



SDI Review Form 1.6

Journal Name:	Advances in Research
Manuscript Number:	2015_AIR_16795
Title of the Manuscript:	Optimization of base oil regeneration from spent engine oil via solvent extraction
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	<p>Many studies are using the CCD/RSM to optimize processes, but this tool needs to be used carefully. There are a lot of studies which used "time" as one of the independent variables (for example: digestion time, extraction time, distillation time, fermentation time, etc...). I recommend to think if there is no other independent variable to study in this process; only solvent to oil ratio and time affecting this process? If there is another possible independent variable to study this process, is recommend to collect samples at different times (each 5 or 10 min, for example) and do not use "time" as an independent variable of the process. So, the authors can optimize the solvent and other independent variable which resulted in the best responses (base oil yield and ash content) in a specific time, not in a time estimated by the CCD matrix.</p> <p>At conclusions section the authors cited that the "time had less or no effect on the yield whereas its increment increased the ash content of the oil which is not desirable".</p> <p>Also in the surface plots is possible to see this: the time had no effect on the responses at any level.</p>	<p>This is an opinion and does not form the basis for the present study. Nevertheless, it must be noted that if any parameter studied is fixed at all, it invalidates CCD/RSM, because interactions with that fixed variable is limited.</p> <p>Yes, the results obtained in this work show that time has little or no effect on the yield of the base oil, whereas its increment increased the ash content of the oil which is not desirable.</p>
Minor REVISION comments	<p>Author also cited that "a numerical optimization was used to determine the experimental data that gave the optimal conditions".</p>	<p>Yes.</p> <p>The results given are experimental, they are not</p>



SDI Review Form 1.6

	<p>The authors found the “optimum conditions predicted as solvent to oil ratio of 5:1 and time at 30 min. Thus the predicted optimum conditions were not validated by repeating the experiment.”</p> <p>This may be different if time is not used as a variable. If the authors really wanted to optimize this process, it is important to validate experimentally the model obtained, not only numerically. The experimental values of the response variables obtained from the optimized process need to be close and in linear with the predicted values.</p>	<p>empirical results. They are validated results.</p> <p>The recommendations here are beyond the scope of the present study.</p>
<u>Optional/General</u> comments	<p>In this order, it is recommended to repeat, if possible, this experiment with another independent variable and collecting samples at regular time intervals to obtain the best responses for this study.</p>	<p>The recommendations here are not within the scope of the present study. Thank you.</p>