



DAFTAR PUSTAKA

- Amaral, S.S., de Carvalho, J.A., Costa, M.A.M., Pinheiro, C., 2016. Particulate matter emission factors for biomass combustion. *Atmosphere* (Basel). <https://doi.org/10.3390/atmos7110141>
- Anca-Couce, A., Archan, G., Buchmayr, M., Essl, M., Hochenauer, C., Scharler, R., 2021. Modelling fuel flexibility in fixed-bed biomass conversion with a low primary air ratio in an updraft configuration. *Fuel* 296. <https://doi.org/10.1016/j.fuel.2021.120687>
- Archon, G., Anca-Couce, A., Gregorc, J., Buchmayr, M., Hochenauer, C., Gruber, J., Scharler, R., 2020. Detailed experimental investigation of the spatially distributed gas release and bed temperatures in fixed-bed biomass combustion with low oxygen concentration. *Biomass Bioenergy* 141. <https://doi.org/10.1016/j.biombioe.2020.105725>
- Badan Pengkajian dan Penerapan Teknologi (BPPT). (2021). OUTLOOK ENERGI INDONESIA 2021 Perspektif Teknologi Energi Indonesia: Tenaga Surya untuk Penyediaan Energi Charging Station. In Pusat Pengkajian Industri Proses dan Energi (PPIPE) Badan Pengkajian dan Penerapan Teknologi (BPPT).
- Balakrishnan, K., Ramaswamy, P., Sambandam, S., Thangavel, G., Ghosh, S., Johnson, P., Mukhopadhyay, K., Venugopal, V., Thanasekaraan, V., 2011. Air pollution from household solid fuel combustion in India: an overview of exposure and health related information to inform health research priorities. *Glob Health Action*. <https://doi.org/10.3402/gha.v4i0.5638>
- Balat, M., 2008. Mechanisms of thermochemical biomass conversion processes. Part 1: reactions of pyrolysis. *Energy Sources, Part A*, 30(7), pp.620-635. <https://doi.org/10.1080/15567030600817258>
- Bennetzen, E.H., Smith, P., Porter, J.R., 2016. Decoupling of greenhouse gas emissions from global agricultural production: 1970-2050. *Glob Chang Biol* 22, 763–781. <https://doi.org/10.1111/gcb.13120>
- Cengel, Y. A., & Boles, M. a., 2015. Thermodynamics An Engineering Approach 8th. In McGraw-Hill Education (Eighth, Vol. 8, Issue 1). <https://doi.org/10.1007/bf03041311>
- Cochran, E.A., Park, D.H., Kast, M.G., Enman, L.J., Perkins, C.K., Mansergh, R.H., Keszler, D.A., Johnson, D.W. and Boettcher, S.W., 2017. Role of combustion chemistry in low-temperature deposition of metal oxide thin films from solution. *Chemistry of Materials*, 29(21), pp.9480-9488. <https://doi.org/10.1021/acs.chemmater.7b03618>
- Crutzen, P. J., Andreae, M. O., 1990. Biomass Burning in the Tropics: Impact on Atmospheric Chemistry and Biogeochemical Cycles. Departments of



Atmospheric Chemistry and Biogeochemistry, Max Planck Institute for Chemistry (Germany). 1669-1677. DOI: 10.1126/science.250.4988.1669

Damoe, A.J., Jensen, P.A., Frandsen, F.J., Wu, H., Glarborg, P., 2017. Fly ash formation during suspension firing of biomass: Effects of residence time and fuel type. Energy and Fuels 31, 555–570.
<https://doi.org/10.1021/acs.energyfuels.6b02051>

Demirbas, A., 2007. Combustion of biomass. Energy Sources, Part A: Recovery, Utilization and Environmental Effects 29, 549–561.
<https://doi.org/10.1080/009083190957694>

Fuhaid, N., 2011. Pengaruh medan magnet terhadap konsumsi bahan bakar dan kinerja motor bakar bensin jenis Daihatsu Hijet 1000. Proton, 3(2).

