



cheetahphon official <nnsyarif@gmail.com>

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## Reviewers' report: jESE 6638246

2 messages

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**Prof. Sasha Omanovic - McGill University** <editorso@jese-online.org>

Sat, Sep 22, 2012 at 6:45 AM

To: nnsyarif@gmail.com

Journal of Electrochemical Science and Engineering – jESE

J. Electrochem. Sci. Eng.

Open Access Journal

ISSN: 1847-9286

September 21, 2012

Sasha Omanovic, Editor

McGill University

Department of Chemical Engineering

Montreal, Quebec, Canada

E-mail: [EditorSO@JESE-online.org](mailto:EditorSO@JESE-online.org)

Ref. No. jESE 6638246

Dear Dr. Syarif,

Thank you for being interested in publishing your paper in the Journal of Electrochemical Science and Engineering.

Your manuscript entitled "Binderless Activated Carbon Electrode from Gelam Wood for Use in Supercapacitor" has been evaluated by two referees. Their reports are enclosed below.

Please consider the suggested changes. The corrected manuscript, together with description of changes you made, should be returned within 30 days. Manuscripts received after this period of time will be considered as a new submission.

Sincerely yours,

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**REVIEWER 1:**

**\* Specific comments**

|  | <b>Yes</b> | <b>No</b> |
|--|------------|-----------|
| Does the manuscript contain enough significant original material?                  | X          |           |
| Is the manuscript clearly and concisely written?                                   | X          |           |
| Are the conclusions adequately supported by the data?                              | X          |           |
| Does the manuscript give appropriate credit to related recent publications?        |            | X         |
| Are the references appropriate and free of important omissions?                    |            | X         |
| Is the length of the manuscript appropriate?                                       | X          |           |
| Does the manuscript need condensation or extension?                                | X          |           |
| Is the quality of the figures (including legends and axes labelling) satisfactory? | X          |           |
| Are the nomenclature and units in accordance with SI?                              | X          |           |
| Are the English grammar and syntax satisfactory?                                   |            | X         |

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**\* General Assessment of the Manuscript**

|   | <b>exelent</b> | <b>good</b> | <b>average</b> | <b>correct</b> | <b>weak</b> |
|---|----------------|-------------|----------------|----------------|-------------|
| Originality                                   |                |             | X              |                |             |
| Contribution to the field of electrochemistry |                |             |                | X              |             |
| Organisation of material                      |                |             | X              |                |             |
| Clarity of presentation                       | X              |             |                |                |             |
| Grammar and spelling                          |                |             |                |                | X           |

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**\* REPORT**

The article provides a useful comparison of three methods to prepare activated carbon materials for use as supercapacitors. The aim of the study is to develop a material that does not include an additional binding agent, with the potential benefit of keeping the resistance of the activated carbon to a minimum, and this aim is clearly presented in the paper. The novelty of using gelam wood as a carbon source is also established.

As a full research paper, it would be beneficial not to “briefly” describe the electrode preparation (3rd line of the Experimental section), but to provide full details of the important steps involved. This would include the experimental details for the preparation of the nitric acid and high pressure steam samples, including exposure times, temperatures, and any measures taken to monitor the processes.

In the presentation of the data for the surface areas and capacitance values (Table 1), some comparison with values obtained with other carbon electrodes from the literature should be provided. While comparisons are made between the three materials formed in the present study, there is no indication whether the values are obtained are all much higher, lower or similar to values obtained in previous research.

The voltammetric scans (Figures 3 and 4) also confirm differences between the samples, but again comparisons with past studies, and references to support the statements made on page 8, are needed. References are also needed for the statement made in the second paragraph of page 7 about computational studies on the effects of –COOH functional groups, and graphene surfaces – is there any evidence that graphene has been formed in the present study?

The manuscript is in need of revision of the English presentation, in places, for example, “focuses” and “processes” are needed in the first line of the abstract, rather than “focus” and “process”. For the description of the electrochemical measurement on page 3, a phrase such as “using a three electrode configuration” is needed rather than “in three electrodes configuration potentiostat”. At the same time full details of the potentiostat used in the experiments should be supplied.

