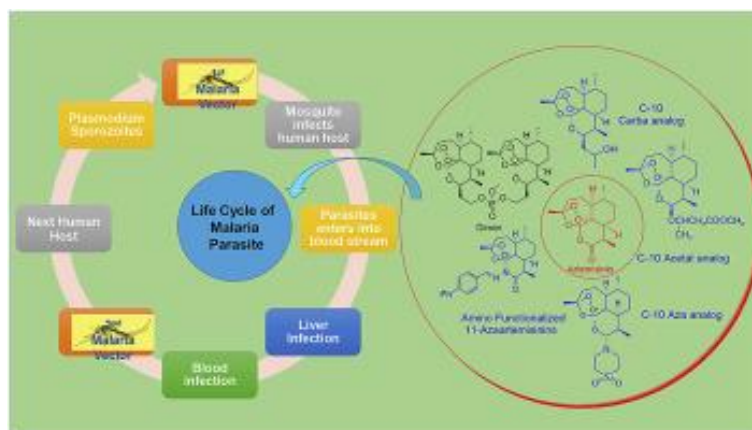
(ii) <https://www.organic-chemistry.org/abstracts/lit7/024.shtm>

5. Isomerization of Epoxide.

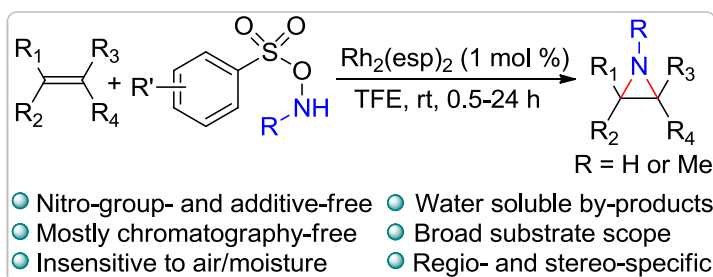
Jawahar L. Jat, Ganesh Kumar *Adv. Syn. & Cat.*, **2019**, 361(19), 4426-4441. (I.F. 5.2)



6. Current scenario of artemisinin and its analogues for antimalarial activity. Akriti Kumari, Manvika Karnatak, Davinder Singh, Ravi shankar, **Jawahar L. Jat**, Siddharth Sharma, Dinesh yadav, Rahul Srivastava, Ved Prakash Verma. *European Journal of Medicinal Chemistry*, **2019**, *163*, 804-829. (I.F. 4.8)



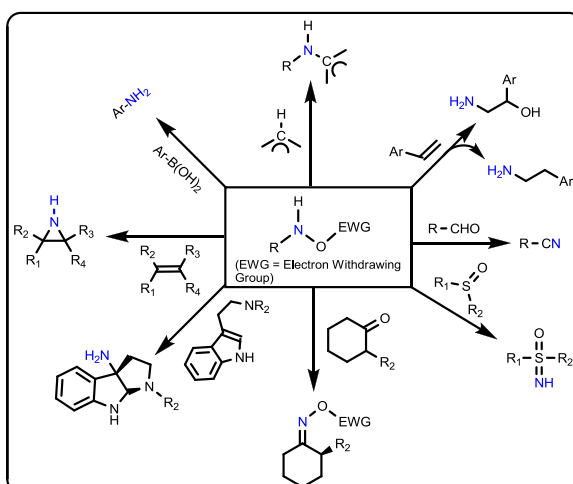
7. Direct *N*-H/*N*-Me Aziridination of Unactivated Olefins Using *O*-(Sulfonyl)hydroxylamines as Aminating Agents. Shekh Sabir, Chandra Bhan Pandey, Ajay K. Yadav, Bhoopendra Tiwari*, **Jawahar L. Jat*** *J. Org. Chem.*, **2018**, *83* (19), pp 12255–12260. (I.F. 4.4)



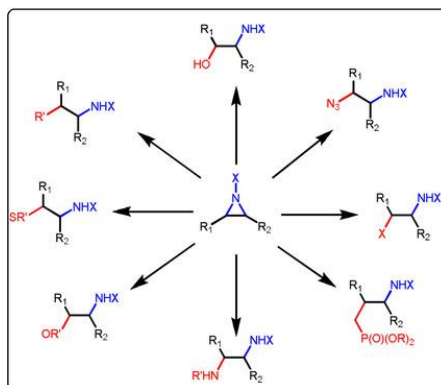
This work has been highlighted in Organic Chemistry portal:

