

عنوان مقاله:

A highly efficient synthesis of biologically active spirooxindole derivatives with Nano SiO₂ as a mild catalyst under solvent-free conditions

محل انتشار:

کنفرانس بین المللی مهندسی معدن، فلزات و مواد (سال: ۱۳۹۴)

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خلاصه مقاله:

In this protocol, we have reported Nano SiO₂ as an efficient and environmentally benign naturecatalyst for the multi-component efficient synthesis of biologically spirooxindole derivatives. And we studied three-component, one-pot condensation of isatin/acenaphthequinone, malononitrile and different reagents including ۱, ۳-dicarbonyl compounds, naphthol and ۴-hydroxycumarin under thermal and solvent-free conditions in the presence of Nano SiO₂ as a mild catalyst. solvent-free conditions, short reaction times, good yields, non-toxic, in expensive, simple operational procedures, one-pot, mild, easily separated from the reaction mixture with no column chromatographic separation .for the economical synthesis of these fused biologically compounds are the major advantages of this literature

کلمات کلیدی:

Nano SiO₂, Spirooxindole derivatives, Multi-component reactions, Solvent-free conditions

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