

DAFTAR PUSTAKA

- Abdel-Ghani, N.T., and El-Changaby, G.A., 2014, Biosorption for Metal Ions Removal from Aqueous Solution: A Review of Recent Studies, *Int. J. Latest. Res. Sci. Technol.*, 3(1), 24-42.
- Adamson, A.W., and Gast, A.P., 1997, *Physical Chemistry of Surfaces*, 6th Ed., John Wiley and Sons, New York.
- Aguado, J., Serrano, D.P., and Escola, J.M., 2008, Fuel from Waste Plastics by Thermal and Catalytic Processes: A Review., *Ind. Eng. Chem. Res.*, 47, 7982-7992.
- Ansori, C., Sudarsono dan Saifudin, 2011, Distribusi mineralogi pasir besi pada jalur pantai selatan kebumen-Kutoarjo, *Buletin Sumber Daya Geologi*, 2(6), 81-96.
- Apriyanti, H., Candra, I.N., dan Elvinawati, Karakterisasi Isoterm, 2018, Adsorpsi dari Ion Logam Besi (Fe) pada Tanah di Kota Bengkulu, *ALOTROP. J. Pend. Ilmu Kim.*, 2(1), 14-19.
- Atkins, P.W., 1999, *Physical Chemistry*, 8th Ed., W.H. Freeman and Company, New York.
- Atkins, P.W., and De Paula, J., 2006, *Physical Chemistry*, Oxford University Press, Oxford.
- Bashir, N.H.H., 2013, Plastic Problem in Africa, *Japanese Journal of Veterinary Research*, 61, 1-10.
- Cahyono, M.S., and Styana, U.I.F., 2017, Influence of Hetaing Rate and Temperature on the Yield and Properties of Pyrolysis Oil Obtained from Waste Plastic Bag, *CJEES*, 1(1), 1-10.
- Carotenuto, G., De Nicola, S., Palomba, M., Pullini, D., Horsewell, A., Hansen, T.W., and Nicolais, L., 2012, Mechanical Properties of Low-density Polyethylene Filled by Graphite Nanoplatelets, *Nanotech.*, 23(48).
- Cawenberghe, L.V., Vanreusel, A., Mess, J., and Janssen, C. R., 2013, Microplastic Pollution in Deep-Sea Sediments, *Environ. Pollut.*, 182, 495-499.
- Chen, X., Ma, X., peng, X., Lin, Y., and Yao, Z., 2017, Conversion of Sweet Potato Waste to Solid Fuel Via Hydrothermal Carbonization, *journal Bioresource Technology*, 249, 900-907.
- Chia, C. H., Sigh, B. P., Joseph, S., Graber, E. R., dan Munroe, P., 2012, Characterization of Enriched Biochar, *J. Anal. Appl. Pyrolysis.*, 108, 26-34.
- Dogra, S.K., 1990, *Kimia Fisik dan Soal-Soal* (diterjemahkan oleh Masyur, U), 1st Ed, Universitas Indonesia (UI-Press), Jakarta.

