

CURRICULUM VITAE

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Joydev K. Laha, Ph.D.

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BIOGRAHPY: Dr. Joydev Laha started his independent research career at NIPER S.A.S. Nagar on July 2011. Prior to joining the NIPER, Dr. Laha was employed on a permanent position in the Laboratory for Drug Discovery in Neurodegeneration (LDDN) at Harvard Medical School. Dr. Laha obtained a Ph.D. degree in organic chemistry from the National Chemical Laboratory at Pune under the mentorship of Prof. Ganesh Pandey. He acquired a total of about five years of postdoctoral research experiences in synthetic organic chemistry and medicinal chemistry at the

North Carolina State University and Mayo Clinic in the United States. Dr. Laha has versatile research experiences including target-driven method development in organic synthesis, natural product synthesis, and medicinal chemistry research directed to structure-based drug discovery. Dr. Laha's current research interests include oxidative radical reactions largely using persulfates, understanding their mechanisms, and applications to the synthesis of heterocycles and API (active pharmaceutical ingredient) synthesis. Over the past ten years in his independent career, he has mentored two Postdoctoral Fellows, eight PhDs and six three Master's students. Dr Laha and his group have demonstrated a translational application of a laboratory concept to prepare a marketed drug, Sildenafil (ViagraTM). He is author or co-author of seventy three papers published in peer-reviewed international journals and has two US Patents to his credit. He has been serving referee to the ACS, RSC, Science Direct, and Wiley journals. He has delivered invited lectures/oral presentations extensively in India and abroad.

EDUCATION:

- Ph.D** September 2001, University of Pune (research conducted at National Chemical Laboratory, Pune under the guidance of Prof. Ganesh Pandey), Thesis title: Asymmetric [3+2]-Cycloaddition of Azomethine Ylides: Application to the Synthesis of Natural Products
- M. Sc.** October 1993, Organic Chemistry major, Visva-Bharati University, INDIA
- B. Sc.** October 1990, Chemistry major, Vidyasagar University, INDIA

PROFESSIONAL ACADEMIC EXPERIENCE

- Jul 2011-present** Assistant Professor, National Institute of Pharmaceutical Education and Research S.A.S. Nagar, India
- Mar 2007-Jul 2011** Postdoctoral Chemist (staff), Laboratory for Drug Discovery in Neurodegeneration, HARVARD MEDICAL SCHOOL and Brigham & Women's Hospital, Boston, associated with Dr. Gregory D. Cuny (former Co-Director, LDDN)
- Feb 2006-Mar 2007** Senior Research Fellow, Mayo Clinic, Rochester, Advisor: Yuan-Ping Pang
- Nov 2001-Feb 2006** Postdoctoral Fellow / Research Associate, North Carolina State University, Raleigh, Advisor: Prof. Jonathan S. Lindsey

TEACHING EXPERIENCE

Course (2 Credit)	Subject	Subject Code	Hours/Week
M. Tech (Pharm.)	Synthetic Aspects of Process Chemistry	PT-560	2 h/week
	Synthetic Bulk Drug Technology	PT-630	2 h/week
M. Tech (Pharm.)	General Lab Exp.	LG-510	10 h/week
	Lab Special Exp.	LS-610	10 h/week
Ph. D.	Technologies for Green Chemistry	PT-710	2 h/week

- *Curriculum developed for M.Tech. (Pharm.): Synthetic Aspects of Process Chemistry (PT-560)*

INDUSTRIAL EXPERIENCE

- Visiting Scientist (July 23-August 12, 2013 and July 01-July 30, 2014) at Symmetry Biosciences Inc., North Carolina, United States worked on process development of Gleevac analogues

AREA OF RESEARCH INTERESTS

- Generation of benzyl and acyl radicals, radical cations largely using persulfates, especially their reactions in water, mechanistic study to understand their generation, unpolung reactivity of reactive radical intermediates, and their applications to the synthesis of heterocycles and generic active pharmaceutical ingredients (APIs)
- Understanding organic chemistry of drug degradations and interactions
- New process development for the synthesis of generic drugs and drug intermediates (APIs) utilizing novel catalytic C-H functionalizations, Tandem/Domino/Cascade reactions, or via C-H bond activation

- Design and synthesis of biaryl sulfonamides, atropisomerism in biaryl sulfonamides, preparation of sultams and their ring opening via thermal or photochemical reactions, chemo-enzymatic ring opening of sultams

