



Dr. Satpal Singh Badsara, PhD, MRSC

Assistant Professor

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Assistant Professor:	2014-Continue
DST INSPIRE Faculty:	2015- 2020 (Availed Research Grant)
Post-Doctoral Researcher:	Oct. 2013 to Dec.-2014 with Professor Chin-Fa Lee <i>National Chung Hsing University, Taiwan ROC.</i>
Doctor of Philosophy (Ph. D.):	08/2013 with Professor D. Basavaiah <i>University of Hyderabad, Hyderabad.</i>
Master of Science (M. Sc.):	2006; <i>Banaras Hindu University (B. H. U.)</i>

Awards/Achievements

1. **ISCB Young Scientist Award-2019** in **Chemical Sciences** by Indian Society of Chemists and Biologists, India.
2. Member (MRSC) of **The Royal Society of Chemistry**, Cambridge, CB4 0WF, UK
3. **DST INSPIRE Faculty Award** by Indian National Science Academy (Department of Science & Technology, Government of India in 2015).
4. **Core Research Grant** by SERB, Department of Science & Technology, Government of India in 2020.
5. **Young Scientist Scheme** by SERB, Department of Science & Technology, Government of India in 2015.
6. Awarded **NSC Post-Doctoral Fellowship** by NSC Taiwan.

Research Interest

- (i) Development of methods for organic synthesis *via* C-H functionalization/ cross-coupling reactions
- (ii) Electro Organic Synthesis
- (ii) Baylis-Hillman Chemistry

R & D Projects as Principal Investigator

S.N.	Title	Name of funding agency	Amount (INR)	Duration	Status
1.	“Development of Electrochemical Strategies for Carbon-Chalcogen Bond Formations”	SERB-INDIA (CRG)	36,56,268	2021-2023	On going
2.	Development of Novel Metal Free Organic Transformations for the Synthesis of Oxindole Containing Heterocycles and Evaluation of Their Biological Activities	CSIR-INDIA (EMR)	Approx. 35,00,000	2018-2021	On going
3.	Development of Novel Metal Free Organic Transformations: Transition Metal Catalysis versus Peroxide Catalysis in sp ³ C-H Borylation	DST-INDIA (INSPIRE Faculty)	35,00,000	2015-2020	Completed
4.	New Dimension towards C-H Functionalization: Development of Novel Metal Free C-H Silylation Reactions	SERB-INDIA (YSS)	27,34,000	2016-2019	Completed
5	Application of Iron Catalysis in the Development of C-H Borylation Reactions and Diastereoselective Synthesis of C-Aryl and C-Vinyl Glycosides	UGC-INDIA (Start-up)	6,00,000	2015-2017	Completed

Administrative, Related Experiences

- **Vice-Principal:** University Maharaja College, University of Rajasthan (Sep 2019-Cont).
- **Coordinator (Chemistry):** Centre for Converging Technologies, University of Rajasthan (Nov. 2017-Cont).
- **Member,** Local Advisory Committee (LAC) DST-SAIF Programme, University of Rajasthan.
- **Member,** UGC-CAS Advisory Committee - Department of Chemistry, University of Rajasthan
- **Organizing Secretary,** International Conference on “Frontiers at the Chemistry - Allied Sciences Interface (e-FCASI 2020; June 30, 2021).

- **Organizing Secretary**, International Conference on “Frontiers at the Chemistry - Allied Sciences Interface (FCASI-2018; December 21-22, 2018).
- **Joint-Organizing Secretary**, International Conference on “Frontiers at the Chemistry - Allied Sciences Interface (FCASI-2017; July 22-23, 2017).
- **Coordinator**- International Conference on “Frontiers at the Chemistry - Allied Sciences Interface (FCASI-2016; April 25-26, 2016).

Teaching

Courses Taught (UG Level) (i) CH-102 (Paper -II): Organic Chemistry (ii) CH-301(Paper -II): Inorganic Chemistry (iii) CH-302 (Paper -II): Organic Chemistry (iv) Chemistry Lab

Courses Taught at PG Level: (i) CHE-902: Organic Synthesis-I (ii) CHE-X02: Organic Synthesis-II (iii) CHE A11: Elective Lab

Thesis / Project Supervision

Ph. D. Awarded: 3

1. Dr. Pratibha Singh

2. Dr. Rakhee Choudhary

3. Dr. Rekha Bai

M.Sc. Project Students: 7

Publications:

Total Number = 28

Total Impact Factor = 150.000⁺

Total Citation: 1527

(Source: https://scholar.google.com/citations?user=s_aJc30AAAAJ&hl=en & 2019 Journal Citation Reports, Thomson Reuters)

From University of Rajasthan as Principle Investigator

1. *Carbon-Sulfur Bond Constructions: From Transition-Metal Catalysis to Sustainable Catalysis*

P. Annamalai, K-C. Liu, **S. S. Badsara**, C.-F. Lee, *Chem. Rec.* **2021**, Accepted manuscript DOI: 10.1002/tcr.202100133. **(IF.: 6.163)**.

