Dear Editor,
Thank you again for your letter on our manuscript. We would like to thank the reviewers for their constructive remarks. The manuscript has been improved accordingly. In the text we used track changes for the addition/revision of the manuscript. Following, we wrote in the font style of yellow for the answer of the reviewer.

Comments from the Editors and Reviewers:

Reviewer 1: Yes

Title, Abstract and Introduction - overall evaluation
Reviewer 1: Sound with minor or moderate revisions
Response:

Yes we had amended

Methodology / Materials and Methods – overall evaluation
Reviewer 1: Sound with minor or moderate revisions

Response:

Yes we had amended

Objective / Hypothesis – overall evaluation
Reviewer 1: Sound
Response:

Yes we had amended

Figures and Tables – overall evaluation
Reviewer 1: Sound with minor or moderate revisions

Response:

Yes we had amended

Results / Data Analysis – overall evaluation
Reviewer 1: Sound with minor or moderate revisions

Response:

Yes we had amended

Interpretation / Discussion – overall evaluation
Reviewer 1: Sound

Response:

Yes we had amended

Conclusions – overall evaluation
Reviewer 1: Sound

References – overall evaluation
Reviewer 1: Sound
Response:

Yes we had amended

Compliance with Ethical Standards – overall evaluation
Reviewer 1: Sound
Response:

Yes we had amended

Writing – overall evaluation
Reviewer 1: Sound

Response:

Yes we had amended

Supplemental Information and Data – overall evaluation
Reviewer 1: Not applicable

Comments to the author

Reviewer 1: Manuscript Number: COGENTENG-2022-0029 Manuscript Title: Crystallization of struvite in the presence of calcium ions: change in reaction rate, morphology and chemical composition

Reviewer's comments

The authors performed a detailed research study on the Crystallization of struvite in the presence of calcium ions: change in reaction rate, morphology and chemical composition. The study revealed the impact of calcium ions on crystallization kinetics, mineralogical phases, and morphology. The introduction was clearly written with no ambiguity and the research study explained the proposed subject. However, there are some minor corrections and modifications that the authors should consider before publication.

Minor comments

Kindly revise the first paragraph of the abstract "Struvite and struvite-(K) precipitated from an aqueous solution in the absence and presence of calcium ions was investigated for an understanding of simultaneous recovery of ammonium, phosphorus, and potassium in wastewater treatment"

Response:

Yes we had amended

Page 9: Line 177: Line 192: kindly adjust the subscript and superscript of chemical compounds

Response:

Yes we had amended

Can the authors run a control experiment just with Mg+, changing its concentration while noting its corresponding change in pH? This is to check if changes in Mg+ cause a corresponding decline in pH keeping other process conditions constant. There must be a linear correlation to validate [Mg2+] = [H+] (Line 241).

Response
In fact, struvite precipitation is mainly under control by pH, initial relative MAP concentrations, and other corresponding ions of such Ca. Specifically, pH is regarded as a key aspect to control struvite crystallization (shape, morphology, and purity). Accordingly, the present kinetic experiments were relied on the change of pH that could be related to the decreased Mg2+ concentration at the ambient temperature and at a constant stirring speed of 200 rpm with varying Ca- concentrations.

What exactly is represented in Fig. 1a? Is it the concentration of Ca2+ at 0, 1, 10, and 20 ppm? If so, then was Mg included? Kindly state the necessary reaction parameters under the figure caption such as [MgCl (amount); Ca2+ (0, 1, 10, and 20 ppm); …]. For ease of clarity with error bars.

Response:
Yes, we had added MgCl in the amount of 175 mM in the figure 1 caption.

Fig. 1. is very confusing …. The reviewer understands that…Fig. 2 is Struvite crystallization in the absence of Ca and Fig. 3 is Struvite crystallization in the presence of Ca. Can you please explain the reason for Fig. 1?

Response:
Fig 1 presents data of kinetic analysis for the observed pH change against an initial fixed ratio MAP of 1:1: 1 concentration at which varying concentrations of Ca influencing the Mg ionic concentrations during struvite crystallization was investigated. Accordingly, we had added comments in figures 1 and 2 captions.

Figure 4a, 4b, and Fig.5: can the authors make the names in the images more legible, the names in the images are too small.

Response:
Yes we had amended accordingly

Page 19: Line 440: the authors report "Mg/Ca ratio of 1:2"; while on Table 3 it was "Ca/Mg: 2" are they the same… if yes, kindly unify.
Response:
Yes we had amended accordingly

Page 19: Line 443-444: the reviewer aggress that "both EDX spectra have higher peaks of P, Ca, and O than Mg (Fig. 7b, c)." However, the reviewer observed that on the scale of the EDX spectra, the composition of Ca, P, Mg and O tends to increase as the Mg: Ca molar ratio was increased from 0.5 (Fig 7a) to 1 (Fig.7b). Whereas from the scale the composition decreased as the molar ratio was further increased to 2 (Fig 7c). Why?