EXTRAMURAL RESEARCH GRANTS ON-GOING

Title	Funding agency	Fund
Development of Metal-Catalyzed Domino Reactions for the Synthesis of Biaryls Containing Five to Eight Member Ring and its applications in the Synthesis of Active Pharmaceutical Ingredients (API) and Natural Products	Council of Scientific and Industrial Research (CSIR), Govt. of India, New Delhi, (Nov 2012-Oct 2015)	Rs. 19 lakhs
Development of Metal-catalyzed Domino Synthesis of Azafluorenes and its Applications in the Synthesis of Compounds Potential as Aromatase Inhibitors, Natural product, and in the Discovery of New Amine Protecting Group	Department of Science and Technology (DST), New Delhi, (May 2014-September 2017)	Rs. 48 lakhs
Strategic Design and Synthesis via Chemoenzymatic approach of Small Molecule Based Hypnotic Agents for Intravenous General Anesthesia	Council of Scientific and Industrial Research (CSIR), Govt. of India, New Delhi, (May 2018-May 2021)	Rs. 25 lakhs
Explorations of Radical Cascade and Multicomponent Reactions, Non-traditional Reactivity of Radicals and Chirality Relay	SCIENCE AND ENGINEERING RESEARCH BOARD (SERB), New Delhi (December 2020- on-going)	Rs. 45 lakhs

CURRENT GROUP MEMBERS

PhDs

- Mandeep Kaur Hunjan (Joined with NIPER Fellowship, July 2017–Continued): Chemistry of arylglyoxylic acids: Scope and applications
- Upma Gulati (Joined with NIPER Fellowship July 2017–Continued): Novel process for the synthesis of NSAID drugs and their pharmaceutical biology
- Gupta Pankaj Trivenee Prasad (Joined with NIPER Fellowship July 2018–Continued): Design and Development of Novel Synthetic Approaches to Sultams and Heteroaryl Sulfones: Application towards Synthesis of Selected APIs
- Surabhi Panday (Joined with CSIR project Fellowship July 2018–Continued): Novel Approaches Towards Synthesis of APIs and Their Mechanistic Insights
- Anjali Gupta (Joined with NIPER Fellowship November 2020–Continued): Yet to be decided
- Kamalesh Kumar Khatua (Joined with NIPER Fellowship November 2020–Continued): Yet to be decided
- Pratibha Bhatti (Joined with NIPER Fellowship November 2020–Continued): Yet to be decided

Master Students

- Amitava Hazra: Regioselective sulfonamidation of 4-aminobenzene sulfonamide aimed at the new process development of Sulfadiazine
- Akanksha Dinesh Likhitkar: New process development for the synthesis of Gabapentin
- Albin D Thomas: Sequential regioselective hydroxylation and acylation of benzoic acid for the synthesis of Aspirin
- Soni Joshi: Synthesis of Meglitinides via oxidative amidation
- Shivraj Seth: New process development for the synthesis of Valsartan
- Sujit Raosaheb Tope: Sequential regioselective hydroxylation and acylation of aniline for the synthesis of Paracetamol
- Chandi Rani Pentela: Regioselective nitration of imidazoles via radical chemistry for the synthesis of Metronidazole
- Sapana Prakash Pawar: Intramolecular N-arylation of amides via radical chemistry for the synthesis of Diclofenac

FORMER GROUP MEMBERS

Post-doctoral Fellow

- Saima Malik (March 2017-April 30, 2019), Post Doctoral Fellow (SERB-NPDF), worked on Application of C-H functionalizations for the Synthesis of Generic APIs of Some Selected Top-selling Marketed Drugs, Current Position: Punjab University

Post-doctoral Research Associate

- Ankur Gupta (Joined with CSIR-RA fellowship March 2013-February 2014), Current Position: Founder of Dugdh Nutraceuticals Ltd., Siliguri and Co-founder of Ceutica & Chemie, Bangalore.

Ph. D. (jointly with another faculty)

- Seema Kirar (Joined with DBT fellowship July 2013-July 2019): Thesis: “Design and synthesis of nano-photosensitizers for various biomedical applications”, Current Position: Postdoctoral Fellow at CIAB, Mohali
- Bharat Dwivedee (Joined with NIPER fellowship July 2013-February 2018): Thesis: “Development of *Pseudomonas fluorescens* lipase as a nanobiocatalyst for the synthesis of enantiopure drug intermediates”, Current Position: Assistant Professor, Bahra University, Solan

Ph. D.

- Shubhra Sharma (Joined with NIPER fellowship November 2013-July 2018): Thesis: “Novel convergent approaches to the synthesis of heterocycles containing sulfonyl functionality”, Current Position: Research Investigator, Johnson & Johnson, Mumbai.
- Ketul V. Patel (Joined with SERB sponsored project fellowship July 2014-July 2018): Thesis: “Acylation and application of α -oxocarboxylic acids towards C-C and C-N bond formation reactions”, Former Position: Senior Scientist, Aten Porus Lifesciences, Bangalore. Current position: Postdoctoral fellow, Calgary University, Canada
- Rohan A. Bhimpuria (Joined with UGC-JRF fellowship July 2013-April 2018): Thesis: “Palladium-catalyzed inter- and intramolecular oxidative arylations and alkenylations of 7-azaindoles and pyrroles”, Former Position: Research Investigator, Piramal Healthcare, Ahmedabad. Current position: Postdoctoral fellow, Uppsala University, Sweden
- Krupal P. Jethava (Joined with NIPER fellowship February 2013-April 2017): Thesis: “Exploration of novel approaches to the convergent synthesis of nitrogen heterocycles”, Current Position: Postdoctoral Fellow at Purdue University with Prof. Gaurav Chopra
- K. Satyanarayana Tummalapalli (Joined with CSIR-JRF fellowship January 2012-April 2016), Thesis: “Convergent Synthesis of Fused Nitrogen Heterocycles via palladium-Catalyzed Domino and Transition-metal-free Oxidative Reactions”, Current Position: Postdoctoral Fellow at University of Utah, Salt Lake city with Prof. Jon D. Rainer, before with Prof. Jon Antilla at Tianjn University, China
- Neetu Dayal (Joined with NIPER fellowship July 2012-February 2016), Thesis: “Convergent Synthesis of Tricyclic Fused Nitrogen Heterocycles via Palladium-Catalyzed Mono C(sp²)-H/Double C(sp²)-H Functionalization Strategies”, Current Position: Postdoctoral Fellow at Purdue University with Prof. Hermin Sintim

