Dr. M. Bhanuchandra
Assistant Professor
Department of Chemistry
School of Chemical Sciences and Pharmacy
Central University of Rajasthan
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mallibhanuchandra@gmail.com

Research Interests

Development of sustainable reactions and methods

Synthesis of Organic Materials for Organic Electronics

C-H Bond Functionalization

Organosulfur Chemistry

Positions

Assistant Professor (April **2016** - present)

Education

Postdoctoral Research: Kyoto University, Kyoto - Japan (**2013** - **2016**)

Supervisors: Prof. Hideki Yorimitsu and Prof. Atsuhiro Osuka

Ph.D: University of Hyderabad, Hyderabad - India (**2008** - **2013**)

Supervisor: Prof. Akhila Kumar Sahoo

B. Ed: Srivenkateswara University, Tirupati - India (**2007**)

M.Sc: Srivenkateswara University, Tirupati - India (**2006**)

Publications from CURAJ

- Transition-metal-free synthesis of 2-arylphenol via S_NAr reaction of dibenzothiophene dioxide with KOH.
  M. Yadav, R. S. Jat, S. Kumari, P. V. Babu, P. Roy, M. Bhanuchandra; *Tetrahedron Lett.* **2023**, 119, 154430.

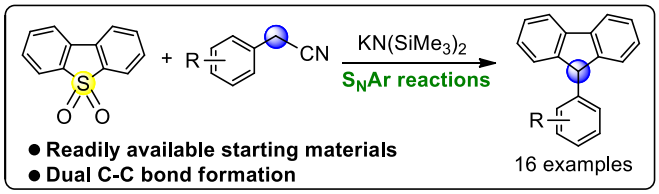
- Palladium-catalyzed direct C–H thiolation of 2-pyridyl sulfoxide with disulfides.
  M. Yadav, B. Sarma, R. S. Jat, M. Bhanuchandra; *New J. Chem.*, **2022**, 46, 13401-13405.

- 2-Pyridyl Sulfoxide Directed Pd(II)-Catalyzed C–H Olefination of Arenes with Molecular Oxygen as the Sole Oxidant.
  Yadav, M.; Jat, R. S.; Sarma, B.; Bhanuchandra, M. *Synthesis*, **2021**, 53, 2269-2276.

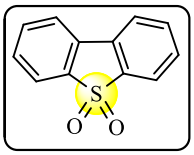
- Conjugated Small Organic Molecules: Synthesis and Characterization of 4-Arylpyrazole-decorated Dibenzothiophenes.
  S. Panda, R. S. Jat, A. Fayaz, J. Saha, R. Thirumoorthi, T. K. Roy, and M. Bhanuchandra, *New. J. Chem.*, **2020**, 44, 8944-8951.

- X-ray structures and photophysical properties of Tris(1-naphthyl)silicon(IV) derivatives.
  Dhanwant, K.; Chivers, T.; Bhanuchandra, M.; Thirumoorthi, R.; *Journal of Molecular Structure*, **2020**, 1219,128650**.**

- KHMDS Mediated Synthesis of 9-Arylfluorenes from Dibenzothiophene dioxides and Arylacetonitriles by Tandem S_NAr-Decyanation-Based Arylation.
  S. Mylavarapu, M. Yadav , M. Bhanuchandra*; Org. Biomol. Chem.*, **2018**, 16, 7815.



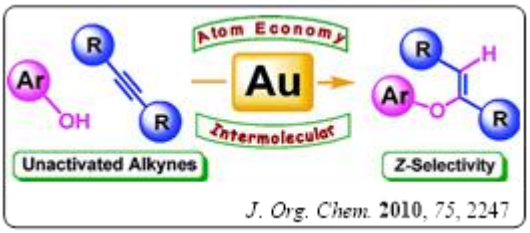
- Dibenzothiophene 5,5-Dioxide. **M. Bhanuchandra**, Hideki Yorimitsu,* *eEROS, Encyclopedia of Reagents for Organic Synthesis*, Wiley,



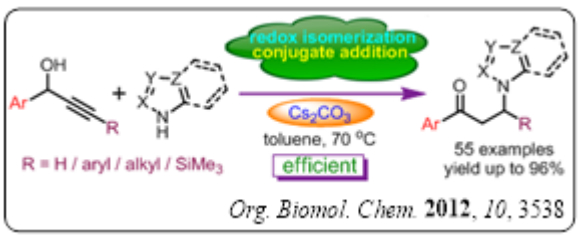
(https://doi.org/10.1002/047084289X.rn02046).

