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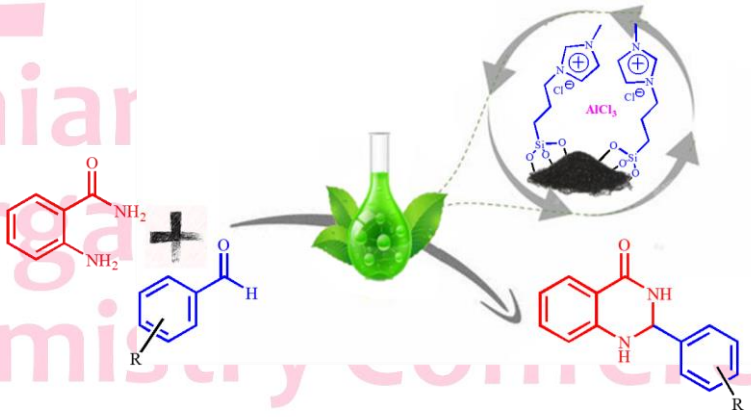
Aluminium -based ionic liquid grafted on Biochar as a heterogeneous catalyst for the synthesis of 2,3-dihydroquinazolin-4(1H)-one

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Biomass as the only carbon neutral alternative, has the unique chemical structure containing tailored surface functional groups and large surface area. Having these features has made it easy to prepare by activation and/or functionalization.The selection of biochar as a surface will be ideal for the preparation of heterogeneous catalysis [1, 2]. Recently, ionic liquids are suitable substitute for old conventional catalyst and do not leave any toxicity in the reaction medium [3]. Aluminium -based ionic liquid grafted on biochar surface (BC\[TESPMI]$_2$AlCl$_3$) was synthesized as a catalyst for the synthesis of 2,3-dihydroquinazolin-4(1H)-one and characterized by FTIR, XRD, TGA, FESEM, and EDS. This results disclosed that the chemical grafting was successfully performed. The high activity in mild condition and the simple recoverable from the reaction are the suitable characteristics of this catalyst. Finally, the catalyst sustained activity for five cycles of reaction.

Keywords: Biochar, 2,3-dihydroquinazolin-4(1H)-one, Ionic liquid, Recoverable nanocatalyst



Scheme 1. Synthesis of 2,3-dihydroquinazolin-4(1H)-one in the attendance of BC\[TESPMI]$_2$AlCl$_3$

References

[1] Moradi, P. Hajjami, M.. Tahmasbi, B. **2020**, *Polyhedron*, **175**, 114169.

[2] Zheng, Y. Gao, J. Du, W. Zhang, Y. Huang, L. Wang, Q. Zhao, X. **2020,** RSC Adv. **10**, 40196

[3] Ghorbani-Choghamarani, A. Norouzi, M. **2016** *J. Magn. Magn. Mater.* **401** 832.