M. Tech (Pharm.)

Batch 2019-21 (Name, Thesis Title, and current affiliation)

1. Akash Srivastava: Synthesis of fluorescent glycoconjugates
2. Sagar Shantaram Arote: Synthesis of Fenofibrate using arylacetic acid as the acyl source

3. Shubham Bharat Chaudhari: Acetylation of heterocycles using radical chemistry: Facial access to tetracyclic indole natural products
4. Kratika Agrawal: C– Glycosylation of pyrroles for the synthesis of antiviral drugs
5. Chinmay Kulkarni: C– Glycosylation of arenes using radical chemistry for the synthesis of Dapagliflozin
6. Akash Shivajeerao Nayak: C– Glycosylation of chalcone based molecules as lectin ligands
7. Nayalakonda Shivani Reddy: C– Glycosylation of nitrogen heterocycles for the synthesis of antiviral drugs
8. Trapti Bhatt: Intramolecular C-N bond formation for the synthesis of drug intermediates
9. Ankita Thakur: Decarboxylative study of aminoacetic acids for the synthesis of Hydrochlorothiazide

Batch **2018-20** (Name, Thesis Title, and current affiliation)

1. Ankita Singh: Synthesis of Quetiapine using toluene derivatives, Current position: Mylan Laboratory
2. Zainab Rahman: Study of radical acylation and arylation reactions for the synthesis of drug intermediates, Current position: ZN Laboratory
3. Karuna Sharma: First Chemical synthesis and unexplored organic reactions of indoxyl sulphate, Current position: WNS, Nodia
4. Jojiya Grace George: Study of reactive radical intermediates for the synthesis of drug intermediates, Current position: Novartis, Hyderabad
5. Mohini Ghorpade: Synthesis of nitrogen heterocycles using arylglyoxylic acid, Current position: PhD scholar, IIT Gandhinagar
6. Ummehani Tinwala: Investigation of persulfate activation by organic compounds in water, Current position: Xogene
7. Shariq Ahmed Khan: Persulfated mediated oxidative conversion of metylarenes to arylaldehydes in water and drug its applications in the synthesis of drug intermediates, Current position: PhD candidate
8. Tapas Maity: Generation and reactivity of arene radicals, Current position: JRF, NIPER S.A.S. Nagar

Batch **2017-19** (Name, Thesis Title, and current affiliation)

1. Lakshita Anand: Studies on oxidative C-N and C-C bond formation towards the synthesis of nitrogen heterocycles, Current position: PhD scholar, Rutgers University, United States.
2. Anjali: Investigations on in-situ generation and subsequent reactions of pyridine acyl radical, Current position: PhD scholar, NIPER S.A.S. Nagar
3. Shalakra H: Persulfate mediated oxidative study of pyrrole comprising heterocycles, Current position: PhD scholar, Kansas University, United States
4. Singitham Swetha: Chemical synthesis and unexplored reactions of indoxyl sulphate, Current position: JRF, BITS Hyderabad
5. Neha Singh: Transition metal free synthesis of N,N-diaryl(heteroaryl)urea and the degradation study of anti-HIV drug Nevirapine, Current position: Suven Lifesciences, Hyderabad

6. Indurthi Harish Kumar: Attempted convergent synthesis of carbamazepine and its interactions under oxidative conditions, Current position: PhD scholar, IIT BHU
7. Sagar Badoni: Transition metal free intramolecular oxidative acylation for the synthesis of indoloisoquinolines and degradation studies of indomethacin, Current position: PhD scholar, University of Florida, United States.
8. Gauri Shankar: Studies on the synthesis of benzimidazole, acridone and related nitrogen heterocycles and oxidative degradation of benimidazole drug, Telmisartan, Current position: PhD scholar, IIT BHU

Batch 2016-18 (Name, Thesis Title, and current affiliation in India)

1. Radhika Gandhi: Efforts towards benzylic C-H functionalization via radical reactions, ZS Associates, Gurgaon
2. Neelam Manral: New process development for the synthesis of anti-psychotic drug, clozapine and degradation of NSIDs, Integral Biosciences, Noida
3. Yogesh Sonawane: Synthesis of biaryl ultams and its N-S bond for the synthesis of BMS-207940, Glenmark Pharmaceuticals, Mumbai
4. Digambar Mangale, Intramolecular radical acylation for the synthesis of drug intermediates and efforts towards the synthesis of diazepam, Avium Life Sciences Pvt Ltd, Pune
5. Monika Tomar: Synthesis of quinazoline via tandem decarboxylative N-acylation/intramolecular cyclization, PhD scholar, Uppsala University
6. Shudheer: Intramolecular oxidative coupling for the synthesis of sultam drug intermediate
7. Mahesh Hakale, Benzylic C-H acylation at late-stage functionalization of drug intermediates, Xogene, Pune.