Publications from doctoral and post-doctoral work

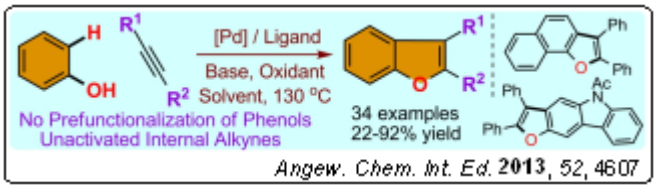
- Gold-Catalyzed Intermolecular Hydrophenoxylation of Unactivated Internal Alkynes. Malleswara Rao Kuram, **M. Bhanuchandra**, Akhila K. Sahoo,* *J. Org. Chem.* **2010**, 75(7), 2247-2258.



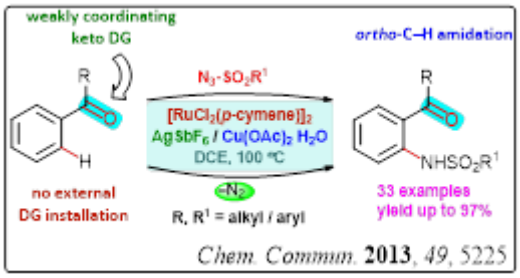
- A convenient approach to β-heteroarylated (C–N bond) ketones from Cs_2CO_3 promoted reaction between propargyl alcohols and nitrogen-heterocycles. **M. Bhanuchandra**, Malleswara Rao Kuram, Akhila K. Sahoo,* *Org. Biomol. Chem.* **2012**, 10(18), 3538-3555.



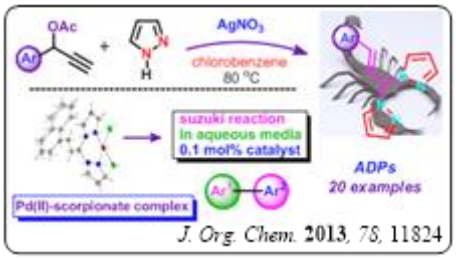
- Direct Access to Benzo[*b*]furans through Palladium-Catalyzed Oxidative Annulation of Phenols and Unactivated Internal Alkynes. Malleswara Rao Kuram, **M. Bhanuchandra**, Akhila K. Sahoo,* *Angew. Chem. Int. Ed.* **2013**, 52(17), 4607-4612.



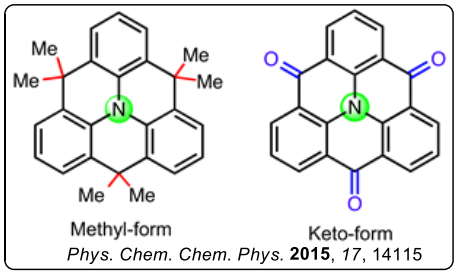
- Ru(II)-catalyzed intermolecular *ortho*-C–H amidation of aromatic ketones with sulfonyl azides. **M. Bhanuchandra,** M. Ramu Yadav, Raja K. Rit, Malleswara Rao Kuram, Akhila K. Sahoo,* *Chem. Commun.* **2013**, 49(45), 5225-5227.



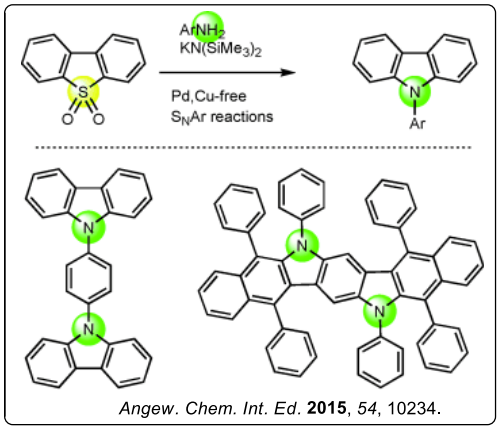
- Silver(I)-Catalyzed Reaction between Pyrazole and Propargyl Acetates: Stereoselective Synthesis of the Scorpionate Ligands (*E*)-Allyl-*gem*-Dipyrazoles (ADPs). **M. Bhanuchandra**, Malleswara Rao Kuram, Akhila K. Sahoo,* *J. Org. Chem.* **2013**, 78(23), 11824-11834.