- Esmaeli, A., Saremnia, B., and Kalantari, M., 2015, Removal of Mercury(II) from Aqueous Solutions by Biosorption on the Biomass of *Sargassum Galucescens* and *Gracilaria Corticata*, *Arab. J. Chem.*, 8(4), 506-511.
- Faizal, M., Rifky, A.D., Sanjaya, I., 2018, Pembuatan Briket dari Campuran Limbah Plastik LDPE dan Kulit Buah Kapuk Sebagai Energi Alternatif, *Jurnal Teknik Kimia*, 1(24), 8-16.
- Fatmawati, 2006, Kajian Adsorpsi Cd(II) oleh Biomassa Potamogeton (Rumput Naga) yang Terimobilkan pada Silika Gel, *Skripsi*, FMIPA Universitas Lambung Mangkurat, Banjar Baru.
- Font, R., Gálvez, A., Moltó, J., Fullana, A., and Aracil, I., 2010, Formation of polychlorinated compounds in the combustion of PVC with iron nanoparticles, *Chemosphere*, 78, 152-159.
- Garlapalli, R. K., Wirth, B., and Reza, M. T., 2016, Pyrolysis of Hydrochar From Digestate: Effect of Hydrothermal Carbonization and Pyrolysis Temperatures on Pyrochar Formation, *journal Bioresource Technology*, 220, 168-174.
- Gunadi, N., 2009, Kalium Sulfat dan Kalium Klorida sebagai Sumber Pupuk Kalium pada Tanaman Bawang Merah, *Jurnal Hortikultura*, 19(192), 174-185.
- Guo, L., Sun, C., Li, G., and Liu, C., 2009, Thermodynamics and Kinetics of Zn²⁺ Adsorption on Crosslinked Starch Phosphate, *J. Hazard Mater.*, 161, 510-515.
- Guo, S., Dong, X., Wu, T., Shi, F., and Zhu, C., 2015, Characteristic evolution of hydrochar from hydrothermal carbonization of corn stalk, *J. Anal. Appl. Pyrol.*, 116, 1-9.
- Hajar, E. W.B., Sitorus, R.S., Mulianingtias, N., dan Welan, F.J., 2016, Efektivitas Adsorpsi Logam Pb²⁺ dan Cd²⁺ menggunakan Media Adsorben Cangkang Telur Ayam, *Konversi*, 5(1), 1-7.
- Himah, T.N., 2017, Sintesis Komposit Arang-Fe₃O₄ Dari Polivinil Klorida (PVC) Dengan Metode Karbonisasi Hidrotermal dan Pirolisis Serta Aplikasinya Sebagai Adsorben Glukosa, *Skripsi*, Departemen Kimia FMIPA UGM, Yogyakarta.
- Ho, Y.S., 2004, Citation Review of Lagergren Kinetic Rate Equation on Adsorption Reaction, *Scientometrics*, 59, 171-177.
- Irawan, A., 2018, Synthesis and Characterization of Char-Al₂O₃ Composite Through Hydrothermal as Potassium Ion Adsorbent, *Skripsi*, Departemen Kimia FMIPA UGM, Yogyakarta.
- Jindo, K., Mizumoto, H., Sawada, Y., Sanchez-Monodero, M.A., and Sonoki, T., 2014, Physical and Chemical Characterization of Biochar Derived from Different Agricultural Residues, *Biogeosciences*, 11, 6613-6621.

- Karuniastuti, N., 2015, Bahaya Plastik Terhadap Kesehatan Lingkungan, *Jurnal Forum Teknologi*, 3(1), 7-13.
- Kennedy, L. J., Vijaya, J. J., and Sekaran, G., 2005, Electrical Conductivity study of Porous Carbon Composite Derived from Rice Husk, *Mater. Chem. Phys.*, 91, 471-476.
- Kundu, S., and Gupta, A.K., 2006, Arsenic Adsorption onto Iron Oxide-Coated Cement (IOCC): Regression Analysis of Equilibrium Data with Several Isotherm Models and Their Optimization, *Chem. Eng. J.*, 122, 93-106.
- Liang, P., Wang, H., Chen, C., Ge, F., Liu, D., Li, S., Han, B., Xiong, X., and Zhao, S., 2013, The Use of Fourier Transform infrared spectroscopy for Quantification of Adulteration in Virgin Walnut Oil, *Int. J. Spectrosc.*, 2013, 1-6.
- Libra, J.A., Ro, K.S., Kammann, C., Funke, A., Berge, N.D., Neubauer, Y., and Kern, J., 2011, Hydrothermal Carbonization of Biomass Residuals: A Comparative Review of the Chemistry, Process and Application of wet and Dry Pyrolysis, *Biofuels*, 2 (1), 71-106.
- Liestiono, R.P., Cahyono, M.S., Widyawidura, W., Prastya, A., dan Syamsiro, M., 2017, Karakteristik Minyak dan Gas Hasil Proses Dekomposisi Termal Plastik Jenis *Low Density Polyethylene* (LDPE), *OFFSHORE*, 1(2), 1-9.
- Liliana, G., Erto, A., Moreno-Pirajan, J.C., 2013, Magnetite Nanoparticles for Removal of Heavy Metals from Aqueous Solution: Synthesis and Characterization, *Adsorption*, 19, 465-474.
- Liu, Y., Yao, S., Wang, Y., Lu, H., Brar, S.K., dan Yang, S., 2017, Bio- and hydrochars from rice straw and pig manure: Inter-Comparison, *J.biortech.*, 235, 332-337.
- Lowell, S., Shields, J.E., Thomas, M.A., Thommes, M., 2004, *Characterization of Porous Solids and Powders: Surface Area, Pore Size and Density*, Kluwer Academic Publisher, USA.
- Luo, C., Fan, L., Zhen, L., Fuguang, L., dan Huamin, Q., 2011, Preparation of magnetik modified chitosan and adsorption of Zn^{2+} from aqueous solution, *Colloid Surf.*, 88, 574-581.
- Lusiyana, A., Taifur, M., dan Rohman, F., 2014, Uji Sifat Magnetik Pasir Pantai Melalui Penentuan Permeabilitas Relatif Menggunakan *Logger Pro*, *Jurnal Fisika*, 2(4), 78-82.
- Malghani, S., Gleixner, G., dan Trumbore, S.E., 2013, Char Produce by Slow Pyrolysis and Hydrothermal Carbonization Very in Carbon Sequestration Potential and Greenhouse Gases Emissions, *Soil Boil., Biochem.*, 62, 137-146.
- Mason, B., and Moore, C.B., 1982, *principle of Geochemistry*, John Wiley and Sons Inc, New York.