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**\* In my opinion, this manuscript should**

- be published as is  
 be published after language correction by the author(s)  
 be published after professional language editing  
 be published after minor revision without additional review  
 be published after major revision and additional review  
 not be published for the reasons indicated above

**REVIEWER 2:**

**\* Specific comments**

|  | <b>Yes</b> | <b>No</b> |
|--|------------|-----------|
| Does the manuscript contain enough significant original material?                  | X          |           |
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| Are the conclusions adequately supported by the data?                              | X          |           |
| Does the manuscript give appropriate credit to related recent publications?        | X          |           |
| Are the references appropriate and free of important omissions?                    | X          |           |
| Is the length of the manuscript appropriate?                                       | X          |           |
| Does the manuscript need condensation or extension?                                |            | X         |
| Is the quality of the figures (including legends and axes labelling) satisfactory? | X          |           |
| Are the nomenclature and units in accordance with SI?                              | X          |           |
| Are the English grammar and syntax satisfactory?                                   | X          |           |

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| Contribution to the field of electrochemistry |                |             |                |                | X           |
| Organisation of material                      |                |             | X              |                |             |
| Clarity of presentation                       |                |             | X              |                |             |
| Grammar and spelling                          |                |             | X              |                |             |

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**\* REPORT**

The manuscript analyzes the relations between the porous structure and the capacitive process in activated carbon, by using three different types of activated carbon monoliths. The paper is well-written, contains original data and the conclusions are clearly formulated, so I recommend its publication after some minor corrections.

Page 3. For Boehm titration, the reference 15 could be replaced with the original article of Boehm: H.P. Boehm, Carbon 32(5), 1994, 759-769.

Page 4, 2nd paragraph: Figure 2 is cited in the text before Figure 1.

Page 5, Figure 1. The magnification of Fig. 1c should be the same with that of Figs. 1a and 1b, in order to better compare the three structures.

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The discrete points for the capacitance should be presented on Figs. 5 and 6.

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**Nirwan Syarif** <nnsyarif@gmail.com>

Sat, Oct 20, 2012 at 12:18 PM

To: "Prof. Sasha Omanovic - McGill University" <editorso@jese-online.org>

Cc: nirwansyarif@gmail.com

Dear Prof. Sasha Omanovic.

I have improved our manuscript, mainly based on correction made by the reviewers. So send you corrected manuscript in the attachment.

Many correction have been made especially revision of the English representation, deleted unnecessary and added important explanation.

Below, the description of changes/correction I made.

For Reviewer I (Made major revision)

Provide details explanation of activated carbon preparation and oxidation steps

Added the comparative data in Table 1 and two explanation sentences.

Use graphite layer in the explanation of computational study instead of graphene, because graphite layer do exist in such activated carbon.

Added reference in Figure 3 explanation

Add details of potentiostat experimentation.

For Reviewer II

Replace the reference with the original

Replace SEM Image with the same magnification

Place discrete point in new adding Figure (Figure 6C)

Thanks for your help.

Nirwan Syarif

On 9/22/12, Prof. Sasha Omanovic - McGill University

<editorso@jese-online.org> wrote:

> Journal of Electrochemical Science and Engineering -- jESE

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> J. Electrochem. Sci. Eng.  
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> Open Access Journal  
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> ISSN:1847-9286  
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> Sasha Omanovic, Editor  
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> McGill University  
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> Department of Chemical Engineering  
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> Montreal, Quebec, Canada  
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> Sasha Omanovic  
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> -----  
> \*REVIEWER 1:\*
>  
> \*\* \*Specific comments\*\*  
> Yes No  
> \*Does the manuscript contain enough significant original material?\* \*X\*  
> \*Is the manuscript clearly and concisely written?\* \*X\*  
> \*Are the conclusions adequately supported by the data?\* \*X\*  
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> \*Are the English grammar and syntax satisfactory?\* \*X\*  
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> \*\* General Assessment of the Manuscript\*  
> exelent good average correct weak

- > \*Originality\* \*X\*
- > \*Contribution to the field of electrochemistry\* \*X\*
- > \*Organisation of material\* \*X\*
- > \*Clarity of presentation\* \*X\*
- > \*Grammar and spelling\* \*X\*

> -----

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> The article provides a useful comparison of three methods to prepare activated carbon materials for use as supercapacitors. The aim of the study is to develop a material that does not include an additional binding agent, with the potential benefit of keeping the resistance of the activated carbon to a minimum, and this aim is clearly presented in the paper. The novelty of using gelam wood as a carbon source is also established.

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> **\*REVIEWER 2:\***

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- > **\*\* Specific comments\*\***
- > Yes No
- > \*Does the manuscript contain enough significant original material?\* \*X\*
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[Quoted text hidden]



**BINDERLESS ACTIVATED CARBON by Nirwan Oct 2012.doc**

787K