

DAFTAR PUSTAKA

Ahmaruzzaman, M. (2011) 'Industrial wastes as low-cost potential adsorbents for the treatment of wastewater laden with heavy metals', *Advances in Colloid and Interface Science*. Elsevier B.V., 166(1–2), pp. 36–59. doi: 10.1016/j.cis.2011.04.005.

Ajit S. Narang and Sherif I.F. Badawy (eds) (2019) *Handbook of Pharmaceutical Wet Granulation, Handbook of Pharmaceutical Wet Granulation*. doi: 10.1016/b978-0-12-810460-6.09991-7.

Altair, N. M., Kabir, S. and Brameshuber, W. (2010) 'Palm Oil Fuel Ash (Pofa): an Environmentally-Friendly Supplemental Cementitious Material for Concrete Production', *International Rilem Conference on Material Science (Matsci), Vol Iii*, 77(October), pp. 113–126.

Badan Standardisasi Nasional (2014) 'SNI 2460:2014 Spesifikasi abu terbang batubara dan pozzolan alam mentah atau yang telah dikalsinasi untuk digunakan dalam beton', p. 16.

Basu, M. *et al.* (2009) 'Potential fly-ash utilization in agriculture: A global review', *Progress in Natural Science*. National Natural Science Foundation of China and Chinese Academy of Sciences, 19(10), pp. 1173–1186. doi: 10.1016/j.pnsc.2008.12.006.

Bethary, R. T. *et al.* (2021) 'The Evaluation of the use of Palm Shell Ash Waste to Polymer Modified Asphalt Mixture', *IOP Conference Series: Earth and Environmental Science*, 830(1). doi: 10.1088/1755-1315/830/1/012010.

Dimas, B. *et al.* (2016) 'Pengaruh Pemberian Magnesium, Boron dan Silikon terhadap Aktivitas Fisiologis, Kekuatan Struktural Jaringan Buah dan Hasil Pisang (*Musa acuminata*) "Raja Bulu"', *Vegetalika*, 5(4), pp. 1–14.

ditjenbun (2020) *Statistik Perkebunan Unggulan Nasional 2019-2021*.

Ditjenbun (2022) 'Direktoral Jenderal Perkebunan. 2020', *Statistik Perkebunan Indonesia*, 2020.

ditjenPPHP (2006) *Pedoman Pengelolaan Limbah Industri Kelapa Sawit*.

Donald V. Erickson and Eugene L. Palusky (1973) 'Bentonite Binder Composition', *United States Patent*, 4(75), pp. 58–61.

Du, J. *et al.* (2022) 'Utilization of off-specification fly ash in preparing ultra-high-performance concrete (UHPC): Mixture design, characterization, and life-cycle assessment', *Resources, Conservation and Recycling*. Elsevier B.V., 180(January), p. 106136. doi: 10.1016/j.resconrec.2021.106136.

Epstein, E. (1994) 'The anomaly of silicon in plant biology', *Proceedings of the National Academy of Sciences of the United States of America*, 91(1), pp. 11–17. doi: 10.1073/pnas.91.1.11.

Fauziah, M. and Febriansyah, H. (2013) 'Pemanfaatan Limbah Cangkang Kelapa Sawit Sebagai Bahan Tambah Untuk Meningkatkan Kekuatan Dan Keawetan Campuran Aspal Concrete Binder Course (AC-BC)'.

G.G.Brown (1950) *Unit Operation*. New York.

Halstead, W. J. (1986) 'Use of Fly Ash in Concrete.', *National Cooperative Highway Research Program, Synthesis of Highway Practice*, 96(Reapproved), pp. 1–34.

Haynes, R. J., Belyaeva, O. N. and Kingston, G. (2013) 'Evaluation of industrial wastes as sources of fertilizer silicon using chemical extractions and plant uptake', *Journal of Plant Nutrition and Soil Science*, 176(2), pp. 238–248. doi: 10.1002/jpln.201200372.

Houben, D., Sonnet, P. and Cornelis, J. T. (2014) 'Biochar from Miscanthus: A potential silicon fertilizer', *Plant and Soil*, 374(1–2), pp. 871–882. doi: 10.1007/s11104-013-1885-8.

Indonesia, P. (2021) 'Peraturan Pemerintah Nomor 22 Tahun 2021 tentang Pedoman Perlindungan dan Pengelolaan Lingkungan Hidup', *Sekretariat Negara Republik Indonesia*, 1(078487A), p. 483. Available at: <http://www.jdih.setjen.kemendagri.go.id/>.

Iveson, S. M. *et al.* (2001) 'Nucleation, growth and breakage phenomena in agitated wet granulation processes: A review', *Powder Technology*, 117(1–2), pp. 3–39. doi: 10.1016/S0032-5910(01)00313-8.

