

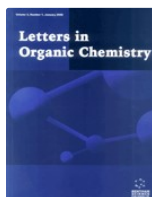


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Research Article

A Mild and Rapid Synthesis of 2-aryl Benzimidazoles by using SO₄²⁻/ZrO₂-TiO₂ as a Heterogeneous Catalyst

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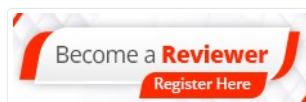
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Abstract

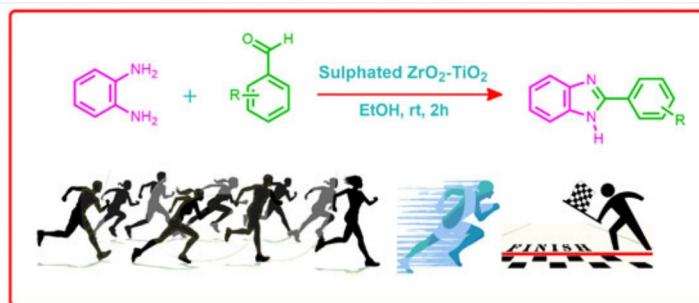
Herein, we have reported an efficient synthesis of 2-aryl benzimidazoles by reacting ophenylenediamines and substituting aromatic aldehydes using SO₄²⁻/ZrO₂-TiO₂ as a heterogeneous catalyst. This methodology is straightforward to obtain 2-aryl benzimidazoles with good to excellent yields. It has been performed in ethanol as a green solvent. The reported protocol has some advantages such as a safe and reusable heterogeneous catalyst, without any need for column chromatography to obtain desired products. The catalyst can be recovered for up to five catalytic cycles without significant loss in the catalytic activity.

Keywords: SO₄²⁻/ZrO₂-TiO₂, 2-Aryl benzimidazoles, recyclable, heterogeneous catalyst, cyclocondensation, benign GERD.

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Graphical Abstract



A mild and efficient protocol have been reported for the synthesis of 2-aryl benzimidazole derivatives using various substituted *o*-phenylenediamines and aromatic aldehydes as starting materials in SO₄²⁻/ZrO₂-TiO₂ as a heterogeneous catalyst at room temperature with high yields.

References

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