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Analytical and Bioanalytical Electrochemistry

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#	Manuscript ID	Manuscript Type	Manuscript Title	Submit Date	Current Status	Modify Date	Manuscript Main File	Email	Withdraw
1	ABEC2020-2009-1092	Original Article	PREPARATION AND CHARACTERIZATION OF ION SELECTIVE ELECTRODE Pb(II) BASED ON DITHIZONE AS CHEMICAL SENSOR	2020-09-10	Manuscript Handled by Technical Editor	2020-09-19			

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Acknowledgement of Submission (#ABEC2020-2009-1092)

Sep 10, 2020 at 6:12 PM

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Analytical and Bioanalytical Electrochemistry <journal@iranjournals.ir>

To: amanspanggabean@yahoo.com

Cc: abechem@gmail.com

Manuscript ID: ABEC2020-2009-1092

Manuscript Title: **PREPARATION AND CHARACTERIZATION OF ION SELECTIVE ELECTRODE Pb(II) BASED ON DITHIZONE AS CHEMICAL SENSOR**

Authors: Aman Panggabean

Dear **Dr. Aman Sentosa Panggabean**

This is to acknowledge receiving the above mentioned manuscript.

The manuscript will be reviewed for possible publication in the Scientific Journal Management System.

Please be sure that the submitted manuscript has not been published previously and will not be submitted elsewhere prior to our decision.

Our editorial decision will be brought to your attention once the paper has been reviewed by referees considerations.

Thank you for choosing ABEC to present your work.

Best regards,

Editorial Team of **Analytical and Bioanalytical Electrochemistry**

The screenshot shows a web browser window with the address bar displaying 'https://www.abechem.com/author?_action=info&manuscript=136240'. The page content includes a table with the following information:

Main Subjects	Potentiometry - Offered Subjects : Ion Selective Electrode
Abstract	The research on the preparation and characterization of Pb ²⁺ Ion Selective Electrode (ISE) using dithizone (DTZ) as ion carrier has been done. Membrane of ISE was made with the optimum composition with ratio of DTZ : PVC : DOP was 6 : 3 : 1. The membrane was doped using 1M Pb ²⁺ solution within 7 days, and characterized using FT-IR to determine the shift of wave number from the spectrum of the group from membrane before and after doped. The results of characterization of FT-IR spectra of membrane after doped, shows that there is a shift of wave number from absorption spectra of secondary amine (N-H) group and absorption spectra of thiol (S-H) group didn't appear. The result of characterization of Pb ²⁺ ISE shows that ISE worked well with range concentration of 1×10 ⁻⁴ - 1×10 ⁻¹ M, with Nernst slope was 29.5 mV/decade and the limit of detection was 1.5×10 ⁻⁴ M. The electrode worked optimally at pH 5, the response time was 9-48 seconds and can be used within 6 weeks. The presence of interfere ions, such as Ag ⁺ , Zn ²⁺ , Cu ²⁺ , Cd ²⁺ , Cl ⁻ and SO ₄ ²⁻ didn't affect to the determination of Pb ²⁺ ions in the samples.
Keywords	ISE, PVC, Membrane, Dithizone, Pb ²⁺ , Nernstian slope.
Submit Date	2020-09-10 14:42:41
Revise Date	2021-12-03 08:19:39
Accept Date	2021-12-31
View Published Article	Volume 13, Issue 3 https://www.abechem.com/article_248523.html
Author's Comment	Hopely can be published in this journal.
Comments for Author	
Current Status	Manuscript Published (Online)
Modify Date	2022-01-01 01:17:57

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Manuscript Needs Major Revision (#ABEC2020-2009-1092 (R1))

Nov 19, 2021 at 7:33 PM

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Manuscript ID: ABEC2020-2009-1092

Manuscript Title: **PREPARATION AND CHARACTERIZATION OF ION SELECTIVE ELECTRODE Pb(II) BASED ON DITHIZONE AS CHEMICAL SENSOR**

Authors: Aman Panggabean

Dear **Dr. Aman Sentosa Panggabean**

Evaluation process of the above mentioned manuscript has been done. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended Major Revisions. In this case we normally treat it as unacceptable for publication. However, as numerous editorial errors have pointed out by the reviewers, the **Analytical and Bioanalytical Electrochemistry** editor believes that the manuscript could be rectified and prepare for possible publication.

