



SDI Review Form 1.6

Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	2014_IRJPAC_11921
Title of the Manuscript:	Separation of Palmitic and Palmitoleic Acid using Transition Metal Salts: Part 2
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



SDI Review Form 1.6

PART 1: 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) As reported, under optimum concentration of ZnSO_4, 58% of 16:0 FA is precipitated out and 90% of 16:1 FA remains in the solution. It indicates that the purity of precipitated 16:0 FA is 85.29% and that of 16:1 FA is 68% only. Fatty acids of such purity may not be used for any useful purposes. Yield of precipitated FA (16:0) is also very poor (58%). Conditions should be evaluated to further improve the purity ($\geq 90\%$) and yield of the separated FAs. 2) This experiment has used a mixture of two fatty acids (16:0 and 16:1 FAs) in 1:1 ratio. What will happen if the two acids are present in different ratio? 3) Whether the reagent ZnSO_4 is specific for precipitation of 16:0 FA or it will precipitate all saturated fatty acids? 4) In nature, these FAs are found along with other fatty acids. What will happen if experiment is conducted with a mixture of fatty acids obtained from seed oils? Data should be generated.	1) This experiment was aimed at checking the extent to which ZnSO_4 is capable of separating C16:0 from a solution containing a mixture of both C16:0 and C16:1 FAs. The aim was to remove the saturated fatty acid from the mixture making the original solution more concentrated with the unsaturated fatty acid. Experiments thus far proved that 90% of C16:1 FA remained in the original solution. Although far from commercial feasibility, we feel that these findings are significant and paves way for a technology that can be further optimized. 2) – 4). These are all very valid and important suggestions. We would like to point out that the experiments that we conducted thus far are very fundamental in nature and were geared toward understanding how these chemical moieties interact. Future experiments are planned to evaluate the effect of select metal ions on two or more fatty acids in different ratios. In fact, our long-term goal is to attempt develop this technology for high-value FA separation from natural oils.
Minor REVISION comments	-References should be included in Line No. 30- after gas chromatography	References were incorporated/ revised as suggested.



SDI Review Form 1.6

	31- after thin layer chromatography, liquid chromatography, winterization, urea complexation 34- after separation 164- after earlier studies 171- after Gaussian 09 -Figures 5 & 6 should be removed or sufficient data/ references should be provided in support of the 3 dimensional structure. -In REFERENCE section, References should be written as per the Journal's requirement. Following references may be checked 1, 7, 9, 11, 14, 15, 21, 22 & 24	We feel that Figures 5 & 6 (Figures 4 and 5 in the revised version) serves an important purpose by implicating the reasons behind the saturated FAs when complexed with the metal ions tending to crystallize as compared to the unsaturated ones (linear molecules tending to pack on top of each other whereas the curved ones do not). We added a section clarifying this. References were checked and revised.
<u>Optional/General</u> comments		