

< Back to results | 1 of 2 Next >

Export Download Print E-mail Save to PDF Add to List More... >

[Full Text](#) View at Publisher

AIP Conference Proceedings
Volume 2068, 6 February 2019, Article number 020009
International Conference on X-Rays and Related Techniques in Research and Industry 2018,
ICXRI 2018; Grand Riverview Hotel Kota Bharu, Kelantan; Malaysia; 18 August 2018 through 19
August 2018; Code 144871

Mechanism of carbon deposition within char derived from oil palm empty fruit bunch (Conference Paper)

Rozhan, A.N.^a , Hairin, A.L.N.^a , Salleh, H.M.^b, Purwanto, H.^a

^aDepartment of Manufacturing and Materials, Kulliyah of Engineering, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, 50728, Malaysia

^bInternational Institute of Halal Research and Training, International Islamic University Malaysia, P.O. Box 10, Kuala Lumpur, 50728, Malaysia

Abstract

View references (16)

This paper describes the reaction mechanism to deposit pyrolytic carbon within porous body of char derived from oil palm empty fruit bunch (EFB) via an integrated pyrolysis-tar decomposition process, which employs chemical vapor infiltration method. This process was developed to produce a value-added EFB-derived char and to make EFB able to be utilized as a supplementary solid biofuel. The product, namely carbon-deposited char, was characterized in comparison with metallurgical coke breeze used in iron-steel industry. © 2019 Author(s).

SciVal Topic Prominence

Topic: Pyrolysis | Soil amendment | Biochar amendment

Prominence percentile: 99.968

ISSN: 0094243X

ISBN: 978-073541796-0

Source Type: Conference Proceeding

Original language: English

DOI: 10.1063/1.5089308

Document Type: Conference Paper

Volume Editors: Ahmad Z.A., Mohamed J.J., Sulaiman M.A.

Publisher: American Institute of Physics Inc.

References (16)

[View in search results format >](#)

All Export Print E-mail Save to PDF Create bibliography

- 1 Du, S.-W., Chen, W.-H., Lucas, J.A.
Pretreatment of biomass by torrefaction and carbonization for coal blend used in pulverized coal injection

(2014) *Bioresource Technology*, 161, pp. 333-339. Cited 78 times.

www.elsevier.com/locate/biortech

doi: 10.1016/j.biortech.2014.03.090

[View at Publisher](#)

Metrics



PlumX Metrics

Usage, Captures, Mentions,
Social Media and Citations
beyond Scopus.

Cited by 0 documents

Inform me when this document
is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents

Enhancement of oil palm empty
fruit bunch char by impregnation
of pyrolytic carbon from tar vapor
decomposition

Rozhan, A.N. , Cahyono, R.B. ,
Nomura, T.
(2016) *Journal of Renewable and
Sustainable Energy*

New technology for biochar
production from oil palm empty
fruit bunch

Rozhan, A.N. , Mohd. Salleh, H. ,
Purwanto, H.
(2016) *ARPJ Journal of
Engineering and Applied
Sciences*

Bioleaching of heavy metal from
woody biochar using
Acidithiobacillus ferrooxidans and
activation for adsorption

Wang, B. , Li, C. , Liang, H.
(2013) *Bioresource Technology*

[View all related documents based
on references](#)

[Find more related documents in
Scopus based on:](#)

[Authors >](#)

