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Journal Name:	<u>International Research Journal of Pure and Applied Chemistry</u>
Manuscript Number:	2015_IRJPAC_18119
Title of the Manuscript:	Desulfurization of Tawke diesel fuel Using Na-Y type zeolite and active carbon
Type of the Article	Original Research Article

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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.

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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)
<u>Compulsory</u> REVISION comments	- The authors need to rewrite the whole manuscript taking care of English use. Sometimes is difficult to understand the text. It is also necessary to improve the clarity of the text. - The temperature used to dry the adsorbents is not high enough to dry zeolites that require at least 500 °C to be dried. - The authors chosen the activated carbon sample to define the best contact time; however, different adsorbents will probably require different contact time depending on the affinity of the sulphur compounds and the surface of the adsorbent. So, the kinetic profile should has been done for all adsorbents. - Figures 1 and 2 are very similar (it seems like they are the same) and the description of the results presented at lines 107-110 cannot be observed in the figures. For both figures, the greatest reduction of sulphur content was observed after 1 h. Then, the sulphur content seems to be constant. - The sulphur content shown in Table 2 for activated carbon does not seem to be the same as the result shown in Figures 1 or 2 (the amount of adsorbent used was not defined by the authors for Table 2). - Different performances of the adsorbents were clearly	



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	seen in Table 2. However, the explanations given by the authors are not accurate. The following sentence is too general, "The results show that under present experimental conditions the adsorption capacity varied among activated charcoal, granular H-Y , granular H-MOR without binder and desiccant depending upon the nature of exchanged capacity, pore size and the acidity of each adsorbent used in this process." No characterization of the adsorbents was done. So, the influence of pore size and acidity was not checked. What do authors mean by "nature of exchanged capacity"? The sentence "The activated charcoal exhibited better performance in desulfurization of diesel and the sulfur content treated with granular H-MOR type zeolite without binder is less than that treated with granular H-Y type zeolite this due to the adsorption on MOR without binder affected by method of synthesis (clay particles) and MOR type zeolite more sensitive than Y type zeolite to the impurities (poisoning)." is also not accurate. Mordenites and Y zeolites are different materials although they are zeolites. Crystalline structure, textural properties, chemical composition and acidity are different for these two materials. What do the authors mean by 'sensitivity to impurities'? - No explanation was given for the good performance of activated carbon. - The authors did not mention the presence of dyes in diesel when they presented its physicochemical properties. - No discussion was done about the influence of adsorption temperature (Table 2).	
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	- The GC analysis was used to improve the characterization of sulphur compounds. However, only the chromatograms are shown and no identification of the compounds was done. So, the chromatograms are useless.	
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<u>Minor</u> REVISION comments	- Table 1: check unity for sulphur content; check cell “refractive index (RI) at” -What does calculate mean in Table 1? - What is molecular sieve desiccant NO 17-1159 (type of material)? - What was the detector used for gas chromatography? - Table 2: check cell “treated with granular H-”; check cell “treated with activated”; improve the presentation in title cells. - What was the amount of adsorbent used for adsorption with the different materials (Table 2)? Justify the choice. - Check the journal rules for reporting references.	
<u>Optional/General</u> comments	The manuscript “Desulfurization of Tawke diesel fuel Using Na-Y type zeolite and active carbon” should be completely rewritten and new experimental tests are also required so that it can be considered for publication. The authors need to be more careful with English use, possibly seek for help. It is not easy to write in a language that is not our mother language, so special attention should be given to the correct use of grammar, spelling, concordance, etc. The goal of the manuscript is not clear. The studied adsorbents are largely used in the literature related to adsorption of sulphur compounds present in different fuels. The adsorption process is not adequate for treating streams such as Tawke diesel fuel that shows very high sulphur content (10000 ppm).	



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	The results shown in this manuscript are preliminary. More tests should be done such as adsorbent characterization, adsorption isotherms. An appropriated discussion is also required.	
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