- McKay, G., 2002, Dioxin Characterisation, Formation and Minimation during Municipal Solid Waste (MSW) Incineration, *Chem. Engn. J.*, 86, 343-368.
- Merdekani, S., 2013, Sintesis Partikel Nanokomposit Fe₃O₄/SiO₂ dengan Metode Kopersipitasi, *Prosiding Seminar Nasional Sains dan Teknologi Nuklir*, 472-477.
- Mujianti, D.R., Nuryono, dan Kunarti, E.S., 2010, sintesis dan Karakteristik Silika Gel dari Abu Sekam Padi yang Diimobilisasi dengan 3-(Trimetoksisilil)-1-Propatiol, *Sains dan Terapan Kimia*, 2 (4), 150-167.
- Muslem, 2017, Karbonisasi Polivinil Klorida dan Preparasi Komposit Arang-Fe₃O₄ Sebagai Adsorben Co(II) dengan Metode Hidrotermal dan Hidrotermal-Pirolisis, *Tesis*, Departemen Kimia FMIPA UGM, Yogyakarta.
- Na, Y., Dai, S., and Chen, C., 2018, Direct Synthesis of Polar-Functionalized Linear Low-Density Polyethylene (LLDPE) and Low-Density Polyethylene (LDPE), *Macromolecules*, 51, 4040-4048.
- Patnaik, P., 2003, *Handbook of Inorganic Chemicals*, McGraw-Hill, New York.
- Pérez-Marin, A.B., Zapata, V.M., Ortuno, J.F., Aguilar, M., Sáez, J., and Lorens, M., 2007, Removal of Cadmium from Aqueous Solutions by Adsorption on to Orange Waste, *J. Hazard. Mater.*, B139, 122-131.
- Poerschmann, J., Weine, B., Wozidlo, S., Koehler, R., and Kopinke, F.D., 2015, Hydrothermal Carbonization of Poly(Vinyl Chloride), *Chemosphere*, 119, 682-689.
- Pratama, D., 2016, *Mikrob Pelarut Kalium dari Tiga Lokasi Lahan dan Kemampuannya dalam Meningkatkan ketersediaan Kalium*, Institut Pertanian Bogor.
- Pratiwi, R., dan Wiwiek, D., 2015, Pengaruh Penggunaan Katalis Zeolit Alam Dalam Pirolisis Limbah Plastik Jenis LDPE Menjadi Bahan Bakar Cair Setara Bensin, *Seminar Sains dan Teknologi*, 17 November 2015, Jakarta.
- Rachmawati, Q., dan Herumurti, W., 2015, Pengolahan Sampah secara Pirolisis dengan Variasi Rasio Komposisi Sampah dan Jenis Plastik, *Jurnal Teknik ITS*, 4 (1), ISSN 2337-3539.
- Ridhuan, K. dan Suranto, J., 2016, Perbandingan Pembakaran pirolisis dan Karbonisasi Pada Biomassa Kulit Durian Terhadap Nilai Kalori, *Jurnal Teknik Mesin Universitas Muhammadiyah Metro*, 1 (5), 50-56.
- Rodiansono, Trisunaryati, W., dan Triyono, 2007, Pembuatan Karakterisasi dan Uji Aktivitas Katalis NiMo/Z dan NiMo/Z-Nb₂O₅ Pada Reaksi Hidrorengkah Fraksi Sampah Plastik Menjadi Fraksi Bensin, *Berkala MIPA*, 17 (2), 43-53.

