

BUKTI KORESPONDENSI

Penulis : **MSK Tony Suryo Utomo** (*First author and corresponding author*)

Jurnal : **Cogent Engineering** – Cogent OA (Q2) – SJR 2023: 0,43

Judul Paper : *Effect of Ring Baffle on Erosion in Circulating Fluidized Bed Boiler*

No	Jenis Korespondensi / Kegiatan	Tanggal	Lampiran Bukti
1	Submission received for Cogent Engineering (Submission ID: 233493094)	6 April 2023	Lampiran 1
2	Additional time for revision	7 Juni 2023	Lampiran 2
3	Confirmation of editable file	11 Juli 2023	Lampiran 3
4	Additional time for revision	28 Agustus 2023	Lampiran 4
5	Revised submission received	16 Oktober 2023	Lampiran 5
6	Paper accepted	19 Oktober 2023	Lampiran 6
7	Paper on line on Taylor and Francis (Cogent Engineering)	2 November 2023	Lampiran 7

Lampiran 1

Dari: "oaen-peerreview@journals.tandf.co.uk" <oaen-peerreview@journals.tandf.co.uk>
Kepada: "msktonysu@yahoo.co.id" <msktonysu@yahoo.co.id>
Terkirim: Kamis, 6 April 2023 pukul 15.07.07 WIB
Judul: Submission received for Cogent Engineering (Submission ID: 233493094)



Dear Tony Utomo,

Thank you for your submission.

Submission ID	233493094
Manuscript Title	EFFECT OF RING BAFFLE ON EROSION IN CIRCULATING FLUIDIZED BED BOILER
Journal	Cogent Engineering
Article Publishing Charge (APC)	USD \$1270.00 (plus VAT or other local taxes where applicable in your country)

**APC only payable if your article is accepted*

You can check the progress of your submission, and make any requested revisions, on the [Author Portal](#).

Thank you for submitting your work to our journal.

If you have any queries, please get in touch with OAEN-peerreview@journals.tandf.co.uk.

For any queries relating to your APC, please get in touch with APC@tandf.co.uk

Kind Regards,
Cogent Engineering Editorial Office

Lampiran 2



Dari: oaen-peerreview@journals.tandf.co.uk
Kepada: msktonysu@yahoo.co.id

Rab, 7 Jun 2023 jam 21.03 ☆

Dear Dr. Tony Utomo,
I hope this email finds you well.
Please be advised that I have now extended your revision due date to June 30, 2023.
If I can be of further assistance, please do not hesitate to let me know.

Best Regards,
Mary Rose Logro - Journal Editorial Office
On behalf of Charlie Flores
Cogent Engineering
Taylor & Francis Group
Web: www.tandfonline.com
Taylor & Francis is a trading name of Informa UK Limited, registered in England under no. 1072954

Lampiran 3

• Re: Submission Id: 233493094 #TrackingId:15746577

Yahoo/Email M... ☆



Dari: oaen-peerreview@journals.tandf.co.uk
Kepada: msktonysu@yahoo.co.id

Sel, 11 Jul 2023 jam 11.13 ☆

Dear Dr. Tony Utomo,
Thank you for sending the editable file.
This is to confirm that I have now uploaded this in the system on your behalf.
Should you have any further assistance, please let me know.
Best regards,
Charlie Flores - Journal Editorial Office
Taylor & Francis Group
Web: www.tandfonline.com
Taylor & Francis is a trading name of Informa UK Limited, registered in England under no. 1072954
Journal Editorial Office
Taylor and Francis

Lampiran 4

• Additional time for revision #TrackingId:16221830

Yahoo/Email M... ☆



Dari: oaen-peerreview@journals.tandf.co.uk
Kepada: msktonysu@yahoo.co.id

Sen, 28 Agu 2023 jam 14.33 ☆

Dear Dr. Tony Utomo,
Thank you for your email.
Your request has been passed on to the Editor for their confirmation.
I will be in touch as soon as I hear back from them.
In the meantime, please do not hesitate to contact me if you have any further queries.

Kind Regards,

Micaela Gail Villaseñor - Journal Editorial Office

Taylor & Francis Group

Web: www.tandfonline.com

Taylor & Francis is a trading name of Informa UK Limited, registered in England under no. 1072954

Lampiran 5

• Revised submission received for Cogent Engineering (Submission ID: 233493094.R3)

Yahoo/Email M... ☆



Dari: oaen-peerreview@journals.tandf.co.uk
Kepada: msktonysu@yahoo.co.id

Sen, 16 Okt 2023 jam 15.21 ☆



Taylor & Francis
Taylor & Francis Group

Dear Tony Utomo,

Thank you for submitting your revised manuscript.