Batch 2015-17 (Name, Thesis Title, Year of passing, and current affiliation in India)

1. Aitha Manoj Kumar: Novel process for the drug development of Clozapine, 2017 (Precision Business Insights, Hyderabad)
2. Mule Gajanan: Novel process development for the synthesis of the drug Esomeprazole, 2017 (Alkem Laboratories, Mumbai)
3. Ganesh Solanke: Novel synthetic approach for Darifenacin 2017 (GreyB Services, Mohali)
4. Surabhi Pandey: Novel approach for the synthesis of Diclofenac Epolamine, 2017 PhD scholar at NIPER S.A.S. Nagar
5. Mukul Jain: New synthetic route development for Letrozole synthesis 2017 (GreyB Services, Mohali)
6. Sheetal Sharma: Novel process development for the synthesis of Solifenacin 2017 (Gracure Pharmaceutical Ltd., Baddi)
7. Vanya Vashisht: Novel process drug development of Tadalafil (IMS, New Delhi)

Batch 2014-16 (Name, Thesis Title, Year of passing, and current affiliation in India)

1. Misha Sharma, "*Enzymatic decarboxylative benzylation*" 2016 (Novartis, Hyderabad)
2. Mandeep Kaur Hunjan, "*Application of dehydrogenative coupling in the synthesis of N-heterocycles*" 2016 (PhD scholar at NIPER SAS Nagar)
3. Ramteja Adari, "*Study of metal-catalyzed decarboxylative arylations to the fused N-heterocycles*" 2016 (Reckitt Benckiser, Gurgoan)
4. Sagar Kumar Patel, "*Novel approaches for the synthesis of fluorenones*" 2016 (PhD Scholar at NIPER S.A.S. Ahmadabad)
5. Gurudutt Dubey, "*Efforts towards the synthesis of fluorenones and azafluorenones by palladium-catalyzed decarboxylative arylation*" 2016 (PhD Scholar at NIPER S.A.S. Nagar)
6. Shruti Sharma, "*Biocatalytic approach towards the synthesis of enantiopure drug intermediates*" 2016, (BresMed, Gurgoan)

Batch **2013-15** (Name, Thesis Title, Year of passing, and current affiliation in India)

1. Akshay Nair, "*Study of metal-catalyzed decarboxylative benzylation of alpha-oxo acids*", 2015 (PhD Scholar IIT Bombay)
2. Atithi Arya, "*A study towards the synthesis of Carbazole derivatives*", 2015 (Novartis, Hyderabad)
3. Dilip Prajapati, "*Applications of dehydrogenative cross-coupling to the synthesis of fused N-heterocycles*", 2015 (Centiss Pharma, Gurgoan), Now PhD scholar, University of Florida, United States.
4. Nidhi Patel, "*Study of metal-catalyzed decarboxylative C-C bond formation of Alkynyl Carboxylic Acids*", 2015 (Torrent Pharma, Ahmedabad)
5. Urvashi Jawharani, "*Studies toward the synthesis of benzo-fused Sultam by Palladium-catalyzed directed C-H activation*", 2015

Batch **2012-14** (Name, Thesis Title, Year of passing, and current affiliation in India)

1. Ketul Patel, "*Direct ortho-benzylation of primary heteroaryl amides*", 2014 (PhD scholar at NIPER SAS Nagar), Now Postdoc at University of Calgary, Canada
2. Anuja Jain, "*Transition-metal catalyzed decarboxylative benzylation of aromatic carboxylic Acids*", 2014 (Assistant Professor in a College, Jabalpur)
3. Kartavya Balat, "*Transition metal-catalyzed decarboxylative cross-coupling of α -oxo Acids*", 2014 (Intas Pharmaceuticals, Ahmedabad)

4. Roli Jain, " *α -Arylation of ketones present in N-Heterocycles*", 2014 (Sun Pharma. Ltd., Mumbai)
5. Bhaskar Singh Rathore, "*1,3-dipolar cycloaddition reaction of porphyrins for the synthesis of new photosensitizers*", 2014 (Drug Inspector, Chattisgarh)
6. Manoj Kadam, "*Palladium-catalyzed direct o-benylation of primary benzamide with bromobenzyl bromide and 4-bromomethyl pyridine*", 2014 (Emcure Pharma, Pune)
7. Gitanjali Madan, "*Synthesis of Bioconjugatable Photosensitizers for Photodynamic Therapy (PDT) of Cancer*", 2014
8. Lekshmi Vijay, "*Rational synthesis of various Building blocks towards the development of Porphyrin Photosensitizers*", 2014, (Indegene, Kerala)
9. Sumant Kumar Bhaskar, "*Metal catalyzed N-arylation of electron-deficient Heterocyclic Amines*", 2014

