



SDI Review Form 1.6

PART 1:

Journal Name:	<u>International Research Journal of Pure and Applied Chemistry</u>
Manuscript Number:	2013_IRJPAC_4347
Title of the Manuscript:	Zirconium (IV) Molybdotungstate- An Application as Catalyst for the Synthesis of Ester
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)
Compulsory REVISION comments	[1] Kinetic data not sufficient. Rate plots, optimisation results for varying catalyst weight, reaction time, molar ratio of reactants must be presented. No explanation on Figure 2. [2] Ea and rate values must be mentioned. [3] reaction with isopropanol didnot give much yield, substantiate. [4] Thermal stability: structure rearrangement decreases catalyst wt, how? Line no.143 [5] determining and comparing the acidity of the solid catalyst with sulphuric acid would be interesting. [6]No data on reusability of the catalyst is reported.	1. The desired details have been incorporated. The changes made in the revised manuscript have been highlighted in yellow. 2. Ea has not been calculated since the studies were done only at one temperature. 3. The probable reason for the same may be the steric hindrance. The same has been incorporated in the revised manuscript. 4. Structural rearrangement involves losing of the external water molecules initially giving anhydrous heteropolyacid compound leading to decrease in weight of the salt. Further increase in temperature upto a temperature of 500 °C results in loss of coordinated water and hydroxyl groups besides the rearrangement of functional groups. These losses follow the regular trend of inorganic ion exchangers. These details have been incorporated and highlighted in yellow in the revised manuscript. 5. As already reported in the manuscript, the heteropolyacid salts are prepared in highly acidic conditions (pH~1.0). However, the comparison of the acidity of the solid catalyst with sulphuric acid has not been done. 6. Regeneration of the heteropolyacid salt has been reported under part 3.5. Exhausted exchanger was regenerated and its ion exchange



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		capacity was determined. It was observed that there was a very small decrease in the production, only 10-15% even after 5 regenerations. The reports available gave the evidence that the activity of the catalyst decreases in the subsequent reactions due the blockage of the activated sites by bulky molecules [23].
<u>Minor</u> REVISION comments	[1] article must be checked thoroughly for its grammar and sentence continuity.	Needful done.
<u>Optional/General</u> comments		