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32nd International Conference on Diamond and Carbon Materials (ICDCM)

Submission ID

165

Title (required)

Synthesis, Characterization and Hydrogen storage application of an Activated Carbon derived from orange peels waste

Abstract (required)

The recovery and reuse of orange peel waste (OP) is a sustainable strategy in a circular economy. In this research, OP was used as the raw material for the preparation of a novel carbonaceous nanomaterial to be used in the adsorption of hydrogen as an alternative in the use of green hydrogen. Activated carbons were synthesized from orange peel using different synthesis conditions. The activation of the carbon was carried out by means of a chemical process with phosphoric acid as activating agent, varying the the activating agent/precursor ratio, and the contact time between them. The activating agent used is a solution of phosphoric acid (50 wt %) in different weight ratios of acid/precursor of 3:1 or 6:1, with resting time of 24 hours. The best support was obtained using a carbonization time of 1 h, a carbonization temperature of 470^oC, 6:1 precursor/acid ratio and 24 hours of resting time. According XRD analysis all samples present amorphous structure of activated carbons with BET surface areas of 1000 to 1400 m²/g. With the activated carbons obtained with the best structure and texture, the adsorption of hydrogen and the effects on their meso / microporosity were studied. Said material significantly improved H₂ storage behaviour compared to CMK-3 type nanostructured carbon (3.1% by weight at -196,15 °C and 10 bar). The synthesized material shows promise in absorbing hydrogen by weak binding forces (physisorption).

App (required)

Yes

Author Approval (required)

I confirm that this submission has been approved by all authors

I confirm that I have copyright permission to use any images included within this submission, including the abstract and any subsequent paper, poster or presentation.

Authors and Affiliations (required)

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Presenter gender identity (required)

Woman

Categories (required)

Other

Other category

Activated Carbon

Sub Category (required)

Applications and devices: Energy applications



Juliana Juarez <julijuarez@gmail.com>

Poster Acceptance Letter - 32nd International Conference on Diamond and Carbon Materials (ICDCM)

Content-DIAM2022 <Content-DIAM2022@elsevier.com>

25 de mayo de 2022, 14:12

Para: "juarez@frc.utn.edu.ar" <jjuarez@frc.utn.edu.ar>

**Poster acceptance letter****Abstract reference no.: DIAM2022_0165 (Please quote in all correspondence)**

25 May 2022

Dear Juliana Maria Juarez,

Thank you for submitting a paper to present at the 32nd International Conference on Diamond and Carbon Materials (ICDCM). On behalf of the Organising Committee, I am delighted to inform you that your abstract titled **'Synthesis, Characterization and Hydrogen storage application of an Activated Carbon derived from orange peels waste'**, has been accepted for **Poster presentation**. Abstracts of an extremely high standard were submitted to the conference and we believe we have selected an excellent mix of abstracts to address the conference themes. We very much look forward to your presentation.

The details of your presentation are as follows:

Title:	Synthesis, Characterization and Hydrogen storage application of an Activated Carbon derivated from orange peels waste
Authors:	Juliana Maria Juarez, Brenda Cecilia Ledesma, Oscar A Anunziata, Marcos B Gomez Costa, Andrea R Beltramone
Presenting Author:	Juliana Maria Juarez

Please check the above details of your presentation carefully as all conference material will be printed with this information. If there are any corrections, please inform me as soon as possible.

Poster Presentations

You will be informed of your session date, time and poster number in due course.

Please bookmark the conference website <https://www.elsevier.com/events/conferences/international-conference-on-diamond-and-carbon-materials/about> to keep up-to-date with changes as they occur.

It is a condition of abstract acceptance that you or a nominated presenting co-author registers for the conference by the **author registration deadline of 10 June 2022.**

The abstracts of all unregistered presenters will not be included in the programme after this date. Should the addressee above not be the nominated presenter, please inform me of the name and email address of the presenter immediately Content-DIAM2022@elsevier.com

To register to attend the conference, please follow this link: <https://conferences.elsevier.com/DIAM2022>

Registration is available online using a credit card. Information about registration rates, inclusions, payment methods are available [here](#).

Multiple papers

If you have had more than one paper accepted for the conference, and you will be the presenting author of more than one paper (this does not apply if you are a co-author), you must register to attend, and pay an additional paper fee for each additional paper (i.e., for the 2nd, 3rd, 4th papers – not the 1st). **The cost is €50 per additional paper.** Please select the additional item during the registration process and indicate all of your abstract reference numbers when prompted.

All authors will be responsible for their own travel and accommodation expenses.

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Cancellation information:

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Accommodation

Rooms have been reserved at the conference hotel at specially negotiated rates for use by delegates.

To book and for more details please access the accommodation page on the website: <https://www.elsevier.com/events/conferences/international-conference-on-diamond-and-carbon-materials/location/accommodation>

Conference Publications

Upon arrival at the conference all delegates will receive a programme overview. Prior to the conference all delegates will be sent a link to a secure online system, to access to the programme, all accepted abstracts, speaker biographies and other detailed conference information.

In addition to presenting your poster at the conference in person, we will give attendees online access to all posters 1 week prior to the conference. These will then remain in the platform for conference attendees to access during, and after the conference. This will give participants further opportunity to review the work presented at the conference.

Oral presentations will also be available to conference attendees via the platform (the day after the conference).

We ask that all poster authors upload a pdf of their poster and make a short 2 minute video pitch about their work, that can then be viewed by attendees at their leisure

Details on how to upload the files and make the recording in our platform will be shared with you.

SSRN

If you would like to include your abstract within SSRN, please kindly log back into Oxford Abstracts and grant permission. You will be notified by SSRN when your abstract is live in the platform, and with details of how to add more information to your record if you wish. Immediately after the conference, your poster PDF will be added to the SSRN record.

Please do not hesitate to contact me if you have any queries and I look forward to receiving your completed registration.

Kind regards,

Jafar Ali Meera Mohideen

Conference Co-Ordinator

32nd International Conference on Diamond and Carbon Materials (ICDCM)

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