Teguh Kurniawan <teguh@untirta.ac.id>

Your Submission WAVE-D-22-00467R1 - [EMID:f8cfa42cb818f24a]

1 pesan

Waste and Biomass Valorization (WAVE) <em@editorialmanager.com> 17 September 2022 pukul 21.55
Balas Ke: "Waste and Biomass Valorization (WAVE)" <shopitha.velmurugan@springer.com>
Kepada: Teguh Kurniawan <teguh@untirta.ac.id>

You are being carbon copied ("cc:'d") on an e-mail "To" "Anton Irawan" antonirawan@untirta.ac.id
CC: "Teguh Kurniawan" teguh@untirta.ac.id, "N Nurkholifah" nurkholifah99910@gmail.com, "M. Melina" melinalina17@gmail.com, "Asep Bayu Dani Nandiyanto" nandiyanto@upi.edu, "Mochamad Adha Firdaus" g201704250@kfupm.edu.sa, "Hafid Alwan" hafid.alwan@gmail.com, "Yazid Bindar" ybybyb@fti.itb.ac.id

Dear Dr.-Ing Irawan,

We are pleased to inform you that your manuscript, "Pyrolysis of Polyolefins into Chemicals using Low-cost Natural Zeolites", has been accepted for publication in Waste and Biomass Valorization.

You will be contacted by Author Services in due course with a link to complete the grant of rights. Please note that you will receive your proofs after the publishing agreement has been received through our system.

Please remember to quote the manuscript number, WAVE-D-22-00467R1, whenever inquiring about your manuscript.

With best regards,
Springer Journals Editorial Office
Waste and Biomass Valorization

Reviewer #2: Authors have done significant modifications. Minor corrections need to be done before the paper can be accepted for publication.
Second paragraph of introduction [lines 37-45]:
1. "....multiple feeds which is called co-pyrolysis" instead of "....multiple feeds which was called co-pyrolysis"
2. ".....in co-pyrolysis is lower than pyrolysis....." instead of ".....in co-pyrolysis was lower than pyrolysis....."
3. "Catalytic pyrolysis can produce more....." instead of "The advantages of catalytic pyrolysis can produce more....."

Reviewer #5: Authors have answered all the comments well.

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Teguh Kurniawan <teguh@untirta.ac.id>

Major Revisions requested WAVE-D-22-00467

1 pesan

Waste and Biomass Valorization (WAVE) <em@editorialmanager.com> 21 Juli 2022 pukul 07.29
Balas Ke: "Waste and Biomass Valorization (WAVE)" <shopitha.velmurugan@springer.com>
Kepada: Teguh Kurniawan <teguh@untirta.ac.id>

You are being carbon copied ("cc:'d") on an e-mail "To" "Anton Irawan" antonirawan@untirta.ac.id
CC: "Teguh Kurniawan" teguh@untirta.ac.id, "N Nurkholifah" nurkholifah99910@gmail.com, "M. Melina" melinalina17@gmail.com, "Asep Bayu Dani Nandiyanto" nandiyanto@upi.edu, "Mochamad Adha Firdaus" g201704250@kfupm.edu.sa, "Hafid Alwan" hafid.alwan@gmail.com, "Yazid Bindar" ybybyb@fti.itb.ac.id

Dear Dr.-Ing Irawan,

We have received the reports from our advisors on your manuscript, "Pyrolysis of Polyolefins into Chemicals using Low-cost Natural Zeolites", which you submitted to Waste and Biomass Valorization.

Based on the advice received, I feel that your manuscript could be reconsidered for publication should you be prepared to incorporate major revisions. When preparing your revised manuscript, you are asked to carefully consider the reviewer comments which can be found below, and submit a detailed list of responses to each of the comments in a separate sheet. You are kindly requested to also check the website for possible reviewer attachment(s).

In order to submit your revised manuscript, please access the journal's website.

Your username is: ********
If you forgot your password, you can click the 'Send Login Details' link on the EM Login page at
https://www.editorialmanager.com/wave/

Please make sure to submit your editable source files (i. e. Word, TeX).

We look forward to receiving your revised manuscript before 31 Aug 2022.

With kind regards,

Ange Nzihou, PhD
Editor in Chief
Waste and Biomass Valorization

COMMENTS FOR THE AUTHOR:

Reviewer #2: The manuscript deals with pyrolysis of polyethylene and polypropylene in the presence of natural zeolite in a semi-batch reactor. The results of pyrolysis products are discussed comprehensively. Detailed characterization of products obtained is analyzed and presented. However, there are many grammar related mistakes, which need to be rectified by revisiting the manuscript. The manuscript may be considered for publication upon addressing following specific comments/suggestions.