Jain, D. *et al.* (2022) 'Utilization of marble dust and fly ash in composite mortar as partial cement substitute', *Materials Today: Proceedings*. Elsevier Ltd, 60, pp. 181–186. doi: 10.1016/j.matpr.2021.12.301.

Jokhio, G. A. *et al.* (2020) 'Environmental benefits of incorporating palm oil fuel ash in cement concrete and cement mortar', *E3S Web of Conferences*, 158, pp. 1–6. doi: 10.1051/e3sconf/202015803005.

K.P. Hapgood, S.M. Iveson, J.D. Litster, L. X. L. (2007) 'Handbook of Powder Technology - Granulation', in A.D. Salman, M.J. Hounslow, J. P. K. S. (ed.) *Handbook of Powder Technology - Granulation Volume 11*. Elsevier Science B.V., pp. 897–977. doi: [https://doi.org/10.1016/S0167-3785\(07\)80055-8](https://doi.org/10.1016/S0167-3785(07)80055-8).

Li, J. *et al.* (2014) 'Synthesis of merlinoite from Chinese coal fly ashes and its potential utilization as slow release K-fertilizer', *Journal of Hazardous Materials*. Elsevier B.V., 265, pp. 242–252. doi: 10.1016/j.jhazmat.2013.11.063.

Li, X. *et al.* (2016) 'Characterization, swelling and slow-release properties of a new controlled release fertilizer based on wheat straw cellulose hydrogel', *Journal of the Taiwan Institute of Chemical Engineers*. Elsevier B.V., 60, pp. 564–572. doi: 10.1016/j.jtice.2015.10.027.

Litster, J. and Ennis, B. (2004) *The Science and Engineering of Granulation Processes*. Springer Netherlands. doi: 10.1007/978-94-017-0546-2.

Litster, J. and Ennis, B. (2013) *The Science and Engineering of Granulation Processes*. Edited by L. Liu. Springer Netherlands. doi: 10.1007/978-94-017-0546-2.

Liu, J. *et al.* (2022) 'Resource utilization of municipal solid waste incineration fly ash - cement and alkali-activated cementitious materials: A review', *Science of the Total Environment*. Elsevier B.V., 852(June), p. 158254. doi: 10.1016/j.scitotenv.2022.158254.

Makarim, A. K. (2007) 'Silikon: Hara Penting pada Sistem Produksi Padi', *Iptek Tanaman Pangan*, 2(2), pp. 195–204.

Mattigod, S. V. *et al.* (1990) 'Geochemical Factors Controlling the Mobilization of Inorganic Constituents from Fossil Fuel Combustion Residues: II. Review of the Minor

Elements', *Journal of Environmental Quality*, 19(2), pp. 202–214. doi: 10.2134/jeq1990.00472425001900020005x.

Mirković, K., Tošić, N. and Mladenović, G. (2019) 'Effect of Different Types of Fly Ash on Properties of Asphalt Mixtures', *Advances in Civil Engineering*, 2019. doi: 10.1155/2019/8107264.

Mistry, R. and Roy, T. K. (2016) 'Effect of using fly ash as alternative filler in hot mix asphalt', *Perspectives in Science*. Elsevier GmbH, 8, pp. 307–309. doi: 10.1016/j.pisc.2016.04.061.

Narang, A. S. and Badawy, S. I. F. (2019) *Handbook of Pharmaceutical Wet Granulation*, *Handbook of Pharmaceutical Wet Granulation*. doi: 10.1016/b978-0-12-810460-6.09991-7.

Obraniak, A., Orczykowska, M. and Olejnik, T. P. (2019) 'The effects of viscoelastic properties of the wetting liquid on the kinetics of the disc granulation process', *Powder Technology*. Elsevier B.V., 342, pp. 328–334. doi: 10.1016/j.powtec.2018.09.081.

Ozga, M. and Borowski, G. (2018) 'The use of granulation to reduce dusting and manage of fine coal', *Journal of Ecological Engineering*, 19(3), pp. 218–224. doi: 10.12911/22998993/89794.

Pamungkas, R. B. *et al.* (2020) 'Granulation processing variables on the physical properties of granule slow release urea fertilizer', *AIP Conference Proceedings*, 2197(January). doi: 10.1063/1.5140952.

Pemerintah Indonesia (2001) 'PERATURAN PEMERINTAH REPUBLIK INDONESIA NOMOR 8 TAHUN 2001 TENTANG PUPUK BUDIDAYA TANAMAN PRESIDEN', 7(2).

Permentan (2017) 'Pupuk Organik, Pupuk Hayati Dan Pembenah Tanah', *Journal of Chemical Information and Modeling*, 53(9), pp. 21–25. Available at: <http://www.elsevier.com/locate/scp>.

Permentan (2018) *Persyaratan Teknis Minimal Pupuk An-Organik*.

Perry, R. H., Green, D. W. and Maloney, J. O. (1999) *Perry's chemical engineers' handbook Seventh Edition*, McGraw Hill.