Batch **2011-13** (Name, Thesis Title, Year of passing, and current affiliation in India)

1. Pooja Shah, "*Palladium-catalyzed convergent synthesis of dibenzoazepinones and fused oxazocines*", 2013 (Lupin Pharma, Mumbai)
2. Swati Singh, "*Synthesis of 6H-isoindolo[2,1-a]indole and its derivatives*", 2013 (Quantum Solutions, Chandigarh)
3. Rohan Bhimpuria, "*Synthesis of indole[2,1-a]isoquinolino-6(5H)-one and related heterocycles through palladium-catalyzed Domino reaction*", 2013 (PhD scholar at NIPER SAS Nagar), Now Postdoc at Uppsala University
4. Shivanand Kaurav, "*Effort toward the synthesis of Azafluorenes by palladium-catalyzed Decarboxylative Coupling*", 2013 (Currently working for Himadi Solutions Pvt Ltd., New Delhi)

RESEARCH COLLABORATION

International

- **Dr. Douglas E. Raines**, Associate Professor, Department of Anesthesia, Critical care, and Pain Medicine Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts, United States (Pharmacology)
- Symmetry Biosciences Inc., NC, United States (Scale up of API)

National

- Prof. Prasad B. Bharatam, NIPER S.A.S. Nagar (Computational)

- Prof. Uttam C. Banerjee, NIPER S.A.S. Nagar (Biology, enzymatic reactions)
- Dr. Ipsita Roy, NIPER S.A.S. Nagar (Biology, enzymatic reactions)
- Prof. Shyam S. Sharma, NIPER S.A.S. Nagar (Pharmacology)
- Dr. Jaideep Saha, Center of Biomedical Research, Lucknow

HONORS & ACHIEVEMENTS

- Associate Editor, *CRIPS* journal
- Expert member, Project Evaluation Committee (PEC), Technology Development Board (TDB), DST, New Delhi
- Expert member, Committee for selection of PhD candidates, INST, Mohali
- Member, National Advisory Board, ICNP-2015, April 10-12, 2015
- Convener, symposium “*Frontiers in Organic Chemistry*” from 5-6th July, 2013 at CBMR, Lucknow
- External examiner of PhD thesis
- Biography listed in Marquis Who’s Who in the World 27th Edition 2010
- Serving referee to the *American Chemical Society*, *Royal Society of Chemistry*, Science Direct, and Wiley Journals

PROFESSIONAL AFFILIATIONS

- Former Consultant, Symmetry Biosciences Inc., NC, United States
- Member, American Chemical Society (2003-11)
- Member, International Union of Pure and Applied Chemistry (IUPAC) (2007-11)

AWARDS & FELLOWSHIPS

- NIPER Innovation award 2019
- Award of appreciation by NIPER S.A.S. Nagar on technology day May 11, 2018
- Rajnibhai V. Patel PharmInnova Award 2017-18 jointly with Mr. Gurudutt Dubey
- Best composition award: “Large-Scale Synthesis of a Meso-Substituted Dipyrromethane; 5-Phenyldipyrromethane” *SyntheticPages*, 2006: 248 (<http://www.syntheticpages.org/pages/248>)

- Awarded CSIR (Council of Scientific & Industrial Research, New Delhi, India) research fellowship for graduate studies from February 1995-January 2000
- Qualified GATE (Graduate Aptitude Test in Engineering, a National Level Test for graduate research fellowship) in December 1993 with 91.77 percentile
- Awarded National Scholarship in class 10th standard
- Prize for ranking 2nd in Madhyamik Examination within the school

PEER-REVIEWED PUBLICATIONS

1. Laha, J. K.; Singh, N.; Hunjan, M. K. "Synthesis of unsymmetrical urea from aryl- or pyridyl carboxamides and aminopyridines using PhI(OAc)₂ via in situ formation of aryl- or pyridyl isocyanates" *New J. Chem.* **2021**, *accepted manuscript* (DOI: 10.1039/D1NJ03160K). [Impact factor: 3.59]
2. Laha, J. K.; Hunjan, M. K. K₂S₂O₈ activation by glucose at room temperature for the synthesis and functionalization of heterocycles in water. *Chem. Commun.* **2021**, *57*, 8437-8440. [Impact factor: 6.22]
3. Laha, J. K.; Hunjan, M. K. K₂S₂O₈ mediated synthesis of 5-aryldipyrromethanes and meso-substituted A4-tetraarylporphyrins. *J. Porphyrins Phthalocyanines* **2021**, *25*, 664-673. [Impact factor: 1.81]
4. Kirar, S. Chaudhari, D. Thakur, N. S. Jain, S. Bhaumik, J. Laha, J. K. Banerjee, U. C. Light-assisted anticancer photodynamic therapy using porphyrin-doped nanocapsulates. *J. Photochem. Photobiol. B*, **2021**, *220*, 112209-112213. [Impact factor: 6.25]
5. Hunjan, M. K.; Panday, S.; Gupta, A.; Bhaumik, J.; Das, P.; Laha, J. K. Recent Advances in C-H Functionalization of Pyrroles and their Translational Potential, *Chemical Rec.* **2021**, *21*, 715-780. [Impact factor: 6.77]
6. Laha, J. K.; Gulati, U.; Gupta, A.; Indurthy, H. K. Improved, gram-scale synthesis of sildenafil in water using acetic acid as the acyl source in the pyrazolo[4,3-d]pyrimidin-7-one ring formation, *New J. Chem.* **2021**, *25*, 2643-2648. [Impact factor: 3.59]
7. Laha, J. K.; Panday, S.; Tomar, M.; Patel, K. V. Possible competitive modes of decarboxylation in the annulation reactions of ortho-substituted anilines and arylglyoxylate, *Org. Biomol. Chem.* **2021**, *19*, 845-853. [Impact factor: 3.87]