1. Abstract: The first two sentences need to be removed (those can be part of introduction).
2. Page 2, Line 25: Sentence is incomplete.
3. Page 3, Line 28: Needs to be "plastic waste by 2028" instead of "plastic waste in 2028"
4. Importance of pyrolysis for petroleum derived materials can be highlighted by referring to following paper: https://doi.org/10.1016/j.jenvman.2021.113854
5. In the introduction section, the discussion on importance of addressing the issue of plastic wastes can be further strengthened by referring to following papers:
i) https://doi.org/10.1080/15567036.2020.1856976
ii) https://doi.org/10.1016/j.scitotenv.2021.147004
iii) https://doi.org/10.1016/j.biortech.2022.127332
6. Further, in the last paragraph of introduction section, couple of recent studies related to the use of zeolite for pyrolysis of plastic wastes, especially, polyolefins need to be included for bringing out further clarity on the novelty of the current manuscript.
7. Page 3, line 58: Needs to be "Hence, it is needed..." instead of " Hence it is needed...."

8. The sentence "Based on our literature survey...." seems incorrect.
9. Replace "hours" by "h" throughout the manuscript.
10. Section 2.2: Needs to be "180 g natural zeolites was soaked...." instead of "An amount of 180 g natural zeolites was soaked"
11. Section 2.3: Needs to be "Fig. 1 presents the reactor setup....." instead of "Fig 1. presents the reactor setup...."
12. Section 2.3: Needs to be "300 g plastics and zeolites catalyst" instead of "An amount of 300 g plastics and zeolites catalyst"
13. Captions of Tables 3 and 4 and Figure 12 need to revisited.
14. Difference in the values shown in Table 3 and 4 in terms of area under the curve and its significance need to be explicitly mentioned.
15. Out of the three studied temperatures, at which temperature oil yield was highest and why?
16. Conclusion section: Needs to be "Pyrolysis of polyethylene and polypropylene was successfully...." instead of "Pyrolysis polyethylene and polypropylene were successfully..."

Reviewer #4: The scientific article is well written, and contains some good experimental data and discussion. However, the article does not flow well, and the results section is inadequately described in the text, especially the GC/MS section. This needs addressing before publication.

In addition, the following comments can be made:

Page 3
Line 37 - ". The temperature optimum for the catalytic reaction could produce the highest paraffin and olefin products at 400 °C." how does this compare to the reaction that has not been catalysed via HZ?
Line 7-9 "The oil yield and products selectivity improved significantly after using the natural zeolites." - how much did it improve by?
Line 33 - change "pyrolysis reaction" to "pyrolysis process"
Line 37-39 - what are the advantages & disadvantages to catalytic pyrolysis as opposed to non-catalytic pyrolysis?
Line 41-42: what type of pyrolysis reactor?
Line 39: you need to state more clearly: what is the aim of polyolefin pyrolysis? To produce light oil? Chemicals? Fuel? Clearly state what the aim of the study is and how you are trying to improve pyrolysis product composition and distribution
Page 4
Line 1: are catalysts infinitely reusable, or do they require replacement? What is the mode of action by which catalysts assist in the pyrolysis reaction? Is it their high surface area, or surface chemistry? Please comment more on these in the introduction to make the paper more accessible to readers who do not specialise in catalytic pyrolysis
Line 7; "narrow range temperature" change to "narrow temperature range"
Line 11: "which pyrolysed at" to "which was pyrolysed at"
Line 39: add any material characterisation techniques that you used here. Photographs of your catalysts and samples would also be a good addition
Page 5
Figure 1: where did you add your catalyst? Was it dispersed in the bed, or on top? How did you mix them? What was the heating rate? What temperature was the cooling oil?
Page 6
Figure 2: what experimental technique produced this graph? XRD? Please be specific
Page 7
Please label the peaks which you mention in the text (9.77° and 22.32°)
Line 43: why not test the effect of dealumination via gas sorption analysis? This would assess the change in porosity and surface area of the material. If this technique was not available, mention literature that has assessed the effects of acid washing on zeolite structure.
Page 9:
Figure 4a and 4b should have the same number of significant figures for all product yields
54: "increases" to "increased"
General:
It would be beneficial to have a diagrams showing the molecular unit of PE and PP in the introduction. A diagram showing the structure of a zeolite would also be useful
Page 11
Line 29 It would be good to have a schematic showing how an acidic surface reacts contributes towards PP and PE cracking
Page 11
Table 1: this table adds little value to the paper and does not really tell you anything that a short sentence cannot. If you want to test the zeolite for coking, I recommend ASTM D1618-18 or ASTM D3172.
Page 12
Line 25: "Generally, it shows that the higher the pyrolysis temperature, the higher the produced oil's density increased" -

