



SDI Review Form 1.6

PART 1:

Journal Name:	<u>American Chemical Science Journal</u>
Manuscript Number:	2013_ACSj_4957
Title of the Manuscript:	Fe_{0.2}Al_{1.8}Zn₁₀O₄ Composite: An Efficient Catalyst for the Synthesis of 1, 4-Dihydropyridine Derivatives
Type of the Article	Research paper

General guideline for Peer Review process is available in this link:

[\(http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline\)](http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	1. Describe the catalyst synthesis in the experimental section or reference should be cited. 2. The authors were mentioned about the catalyst recyclability. However the data for recycling studies is missing. It would be good to include the data. 3. The Authors mentioned no leaching of catalysts observed. However no explanation on what happened to the catalyst after third cycle. 4. How the authors confirmed that there is no leaching of catalysts? need a proper explanation in the results and discussion 5. In order to show the efficiency the catalytic activity must be compared with the simple Lewis catalyst. 6. What is purpose of adding 2 drops of HCl in the reaction mixture as indicated in the Table 1?	The proper references (Ref. No. 21-23) have been added in the manuscript. The results of catalyst reusability study for the synthesis of diethyl 1, 4-dihydro-2, 6-dimethyl-4-phenylpyridine-3, 5-dicarboxylate have been summarized in table 2 and also discussed in the result and discussion part of the manuscript. We appreciate the query of reviewers query. The catalyst on recycle study (Table 2) afforded the yield of the products without appreciable change and hence there is no leaching of the catalyst. We studied the catalyst recycling ability upto third recycle. We confirmed that there is no leaching of the catalyst from the satisfactory yields of the products after successive recycling runs. The effect of catalyst is comparatively presented in Table 3 in the result and discussion part of the manuscript. HCl was added to the reaction mixture to polarize the catalyst which enhances the reaction rate and reduces the time.



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	7. Since the number of catalysts and methods developed for the DHP synthesis authors should clearly elaborate the novelty of this catalyst. 8. The results and discussion part is too short and discussing only the common features of the DHP synthesis. 9. The authors have published a research paper in using the same catalyst for the synthesis of DHP derivatives using MW. However the above paper not cited in the present manuscript. 10. The substituent R is attached to the phenyl ring and it is misleading in the Table 1. For example, entry 1 the substituent R is phenyl ring but if we compare to scheme 1 the substituent is biphenyl. It would be correct to remove the phenyl ring from the Scheme 1 and attach the R to the DHP moiety directly. 11. The manuscript contains grammatical errors and this should be avoided while making the manuscript. some examples are as follows: - line 43 : homogeneous.... corrected as homogeneous - scheme 1 remove phenyl ring and attach R directly to DHP moiety	The present protocol affords a method for the synthesis of 1, 4-dihydropyridines in moderate to excellent yield within short reaction time and hence provides a valuable addition to the literature methods as mentioned in the conclusion. The result and discussion part is extended by adding tables 2 (for recycle study) and 3 (for comparing the catalytic activity with the literature protocols.) Our published article is cited as ref. No.20 in the introduction and bibliographic list. To minimize the confusion, we have attached only R to the CHO group in scheme 1. The following mistakes have been corrected. - Homogenous is corrected to homogeneous - As per the reviewers suggestion we have changed the phenyl ring to the R only.
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	c. DHP derivative 7 correct the susbtituent n-C₉H₉ d. line 68 : spectrophotometer..... corrected as spectrometer e. line 72 : Section1.1 should be corrected as 2.1 f. line 99: dimethyl.....corrected as diethyl g. line 72: 1,4-dihydropyridines derivatives should be corrected as 1,4-dihydropyridine derivatives. h. line 84: is... should be corrected as ...are... since the beginning is plural	c. For the DHP derivative 7; we have corrected the term n-C₆H₉ as n-C₉H₁₉. d. The term spectrophotometer is corrected as corrected as spectrometer. e. The sub-sectional heading 1.1 is corrected as 2.1 f. g. 1,4-dihydropyridines derivatives is corrected to 1,4-dihydropyridine derivatives. h. "is" is corrected as ...are.
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		