PT. PLN (Persero) (2019) 'Electric Power Supply Business Plan (2019-2028)', pp. 2019–2028. Available at: http://gatrik.esdm.go.id/assets/uploads/download_index/files/5b16d-kepmen-esdm-no.-39-k-20-mem-2019-tentang-pengesahan-ruptl-pt-pln-2019-2028.pdf.

Purnomo, C. W. *et al.* (2017) 'Slow release fertiliser production from poultry manure', *Chemical Engineering Transactions*, 56, pp. 1531–1536. doi: 10.3303/CET1756256.

Rahmanian, N., Naji, A. and Ghadiri, M. (2011) 'Effects of process parameters on granules properties produced in a high shear granulator', *Chemical Engineering Research and Design*, 89(5), pp. 512–518. doi: 10.1016/j.cherd.2010.10.021.

Rhodes, M. (2008) *Introduction to Particle Technology*.

Shaheen, S. M., Hooda, P. S. and Tsadilas, C. D. (2014) 'Opportunities and challenges in the use of coal fly ash for soil improvements - A review', *Journal of Environmental Management*. Elsevier Ltd, 145, pp. 249–267. doi: 10.1016/j.jenvman.2014.07.005.

- Simarmata, T. and Setiawati, M. R. (2021) 'A method for production of pure silica as fertilizer from industrial waste material A method for production of pure silica as fertilizer from industrial waste material'. doi: 10.1088/1755-1315/648/1/012213.
- Siregar, A. and Annisa, W. (2020) 'Ameliorasi Berbasis Unsur Hara Silika di Lahan Rawa', *Jurnal Sumberdaya Lahan*, 14(1), p. 37. doi: 10.21082/jsdl.v14n1.2020.37-47.
- Siregar, A. F. *et al.* (2016) 'Empirical Study on Effect of Silicon Application on Rice Blast Disease and Plant Morphology in Indonesia', *Journal of Agricultural Science*, 8(6), p. 137. doi: 10.5539/jas.v8n6p137.
- Sulistiyowati, W. and Astuti, C. C. (2017) *Statistika dasar konsep dan aplikasinya*.
- Sumada, K. and Widodo, L. U. (2019) 'Liquid Bio-Silica Fertilizer from Ash Solid Waste of Sugar Industry', 2018(2018), pp. 224–230. doi: 10.11594/nstp.2019.0229.
- Suprihatin, E., Anita Zaharah, T. and Wahyuni, N. (2015) 'Pembuatan Membran Silika Dari Fly Ash Dan Aplikasinya Untuk Menurunkan Kadar Cod Dan Bod Limbah Cair Kelapa Sawit', *Jurnal Kimia Universitas Tanjungpura*, 4(3), pp. 48–53.
- Tangchirapat, W. *et al.* (2007) 'Use of waste ash from palm oil industry in concrete', *Waste Management*, 27(1), pp. 81–88. doi: 10.1016/j.wasman.2005.12.014.
- Tangchirapat, W., Jaturapitakkul, C. and Chindaprasirt, P. (2009) 'Use of palm oil fuel ash as a supplementary cementitious material for producing high-strength concrete', *Construction and Building Materials*. Elsevier Ltd, 23(7), pp. 2641–2646. doi: 10.1016/j.conbuildmat.2009.01.008.
- Tateda, M. (2016) 'Production and Effectiveness of Amorphous Silica Fertilizer from Rice Husks Using a Sustainable Local Energy System', *Journal of Scientific Research and Reports*, 9(3), pp. 1–12. doi: 10.9734/jsrr/2016/21825.
- Vincevica-Gaile, Z. *et al.* (2019) 'Granulation of fly ash and biochar with organic lake sediments – A way to sustainable utilization of waste from bioenergy production', *Biomass and Bioenergy*. Elsevier Ltd, 125(April), pp. 23–33. doi: 10.1016/j.biombioe.2019.04.004.
- Wang, S., Li, L. and Zhu, Z. H. (2007) 'Solid-state conversion of fly ash to effective adsorbents for Cu removal from wastewater', *Journal of Hazardous Materials*, 139(2), pp. 254–259. doi: 10.1016/j.jhazmat.2006.06.018.
- Wardana, K. A. *et al.* (2015) 'Perekat Untuk Pembuatan Pelet Pupuk Organik Dari Residu Proses Digestasi Anaerobik Lumpur Biologi Industri Kertas', *Jurnal Selulosa*, 5(02), pp. 69–78. doi: 10.25269/jsel.v5i02.82.
- Windia, H., Chandra, W. P. and Suryo, P. (2019) 'Slow release npk fertilizer preparation from natural resources', *Materials Science Forum*, 948 MSF, pp. 43–48. doi: 10.4028/www.scientific.net/MSF.948.43.
- Zarina, Y. *et al.* (2013) 'Review on the various ash from palm oil waste as geopolymer material', *Reviews on Advanced Materials Science*, 34(1), pp. 37–43.