

# A new heterogenous catalyst supported on graphene oxide for the selective epoxidation of olefins

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## Abstract

Graphene-based nanomaterials, specifically graphene oxide (GO) due to unique properties and oxygenated functional groups on basal and edges of nanosheets, are ideal candidates as solid support for the immobilization of various homogeneous catalysts [1-2]. Recently, click chemistry has been employed in several processes such as functionalization of solid surfaces, immobilization of homogeneous catalysts, and preparation of polymer-based hybrid materials [3-4]. In this study, a new heterogeneous catalyst was synthesized via a click chemistry approach. The surface of graphene oxide (GO) was modified by cysteamine hydrochloride as linking agent. Then, the Venturello catalyst (PW) was supported on the surface of clicked graphene oxide through the electrostatic interaction with ammonium groups. A schematic description of the heterogenous catalyst preparation is depicted in Figure 1. The catalytic performance of the prepared catalyst was investigated in the epoxidation of olefins and allylic alcohols using  $H_2O_2$  as oxidant. The results showed that the catalyst could be reused for five runs without significant loss of activity and stability.

## References

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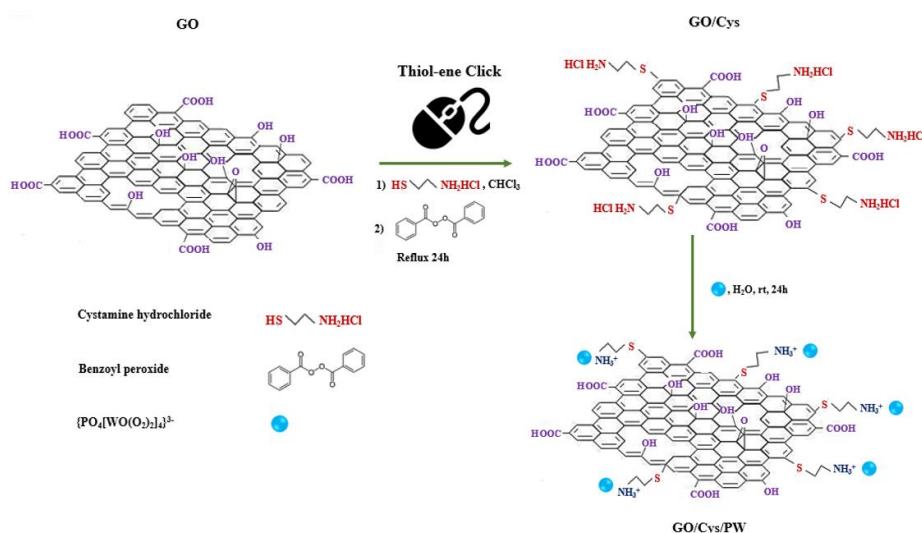


Figure 1: Schematic illustration for the preparation of the heterogenous catalyst.