- The influence of source molecule structure on the low temperature growth of nitrogen-doped graphene. Tokio Katoh, Gaku Imamura, Seiji Obata, **M. Bhanuchandra**, Graeme Copley, Hideki Yorimitsu, Koichiro Saiki,* *Phys. Chem. Chem. Phys.* **2015**, 17(21), 14115-14121.

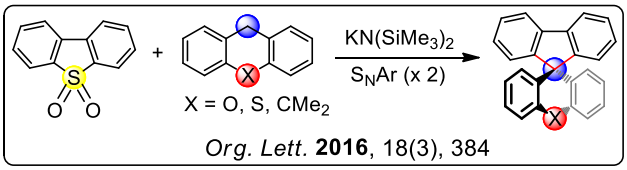


- Transition-Metal-Free synthesis of Carbazoles and Indoles by an S_NAr-Based "Aromatic Metamorphosis" of Thiaarenes. **M. Bhanuchandra**, Kei Murakami, Dhananjayan Vasu, Hideki Yorimitsu,* Atsuhiro Osuka, *Angew. Chem. Int. Ed.* **2015**, 54(35), 10234-10238.

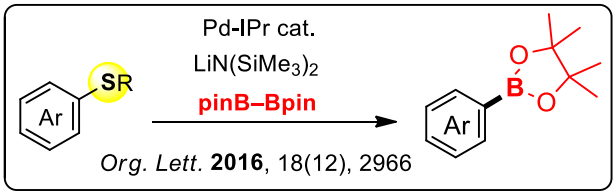


- Discrete Atomic Layers at the Molecular Level. Hideki Yorimitsu,* **M. Bhanuchandra**, *J. Phys. Soc. Jpn.* **2015**, *84*, 121016.

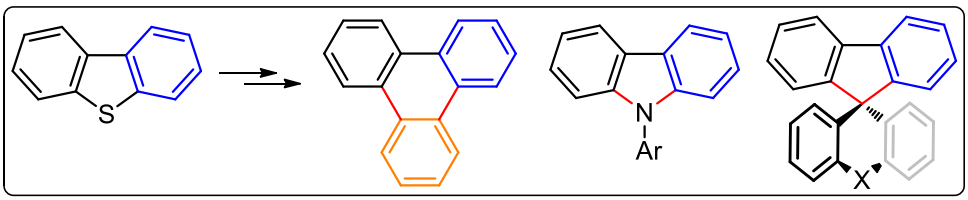
- Synthesis of Spirocyclic Diarylfluorenes by One-Pot Twofold S_NAr Reactions of Diaryl Sulfones with Diarylmethanes. **M. Bhanuchandra**, Hideki Yorimitsu,* Atsuhiro Osuka, *Org. Lett.* **2016**, 18(3), 384-387.



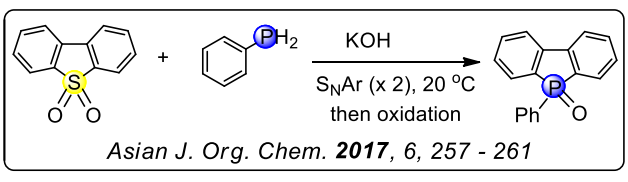
- Palladium-Catalyzed *ipso*-Borylation of Aryl Sulfides with Diborons. **M. Bhanuchandra**, Alexandre Baralle, Shinya Otsuka, Keisuke Nogi, Hideki Yorimitsu*, Atsuhiro Osuka, *Org. Lett.* **2016**, 18(12), 2966-2969.



- Aromatic Metamorphosis of Dibenzothiophenes. Hideki Yorimitsu,* Dhananjayan Vasu, **M. Bhanuchandra**, Kei Murakami, Atsuhiro Osuka, *synlett* **2016**, 27(12), 1765-1774.