Response:
Thank you for these constructive remarks. We conducted the EDX mapping analysis focused on a specific area localized on the SEM pictures. Their spectra and the specific distribution mapping of elements were presented in Figs. 7a,b,and c respectively. Under the Ca/Mg ratio of 1/2 or above on SEM-EDX analysis, another phase precipitates other than struvite crystal surfaces made the interaction with its formation and the absorption of Ca on the surface of struvite crystals. We revised Figures 7a, b, and c by changing the intensity scale to make a clear difference of morphology and their respective spectra.

Yes we had amended accordingly

For proper context… Fig 5a scale = 0 – 473; Fig 5b scale = 0 – 614, while Fig 5c scale = 0 – 1.3. Why did the composition of Ca, P, Mg and O decrease at higher Mg:Ca ratio? In addition, if possible, for the EDX horizontal (Energy-KeV) axis, kindly reduce it to 0 – 5.00.

Moreover, what is the dimensional caption and unit for the vertical axis in all the EDX spectrum?

Response:
Yes we had amended accordingly. We had replaced with new figures by reducing the scale.

Page 19: Line 446, Line 447, Page 21 (Line 504, Line 510): can you please stick to either using "Ca/Mg" or "Mg/Ca" kindly choose one of these and unify in the article.
Response:
Yes we had amended accordingly

Page 18: Fig.6: Kindly adjust the superscript of Ca
Response:
Yes we had amended accordingly

Reviewer 2: Yes

Title, Abstract and Introduction - overall evaluation
Reviewer 2: Sound
Response:
Yes we had amended accordingly

Methodology / Materials and Methods – overall evaluation
Reviewer 2: Sound
Response:
Yes we had amended accordingly

Objective / Hypothesis – overall evaluation
Reviewer 2: Sound
Response:
Yes we had amended accordingly

Figures and Tables – overall evaluation
Reviewer 2: Sound
Response:
Yes we had amended accordingly

Results / Data Analysis – overall evaluation
Reviewer 2: Sound with minor or moderate revisions
Response:
Yes we had amended accordingly

Interpretation / Discussion – overall evaluation

Reviewer 2: Sound with minor or moderate revisions
Response:
Yes we had amended accordingly

Conclusions – overall evaluation
Reviewer 2: Sound with minor or moderate revisions
Response:
Yes we had amended accordingly

References – overall evaluation
Reviewer 2: Sound with minor or moderate revisions
Response:
Yes we had amended accordingly

Compliance with Ethical Standards – overall evaluation
Reviewer 2: Sound
Response:
Yes we had amended accordingly

Writing – overall evaluation
Reviewer 2: Sound with minor or moderate revisions
Response:
Yes we had amended accordingly

Supplemental Information and Data – overall evaluation
Reviewer 2: Not applicable

Comments to the author
Reviewer 2: Abstract, introduction, experimental sections are well written and do not need any change. However following issues need to be addressed.
Response:
Yes we had amended accordingly. We had added the discussion section accordingly

* Results are needed to be compared with previously published works. The discussion of the deviations in findings should be added.
Response:
Yes we had amended accordingly. We had added the discussion section accordingly

* Results do not point to consideration of analysis of uncertainties of the data.
Response:
Yes we had amended accordingly

* What does this manuscript contribute to the field? How is it different than the currently available methods/techniques/findings? Answers of such questions in the discussion would be

great.
Response:
Yes we had amended accordingly. We added text in the discussion section