- Saragih, E.F., 2016, *Pengaruh Pupuk Cair Kulit Pisang Kepok (Musa paradisiaca forma typica) Terhadap Pertumbuhan Tanaman Sawi Caisim (Brassica juncea L.)*, Universitas Sanata Dharma.
- Schwartz, M.M., 1984, *Composite Material Handbook*, Mc Graw Hill, Singapore
- Sebbahi, S., El Fakir, L., Rghioui, L., El Hajji, A., Brik, Y., Sahban, F. K., and El Hajjaji, S., 2015, Characterization of Lignin Derivative Chars by Infrared Spectroscopy, *J. Mater. Environ. Sci.*, 6(9), 2461-2468.
- Selintung, M., dan Syahrir, S., 2012, Studi Pengolahan Air Melalui Media Filter Pasir Kuarsa (Studi Kasus Sungai Malimpung), *Jurnal Teknik Sipil Fakultas Teknik Unhas*, (6), 1-10.
- Sogancioglu, M., Yel, E., and Ahmetli, G., 2017, Pyrolysis of Waste High Density Polyethylene (HDPE) and Low Density Polyethylene (LDPE) Plastics and Production of Epoxy Composites with their Pyrolysis Chars, *J. Cleaner Prod.*, 165, 369-381.
- Sulestio, T., 2015, Adsorpsi Simultan Ion Logam Pb(II) dan Cd(II) pada Abu Dasar Batubara Terimobilisasi Ditizon, *Skripsi*, FMIPA, UGM, Yogyakarta.
- Sun, C., Chen, S., and Li, Z., 2018, Controllable Synthesis of Fe₂O₃-Carbon Fiber Composites Via a Facile Sol-Gel Route as Anode Materials for Lithium Ion Batteries, *Appl. Surf. Sci.*, 427, 476-484.
- Surono, U.B., 2013, Berbagai Metode Konversi Sampah Plastik Menjadi Bahan Bakar Minyak, *Jurnal Teknik*, 3(1), 32-40.
- Surono, U.B., dan Ismanto, 2016, Pengolahan Sampah Plastik Jenis PP, PET, PE Menjadi Bahan Bakar Minyak dan Karakteristiknya, *Jurnal Mekanika dan Sistem Termal*, 1(1), 32-37.
- Teja, A.S., and Koh, P., 2019, Synthesis, Properties, and Application of Magnetic Iron Oxide Nanoparticles, *Prog. Cryst. Growth Charact. Mater.*, 55, 22-45.
- Tiecke, T.G., 2011, *Properties of Potassium*, Physics Department Harvard University, US.
- Tu, Y., Peng, Z., Xu, P., Lin, H., Wu, X., Yang, L., dan Huang, J., 2017, Characterization and Application of Magnetic Biochars from Corn Stalk by Pyrolysis and Hydrothermal Treatment, *Bioresources*, 12, 1077-1089.
- UNEP (United Nations Environment Programme), 2009, *Converting Waste Plastics Into a Resource*, Division of Technology, Industry and Economics International Environmental Technology Centre, Osaka/Shiga.
- Vijayaraghavan, K., Padmesh, T.V.N., Palanivelu, K., and Velan, M., 2006, Biosorption of Nickel (II) Ions onto Sargassum wightii: Application of Two-Parameter and Three Parameter Isotherm Models, *J. Hazard. Mater.*, 133,304-308.



- Waseda, Y., Matsubara E., & Shinoda, K., 2011, *X-Ray Diffraction Crystallography: Introduction, Examples and Solved Problems*, Springer-Verlag Berlin Heidelberg, London.
- Welden, N., and Lusher, A.L, 2017, Impacts of Changing Ocean Circulation on The Distribution of Marine Microplastic Litter, *Integr. Environ. Assess Manag.*, 13(3), 483-487.
- Wu, J., Chen, T., Luo, X., Han, D., Wang, Z., and Wu, J., 2014, TG/FTIR Analysis on Co-Pyrolysis Behavior of PE, PVC and PS, *Waste Manage.*, 34, 676-682.