

1_3 NOV, 2023
UNIVERSITY OF QOM, IRAN

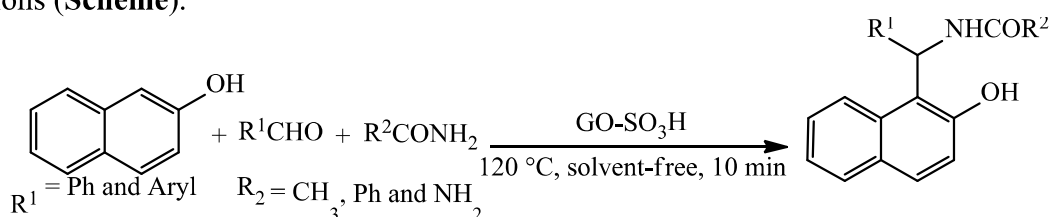
The One-Pot Synthesis of Amidoalkyl Naphthols Derivatives by Using Sulfonic Acid Functionalized Graphene Oxide as an Efficient Catalyst

Nafisehsadat Sheikhan*, Ghazaleh khajeh Saeidi

Department of Chemistry, Najafabad Branch, Islamic Azad University, Najafabad, Iran, ns_sheikhan@yahoo.com

Keywords: One-pot, Graphene oxide, Amidoalkyl naphthols, Solvent-free, solid acid.

One-pot multicomponent reactions are known as important and environmentally benign processes in synthetic chemistry because they decrease the number of steps and reduce energy consumption and waste production. 1-amidoalkyl 2-naphthols can be converted to useful and important biological building blocks and to 1-amino methyl 2-naphthols by an amide hydrolysis reaction, since compounds exhibit depressor and bradycardia effects in humans [1]. Regarding the importance of amidoalkyl 2-naphthols and the great need for environmentally benign chemical productions, the development of suitable green synthetic methods for these compounds has attracted considerable interest. Recently, Solid acids have many advantages such as easy handling, decreasing reactor and plant corrosion problem and environmentally safe disposal over conventional mineral acids. Graphene oxide (GO) includes high density of hydrophilic organic functional groups including hydroxyl, carboxyl and epoxy functional groups. However, GO and such kind of modified GO is a capable candidate as heterogeneous acid catalyst for organic transformation as well as industrial applications [2]. So herein we report a mild and efficient method for the one-pot preparation of amidoalkyl naphthols from condensation of aldehydes with amides or urea and 2-naphthol in the presence of sulfonic acid functionalized graphene oxide (GO-SO₃H) as an effective solid acid under thermal solvent-free conditions (**Scheme**).



Scheme: The one-pot synthesis of amidoalkyl naphthols derivatives by using GO-SO₃H

References

- [51] Hakimi, F.; Mirjalili, F.; Fallah-mehrjardi, M. One-pot synthesis of 1-amidoalkyl-2-naphthols catalyzed by nano-graphene oxide under solvent-free conditions. *Asian J. Green Chem.* 2019, 4, 183–191.
- [52] Hanoon, H.; Kowsari, E.; Abdouss, M.; Zandi, H.; Ghasemi, M. Efficient preparation of acidic ionic liquid- functionalized reduced graphene oxide and its catalytic performance in synthesis of benzimidazole derivatives. *Res. Chem. Intermed.* 2017, 43, 1751–1766.