

## عنوان مقاله:

One-pot synthesis of 4H-pyrano[2,3-c]pyrazoles in the presence of Keggin supported on C<sub>3</sub>N<sub>4</sub> as catalyst

## محل انتشار:

دومین همایش بین المللی علوم و فناوری نانو دانشگاه تهران (سال: 1400)

تعداد صفحات اصل مقاله: 5

## نویسنده:

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## خلاصه مقاله:

A facile and versatile procedure has been explored for the synthesis 1,4-dihydropyrano[2,3-c]pyrazol-5-yl cyanides. This protocol employs the one-pot three-component condensation of aromatic aldehydes and malononitrile with 3-methyl-1-phenyl-2-pyrazolin-5-ones in ethanol under the catalytic effect of Keggin heteropolyacid supported on carbon nitride and visible light irradiation. Simple manipulation, high reaction rates, improved yields, use of inexpensive and non-toxic catalyst, and also use of ethanol as a relatively environmentally benign solvent are the main advantages of this protocol.

## کلمات کلیدی:

pyrazole, g-C<sub>3</sub>N<sub>4</sub>, visible light

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1274735>