- Synthesis of Dibenzophosphole Oxides from Dibenzothiophene Dioxides and Phenylphosphine by Two Successive SNAr Reactions. Mitsuki Onoda, Yoshinari Koyanagi, Hayate Saito, **M. Bhanuchandra**, Yoshihiro Matano,* and Hideki Yorimitsu,* *Asian J. Org. Chem.* **2017**, *6*, 257 – 261.



Presentations

- **"International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI)"** at Rajasthan University, Jaipur, India on April, **2023** (*Invited Lecture*).
- **"International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI)"** at Rajasthan University, Jaipur, India on December, **2018** (*Invited Lecture*).
- **"National Conference on Applied Materials Science"** at Central University of Gujarat, Gandhi Nagar, India on April, 2018 (*Oral presentation, Invited*).
- **"International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI)"** at Rajasthan University, Jaipur, India on July, **2017** (*Oral presentation, Invited*).
- "**The 96th Annual Meeting (2016) of The Chemical Society of Japan**" at Doshisha University, Kyoto, Japan on March, **2016** (*Oral presentation*).
- **"Stimulating Meeting for Young Researchers in Chemistry on Stimuli-responsive Chemical Species"** at Kyoto University, Gokasho Uji, Kyoto, Japan on November, **2015** (*Invited Lecture*).
- "**Chemfest-2012**" at School of Chemistry, *University of Hyderabad*, Hyderabad, India on February, **2012** (*Poster and Oral presentation*).
- "***7th J-NOST conference***" at *Indian Institute of Science Education and Research (IISER) Mohali*, Mohali, India on December, **2011** (*Poster presentation*).

Ongoing Projects:

Project title	Funding agency	File No. & Date	Total cost in Lakh
Regiocontrolled Direct C-H Selenation, Arylation, and Homoallylation of (Hetero)arenes: Synthesis of Medicinally Important Molecules	SERB	*EEQ/2022/000490; Dated: 7th Feb 2018*	33.066

Completed Projects:

Project title	Funding agency	File No. & Date	Total cost in Lakh
Development of Sustainable Reactions and Methods using Dibenzothiophene 5,5-dioxide: Synthesis of pi-Conjugated Systems	DST-SERB	ECR/2016/001092; Dated: 9th January, 2017	38.72

Development of Novel Strategies for the Construction of Benzothiophene Dioxide	UGC	F.30-356/2017(BSR); Dated: 30th August, 2017	10.0
Transition Metal-Catalyzed C-H Nitrogenation and Oxygenation of Arenes using Sulfoxides as Functionalizable Directing Groups	DST-SERB	*EEQ/2017/000768; Dated: 23rd March, 2018*	36.30

Courses taught

Code	Title of the course	Credits
CHM102	ORGANIC CHEMISTRY-I	3
CHM302	ORGANIC CHEMISTRY-II	4
CHM120	ORGANIC CHEMISTRY LABORATORY-I	2
CHM320	ORGANIC CHEMISTRY LABORATORY-II	2
CHM502	PERICYCLIC REACTIONS AND PHOTOCHEMISTRY	3
CHM612	NATURAL PRODUCTS	3
CHM402	STEREOCHEMISTRY AND REACTION MECHANISM	3
BCHT-601	THE ORGANIC CHEMISTRY OF BIOMOLECULES	4

Biography:

M. Bhanuchandra obtained his Ph.D from the University of Hyderabad under the guidance of Prof. Akhila Kumar Sahoo. He then moved to Kyoto University, Japan as a postdoctoral fellow under supervision of Prof. Hideki Yorimitsu. Currently, he is an Assistant Professor in the Department of Chemistry at Central University of Rajasthan, India.

His current research interest is devoted to develop sustainable reactions and methods in organic synthesis with special focus on transition metal-free conditions and visible light photoredox catalysis. His research group eagerly works in field of C-H functionalization which includes C-H nitrogenation and C-H oxygenation of arenes using sulfoxides as functionalizable directing groups. MB group also focuses on syntheses of novel pi-conjugated molecules for OLEDs with TADF approach.