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Pd-Catalyzed Decarboxylation and Dual C(sp3)–H Functionalization Protocols for the Synthesis of 2,4-Diarylpyridines

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Abstract
The Pd-catalyzed decarboxylation and dual C(sp3)-H bond functionalization approaches have been described for the preparation of symmetrical and unsymmetrical 2,4-diarylpyridines. The developed transformations were realized using nonactivated aromatic ketones and amino acids as C-N sources. The efficacy of the catalyst and reagent combination drives the transformation toward the formation of desired products with high yields and selectivity. The described reaction conditions have seduced the self-reaction of phenylalanine via [2 + 2 + 2] cycloaddition and minimized the formation of 3,5-phenylpyridine as a side product, whereas using glycine as a C-N source, the corresponding 2,6-diarylpyridines were formed as minor products.

Biography:
Raghuram Gujjarappa obtained M.Sc. in 2014 from Indian Academy Degree College under Bangalore University, Bangalore, India. He then moved to National Institute of Technology Manipur, Imphal, India for doctoral research work with Dr. Chandi C. Malakar in the field of metal catalysis and organocatalytic chemistry. In 2016, he received GATE Fellowship from the MHRD for his doctoral research work. Currently, he is working as a Senior Research Fellow (SRF) at Department of Chemistry National Institute of Technology Manipur under the supervision of Dr. Chandi C. Malakar. His research focuses on transition-metal catalyzed C-H activation, organocatalysis, domino reactions, and multi-component reactions.

Speaker Publications:
1. "Copper-Catalyzed [2+2+1+1] Annulation for the Regioselective Synthesis of 2,6-Diarylpyridines via C1-Insertion and Subsequent Cyclization / Chemistry Select (2020) Vol 5, Issue 32
2. "Comprehensive Strategies for the Synthesis of Isoquinolines: Progress Since 2008 / Advanced Synthesis & Catalysis Vol 13 (2016)
3. "Recent Advances in Pyridine-Based Organocatalysis and its Application towards Valuable Chemical Transformations / ChemistrySelect Vol 5 – Issue 28 (2020) .
4. Amino-Acid-Mediated Aerobic Oxidation of Organoborons for the Synthesis of Phenolic Derivatives Using Single Electron Transfer / ChemistrySelect / Vol 5 Issue 8(2020).
5. Transition-Metal-Free Variant of Glaser- and Cadiot-Chodkiewicz-Type Coupling: Benign Access to Diverse 1,3-Diynes and Related Molecules / Tetrahedron Letters / Vol 61 Issue 16(2020) .

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