8. Kannaboina, P.; Krishanu Mondal, K.; Laha, J. K.; Das, P. Recent Advances in the global ring functionalization of 7-azaindole, *Chem. Commun.* **2020**, *56*, 11749-11762. [Impact factor: 6.22]
9. Gulati, U.; Gandhi, R.; Laha, J. K. Benzylic methylene functionalizations of diarylmethanes, *Chem. Asian J.* **2020**, *15*, 3135-3161. [Impact factor: 4.56]
10. Laha, J. K.; Kaur H. M.; Hegde, S.; Gupta, A. Arylation of electron-rich pyrroles under Minisci reaction conditions *Org. Lett.* **2020**, *22*, 1442-1447. [Impact factor: 6.00]
11. Laha, J. K.; Manral, N.; Kaur H. M. Palladium-catalysed regioselective N-arylation of anthranilamides: a tandem route for dibenzodiazepinone synthesis” *New J. Chem.*, **2019**, *43*, 7339-7343. [Impact factor: 3.59]
12. Dwivedee, B. P.; Soni, S.; Bhimpuria, R.; Laha, J. K.; Banerjee, U. C. “ Tailoring a robust and recyclable nanobiocatalyst by immobilization of *Pseudomonas fluorescens* lipase on carbon nanofiber and its application in synthesis of carboetomidate analogue” *Int. J. Biol. Macromol.* **2019**, *133*, 1299-1310. [Impact factor: 6.95]
13. Varshney, R.; Sharma, S.; Bhanu Prakash, B.; Laha, J. K. and Patra, D. “One-Step Fabrication of Enzyme-Immobilized Reusable Polymerized Microcapsules from Microfluidic Droplets” *ACS Omega* **2019**, *4*, 13790-13794. [Impact factor: 3.51]
14. Mandal, S.; Bera, T.; Dubey, G.; Saha, J.; Laha, J. K. "Uses of $K_2S_2O_8$ in Metal-Catalyzed and Metal-Free-Oxidative Transformations" *ACS Catal.* **2018**, *8*, 5085-5144. [Impact factor: 13.08]
15. Laha, J. K.; Patel, K. V.; Tummalapalli, K. S. S.; Kaur H. M. “Palladium-Catalyzed Serendipitous Synthesis of Arylglyoxylic Amides from Arylglyoxylates and N,N-Dialkylamides in the Presence of Halopyridines” *ACS Omega* **2018**, *5*, 8787-8793. [Impact factor: 3.51]
16. Dwivedee, B. P.; Soni, S.; Laha, J. K.; Banerjee, U. C. “Facile immobilization of *Pseudomonas fluorescens* lipase on polyaniline nanofibers (PANFs-PFL): a route to develop robust nanobiocatalyst” *Int. J. Biol. Macromol.* **2018**, *119*, 8-14. [Impact factor: 6.95]
17. Laha, J. K.; Patel, K. V.; Saima, Pandey, S.; Solanke, G.; Vashisht, V. “Scope of Regioselective Suzuki Reactions in the Synthesis of Arylpyridines and Benzylpyridines and Subsequent Intramolecular Cyclizations to Azafluorenes and Azafluorenones” *New J. Chem.*, **2018**, *42*, 16069-16074. [Impact factor: 3.59]
18. Laha, J. K.; Sharma, S. "Palladium-Catalyzed Intramolecular Oxidative Arylations for the Synthesis of Fused Biaryl Sulfones" *ACS Omega* **2018**, *5*, 4860-4870. [Impact factor: 3.51]
19. Dwivedee, B. P.; Soni, S.; Laha, J. K.; Banerjee, U. C. "Self assembly through sonication: an expeditious and green approach for the synthesis of organic-inorganic hybrid nanopetals and their application as biocatalyst" *ChemNanoMat* **2018**, *4*, 670-681. [Impact factor: 3.15]