Therefore, I invite you to respond to the reviewer(s) comments and revise your manuscript as soon as possible.

Because we are trying to facilitate timely publication of manuscripts submitted to journal, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time (3 weeks), we may have to consider your paper as a new submission.

Best regards,

Editorial Team of **Analytical and Bioanalytical Electrochemistry**

Reviewer 1

The manuscript explains a lead ion selective electrode based on a DITHIZONE a sensing material. As literature survey shows this compound are also utilized in spectroscopic determination of lead ions.

Although the authors done many experimental tests, the presented data and written text is a little bit weak. So, the manuscript needs a serious revising then it will be considered again.

The comments which should be addressed are as follow:

1- The research highlight or novelty of this work should be compared with previous reported lead potentiometric sensors. In term of linear range, detection limit, or even selectivity it seems a weaker work. The authors should explain more about superiority of their work in introduction.

2- Why there is a need to such a lead ISE?

3- The Kf of dithizone and lead is a too for potentiometric sensor, how the authors explain it? Such Kf causes a long response time!

4- It would be better chemical structure of Dithizone and its complexation with lead is provided.

5- Why was the interference of anions such as chloride and sulphate studied? If anions are important why some of cations were used in form of acetate and some nitrate or chloride! It would be better the same anions used in all case.

6- The interference of lead ions is generally Hg and Ag. Why did they not be studied?

7- Condition time 7 days!!!! It too long!!!! Maximum 24h is acceptable. Such time affect the reusability of the electrode.

8- Why internal solution was filled with $\text{Pb}(\text{NO}_3)_2$ 1 M, firstly it would be better PbCl_2 to interact with internal reference electrode and then the concentration of too high and potential drift during low concentration due to the diffusion occurred. May be due to this procedure the detection limit could not goes to lower amount.

9- Where is the cell assembly? It should be provided.

10- "The equipment used in this research are beaker glass, volumetric pipet, dropper, cylinder, volumetric flask, funnel" these are not instrument which the authors stated in instrumentation part!!!!!! They are general lab tools which should be removed from the text! Instead, the type and model of other used instruments or apparatus should be stated. Especially the type of reference electrode and working electrode.

11- "...The membrane Pb^{2+} -DTZ was affixed with glue to the electrode ..." which kind of electrode?!!! Which type of ISE was used?

12- How the authors optimized the membrane compositions?

13- Which plasticizer were used or why?

14- Fig. 1 is unclear. High resolution figure should be provided.

15- Fig. 2 is not presented scientifically! The guide lines should be removed. Why two linear range is shown!!!! Why just 4 concentrations in linear range are shown!!!? More concentration should be tested for a precis curve.

16- Fig. 3 is wrong. Due to the used concentration and the Ksp of $\text{Pb}(\text{OH})_2$ it is not possible to have Pb^{2+} ions in alkaline pH even in pH 6!!!! Explanation is too weak.

17- Fig. 4 is also not reported in scientific presentation. Delete guide lines and change the scale to see the difference better. Also Fig. 5, change the scale of Y axis.

18- There is no real sample analysis!!!! It should be provided.

19- Accuracy of the proposed sensor should be tested by a reference method.

20- Figures of merit, error bars, standard deviation and validity of the electrode are not reported such as reproducibility, repeatability and ...

21- Conclusion is too weak!!!

22- The references list is too old. There are many newer works in recent years which the authors did not consider them. They should be updated.

23- A comparison table should be provided.

24- And the last the English of the text should be revised carefully. Some examples of grammatically errors or badly worded: "ISE Pb²⁺" should be "the Pb²⁺ ISE" or "Nernstian factor" should be "Nernstian slope" or "membranes was removed" should be "membranes were removed" or "membrane DTZ" should be "membrane contained DTZ".