- (i) C-N Ring Construction: The Mori Synthesis of Lycopodine:
<https://www.organic-chemistry.org/Highlights/2019/22April.shtm>
 (ii) Synthesis of aziridines:
<https://www.organic-chemistry.org/abstracts/lit6/530.shtm>

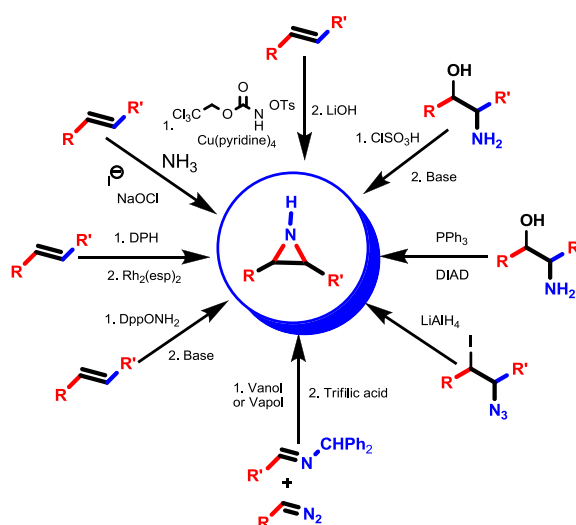
8. *O*-Substituted hydroxyl amine reagents: an overview of recent synthetic advances. Shekh Sabir, Ganesh Kumar and **Jawahar L. Jat*** *Org. Biomol. Chem.*, **2018**, *16*, 3314. (I.F. 3.56)



9. 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)

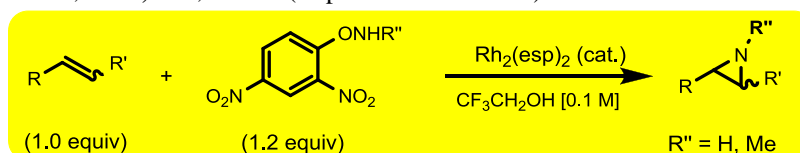


10. Unprotected Aziridines: A Synthetic Overview.
Shekh Sabir, Ganesh Kumar, and **Jawahar L. Jat***. *Asian J. Org. Chem.* **2017**, 6, 782-793.
(I.F. = 2.8)



11. 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)



- Operationally simple
- 1-5 mol% catalyst
- 1.2 equivalent of aminating agent
- Excellent regiochemistry
- Completely stereospecific
- High isolated yields
- 1-10 mmol scale
- Suitable for mono-, di-, or tri and tetra substituted alkenes.

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>)
- (vii) **Protection not included**, *Nature Chemistry*, 6,168 (2014)

12. Regio- and Enantioselective Catalytic Monoepoxidation of Conjugated Dienes: Synthesis of Chiral Allylic *cis*-Epoxides.

Jawahar L. Jat, Saroj Ranjan De , Ganesh Kumar ,Adeniyi Michael Adebessin , Shyam K. Gandham, and John R. Falck. *Org. Lett.*, 2015, 17 (4), 1058–1061. (Impact factor = 6.3)

13. Regio- and Stereoselective Mono epoxidation of Dienes using Methyltrioxorhenium: Synthesis of Allylic Epoxides. Saroj Ranjan De , Ganesh Kumar , **Jawahar L. Jat** , Saritha Birudaraju , Biao Lu , Rajkumar Manne , Narender Puli , Adeniyi Michael Adebessin , and John R. Falck. *J. Org. Chem.*, 2014, 79 (21), pp 10323–10333. (Impact factor = 4.4)

14. 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)

15. 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).

16. PPAR α Activation Can Help Prevent and Treat Non–Small Cell Lung Cancer. Nataliya Skrypnyk, 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).

17. 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. Manthathi, **Jawahar Lal Jat** , and William B. Campbell.
Biochemistry, 2011, 50, 3840-3848. (Impact factor = 3.42)

18. Androgen-Dependent Hypertension Is Mediated by 20-Hydroxy- 5,8,11,14-Eicosatetraenoic Acid-Induced Vascular Dysfunction. Role of Inhibitor of kB Kinase.