20. Kirar, S.; Thakur, N. S.; Laha, J. K.; Bhaumik, J.; Banerjee, U. C. "Development of Gelatin Nanoparticle-Based Biodegradable Phototheranostic Agents: Advanced System to Treat Infectious Diseases" *ACS Biomater. Sci. Eng.* **2018**, *4*, 473–482. [Impact factor: 4.74]
21. Dwivedee, B. P.; Soni, S.; Sharma, M.; Bhaumik, J.; Laha, J. K.; Banerjee, U. C. "Promiscuity of Lipase-Catalyzed Reactions for Organic Synthesis: A Recent Update" *ChemistrySelect* **2018**, *3*, 2441–2466. [Impact factor: 2.10]
22. Laha, J. K.; Sharma, S.; Kirar, S.; Banerjee, U. C. "Design, Sustainable Synthesis, and Programmed Reactions of Templated *N*-Heteroaryl Fused Vinyl Sultams" *J. Org. Chem.*, **2017**, *82*, 9359–9359. [Impact factor: 4.35]
23. Laha, J. K.; Bhimpuria, R.A.; Aitha, M. K. "Post-Synthetic Diversification of Pyrrole Fused Benzosultams via Trans-Sulfonylations and Reactions on the Periphery of Pyrrole" *Org. Chem. Front.* **2017**, *4*, 2170-2174. [Impact factor: 5.28]
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INVITED LECTURES/ORAL PRESENTATIONS/PARTICIPATION IN CONFERENCE/MEETINGS

1. Invited participation, XX NOST-Organic Chemistry Conference, Ananta hotel, Udaipur, December 4-7, **2019**.

2. Invited participation, Organic Chemistry Symposium, Hyatt Hotel, Lucknow September 13-14, **2019**.
3. “Non-Traditional Radical Acylations for the Synthesis of Nitrogen Heterocycles and their Translational Potential to API Synthesis”, Recent Advances in Organic & Bio-organic Chemistry (RAOBC) symposium, IISER Mohali, 22-24 March, **2019**.
4. “Non-Traditional Acylation Reactions for the Synthesis of Nitrogen Heterocycles and their Translational Potential to API Synthesis”, Advanced Topics in Chemical Sciences, Lecture series, BITS Pilani, March 09, **2019**.
5. “Amide Formation via Radical Acylation and its Application in the Synthesis of Fused Nitrogen Heterocycles and generic APIs”, *Invited lecture*, CBMR lecture series, Lucknow, July 04, **2018**.
6. “Recent Trends of Chemical & Biological Sciences in Medicine, Natural Products, and Drug Discovery”, Invited lecture, International Conference, Bhubaneswar, March 3-5, **2017**.
7. “Recent Trends in Chemistry Research” Invited lecture, Two Day National Seminar, Visva-Bharati University, Santiniketan, March 25-27, **2017**.
8. PAC-Organic Chemistry Meeting, Invited Presentation, IISER Bhopal, January 19-20, **2017**.
9. “Metal-Catalyzed Convergent Synthesis of Fused Nitrogen Heterocycles”, *Invited lecture*, CBMR, Lucknow, May 11, **2015**.
10. “Palladium-Catalyzed Regio- and Chemoselective Reactions of 2-Bromobenzyl bromides: Expanded the Scope of the Synthesis of Diverse *N*-Heterocycles”, *Invited lecture*, Innovative Applications of Chemistry in Pharmacology & Technology (IC-IACPT-2015), Berhampur university, Berhampur, February 06-08, **2015**.
11. “*Palladium-catalyzed direct ortho-benzoylation of benzamides*”, *Oral Presentation*, 246th ACS National Meeting and Exposition, Indianapolis, Indiana September 8-12, **2013**.
12. “*Synthesis of phenazines by palladium-catalyzed *N*-arylation of 1,2-diamino(hetero)arenes with 1,2-dihalo(hetero)arenes*”, *Oral Presentation*, 246th ACS National Meeting and Exposition, Indianapolis, Indiana September 8-12, **2013**.
13. “*Palladium-catalyzed domino *N*-benzoylation/*C-H* arylation approach to the synthesis of fused *N*-heterocycles*”, *Oral Presentation*, 246th ACS National Meeting and Exposition, Indianapolis, Indiana September 8-12, **2013**.
14. “Development of macrocycles based photosensitizers for potential applications in photodynamic therapy”, *Invited lecture*, 3rd International Conference on Natural Polymers & Biomaterials, Kothyaam, Kerala, October 26-28, **2012**.
15. “General method for the synthesis of alpha-, beta, gamma- and delta-carbolines by photo-induced intramolecular arylation of anilidopyridines” *Oral Presentation*, 241st ACS National Meeting,

Anaheim, CA, United States, March 27-31, **2011**.

16. "Synthesis of Nitrogen-containing Fused Heterocycles with Defined Stereochemistry by Mitsunobu Alkylation Followed by Palladium-catalyzed Cyclization" *Oral Presentation*, 36th Northeast Regional Meeting (NERM), Hartford, CT, United States, October 7-10, **2009**.
17. "One-pot synthesis of alpha-carbolines via palladium-catalyzed aryl amination and intramolecular Heck reaction" *Oral Presentation*, 237th ACS National Meeting, Salt Lake City, UT, United States, March 22-26, **2009**.

