

## COVER LETTER

[Dessy Agustina Sari]  
[Universitas Singaperbangsa Karawang dan Universitas Diponegoro]  
[[dessy.agustina8@staff.unsika.ac.id](mailto:dessy.agustina8@staff.unsika.ac.id)]  
[0899 220 4787]

[April, 11 2024]

Dear,

We wish to submit an original research article entitled “[**Characterization of  $H_3PO_4$ -activated *Eichhornia crassipes* Bioadsorbent for Removal of Lead Ion ( $Pb^{2+}$ ) in Wastewater of Battery Industry**]” for consideration by SINERGI.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. We promise not to withdraw this article after it has been processed by the Editorial Team. If there is a withdrawal, we are willing to pay a penalty of USD 150 (IDR 2000K) to the SINERGI Editorial Team.

In this paper, we report on / show that:

Field	:	Chemical Engineering
Topic	:	Process engineering – heavy metals in the environment (industrial and municipal waste management)
Brief Background	:	The development of the battery industry has increased the discharge of battery wastewater, containing harmful metals like manganese (Mn), lead (Pb), cadmium (Cd), and lithium (Li). Among these, lead is particularly toxic, causing severe health issues in marine life and humans, including anemia, nervous system damage, reduced immune function, nausea, and kidney damage. There's a critical need for effective methods to reduce $Pb^{2+}$ ions in wastewater before it's discharged into the environment.
Research Problem	:	Traditional methods for reducing $Pb^{2+}$ concentration in wastewater—like precipitation, ion exchange, filtration, and membrane techniques—face limitations such as low efficiency, stringent operating conditions, and high costs. The study focuses on exploring an efficient, cost-effective alternative using bioadsorbents, particularly water hyacinth ( <i>Eichhornia crassipes</i> ), activated with $H_3PO_4$ , for adsorbing $Pb^{2+}$ ions from battery industry wastewater.

Overview of Method	:	The study utilized water hyacinth, activated with a 1.2 M $H_3PO_4$ solution, to create a bioadsorbent for the adsorption of $Pb^{2+}$ ions. The process involved collecting water hyacinth, pre-treating, drying, and activating it with $H_3PO_4$ . The activated bioadsorbent was then tested for its ability to adsorb $Pb^{2+}$ ions from artificial battery industry wastewater. Fourier Transform Infrared (FT-IR) spectroscopy and Atomic Absorption Spectrophotometry (AAS) were employed to characterize the bioadsorbent and analyze the adsorption efficiency, respectively.
Significant finding	:	The activated water hyacinth bioadsorbent demonstrated significant effectiveness in reducing $Pb^{2+}$ ion content from the artificial wastewater, with an adsorption percentage of 96.928%. The FT-IR analysis revealed changes in the bioadsorbent's functional groups post-activation, indicating delignification and the formation of functional groups conducive to $Pb^{2+}$ ion adsorption. The study concludes that $H_3PO_4$ -activated water hyacinth bioadsorbent can serve as an alternative, efficient wastewater treatment method for removing $Pb^{2+}$ ions, potentially addressing the environmental challenges posed by battery industry wastewater.

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.

Sincerely,

[*Dessy Agustina Sari*]



## AUTHORSHIP STATEMENT

We wish to submit an original research article entitled “[**Characterization of  $H_3PO_4$ -activated *Eichhornia crassipes* Bioadsorbent for Removal of Lead Ion ( $Pb^{2+}$ ) in Wastewater of Battery Industry**]” for consideration by SINERGI.

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

<b>Author 1</b>	
Name	: Reza Erlangga
Affiliation	: Universitas Singaperbangsa Karawang
Email Address	: 2010631230048@student.unsika.ac.id
<b>Author 2</b>	
Name	: Dessy Agustina Sari
Affiliation	: Universitas Singaperbangsa Karawang dan Universitas Diponegoro
Email Address	: dessy.agustina8@staff.unsika.ac.id
<b>Author 3</b>	
Name	: Aulia Wahyuningtyas
Affiliation	: Universitas Singaperbangsa Karawang
Email Address	: aulia.wahyuningtyas@ft.unsika.ac.id

## POTENTIAL REVIEWERS

Please submit 3 (three) potential reviewers (*that have not listed in SINERGI*) to speed up the review process that competent for the topic and has a good reputation in that area.

<b>Reviewer 1</b>	:	
Name	:	Anita Dewi Moelyaningrum
Affiliation	:	Universitas Jember
Email Address	:	anitadm@unej.ac.id
Scopus url	:	<a href="https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57200994090">https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57200994090</a>
Google Scholar url	:	<a href="https://scholar.google.co.id/citations?hl=id&amp;user=R_IvAv8AAAAJ">https://scholar.google.co.id/citations?hl=id&amp;user=R_IvAv8AAAAJ</a>
<b>Reviewer 2</b>	:	
Name	:	Roslinda Ibrahim
Affiliation	:	Universitas Hasanuddin
Email Address	:	rosindaibrahim@unhas.ac.id
Scopus url	:	<a href="https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57196456677">https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57196456677</a>
Google Scholar url	:	<a href="https://scholar.google.co.id/citations?view_op=list_works&amp;hl=id&amp;hl=id&amp;user=AYCEiUUAAAAJ">https://scholar.google.co.id/citations?view_op=list_works&amp;hl=id&amp;hl=id&amp;user=AYCEiUUAAAAJ</a>
<b>Reviewer 3</b>	:	
Name	:	Gani Purwiandono
Affiliation	:	Universitas Islam Indonesia
Email Address	:	gani_purwiandono@uii.ac.id
Scopus url	:	<a href="https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57156629800">https://www-scopus-com.proxy.undip.ac.id/authid/detail.uri?authorId=57156629800</a>
Google Scholar url	:	<a href="https://scholar.google.co.id/citations?hl=id&amp;user=gNxopa8AAAAJ">https://scholar.google.co.id/citations?hl=id&amp;user=gNxopa8AAAAJ</a>