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Fast and efficient one-pot ultrasound-mediated synthesis of solid state (full color tunable) fluorescent indolizine derivatives

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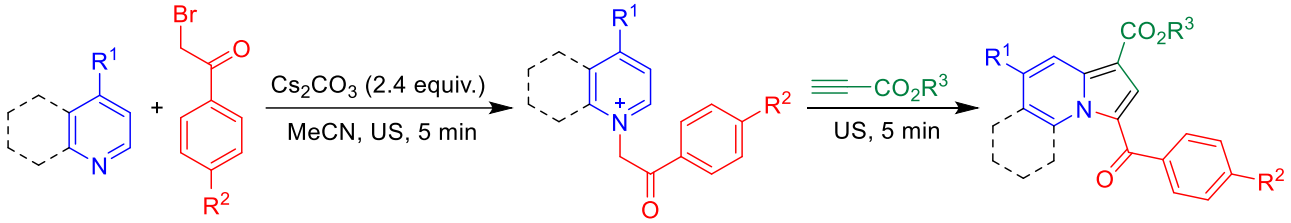
ABSTRACT

The class of heterocyclic compounds has gained prominence in recent decades due to its wide range of applications. Among these, indolizines are highly versatile, presenting different pharmacological properties and applications such as on/off fluorescent sensors, dye-sensitized solar cells (DSSCs), among others.[1] Given the importance of this class of compounds, we developed an efficient, rapid, and sustainable method for the preparation of fluorescent indolizine derivatives under ultrasound (US) irradiation, using a one-pot, multicomponent methodology. Using this method, it was possible to synthesize ten different indolizines containing electron-donating and electron-withdrawing groups in yields ranging from 21% to 99%. The synthesized compounds were subjected to comprehensive photophysical studies, revealing that the substituents used influenced the photophysical properties. In solution, indolizine derivatives exhibit absorption in the UV region and fluorescence emission in the violet-to-blue region. In the solid state, the derivatives exhibit fully adjustable color fluorescence.[2]



R^1 = H, NMe_2, CN;
R^2 = H, NO_2, OMe,
R^3 = Me, Et;

21 - 99%
10 examples

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