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METAL FREE SYNTHESIS OF BETA-TRIAZOLE TETRA PHENYL PORPHYRINS AND RELATED COMPOUNDS

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The convergence of supramolecular chemistry and polymer science especially porphyrin chemistry offers many powerful approaches for building functional nanostructures with well-defined dynamic behavior. The efficient metal-free three-component reactions to synthesize 1,4,5-trisubstituted 1,2,3-porphyrin-triazoles from available materials, such as porphyrin-aldehydes, nitroalkanes, and organic azides, and also from porphyrin aldehydes, nitroalkanes, and porphyrin azides is described. The process is enabled by an organocatalyzed (morpholine:p-toluenesulfonic acid) Knoevenagel condensation of the formyl group with the nitro compound, which is followed by the 1,3-dipolar cycloaddition of the azide to the activated alkene. The reaction features an excellent substrate scope, and the products are obtained with good yield and regioselectivity. This methodology was used for the synthesis of fused triazole heterocycles from nitroporphyrin and organic azides.

Biography

Mian Gul Sayed completed his PhD from the University of Malakand, Dir Lower Khyber Pakhtunkhwa, Pakistan. He did his research in the department of chemistry Ku Leuven University at Belgium under the supervision of Professor Wim Dehaen. He is currently serving as an Assistant Professor at the Institute of Chemical Sciences of University of Swat, Khyber Pakhtunkhwa, Pakistan.

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