2. *Catalyst-Free Synthesis of Phenanthridines via Electrochemical Coupling of 2-Isocyanobiphenyls and Amines*

B. K. Malviya, K. Singh, P. Jaiswal, M. Karnatak, V. P. Verma, **S. S. Badsara**, S. Sharma, *New. J. Chem.* **2021**, 45, 6367. **(IF.: 3.288)**.

3. *Electrochemical Synthesis of Carbodiimides via Metal/Oxidant-Free Oxidative Cross-Coupling of Amines and Isocyanides*
B. K. Malviya, P. K. Jaiswal, V. P. Verma, **S. S. Badsara**, S. Sharma, *Org. Lett.* **2020**, 22, 2323. **(IF.: 6.091)**.
4. *Highly Atom-Economic, Catalyst-free, and Solvent-free Phosphorylation of Chalcogenides*
R. Choudhary, P. Singh, R. Bai, M. C. Sharma, **S. S. Badsara*** *Org. Biomol. Chem.*, **2019**, 17, 9757. **(IF.: 3.49)**
5. *Substrate Switched Dual Functionalization of Alkenes: Catalyst-free Synthetic Route for β -hydroxy and β -keto Thioethers*
S. S. Badsara*, P. Singh, R. Choudhary, R. Bai, M. C. Sharma, *New. J. Chem.* **2019**, 43, 11045-11049 **(IF.: 3.288)**.
6. *Cationic Pd(II) catalyzed regioselective intramolecular hydroarylation for the efficient synthesis of 4-aryl-2-quinolones*
K. Singh, B. K. Malviya, V. P. Verma, **S. S. Badsara**, V. K. Bhardwaj, S. Sharma, *Tetrahedron* **2019**, 75, 2506. **(IF.: 2.233)**.
7. *Engineered C-S bond construction*
C-F. Lee, R. S. Basha, **S. S. Badsara**, *Top. Curr. Chem.*, **2018**, 376, 25. (Springer International Publishing AG, part of Springer Nature 2018) **(IF.: 7.455)**
8. *Room temperature, open flask C-P bond formation on water under catalyst-free conditions*
R. Choudhary, R. Bai, P. Singh, M. C. Sharma, **S. S. Badsara***, *SynOpen*, **2018**, 2, 213.
9. *Open flask, clean and practical protocol for diastereoselective syntheses of oxindole containing phosphinoyl compounds under catalyst-free and solvent-free conditions*
R. Bai, R. Choudhary, P. Singh R. Thakuria, M. C. Sharma, **S. S. Badsara***, *ChemistrySelect*, **2018**, 3, 3221. **(IF.: 1.811)**
10. *Regio- and stereoselective syntheses of allylic thioethers under metal free conditions*
P. Singh, R. Bai, R. Choudhary, M. C. Sharma, **S. S. Badsara***, *RSC Adv.*, **2017**, 7, 30594 **(IF.: 3.119)**
11. *Metal-free, regio- and stereoselective S-methylation/phenylation of allyl halides using sulfoxides as sulfenylating agent*
R. Choudhary, R. Bai, P. Singh, M. C. Sharma, **S. S. Badsara***, *Tetrahedron*, **2017**, 73, 4323 **(IF.: 2.379)**
12. *Peracetic Acid Mediated sp^2 C-H Selenation of Arenes*

P-A. Hsieh,[‡] **S. S. Badsara**,[‡] C.-H Tsai, D. M. Reddy, C-F. Lee, *Synlett*, **2016**, 27, 1557. (IF.: 2.006)

From University of Hyderabad and National Chung Hsing University

([‡]= Equal Contribution)

1. Recent contributions from the Baylis-Hillman reaction to organic chemistry

D. Basavaiah, B. S. Reddy, **S. S. Badsara**, *Chem. Rev.*, **2010**, 110, 5447. (IF.: 52.758)

2. Baylis-Hillman bromides as a source of 1,3-dipoles: sterically directed synthesis of oxindole-fused spirooxirane and spirodihydrofuran frameworks