ABSTRACT OF PAPERS IN CONFERENCE/MEETINGS

1. Hunjan, M. K. Laha, J. K. "*Acylation of Electron-Rich Pyrroles under Minisci Reaction Conditions*", 16th Junior National Organic Symposium Trust (JNOST-2020) Virtual, Oct. 31 – Nov. 1, **2020**.
2. Hunjan, M. K.; Hedge, S.; Gupta, A.; Laha, J. K. "Minisci Acylation of Electron-rich Pyrroles via Umpolung Reactivity", International Conference on Chemistry for Human Development (ICCHD-2020) held in Heritage Institute of Technology, Kolkata, January 9-11, **2020**. (**BEST POSTER AWARD**)
3. Gulati, U.; Laha, J. K. "Process Development towards Greener Route for Sildenafil Synthesis", Symposium on Recent Advances in Bioorganic and Medicinal Chemistry (RABMC) at NIPER S.A.S. Nagar, August 30, **2019**.
4. Jethava, K. P.; Patel, S.; **Laha, J. K.** "*Scope of Successive C–H Functionalizations in Arylpyridines: Utilizing Methyl Group as Latent Carbonyl Functionality*", 3rd International Symposium on C-H Activation (ISCHA3) held at University of Montreal, Quebec, Canada, 30 May to 2 June **2016**.
5. Jethava, K. P.; Patel, S.; Patel, V. K.; **Laha, J. K.** "*A Unified Strategy to the Synthesis of All Four Azafluorenones and Fluorenones via Multiple C (sp³/sp²)-H Functionalizations*", 21st International Conference on Organic Synthesis (ICOS21) held at IIT-Bombay, Mumbai, India December 11-16, **2016**.
6. Sharma, S.; Bhimpuria, R. A.; Dayal, N.; **Laha, J. K.** "*A Novel Sulfonyl Migration in Pyrrole Nucleus: One-Pot Synthesis of Highly Functionalized (NH)-Pyrroles*", 21st International Conference on Organic Synthesis (ICOS21) held at IIT-Bombay, Mumbai, India December 11-16, **2016**.
7. Patel, K. V.; Tummalapalli, K. S. S.; Dayal, N.; **Laha, J. K.** "*Transition-Metal-Free Decarboxylative Amidation and Their Intramolecular Cyclization for the Synthesis of N-Heterocycles and its Application to the Preparation of Marketed Drug, Sildenafil*", 21st

International Conference on Organic Synthesis (ICOS21) held at IIT-Bombay, Mumbai, India December 11-16, **2016**.

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9. Bhaumik, J.; Kirar, S.; Thakur, N. S.; **Laha, J. K.**; Banerjee, U. C. “*A Bioinspired Pathway Towards the Development of Porphyrin-Based Nanophotosensitizers for Photodynamic Therapy*”, Invited Speaker, National Conference on Nanotechnology in Drug Delivery Research: Challenges, Opportunities & Innovations (NCNDDR-2015); NMIMS School of Pharmacy, Mumbai, India, October 16-17, **2015**.
10. Dayal, N.; **Laha, J. K.** “*Tactic for the installation of sulphonamidepharmacophores on biaryls via palladium-Catalyzed oxidative coupling: access to functionalized 2-arylindoles, rarely explored in drug discovery*”, 250th ACS National Meeting, Boston, Massachusetts, USA, August 16-20, **2015**.
11. Dayal, N.; Jethava, K. P.; Prajapati, D. V.; **Laha, J. K.** “*Access to Biaryl Sulfonamides by Palladium-Catalyzed Intramolecular Oxidative Coupling and Subsequent Nucleophilic Ring Opening for the Installation of SulfonamidePharmacophores on Biaryls*”, Sipra Innovative Pharma Research Awards, SIPRA LABS LTD, Hyderabad, July 2-3, **2015**.
12. Bhaumik, J.; **Laha, J. K.**; Banerjee, U. C. “*Combining Nanotheranostics and Photomedicine: Design and Synthesis of Nanophotomedicine for Cancer Treatment*”, 7th Young Investigators Meeting, Srinagar, India, March 27-31, **2015**.
13. Bhaumik, J.; Thakur, N. S., Kirar, S.; **Laha, J. K.**; Banerjee, U. C. “*Bioinspired and Programmable Nanotheranostics and their Use in the Development of Nanophotosensitizers*”, Oral Presentation, 250th National American Chemical Society meeting, Boston, MA, USA, August 16-20, **2015**.
14. Banerjee, U. C.; Bhaumik, J.; Dwivedee, B. P.; **Laha, J. K.** “*Multimodal nanobiocatalysis: Toward the synthesis of pharmaceutically relevant enantiopure drugs and drug intermediates*”, Oral Presentation, 250th National American Chemical Society meeting, Boston, MA, USA, August 16-20, **2015**.
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16. Bhaumik, J.; **Laha, J. K.**; Banerjee, U. C. “*Nanotheranostic Photosensitizers: Method*

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