Source: Rezvanian, A., Mahmoodi, F., Zadsirjan, V., Salimi, M., & [Heravi, M. M.](https://doi.org/10.1002/slct.201904860) (2020). Efficient and Uncatalyzed Synthesis of Highly Functionalized New Symmetrical Indeno [1, 2-b] pyrroles via a One-Pot Four-Component Reaction. ChemistrySelect, 5(12), 3503-3507. <https://doi.org/10.1002/slct.201904860>

Efficient and Uncatalyzed Synthesis of Highly Functionalized New Symmetrical Indeno[1,2-b]pyrroles via a One-Pot Four-Component Reaction

Atieh Rezvanian, Fahame Mahmoodi, Vahideh Zadsirjan, Mehri Salimi, [Majid M. Heravi](#)

Department of Chemistry, School of Science, Alzahra University, Vanak, Tehran, Iran

Abstract

A facile, efficient and un-catalyzed approach for the synthesis of new symmetrical highly- substituted indeno [1,2-b]pyrrole derivatives through four-component reaction, involving, primary amines, diamine, diketene, and ninhydrin in CH₂Cl₂ at ambient temperature is reported. This approach enjoys merits such as being done in the absence of catalyst at ambient temperature, giving good to excellent yields, completed in short reaction times, and showing a wide functional group tolerance.

Keywords: Diketene, Indeno[1,2-b]pyrroles, Multicomponent Reaction, Ninhydrin, One-Pot Reaction, Primary Amines