Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	**Ms_JMSRR_42862**
Title of the Manuscript:	**Production of Synthetic Zeolite from Ugwaka Clay (Black Clay) by thermal treatment**
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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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		
Minor REVISION comments	**On Manuscript category**: I don't think this manuscript is a review work. The author/editor should check and properly place this manuscript into the category it belong to. **On topic**: The author produced Zeolite from locally sourced material. Synthetic Zeolite is the zeolite in existence that is already in use. The title should be reviewed to capture the use of locally sourced material for production of zeolite. **On Abstract**: Line 8 to 9; the units of the variables are not needed since the values were not presented here. The DOE should be written correctly. NaOH should be properly defined at its first appearance in the manuscript. Subsequently, abbreviation can be used instead of full name. This goes for all other defined variables from methodology to results and discussion. Line 14: quadratic model was 'developed' not 'predicted'. The model was used for prediction of zeolite yield. **On Introduction**: Line 23-28: The introductory sentences about zeolite need revision because the combination of sentences did not 'flow well'. Line 25; the author should close his sentence then cite the reference. Line 30: ...amount of zeolite produced or obtained (remove 'to be') Line 32 to 36: Sentences should be closed with 'and' or if instances are not limited to the stated ones 'etc' should be used. Line 45-47 should be joined to line 44 or the author can add more information to it if the aim is to turn it to a full paragraph. **Question: Can the author explain the difference between synthetic zeolite and zeolite?** The introduction was loaded with information about zeolite but failed to address the modelling techniques used for modelling. Information about the modelling techniques will make the introduction a complete one. **On Methodology**: Line 79 to 81 should be under source of raw material (line 72 to 73) Remove 'Instrumental Characterization' and joined the sentence to 'Physical Characterization'. FTIR description or procedure is missing. Line 111 to 113: The three variables should part of continuation of the above paragraph where each of the variables can be defined. Subsequently the abbreviated notations can be used. 114. The author did not explain what -1 and +1 means in his design. '0' is experimental point which is equal to mid-point of the range of data set by each of the variables used in this study. The methodology did not provide information about how yield was determined and its significance to model development. 117. Since the variables has been defined, they should not appear in the tables (1 and 2) **On Results and Discussion**: Based on the results presented by the author, the outline of this section should be in the following format: 1. Physical characterization of zeolite: under which three characterizations can be discussed. 2. Model development and analysis: One factor behaviour/ Influence of individual factors, Model equation and description, model validation and optimization. Is there zeolite in existence? The author should reference the physical characterization of existing zeolite, tabulate and compared it with his own gotten results. This will show if the produced zeolite is suitable because there should be a reason why the use of locally sourced zeolite should be embraced. Or he can characterize the available zeolite and compare its results with his newly developed zeolite from clay. Information in table 4a and 4b can be compared on a table for easy comparison. Also there should be a standard that should be used as a reference on same table. Tenses error on lines 135, 136, 138-142. **Question: What is the reason why some phyo-chemical properties are lower in treated clay (zeolite) and initially are higher in raw clay? Is there a literature reference for such behaviour?** Line 216 to 218 should be removed-repetition.	

	Line 223 to 225 should be combined with line 222. Either equation 1 or 2 is not enough as model equation. **Question: Line 248: In table 6, why is it that two interaction components of the developed model are not significant model term? Can you generate 3D plots for these interactions? This should give an insight.** Line 267: Where is figure 4.7? Line 283 to 288: Box the three plots 8a, 8b and 8c in a plot. Then clearly explain the kind of relationship each of them exhibited with yield. Line 291 to 302: the author did not clearly state how the optimized model was validated. **On conclusion**: The conclusion did not capture all findings from the manuscript **References**: Inconsistencies in the presentation styles.	
Optional/General comments	General comments. 1. There should be a space after the use of a unit. 2. 'O' instead '0' should be used for degree There are some tenses errors are in results section of the manuscript. 3. More so reported speech should be used when presenting results. 4. There is no consistency in the references type used. The author should check the guideline and follow it.	

Reviewer Details:

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