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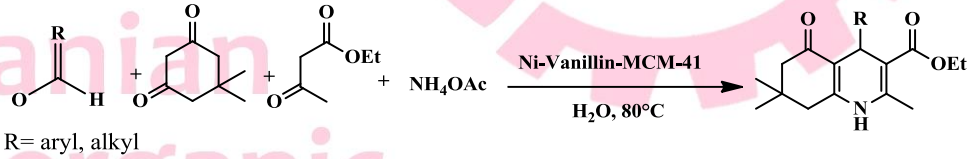
Synthesis and characterization of Ni complex supported on MCM-41 as an efficient and reusable nanocatalyst the synthesis of Polyhydroquinoline derivatives

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Polyhydroquinolines are important building blocks in the synthesis of many natural products with a wide range of pharmacological and biological activities including antifertility, anticonvulsant, antibacterial, anticancer, antifungal, antitumor, and also as a mono amine oxidase inhibitor [1-4]. An efficient heterogeneous catalyst has been synthesized by immobilization of nickel-vanillin complex on MCM-41 nanostructure and characterized by XRD, TGA, BET, EDS, SEM, ICP-OES and FT-IR spectroscopy. The catalytic activity and stability of the prepared compound has been studied for the synthesis of Polyhydroquinoline derivatives. The simple work up, mild conditions, excellent yield, inexpensive and non-toxic catalyst; render this protocol both attractive and economically viable. More importance, this catalyst can be reused for several times without any significant loss of its catalytic activity. The synthesis of Polyhydroquinolines is shown in Scheme 1. The desirable product were synthesised in goog to exellent yeilds.

Keywords: Polyhydroquinolines, MCM-41, Ni complex, Recoverable Catalyst



R= aryl, alkyl

Scheme 1. Synthesis of Polyhydroquinoline in the attendance of Ni-van-MCM-41

References

[1] M. Mohammadi, A. Ghorbani-Choghamarani *RSC Adv*., 2022, 12, 2770-2787
[2] P. Moradi, M. Hajjami, *New Journal of Chemistry* **2021**, 45, 2981-2994.
[3] V. N. Rathod, N. D. Bansode, P. B. Thombre, M. K. Lande, *JCCS* **2021**, 68, 601-609.
[4] M. Nikoorazm, M. Khanmoradi, Catalysis Letters, 150 (2020) **1**2823–2840.

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