Submission ID	233493094
Manuscript Title	EFFECT OF RING BAFFLE ON EROSION IN CIRCULATING FLUIDIZED BED BOILER
Journal	Cogent Engineering

If you made the submission, you can check its progress and make any requested revisions on the [Author Portal](#).

Thank you for submitting your work to our journal.
If you have any queries, please get in touch with OAEN-peerreview@journals.tandf.co.uk.

Kind Regards,
Cogent Engineering Editorial Office

Author Response Revision 1

Dear Editor,

Thank you for giving us the opportunity to submit a revised draft of the manuscript "Effect of Ring Baffle on Erosion in Circulating Fluidized Bed Boiler" for publication in the Cogent Engineering. We appreciate the time and effort that you and the reviewers dedicated to providing feedback on our manuscript and are grateful for the insightful comments on and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Those changes are highlighted (in yellow) within the manuscript. Please see below, in blue, for a point-by-point response to the reviewers' comments and concerns. All page numbers refer to the revised manuscript file.

1: Line 20

the combustion process is inefficient, which could lead to the erosion of the furnace walls' - Combustion process efficiency and erosion in CFB boilers are two separate issues. Erosion is the result of the flow of the gas-solid mixture and may or may not affect the efficiency of the combustion process.

Authors' response:

We would like to thank the reviewer for the consideration. The sentence has been revised (Page

2).

2: Line 19

'that they will be distributed evenly' - please provide additional references, e.g. Mirek P. (2020), Air Distributor Pressure Drop Analysis in a Circulating Fluidized-Bed Boiler for Non-reference Operating Conditions. Chem. Eng. Technol. 2020, 43, No. 11, pp. 2233-2246. doi:10.1002/ceat.201900565

Authors' response:

We want to thank the reviewer for the finding. The supporting references has been added (Page

3).

3: Line 59

' Jiang et alexperiments .'s' - please correct this sentencee

Authors' response:

We want to thank the reviewer for the finding. The typo has been revised (Pages 3).

4: Eq. (1)

Equation (1) is poorly formulated. The second term of the equation on the left should represent the divergence and not the gradient of the product of the density and the velocity vector.

Authors' response:

We appreciate the reviewer's emphasis on this important point. The equation has been revised in Page 4.

5: Eqs (2)-(4)

The equations are formulated incorrectly. Please check carefully in the source entry (Versteeg & Malalasekera) how the momentum equations for the gas phase should be formulated.

Moreover, modeling gas-solid mixture flows in CFB boilers uses completely different equations. If the authors used a multiphase Eulerian flow model then it seems appropriate to provide the equations used in this particular model separately for the solid and gas phases rather than the general equations.

Authors' response:

Many thanks for your thoughtful and insightful remarks. We have been revised the equation as

per Versteeg & Malalasekera reference (Page 4).

6: Line 37

' k- ω SST turbulence model has advantages over other turbulence models' - Please write what

relevance this has to CFB boiler flow modelling.

Authors' response:

We would like to thank the reviewer for emphasizing on this point. We have added the explanation for the relevance as per Menter study (Page 4).

7: Line 43

' The standard k- ω model was developed into the k- ω SST turbulence model that has advantages over other turbulence models, according to a Menter study (Menter, 1993)' - this was written about early in line 39.

Authors' response:

We appreciate for the reviewer's finding. We have revised as per our review (Page 4).

8: Eqs (5) - (12)

Please check the correctness of the equations and provide source literature.

Authors' response:

With respect to this, we do concur with the referee. We have checked the equations and have added the literature source as per Menter formulation (Page 4).

9: Section 2.5

Since the paper is mainly devoted to modeling erosion, in Section 2.5 the authors should describe in detail how this phenomenon was modeled during simulation calculations.

Authors' response:

We appreciate the reviewer's emphasis on this point. We would like to clarify that in the current study, we only consider for the cause – effect of the erosion phenomenon that happens based on the availability of ring baffle. The calculations will be performed in the future study.

10: Line 58

' The process of modeling the geometry' - In CFD software, we don't model geometry, only flow phenomena

Authors' response:

We appreciate for the reviewer's finding. We have revised as per our review (Page 6).

11: Fig. 1

What do the designations A-F in Fig. 1a mean?

Authors' response:

Many thanks for your consideration. We have added the explanation for the inlet parts (Page 6).

12: ' As depicted in Figure 6, the grid Independence test was conducted on elements with the following sizes: 0.15 m, 0.2 m, 0.25 m, and 0.3 m' - this information is not apparent from Fig. 6.

Authors' response:

We want to thank the reviewer for the finding. We have updated the information in the Fig. 6 (Page 24).

13: Table 2

Please explain why the calculations were performed in a stationary state?

Authors' response:

We want to thank the reviewer for emphasizing on this point. Actually, we conducted the study in the transient state. We have described on page 7 about the time step and simulation time. Hence, we would like to apologize for the typo in Table 2.