- 2 Rousset, P., Aguiar, C., Labbé, N., Commandré, J.-M.
Enhancing the combustible properties of bamboo by torrefaction
(2011) *Bioresource Technology*, 102 (17), pp. 8225-8231. Cited 143 times.
doi: 10.1016/j.biortech.2011.05.093
[View at Publisher](#)
-
- 3 Xie, H., Yu, Q., Qin, Q., Zhang, H., Fu, X.
Bio-oil production by fast pyrolysis from agriculture residue in northeastern China
(2013) *Journal of Renewable and Sustainable Energy*, 5 (1), art. no. 013103. Cited 13 times.
doi: 10.1063/1.4773827
[View at Publisher](#)
-
- 4 Khare, P., Goyal, D.K.
Effect of high and low rank char on soil quality and carbon sequestration
(2013) *Ecological Engineering*, 52, pp. 161-166. Cited 18 times.
doi: 10.1016/j.ecoleng.2012.12.101
[View at Publisher](#)
-
- 5 McHenry, M.P.
Agricultural bio-char production, renewable energy generation and farm carbon sequestration in Western Australia: Certainty, uncertainty and risk
(2009) *Agriculture, Ecosystems and Environment*, 129 (1-3), pp. 1-7. Cited 132 times.
doi: 10.1016/j.agee.2008.08.006
[View at Publisher](#)
-
- 6 Karhu, K., Mattila, T., Bergström, I., Regina, K.
Biochar addition to agricultural soil increased CH₄ uptake and water holding capacity - Results from a short-term pilot field study
(2011) *Agriculture, Ecosystems and Environment*, 140 (1-2), pp. 309-313. Cited 403 times.
doi: 10.1016/j.agee.2010.12.005
[View at Publisher](#)
-
- 7 Peake, L.R., Reid, B.J., Tang, X.
Quantifying the influence of biochar on the physical and hydrological properties of dissimilar soils
(2014) *Geoderma*, 235-236, pp. 182-190. Cited 50 times.
www.elsevier.com/inca/publications/store/5/0/3/3/3/2
doi: 10.1016/j.geoderma.2014.07.002
[View at Publisher](#)
-
- 8 Sahu, S.G., Sarkar, P., Chakraborty, N., Adak, A.K.
Thermogravimetric assessment of combustion characteristics of blends of a coal with different biomass chars
(2010) *Fuel Processing Technology*, 91 (3), pp. 369-378. Cited 109 times.
doi: 10.1016/j.fuproc.2009.12.001
[View at Publisher](#)
-

- 9 Dehkoda, A.M., Ellis, N.
Biochar-based catalyst for simultaneous reactions of esterification and transesterification
(2013) *Catalysis Today*, 207, pp. 86-92. Cited 46 times.
doi: 10.1016/j.cattod.2012.05.034
[View at Publisher](#)
-
- 10 Wang, Y., Hu, X., Song, Y., Min, Z., Mourant, D., Li, T., Gunawan, R., (...), Li, C.-Z.
Catalytic steam reforming of cellulose-derived compounds using a char-supported iron catalyst
(2013) *Fuel Processing Technology*, 116, pp. 234-240. Cited 39 times.
doi: 10.1016/j.fuproc.2013.07.014
[View at Publisher](#)
-
- 11 Hosokai, S., Kumabe, K., Ohshita, M., Norinaga, K., Li, C.-Z., Hayashi, J.-i.
Mechanism of decomposition of aromatics over charcoal and necessary condition for maintaining its activity
(2008) *Fuel*, 87 (13-14), pp. 2914-2922. Cited 92 times.
doi: 10.1016/j.fuel.2008.04.019
[View at Publisher](#)
-
- 12 Rozhan, A.N., Ani, M.H., Salleh, H.M., Akiyama, T., Purwanto, H.
Development of carbon-infiltrated bio-char from oil palm empty fruit bunch
([Open Access](#))
(2015) *ISIJ International*, 55 (2), pp. 436-440. Cited 2 times.
https://www.jstage.jst.go.jp/article/isijinternational/55/2/55_436/_pdf
doi: 10.2355/isijinternational.55.436
[View at Publisher](#)
-
- 13 Almeshrky, H.A., Ab Aziz, M.J.
Arabic Malay machine translation for a dialogue system ([Open Access](#))
(2012) *Journal of Applied Sciences*, 12 (13), pp. 1371-1377. Cited 4 times.
<http://scialert.net/qredirect.php?doi=jas.2012.1371.1377&linkid=pdf>
doi: 10.3923/jas.2012.1371.1377
[View at Publisher](#)
-
- 14 Akhtar, J., Idris, A., Teo, C.L., Lai, L.W., Hassan, N., Khan, M.I.
(2014) *Int. J. Adv. Chem. Eng. Biol. Sci.*, 1, pp. 155-157. Cited 4 times.
-
- 15 Okoroigwe, E.C., Saffron, C.M., Kamdem, P.D.
(2014) *J. Chem. Eng. Mater. Sci.*, 5, pp. 1-6. Cited 15 times.
-
- 16 Do, T.X., Lim, Y.-I., Yeo, H.
Techno-economic analysis of biooil production process from palm empty fruit bunches
(2014) *Energy Conversion and Management*, 80, pp. 525-534. Cited 18 times.
doi: 10.1016/j.enconman.2014.01.024
[View at Publisher](#)

About Scopus

[What is Scopus](#)
[Content coverage](#)
[Scopus blog](#)
[Scopus API](#)
[Privacy matters](#)

Language

[日本語に切り替える](#)
[切换到简体中文](#)
[切换到繁體中文](#)
[Русский язык](#)

Customer Service

[Help](#)
[Contact us](#)

ELSEVIER

[Terms and conditions ↗](#) [Privacy policy ↗](#)

Copyright © Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies.

 RELX