Cheng-Chia Wu, Jennifer Cheng, Frank Fan Zhang, Katherine H. Gotlinger, MukulKelkar, Yilun Zhang, **Jawahar L. Jat**, John R. Falck, Michal L. Schwartzman.
Hypertension, **2011**, 57, 788-794. (Impact factor =7.63)

19. 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:

	Inventor	Title and award/Application Number
Awarded (International)	László Kürti, Daniel H. Ess, John R. Falck and Jawahar Lal Jat	Direct stereospecific synthesis of unprotected aziridines from olefins. WO2015103505 A2, (Jul 9, 2015)

Research Supervision

	Completed	Ongoing
PG/M.Phil.	22	-
Ph.D.	-	04

Honors, Recognition and Awards:

- ❖ Young Scientist Scheme (YSS) Grant funded by SERB
- ❖ Startup Grant funded by UGC
- ❖ Post-Doctoral Fellowship by UTSW, USA.
- ❖ CSIR-UGC, NET (Chemical Science)
- ❖ Best Oral Presentation award for the paper entitle “Unprotected aziridination of olefins” presented at IC²S²TD organized by SVNIT, Surat and C.A. University, Seoul, South Korea.

Membership of Professional bodies:

- ❖ Indian Science Congress
- ❖ American Chemical Society

Seminars/ Conferences/Symposium/Workshop Organized:

- ❖ **Co-Convenor:** Workshop on “Cheminformatics in Drug Discovery and Research”
Dept. of Chemistry, BBAU, Lucknow, 2020.
- ❖ **Jt. Org. Secretary:** Two days workshop on Instrumentation (Summer training school),
USIC, BBAU, Lucknow, (Jan 30-31,2019)
- ❖ **Convenor:** National Conference “BBAUNC-2018: Aspiring for the better future” 14 Apr.
2018, BBAU, Lucknow.
- ❖ **Jt. Org. Secretary:** GCGHGSPCT-2k19 (International Conference), BBAU, Lucknow
- ❖ **Organizing Secretary:** ICUCPR-2017 (International Conference), BBAU, Lucknow
- ❖ **Organizing Committee Member:** Grassroots Innovators Summit and Exhibition-2017,
BBAU, Lucknow.
- ❖ **Organizing Committee Member:** Summer and Winter Trasic-2018, BBAU, Lucknow.
- ❖ **Jt. Org. Secretary:** Coronavirus Disease (COVID-19) Pandemic Awareness Online
Quiz-2020, dated: 10/6/2020.

Country Visited:

- ❖ USA

Invited Lectures/ Talks/ Chair/ Co-Chair in Seminar/ Conferences/Seminars/Symposium:

Invited Talk

- ◆ 11th NIPER Symposium on Natural Product Based Therapeutics in Drug Development,
NIPER, Raebareli. (14-15 Feb. 2019)
- ◆ Royal Society of Chemistry (UK) - Western Zone India, Symposium on Recent Trends in
Allied Sciences & Research Scholar Meet – 2019 (February 22-23; 2019), UKA Tarsadia
University, Surat, Gujrat.
- ◆ 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

- ◆ Online International Seminar on Current Trends in Chemical and Pharmaceutical Sciences (CTCPS-2021) organized by Dr. H. S. Gaur Vishwavidyalaya, Sagar, M.P., India. Jan20-22.2021. (Oral)
- ◆ International Conference on Recent Trends in Chemical Sciences (RTCS-2020) Organized by Indian Chemical Society, Kolkata. December 26-29,2020 (Oral)
- ◆ 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.

Any Other Information:

Administrative Experience:

- (i) Course Coordinator, B.Tech- First year, UIET, BBAU, Lucknow
- (ii) Warden, Kanishka Boys Hostel, BBAU, Lucknow (2017-2019).
- (iii) Warden, Siddhartha Boys Hostel, BBAU, Lucknow (2019-continue)

Member:

- (i) Departmental Research Committee
- (ii) Board of Undergraduate Studies, UIET, BBAU, Lucknow
- (iii) Departmental IQAC
- (iv) Departmental Purchase, Admission and Council Committee.
- (v) Advisory Board, USIC
- (vi) University Innovation Club
- (vii) Project Implementation Group (FIST)