14: Line 13

' In Table 2, the model solver is used' - ??

Authors' response:

We want to thank the reviewer for the finding. We have added that the solver model using pressure based. This model has been described in Table 2 as well.

15: Table 3

From the data presented in Table 3, it appears that calculations were made for a single particle diameter. Please explain why such a large simplification was used. In the CFB boilers, monofractional beds are never encountered in practice.

Authors' response:

Many thanks for your consideration. We would like to clarify that the current study is focused on the ring baffle geometry that gives the impact to the erosion phenomenon. We understand that the bed material never using the monofractional type in real life. It should be brings up in the future study for multifractional beds, especially with consideration of the erosion study.

16: Table 4

Please explain how the distribution of primary air in the combustion chamber was modeled? What type of grate is used in the boiler and how was it modeled in the calculations?

Authors' response:

We want to thank the reviewer for emphasizing on this point. Unfortunately, our reference paper did not give us such data to perform the calculation. Our reference did not model the combustion, only the hydrodynamics phenomenon.

17: Line 29

' Simulations that have been executed must be compared to simulations that have been executed

in the same conditions in the past.' - Validation of the results obtained should be based on experimental rather than computational results, which may be subject to errors.

Authors' response:

We want to thank the reviewer for emphasizing on this point. Currently, we only perform the simulation study. For the experimental data, we need an access to the CFB Boiler that our reference paper used to conduct the study, but it is impossible to access and to modify the baffle

as well.

18: Line 45-46

' The distribution of pressure is a measurable parameter that can be measured

experimentally. However, running variations in experiments requires a great deal of time and money.' - Measurement of the pressure distribution in the boiler combustion chamber is one of

the most important process parameters. Therefore, the results of measuring this parameter can

be obtained directly from the boiler DCS.

Authors' response:

We want to thank the reviewer for the further consideration. As per Clarification No. 17, it is impossible to access the CFB Boiler that has been used for the previous study. We need to make sure that the boiler still exist and did not have revamped after the previous study. On the

other side, the modification for adding the ring baffle will be the consideration for the time and money as well.

19: Line 51

'have the same distribution' - at most have a similar qualitative distribution but by no means quantitative. In addition, the authors should make calculations of the pressure drop without bulk material in the boiler combustion chamber and then with bulk material. This would make it possible to determine the effect of the introduced geometry changes on the overall pressure drop.

Authors' response:

We want to thank the reviewer for the further consideration. As per Clarification No. 15, we will perform the pressure drop calculation in the future study.

20: Line 1

'the smallest of all variations' - Based on the data shown in Figure 8, this conclusion cannot be verified. Please use a different scale so that the individual lines are separated.

Authors' response:

We want to thank the reviewer for emphasizing on this point. We want to clarify that 'the smallest' means the pressure drop. The point shape on the line gives the better guidance to trace graph.

Author Response Revision 2

Dear Editor,

Thank you for giving us the opportunity to submit a revised draft of the manuscript "Effect of Ring Baffle on Erosion in Circulating Fluidized Bed Boiler" for publication in the Cogent Engineering. We appreciate the time and effort that you and the reviewers dedicated to providing feedback on our manuscript and are grateful for the insightful comments on and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Those changes are highlighted (in yellow) within the manuscript. Please see below, in blue, for a point-by-point response to the reviewers' comments and concerns. All page numbers refer to the revised manuscript file.

1: Section 2.5

Since the paper is mainly devoted to modeling erosion, in Section 2.5 the authors should describe in detail how this phenomenon was modeled during simulation calculations.

If no model for calculating erosion was used in the work, please indicate this clearly in the content and add a note that the erosion distribution is estimated based on the pressure distribution on the walls of the boiler's circulation contour.

Authors' response :

We appreciate the reviewer's consideration. We have added the note on the Section 2.3 as per previous Author response (Page 5).

2: Table 3

From the data presented in Table 3, it appears that calculations were made for a single particle diameter. Please explain why such a large simplification was used. In the CFB boilers, monofractional beds are never encountered in practice.

The use of monofraction particulate material in calculations is a great simplification. Therefore, please explain to the readers convincingly why this type of simplification was chosen in the research.

Authors' response :

We want to thank the reviewer for emphasizing on this point. We would like to clarify that the current study is focused on the ring baffle geometry that gives the impact to the erosion phenomenon. We understand that the bed material never using the monofractional type in real

life. It should be brought up in the future study for multifractional beds, especially with consideration of the erosion study.

We have added the explanation in the Section 3.2 (Page 7).

3: Table 4

Please explain how the distribution of primary air in the combustion chamber was modeled? What type of air distributor is used in the boiler and how was it modeled in the calculations?