Gartina, D., Sukriya, L.L, 2020. Statistik Perkebunan Unggulan Nasional 2019-2021. Direktorat Jenderal Perkebunan Kementerian Pertanian Republik Indonesia.

Gay, R. (1982). Le système international d'unités. In Annales francaises d'anesthésie et de reanimation (8th ed., Vol. 1, Issue 1).
https://doi.org/10.1007/1-4020-0613-6_10096

Greenstone, G., Fan, Q., 2019. Kualitas Udara Indonesia yang Memburuk dan Dampaknya terhadap Harapan Hidup. Air Quality Life Index

Gunarathne, D.S., Mueller, A., Fleck, S., Kolb, T., Chmielewski, J.K., Yang, W. and Blasiak, W., 2014. Gasification characteristics of hydrothermal carbonized biomass in an updraft pilot-scale gasifier. Energy & fuels, 28(3), pp.1992-2002. <https://doi.org/10.1021/ef402342e>

Houshfar, E., Skreiberg, Ø., Løvås, T., Todorović, D., Sørum, L., 2011. Effect of excess air ratio and temperature on NOx emission from grate combustion of biomass in the staged air combustion scenario. Energy and Fuels 25, 4643–4654. <https://doi.org/10.1021/ef200714d>

Kažimírová, V., Opáth, R., 2016. Biomass combustion emissions. Research in Agricultural Engineering 62, S61–S65. <https://doi.org/10.17221/69/2015-RAE>

Lackner, M., Palotás, Á. B., & Winter, F. (2013). Combustion: From basics to applications. In Combustion: From Basics to Applications.
<https://doi.org/10.1002/9783527667185>

Law, R. M., Peters, W., Rödenbeck, C., Aulagnier, C., Baker, I., Bergmann, D. J., Zhu, Z. (2008). TransCom model simulations of hourly atmospheric CO₂: Experimental overview and diurnal cycle results for 2002. Global Biogeochemical Cycles, 22(3). doi:10.1029/2007gb003050



- Le Blond, J. S., Woskie, S., Horwell, C. J., & Williamson, B. J. (2017). Particulate matter produced during commercial sugarcane harvesting and processing: A respiratory health hazard? *Atmospheric Environment*, 149, 34–46. doi:10.1016/j.atmosenv.2016.11.01
- Mandø, M., 2013. Direct combustion of biomass, in: Biomass Combustion Science, Technology and Engineering. Elsevier Inc., pp. 61–83. <https://doi.org/10.1533/9780857097439.2.61>
- Menghini, D., Marra, F.S., Allouis, C., Beretta, F., 2008. Effect of excess air on the optimization of heating appliances for biomass combustion. *Exp Therm Fluid Sci* 32, 1371–1380. <https://doi.org/10.1016/j.expthermflusci.2007.11.018>
- Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia. (2019). Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor P.15/Menlhk/Setjen/Kum.1/4/2019 Tentang Baku Mutu Emisi Pembangkit Listrik Tenaga Termal
- Nasution, M., 2022. Bahan Bakar Merupakan Sumber Energi Yang Sangat Diperlukan Dalam Kehidupan Sehari Hari. *Journal of Electrical Technology*, Vol 7, No. 1. ISSN : 2502 – 3624
- Nugraha, M.G., Mozasurya, E.D., Hidayat, M., Saptoadi, H., 2023. Evaluation of combustion characteristics in biomass residues open burning. *Mater Today Proc*. <https://doi.org/10.1016/j.matpr.2023.02.098>
- Nussbaumer, T., 2003. Combustion and Co-combustion of Biomass: Fundamentals, Technologies, and Primary Measures for Emission Reduction. *Energy and Fuels* 17, 1510–1521. <https://doi.org/10.1021/ef030031q>
- Othaman, M.F., Sabudin, S., Batcha, M.F.M., 2017. Emission studies from combustion of empty fruit bunch pellets in a fluidized bed combustor, in: IOP Conference Series: Materials Science and Engineering. Institute of Physics Publishing. <https://doi.org/10.1088/1757-899X/226/1/012003>
- Pérez-Orozco, R., Patiño, D., Porteiro, J., Míguez, J.L., 2020. Novel test bench for the active reduction of biomass particulate matter emissions. *Sustainability* (Switzerland) 12. <https://doi.org/10.3390/SU12010422>
- Puspitasari, G. A., Sari, K. E., Utomo, D. M., 2018. JEJAK KARBON DARI SUMBER TIDAK BERGERAK PADA PERUMAHAN KECAMATAN WARU KABUPATEN SIDOARJO. Planing for Urban Region and Environment. Vol 7. No 3. Pg 111-122. DOI: 10.13140/RG.2.2.17199.59041
- Respati, E., Musyafak, A., Susanti, A., Putra, R.K., 2020. Buku Outlook Komoditas Perkebunan. Pusat Data dan Sistem Informasi Pertanian Sekretariat Jenderal – Kementerian Pertanian 2020.
- Ryu, C., Yang, Y. Bin, Khor, A., Yates, N.E., Sharifi, V.N., Swithenbank, J., 2006. Effect of fuel properties on biomass combustion: Part I. Experiments -



