Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Internal Webinar

Synthesis of Push-Pull Imines: Experimental and theoretical study

Srinivas Anga

TIFR, Hyderabad

Compounds involving imine functionality (C=N) plays an important role in different fields of research ranging from covalent organic framework (COF) to dynamic chemistry.[1] Considering different substituents, a variety of imines have been reported.[2] However, the synthesis of push-pull imines have been known scarcely[3] which is in contrast with that of alkene analogue.[4] The push-pull alkenes display distinct properties than that of neutral (non-polarized) alkenes.[5]

In this presentation, I will discuss complete details of the synthesis of a series of push-pull imnies by a selective aromatic nucleophilic substitution of different Fluoroarenes by N-H-substituted N-heterocyclic imines (NHIs) at ambient conditions without any additional reagents.[6]

Reference:

1. (a) J. L. Segura, M. J. Mancheño and Félix Zamora, Chem. Soc. Rev., 2016, 45, 5635–5671; (b) M. E. Belowich and J. F. Stoddart, Chem. Soc. Rev., 2012, 41, 2003–2024.
2. R. W. Layer, Chem. Rev., 1963, 63, 5, 489–510.
3. S. R. Marder, L.-T. Cheng and B. G. Tiemann, J. Chem. Soc., Chem. Commun., 1992, 672–674.
4. (a) E. Kleinpeter, S. Klod and W.-D. Rudorf, J. Org. Chem., 2004, 69, 4317–4329; (b) D. Mandal, S. Chandra, N. I. Neuman, A. Mahata, A. Sarkar, A. Kundu, S. Anga, H. Rawat, C. Schulzke, K. R. Mote, B. Sarkar, V. Chandrasekhar and A. Jana, Chem. Eur. J., 2020, DOI: 0.1002/chem.202000276.
5. H. Yanai, T. Suzuki, F. Kleemiss, H. Fukaya, Y. Dobashi, L. A Malaspina, S. Grabowsky and Takashi Matsumoto, Angew. Chem. Int. Ed., 2019, 58, 8839–8844.
6. S. Anga, S. Chandra, P. Sarkar, S. Das, D. Mandal, A. Kundu, H. Rawat,a C. Schulzke, B. Sarkar, S. K. Pati, V. Chandrasekhar, and A. Jana, “Synthesis of Push-Pull Imines” Org. Biomol. Chem., 2020, submitted.

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