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## Synthesis of new series of pyrazolo[3,4-b][1,6]naphthyridine in presence of nano- $Al_2O_3$

Fateme Majidi Arlan<sup>a\*</sup>, Shahin Soleimani Chalanchi, Jabbar Khalafy and Ramin Maleki<sup>b</sup><sup>a</sup>University of Urmia, Iran<sup>b</sup>Iranian Academic Center for Education, Culture and Research (ACECR), Iran

Pyrazolonaphthyridine is a fused polycyclic heterocycles with four nitrogen-atoms, the pyrazolonaphthyridine derivatives have received much attention in recent years due to their wide biological and pharmacological activities such as potent phosphodiesterase 10A inhibitors [1], selective histamine 4 receptor antagonists [2] bombesin receptor subtype-3 agonists [3] and protein kinase inhibitors [4]. Herein, we report the one-pot threecomponent synthesis of new series of pyrazolo[3,4-b][1,6]naphthyridine in the presence of different catalysts such as L-alanin, p-TSA and nano  $Al_2O_3$ . Ease of purification of products, isolation of catalysts, using water/ ethanol as a green solvent, high yields and shorter reaction times in presence of nanocatalyst in comparison with other catalysts are the advantages of this procedure.

### Biography

Fateme Majidi Arlan was born in Urmia (Iran) in 1984. She received his degree in Pure Chemistry from the Urmia University. She will receive his Ph.D degree in Organic Chemistry from the Urmia University (Iran) in 2017 after completing his research in the Study of Synthesis of chromene and pyridine heterocyclic derivatives by one-pot, multicomponent reaction of aryglyoxals, methylene active compounds and enamines in the presence of nanocatalysts and study of their interactions with heavy metals using analytical techniques under the guidance of Professor Jabbar Khalafy. Her current research interest focus on the Synthesis of new series of pyrazolo[3,4-b][1,6]naphthyridine in presence of nano- $Al_2O_3$

majidi@yahoo.com

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