Fuel type, equivalence ratio and particle size. Fuel 85, 1039–1046.
<https://doi.org/10.1016/j.fuel.2005.09.019>

Samlawi, A.K., 2017. Teknik Pembakaran. Banjarbaru: sn

Schell, L.M., Gallo, M. V., Denham, M., Ravenscroft, J., 2006. Effects of pollution on human growth and development: An introduction. J Physiol Anthropol. <https://doi.org/10.2114/jpa2.25.103>

Sehabudin, S., 2011. Penambatan Karbon Dioksida dan Pengaruh Densitas Alga Air Tawar (*Chlorella* sp.) terhadap Pengurangan Emisi Karbon Dioksida. Skripsi. Program Studi Kimia Fakultas Sains dan Teknologi. Universitas Islam Negeri Syarif Hidayatullah. Jakarta.

Sensirion. (2020). SPS 30 Particulate Matter Sensor For HVAC and air quality applications SPS 30 Particulate Matter Sensor.

Sojikyo. (2022). 30WP. <https://sojikyo.com/product/30wp/>

Viotto, R. S., Maia, A. A. D., Yamaji, F. M., & de Moraes, L. C. (2017). Thermogravimetric investigation of spent shiitake substrate to solid biofuel. The Canadian Journal of Chemical Engineering, 96(4), 845–854. doi:10.1002/cjce.23026

Weatherhead, E.C., Wielicki, B.A., Ramaswamy, V., Abbott, M., Ackerman, T.P., Atlas, R., Brasseur, G., Bruhwiler, L., Busalacchi, A.J., Butler, J.H. and Clack, C.T., 2018. Designing the climate observing system of the future. Earth's Future, 6(1), pp.80-102.

WHO European Centre for Environment and Health. 2021. WHO Global Air Quality Guidelines: Particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. World Health Organization (Bonn)

Yang, Y.B., Sharifi, V.N., Swithenbank, J., 2004. Effect of air flow rate and fuel moisture on the burning behaviours of biomass and simulated municipal solid wastes in packed beds, in: Fuel. pp. 1553–1562. <https://doi.org/10.1016/j.fuel.2004.01.016>

Yin, C., Rosendahl, L. A., & Kær, S. K. (2008). Grate-firing of biomass for heat and power production. Progress in Energy and Combustion Science, 34(6), 725–754. doi:10.1016/j.pecs.2008.05.002

Yoon, S.H., Kim, S.J., Baek, G.U., Moon, J.H., Jo, S.H., Park, S.J., Kim, J.Y., Yoon, S.J., Ra, H.W., Yoon, S.M., Lee, J.G., Kim, J.S., Mun, T.Y., 2023. Operational optimization of air staging and *flue gas* recirculation for NOx reduction in biomass circulating fluidized bed combustion. J Clean Prod 387. <https://doi.org/10.1016/j.jclepro.2023.135878>