D. Basavaiah, **S. S. Badsara**, B. C. Sahu, *Chem Eur. J.* **2013**, 19, 2961. (IF.: 4.857)

3. Baylis-Hillman carbonates in organic synthesis: A convenient one-pot strategy for nitrono-spiro-oxindoles frameworks

D. Basavaiah, **S. S. Badsara**, G. Veeraraghavaiah, *Tetrahedron* **2013**, 69, 7995. (IF.: 2.379)

4. Ketones as electrophiles in two component Baylis-Hillman reaction: a facile one-pot synthesis of substituted indolizines

D. Basavaiah, G. Veeraraghavaiah, **S. S. Badsara**, *Org. Biomol. Chem.*, **2014**, 12, 1551. (IF.: 3.49)

5. Transition-Metal-Catalyzed C-S Bond Coupling Reaction

C-F. Lee, Y-C. Liu, **S. S. Badsara**, *Chem. Asian J.* **2014**, 9, 706 (Focus Review). (IF.: 4.056)

6. Metal-free cross-coupling reaction of aldehydes with disulfides by using DTBP as an oxidant under solvent-free conditions

J-W. Zeng, Y-C. Liu, P-A. Hsieh, Y-T. Huang, C-L. Yi, **S. S. Badsara**, C-F. Lee, *Green Chem.*, **2014**, 16, 2644. (IF.: 9.480)

7. Syntheses of selenoesters through C-H selenation of aldehydes with diselenides under metal-free and solvent-free conditions

J-C. Liou,[‡] **S. S. Badsara**,[‡] Y-T. Huang, C-F Lee, *RSC Adv.*, **2014**, 4, 41237. (IF.: 3.119)

8. Metal-free sp³ C-H functionalization: a novel approach for the syntheses of selenide ethers and thioesters from methyl arenes

S. S. Badsara, Y-C. Liu, P-A. Hsieh, J-W. Zeng, S-Y. Lu, Y-W. Liu, C-F. Lee, *Chem. Commun.*, **2014**, 50, 11374. (IF.: 5.996)

9. Copper-catalyzed cross-coupling reaction of thiols with aryl iodides under ligand-free conditions

Y-T. Huang, W-T. Tsai, **S. S. Badsara**, C-C. Chan, C-F. Lee, *J. Chin. Chem. Soc.* **2014**, *61*, 967. **(IF.: 1.554)**

10. An unusual Wittig reaction with sugar derivatives: exclusive formation of a 4-deoxy analogue of α -galactosyl ceramide

R. C. Sawant, Y-H. Lih, S-A. Yang, C-H. Yeh, H-J. Tai, C-L. Huang, H-S. Lin, **S. S. Badsara**, S-Y. Luo, *RSC Adv.*, **2014**, *4*, 26524. **(IF.: 3.119)**

11. Synthesis of ganglioside Hp-s1

W-S. Chen, R. C. Sawant, S-A. Yang, Y-J. Liao, J-W. Liao, **S. S. Badsara**, S-Y. Luo, *RSC Adv.*, **2014**, *4*, 47752. **(IF.: 2.936)**

12. Transition-metal-free syntheses of pyridine-containing thioethers through two-fold C-S bond formation

S. S. Badsara, C. Chan, C-F. Lee, *Asian J. Org. Chem.* **2014**, *3*, 1197. **(IF.: 3.13)**

13. Microwave-assisted copper-catalyzed cross-coupling reaction of thiols with aryl iodides in water

Y-A. Chen,[‡] **S. S. Badsara**,[‡] W-T. Tsai, C-F. Lee, *Synthesis* **2015**; *47*, 181. **(IF.: 2.675)**

14. Formal synthesis of a disaccharide repeating unit (IdoA–GlcN) of heparin and heparan sulfate

R. C. Sawant, Y-J Liao, Y-J. lin, **S. S. Badsara**, S-Y Luo, *RSC Adv.*, **2015**, *5*, 19027. **(IF.: 3.119)**

15. $K_2S_2O_8/I_2$ Promoted Syntheses of α -Thio- β -dicarbonyl Compounds via Oxidative C-S Coupling Reactions Under Transition Metal-Free and Solvent-Free Conditions

Y.-W. Liu [‡], **S. S. Badsara**,[‡] Y.-C. Liu, C.-F. Lee, *RSC Adv.*, **2015**, *5*, 44299. **(IF.: 3.119)**

