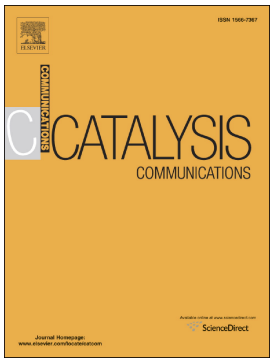

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Synthesis and characterization of amine functionalized graphene oxide and scope as catalyst for Knoevenagel condensation reaction

Surjyakanta Rana and Sreekantha B. Jonnalagadda*

Abstract

Novel amine modified graphene oxide (APTES-GO) was prepared using organo silane (aminopropyltrimethoxysilane, APTES) and the material was fully characterized by PXRD, Raman, SEM, FTIR, and TEM. Successful grafting of the amine group over the graphene oxide (GO) surface was confirmed by FT-IR and TEM data. APTES-GO as heterogeneous catalyst demonstrated impressive activity for solvent-free Knoevenagel condensation reaction producing cinnamic acid with excellent conversion (94%) and selectivity (99%) at RT. The catalytic activity remained almost unchanged for four cycles and in fifth cycle conversion was 9 % less.

Keyword: Graphene oxide; Amine functionalized graphene oxide; Knoevenagel condensation; cinnamic acid; Recyclable catalyst.

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