Review Form 1.7

Journal Name:	**Journal of Energy Research and Reviews**
Manuscript Number:	**Ms_JENRR_97265**
Title of the Manuscript:	**Potential Usage of Selected Agro-Residue as a Biofuel Production Sources: Physiochemical Evaluation Approach.**
Type of the 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:

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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)*
Compulsory REVISION comments **1. Is the manuscript important for scientific community?** (Please write few sentences on this manuscript)	**Yes. The manuscript gives the analysis of possible use of Agricultural wastes as a source of energy. This approach has two aspects:** **the first – the use of biomass as energy source, what contributes to a decrease of the use of fossil fuels and thus mitigate CO_2 emissions** **the second –use of agricultural biomass waste that is difficult to manage otherwise.** **Performed studies by means of physicochemical methods are well chosen and carried out in professional manner. They follow well known procedures already reported in the literature, the novelty of the paper consists in application of known procedures to the local resources, what gives the paper practical value.**	
2. Is the title of the article suitable? (If not please suggest an alternative title)	**The title is fine, correctly describes the content.** **The only doubt is connected to the use of the word Physiochemical** **(The same in the text)** **According to my personal feeling it should be Physicochemical.** **This feeling is supported by the following:** physiochemical ˌfiz-ē-ō-ˈkem-i-kəl : of or relating to physiological chemistry *https://www.merriam-webster.com/medical/physiochemical* As adjectives the difference between physiochemical and physicochemical is that physiochemical is of or pertaining to both physiology and chemistry while physicochemical is dependent on the joint action of both physical and chemical processes. *https://wikidiff.com/physiochemical/physicochemical*	
3. Is the abstract of the article comprehensive?	**Abstract is OK**	
4. Are subsections and structure of the manuscript appropriate?	**Subsections logically divide the papers onto well chosen parts**	
5. Do you think the manuscript is scientifically correct?	**The general approach, and the all procedures are correct including conclusions.** **There are, however some points that require corrections:** *"Moreso ???? , finding from the study of Obernberger and Thek, [13] asserted that Carbon and oxygen content of the biomass are the main components of an efficient solid fuels. The authors in their work described that Carbon and oxygen react during combustion in an exothermic reaction, generating CO_2 and H_2O and concluded that the Carbon and oxygen contents of the biomass sample contribute in a positive way to the fuel's HHV and the combustion process itself."*	

6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form. **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	The sentence quoted above is erroneous. Why so, I will explain below. Taking into account equation 2 in the paper by Obernberger and Thek one can easily see that nitrogen, oxygen and ash negatively contribute to the gross calorific value HHV (decrease HHV with an increase content of components mentioned). In Obernberger and Thek's work the sentence: *"C, H, and O are the main components of biomass fuels. C and H become oxidized during combustion by exotermic reactions (formation of CO2 and water) and therefore influence the gross calorific value of the fuel. The organically bound O provides a part of the O necessary for the combustion process, additional O must be supplied by air injection."* has quite a different meaning than that assigned in the sentence contained in the analysed work. Consequently it should be corrected. In chapter 3.1.4 higher heating value (HHV) or lower heating value (HLV). *This symbol should rather be changed to LHV* "According to Vargas-Morenoa *et al.* [16], higher heating value refers to heat released by complete combustion of a unit volume of fuel leading to the production of water vapour and its eventual condensation; at this point, the total released energy is measured." The sentence quoted above makes impression that Vargas-Morenoa at al had discovered the difference between HHV and LHV whereas this is already a fundamental knowledge, but they only report this in their review paper. I would suggest just small change in the sentence. **I would suggest adding some short discussion about HLV of the discussed fuels, since HLV is the indicator of practical value.** **The references are recent, and I thing sufficient. They represent all what is needed. Obviously there are hundreds of possible, much older, references, but in my opinion they do not need to be repeated by every Author.**	

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Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**	As far as I am concerned. English is correct and logical.	
Optional/General comments	There are some problems connected to the topic discussed. I would like to mention of the topics that are beyond the scope of the present paper, but are connected with it. I would suggest to Authors to think about extending their research for future publications 1. Using biomass as a source of solid state fuels for burning in various ovens one has to keep in mind the melting temperature of the ashes. The ashes from biomass are usually melting at relatively low temperature and might undergo slagging and other problems during combustion. There is some literature about this problem for example:. C˘ajová Kantová, N.; Holubc˘ík, M.; Trnka, J.; C˘ aja, A. Analysis of Ash Melting Temperatures of Agricultural Pellets Detected during Different Conditions. Fire **2023**, 6, 88. https://doi.org/10.3390/fire6030088 Siim Link,* Patrik Yrjas, Daniel Lindberg, and Andres Trikkel Characterization of Ash Melting of Reed and Wheat Straw Blend ACS Omega 2022, 7, 2137−2146 2. The other problem is effectiveness of the processes leading from row resource to the final fuel. This is defined as a ratio of energy provided by the fuel to the total energy needed to convert the resource material into fuel. This ratio should be minimized in the fuel production processes. I have discussed this in the book published by SPRINGER NATURE. Andrzej Wasiak; Modeling Energetic Efficiency of Biofuels Production © Springer Nature Switzerland AG 2019 ISBN 978-3-319-98430-8 ISBN 978-3-319-98431-5 (eBook) https://doi.org/10.1007/978-3-319-98431-5	

PART 2:

	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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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