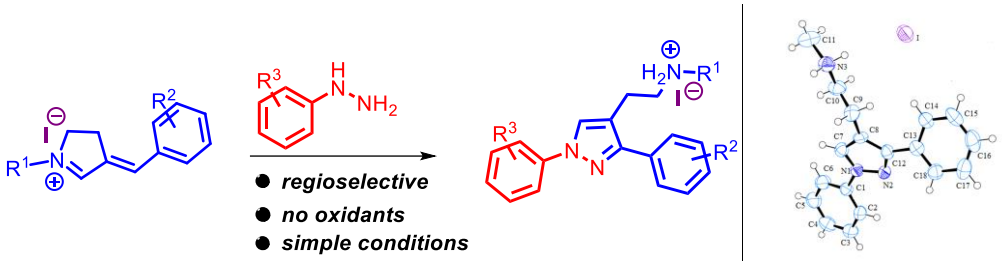
Ring Opening of Pyrrolinium Ions Enabled Regioselective Synthesis of 4-alkyl N-arylpyrazoles

Partha Partim Nath and Chandan K. Jana*

Department of Chemistry, Indian Institute of Technology Guwahati, Guwahati, Assam – 781039, India

(Email: ckjana@iitg.ac.in)

An unprecedented method for the regioselective synthesis of 1,3-diaryl 4-alkyl pyrazoles has been reported. A wide variety of 1,3-diaryl 4-alkyl pyrazoles were synthesized as a single regioisomer via a ring-opening cyclization reaction of unsaturated pyrrolinium ions in the presence of aryl hydrazines. This method avoids the use of additional alkylation steps and hazardous oxidants which generally are essential for the synthesis of 4-alkyl N-arylpyrazoles.[1]



CCDC 2163208

Figure 1. Regioselective synthesis of alkyl-N-arylpyrazole and its X-ray structure.

References:

[1] S. Dwari, P. P. Nath, C. K. Jana, *J. Org. Chem.* **2022**, *87*, 11947.

[2] S. Mandal, S Mahato, C. K. Jana, Org. Lett. **2015**, *17*, 3762.