Response to Reviewer

Title of Manuscript : PREPARATION AND CHARACTERIZATION OF Pb(II) ION SELECTIVE ELECTRODE BASED ON DITHIZONE AS CHEMICAL SENSOR

We have corrected several things that have been requested by reviewers to be improved in our manuscript :

1. Several Journal and literature has been added in the introduction to reinforce why Pb²⁺ ISE was conducted.
2. Chemical structure of Dithizone and its complexation with lead has been added in the result and discussion at fig. 2.
3. Ag⁺ has been used as interference ion of Pb²⁺ ISE.
4. The graphic scale in Fig. 2 and Fig. 3 has been fixed.
5. In this study, real sample analysis was not carried out, only characterizes the Pb²⁺ ESI made whether it is suitable to be used as an alternative as analysis method for determination Pb²⁺ in the samples.
6. The conclusions in this article are adjusted to the aims and results of this research.
7. Some examples of grammatically errors: "ISE Pb²⁺" should be "the Pb²⁺ ISE" or "Nernstian factor" should be "Nernstian slope" or "membranes was removed" should be "membranes were removed" or "membrane DTZ" should be "membrane contained DTZ", has been corrected.

Thanks for your attention,

Aman Sentosa Panggabean

Acknowledgement of Revision (#ABEC2020-2009-1092 (R1))

Dec 3, 2021 at 12:49 PM

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Analytical and Bioanalytical Electrochemistry <no-reply@sinaweb.net>

To: amanspanggabean@yahoo.com

Cc: abechem@gmail.com

Manuscript ID: ABEC2020-2009-1092 (R1)

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Authors: Aman Panggabean

Date: 2020-09-10

Dear **Dr. Aman Sentosa Panggabean**

Thank you for submitting the revised file of your manuscript to the **Analytical and Bioanalytical Electrochemistry**

The Editorial Office will proceed on your manuscript and inform you in the earliest time.

If there is anything else, please do not hesitate to contact us.

Truly yours,

Executive Managing Director of **Analytical and Bioanalytical Electrochemistry**

Scientific Acceptation of Manuscript (#ABEC2020-2009-1092 (R1))

Dec 29, 2021 at 6:37 PM

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Manuscript ID: ABEC2020-2009-1092 (R1)

Manuscript Title: **PREPARATION AND CHARACTERIZATION OF Pb(II) ION SELECTIVE ELECTRODE BASED ON DITHIZONE AS CHEMICAL SENSOR**

Authors: Aman Panggabean

Dear **Dr. Aman Sentosa Panggabean**

I am pleased to inform you that after technical and peer-review evaluations, the above mentioned manuscript has been **accepted** for publication in the journal of **Analytical and Bioanalytical Electrochemistry**.

The proof of your manuscript will be sent to you soon for a final check.

Best regards,

Mohammad Reza Ganjali

Editor-in-Chief of **Analytical and Bioanalytical Electrochemistry**

Review the proofs of your article in Analytical and Bioanalytical Electrochemistry (#ABEC2020-2009-1092 (R1))

Dec 31, 2021 at 11:39 PM

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Manuscript Title: **PREPARATION AND CHARACTERIZATION OF Pb(II) ION SELECTIVE ELECTRODE BASED ON DITHIZONE AS CHEMICAL SENSOR**

Authors: Aman Panggabean

Dear **Dr. Aman Sentosa Panggabean,**

We are pleased to inform you that your paper is nearing publication. The page proof is ready and attached.

Please check it carefully and send us any corrections and responses to the queries (if any) or your approval to publish the article without change within 2 days.

If there is no query and your confirmation are not received on time, we assume that you have not any correction and the proof will be published as it is.

Please note that once we receive your corrections or confirmation, your article is considered finalized and further amendments are no longer possible.

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We hope you are pleased with the publication.

Best regards,

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Authors: Aman Panggabean

Submit Date: 10 September 2020

Accept Date: 31 December 2021

Prof. Mohammad Reza Ganjali

Editor-in-Chief of Analytical and Bioanalytical Electrochemistry

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