this does not make sense, please rephrase
Line 29-31: make sure you use the correct and consistent amount of significant figures
Page 13
Line 27: "There was a slight increase in olefinic products and a slight decrease in paraffinic products." It is difficult to conclude that this wasn't just due to error in the experimental techniques, as you have not done any repeats, which disallows for meaningful statistical analysis. I would therefore advise mentioning that this result may not be statistically significant and could be due to inherent variation in the process/feedstock.
Line 33-34: "The paraffinic product slightly decreased from 20% to 17%." See above
Page 14
Figure 9: superscript your degree symbol - °
Figure 10: this figure has been inadequately described in the text: are there more large hydrocarbons in the catalytically pyrolysed oil? Why is this? Also, where is the y axis label?
Lines 49-60: this seems like a discussion section but you have not mentioned the relevance of your GCMS results to anything you have mentioned
Page 15/16
Table 3: this is a difficult table to interpret meaningfully due to the amount of compounds which you have analysed for. I recommend adding a third column which shows the difference in peak area of the HZ-catalysed oil vs the non-catalysed oil, and ordering the compounds according to the biggest change. This will allow for quick interpretation regarding which chemicals the zeolite promotes the formation of.
Page 17
Line 1: I'm not really sure where this paragraph fits in with your results. You have a discussion section mentioning several literature studies, without really relating them to your own results.
Page 18
Line 12: oil pyrolysis to "pyrolysis oil
Page 18-19
You haven't related any of the discussion to your own laboratory results. This feels more like a literature review.
Page 19
Line 41: "Thermal pyrolysis of PP over catalyst increased the yield of olefins from 39% to 62% Additionally, PE and PP plastics pyrolysis over catalyst produced the highest oil yields with 67% and 70%, respectively" at what temperature/conditions?

Reviewer #5: Authors have nicely worked and presented the research article. . The study is well planned supported by analytical, experimental as well as other data in the form of tables and figures.
However, it requires further improvements as under:
Introduction: Pls cite recent references and mention the research gap in the area and justify why the study was undertaken and how these findings enrich the information for readers of WAVE as well as other scientific communities.
Methods: Kindly detail few of the experiments procedure to be replicated by the others, mere citing the reference may not be enough.
R&D: It requires a lot of corrections, explaining each and every findings, with proper scientific discussion and justification. As of now it's less and just supported by only references. Quality of figures and tables must be improved and even few of the figures could be clubbed or in supplementary info please?
Conclusion must be in bullets and may be concise as per guidelines.

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WAVE-D-22-00467 - Submission Notifica tion to co-author - [EMID:507ff9bd2483f814]

1 pesan

Waste and Biomass Valorization (WAVE) <em@editorialmanager.com> 15 April 2022 pukul 16.28
Balas Ke: "Waste and Biomass Valorization (WAVE)" <mariammal.arunachalam@springer.com>
Kepada: Teguh Kurniawan <teguh@untirta.ac.id>

Re: "Pyrolysis of Polyolefins into Chemicals using Low-cost Natural Zeolites"
Submission ID: WAVE-D-22-00467
Full author list: Anton Irawan; Teguh Kurniawan; N Nurkholifah; M. Melina; Asep Bayu Dani Nandiyanto; Mochamad Adha Firdaus; Hafid Alwan; Yazid Bindar

Dear Dr Kurniawan,

We have received the submission entitled: "Pyrolysis of Polyolefins into Chemicals using Low-cost Natural Zeolites" for possible publication in Waste and Biomass Valorization, and you are listed as one of the co-authors.

The manuscript has been submitted to the journal by Dr. Dr.-Ing Anton Irawan who will be able to track the status of the paper through his/her login.

If you have any objections, please contact the editorial office as soon as possible. If we do not hear back from you, we will assume you agree with your co-authorship.

Thank you very much.

With kind regards,
Springer Journals Editorial Office
Waste and Biomass Valorization