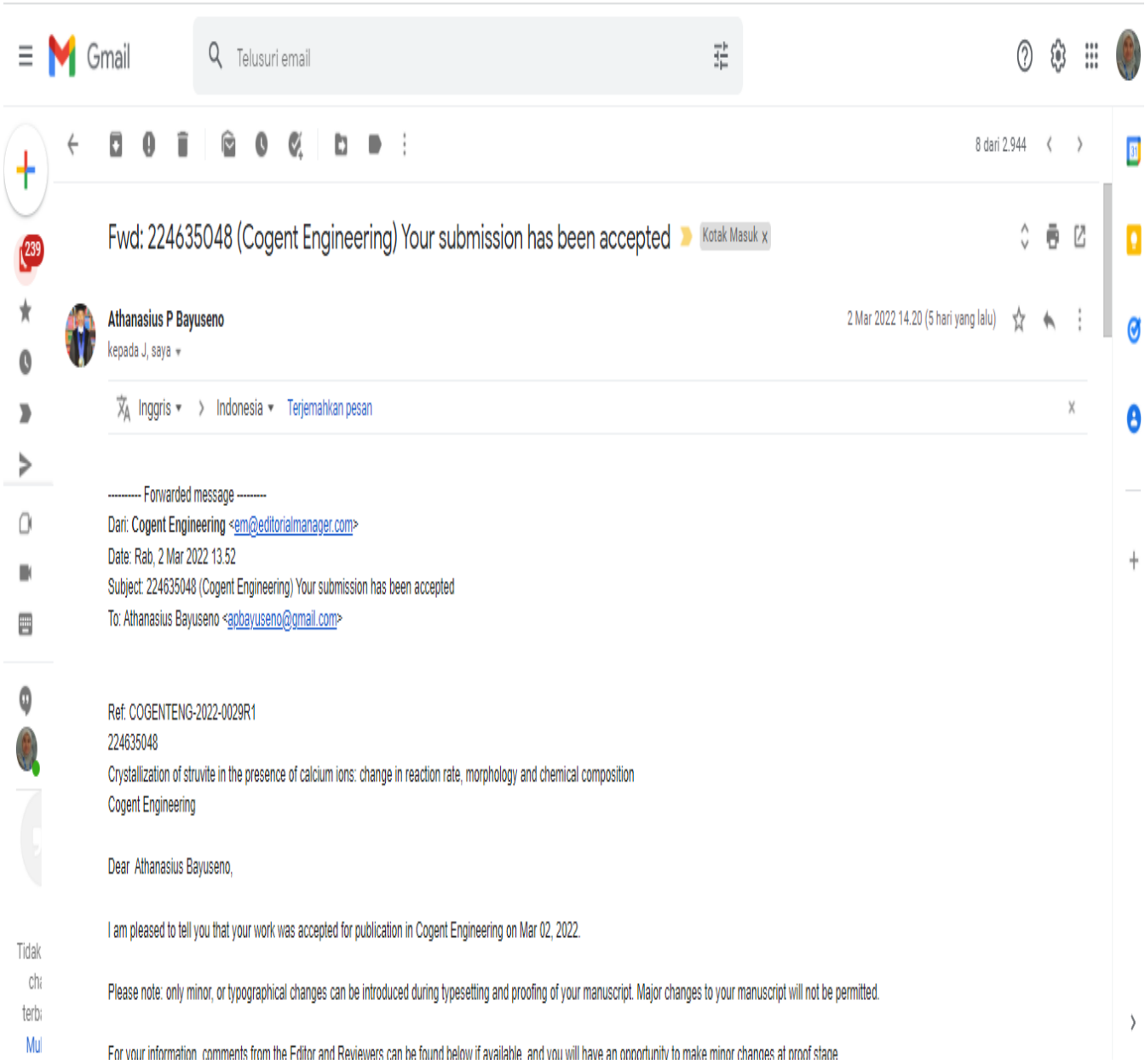
* There are several typos in the manuscript.
Response:
Yes we had amended accordingly

* Most conclusions look superficial due to the lack of strong support from the data/discussion. Final decision could be totally dependent upon how the results and discussion section is presented and concluded.
Response:
Yes we had amended accordingly. We had added the discussion section accordingly

All these issues should be resolved along with appropriate discussion added to related sections. A major revision may be helpful.

Response:
Yes we had amended accordingly. We had added the discussion section accordingly

Korespondensi



Gmail

Telusuri email

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Fwd: 224635048 (Cogent Engineering) Your submission has been accepted

Kotak Masuk x

Athanasius P Bayuseno

kepada J, saya

2 Mar 2022 14.20 (5 hari yang lalu)

Inggris › Indonesia Terjemahkan pesan

--------- Forwarded message ---------
Dari: **Cogent Engineering** <em@editorialmanager.com>
Date: Rab, 2 Mar 2022 13.52
Subject: 224635048 (Cogent Engineering) Your submission has been accepted
To: Athanasius Bayuseno <apbayuseno@gmail.com>

Ref: COGENTENG-2022-0029R1
224635048
Crystallization of struvite in the presence of calcium ions: change in reaction rate, morphology and chemical composition
Cogent Engineering

Dear Athanasius Bayuseno,

I am pleased to tell you that your work was accepted for publication in Cogent Engineering on Mar 02, 2022.

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

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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

Harvey Arellano-Garcia
Senior Editor
Cogent Engineering

Comments from the Editors and Reviewers:

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Reviewer 1: Yes

Title, Abstract and Introduction - overall evaluation