The air distributor plays a very important role in modeling the hydrodynamics of bulk material in CFB boilers. Therefore, the authors should explain what type of air distributor was used and how its geometry was modeled.

Authors' response:

Many thanks for your consideration. We have added the explanation for the air distributor type is mass flow type. The inlet is modelled using round pipe shape and the air is injected normal to pipe boundary (Page 7).

Lampiran 6



Cogent Engineering www.ariessys.com >
Dari: em@editorialmanager.com
Kepada: Tony Utomo

Kam, 19 Okt 2023 jam 19.07 ☆

Ref: COGENTENG-2023-0231R3
233493094
EFFECT OF RING BAFFLE ON EROSION IN CIRCULATING FLUIDIZED BED BOILER
Cogent Engineering

Dear Tony Utomo,

I am pleased to tell you that your work was accepted for publication in Cogent Engineering on Oct 19, 2023.

Please note: only minor, or typographical changes can be introduced during typesetting and proofing of your manuscript. Major changes to your manuscript will not be permitted.

For your information, comments from the Editor and Reviewers can be found below if available, and you will have an opportunity to make minor changes at proof stage.

Your article will be published under the Creative Commons Attribution license (CC-BY 4.0), ensuring that your work will be freely accessible by all. Your article will also be shareable and adaptable by anyone as long as the user gives appropriate credit, provides a link to the license, and indicates if changes were made.

Once the version of record (VoR) of your article has been published in Cogent Engineering, please feel free to deposit a copy in your institutional repository.

Thank you for submitting your work to this journal, and we hope that you will consider us for your future submissions.

Best wishes

D T Pham
Editor-in-Chief
Cogent Engineering

Comments from the Editors and Reviewers:



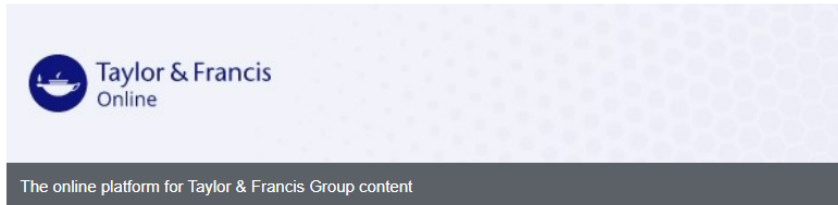
← Show this widget in your own website

Just copy the code below and paste within your html code:

```
<a href="https://www.scimagojr.com" data-bbox="423 650 640 667">
```

 info@tandfonline.com tandfonline.com >
Dari: info@tandfonline.com
Kepada: msktonysu@yahoo.co.id

Kam, 2 Nov 2023 jam 18.57 ☆



[Author Services](#) | [FAQ](#) | [Twitter](#) | [Facebook](#) | [LinkedIn](#)

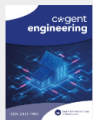
Dear M.S.K. Tony Suryo Utomo,

Your Open Access article, [Effect of ring baffle on erosion in circulating fluidized bed boiler](#), published in Cogent Engineering, [Volume 10 Issue 2](#), is now available to access via tandfonline.com.

Share your article now

You'll hopefully want to share your article with friends or colleagues (and then check its downloads, citations and Altmetric data on [Authored Works](#), our dedicated center for all Cogent OA published authors). Publishing Open Access means your article can be read by anyone, anywhere, and we want to work with you to ensure it reaches as wide (and as appropriate) an audience as possible.

Cogent OA



Cogent Engineering >
Volume 10, 2023 - Issue 2

[Submit an article](#) [Journal homepage](#)

Enter keywords, authors, DOI, etc

339

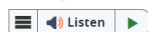
Views

1

CrossRef
citations to date

0

Altmetric



MECHANICAL ENGINEERING

Effect of ring baffle on erosion in circulating fluidized bed boiler

M.S.K. Tony Suryo Utomo ✉ Ir. Eflita Yohana, Bramantya Krisna, M. Farkhan Dwinanda, Mohammad Tauviqirrahman & Kwang-Hwan Choi

Article: 2274534 | Received 06 Apr 2023, Accepted 19 Oct 2023, Published online: 02 Nov 2023

[Cite this article](#) <https://doi.org/10.1080/23311916.2023.2274534> [Check for updates](#)

[Full Article](#) [Figures & data](#) [References](#) [Citations](#) [Metrics](#) [Licensing](#) [Reprints & Permissions](#)

[View PDF](#) [View EPUB](#)


In this article

[Abstract](#)

[1. Introduction](#)

Abstract

Because a variety of fuels can be burned during the combustion process, CFB boilers have a very wide range of applications in real food processing plants. The uneven distribution of flow velocity

Formulae display: 

Related research

[People also read](#)

[Thermal dynamics of](#)