

عنوان مقاله:

Ammonium nitrate as an efficient and green reagent for the oxidation of alcohols into their corresponding carbonyl compounds in the presence of heteropoly acids

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خلاصه مقاله:

In this study, a simple, cheap and green protocol for effective conversion of alcohols to corresponding carbonyl compounds in the presence of H₁₄[NaP₅W₃O₁₁] and ammonium nitrate is reported. All known compounds were characterized by comparing their spectral data (FT-IR) and physical data with those reported. The progress of the reaction was monitored by thin layer chromatography (TLC) technique. The aliphatic products were detected by gas chromatography–flame ionization detector. Reactions were completed within 15-35 minutes at room temperature. In order to investigate the catalyst reusability, the oxidation of benzyl alcohol was carried out in the presence of H₁₄[NaP₅W₃O₁₁]. At the end of each reaction, the catalyst was separated and the recovered catalyst was reused for at least three runs without significant degradation in catalytic activity and performance.

کلمات کلیدی:

Alcohols; heteropoly acids; oxidation; heterogeneous catalyst; ammonium nitrate; energetic materials

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