16. CuCl/TBHP catalyzed synthesis of amides from aldehydes and amines in water

S-Y. Lu, **S. S. Badsara**, Y-C Wu, D. M. Reddy, C.-F Lee, *Tetrahedron Lett.* **2016**, *57*, 633. **(IF.: 2.275)**

Invited Talks

1. *"Greener and Sustainable Protocols for C/P-Chalcogenides Bond Formations"* at Professor Ram Chand Paul National Symposium on Emerging Chemical Innovations for Swachh, Swasth and Sarvatra Bharat", during Feb 27-28, 2020 organized by Department of Chemistry, Panjab University, Chandigarh, India.
2. *"Catalyst-Free Synthesis of Thioethers, Phosphinothioates and Phosphoroselenoates"* at 10th conference of Haridwar Chapter of The Indian Science Congress Association on Science and Technology: Rural Development, organized by Department of Chemistry and Department of Physics, Gurukula Kangri University, Haridwar, Uttarakhand, India during 15-16th February, 2020.
3. *"Sustainable Methods for C-S, C-P and P-Chalcogenides Bond Formations"* at International Conference on Emerging Trends in Chemical Sciences (ETCS-2020) during February 13-15, 2020 organized by Department of Chemistry, Guwahati University, Guwahati, Assam, India.
4. *"Metal-Free Carbon-Sulfur and Phosphorus-Chalcogenides Bond Formations"* at 26th ISCB International Conference (ISCBC-2020) Jointly organized with Nirma Institute of Pharmacy International Conference (NIPiCON) during 22nd - 24th January, 2020 at Nirma University, Ahmedabad, India.
5. *"Metal-Free C-S and C-P Bond Formations: Recent Developments From Our Laboratory"* at 7th Asian Network for Natural & Unnatural Materials (ANNUM VII) International Conference during September, **27-29, 2019** organized by Gujarat University, Ahmedabad, India.
6. *"Open flask, catalyst-free synthesis of oxindole containing α -hydroxy phosphinoyl compounds"* at 25th ISCB International Conference (ISCBC-2019) "Trends in Chemical and Biological Sciences: Impact on Health and Environment" during January, **12-14, 2019** at Hotel Golden Tulip, Lucknow, India.
7. *"Open Flask, Catalyst-Free Practical Protocols for C-P Bond Formation"* at 9th National Conference of Haridwar Chapter "The Indian Science Congress Association" at G. B. Pant University of Agriculture & Technology, Pantnagar, Uttarakhand, India during **October, 13-14, 2018**.
8. *Metal Free Syntheses of Thioethers: Reactivity, Scope and Challenges"* at 24th ISCB International Conference (ISCBC-2018) "Frontier Research in Chemistry & Biology Interface" during **January 11-13, 2018** at Manipal University Jaipur, India.
9. *"Peroxide catalysis in C-S coupling reactions: Reactivity, Scope and Challenges"* at CFOS-2017, Organized by Department of Chemistry, Indian Institute of Technology Roorkee during **December 22-24, 2017**.

10. “Solvent switched regio- and stereoselective C-S coupling reactions” at 8th National Conference of “The Indian Science Conference Association” (Haridwar Chapter) hosted by Kumaun University, Nainital during **October 14-15, 2017**.
11. “Syntheses of Thioethers Under Metal Free Conditions: Reactivity, Scope and Challenges at International Conference on Frontiers at the Chemistry and allied Sciences Interface (FCASI 2017) organized by Centre for advanced study, Department of Chemistry, University of Rajasthan during **July 22-23, 2017**.
12. “Syntheses of Thio/Seleno Ethers and Esters Under Metal Free Conditions via C-H Functionalization” at 23rd ISCB International Conference “Interface of Chemical Biology in Drug Research” organized by SRM University Chennai and ISCB during **February 8-10, 2017**.
13. “Recent Advances in Oxidant Promoted C-H Functionalization” at 7th National Conference of “The Indian Science Conference Association” (Haridwar Chapter) held at Gurukul Kangri Vishwavidyalaya, Haridwar during **November 20-22, 2016**.

Faculty Development Programmes

Name of the Course/Agency	Place	Duration	Sponsoring Agency
Summer School 101 th Orientation Programme	HRDC-University of Rajasthan-Jaipur	4 th -30 th July 2016	UGC
Refresher course in Chemical and pharmaceutical Science	HRDC-University of Rajasthan-Jaipur	4 th -23 rd September 2017	UGC
Winter School: Quantitative Biology	HRDC-University of Rajasthan-Jaipur	28 th Dec. 2020 -09 th Jan 2021	UGC



June 01, 2021

(Dr. Satpal Singh Badsara)