

DAFTAR PUSTAKA

- Abidin, H.Z., Davies, R.J., Kusuma, M.A., Danreas, H., dan Deguchi, T. , 2009, Subsidence dan Uplift of Sidoarjo (East Java) due to the Eruption of the Lusi Mud Volcano (2006-Present). *Environ. Geol.* 57: 833–844.
- Adamson, A.W. dan Gast, A.P. , 1997, *Physical Chemistry of Surfaces* 6th ed. John Wiley & Sons, Inc, Canada.
- Al-Saidi, G.S., Al-Alawi, A., Rahman, M.S., dan Guizani, N. , 2012, Fourier Transform Infrared (FTIR) Spectroscopic Study of Extracted Gelatin from Shaari (*Lithrinus microdon*) Skin: Effects of Extraction Conditions. *Int. Food Res. J.* 19: 1167–1173.
- Aysu, T., Durak, H., Guner, S., Bengu, A.S., dan Esim, N. , 2016, Bio-oil Production via Catalytic Pyrolysis of *Anchusa azurea*: Effects of Operating Conditions on Product Yields dan Chromatographic Characterization. *Bioresour. Technol.* 205: 7–14.
- Aysu, T. dan Sanna, A. , 2015, Nannochloropsis Algae Pyrolysis with Ceria-Based Catalysts for Production of High-Quality Bio-Oils. *Bioresour. Technol.* 194: 108–116.
- Badan Penanggulangan Lumpur Sidoarjo , 2009, *Semburan Lumpur Panas Sidoarjo*.
- Badan Pusat Statistik , 2017, *Profil Kemiskinan di Indonesia September 2016*.
- Benjakul, S., Oungbho, K., Visessanguan, W., Thiansilakul, Y., dan Roytrakul, S. , 2009, Characteristics of Gelatin from the Skins of Bigeye Snapper, *Priacanthus tayenus* dan *Priacanthus macracanthus*. *Food Chem.* 116: 445–451.
- Bertero, M. dan Sedran, U. , 2015, Coprocessing of Bio-oil in Fluid Catalytic Cracking. In, *Recent Advances in Thermochemical Conversion of Biomass*. Elsevier, Amsterdam, pp. 355–381.
- Bridgwater, A. V. dan Peacocke, G.V.C. , 2000, Fast Pyrolysis Processes for Biomass. *Renew. Sustain. energy Rev.* 4: 1–73.
- Cai, C., Wang, H., dan Han, J. , 2011, Synthesis dan Characterization of Ionic Liquid-Functionalized Alumino-Silicate MCM-41 Hybrid Mesoporous Materials. *Appl. Surf. Sci.* 257: 9802–9808.
- Carey, F.A. , 2000, *Organic Chemistry* 4th ed. McGraw-Hill Higher Education, Boston.

- Collard, F.X. dan Blin, J. , 2014, A Review on Pyrolysis of Biomass Constituents: Mechanisms dan Composition of the Products Obtained from the Conversion of Cellulose, Hemicelluloses dan Lignin. *Renew. Sustain. Energy Rev.* 38: 594–608.
- Dagdag, E.E.A., Sukoso, Rachmansyah, A., dan Leksono, A.S. , 2015, Analysis of Heavy Metals in Sediment of Lapindo Mud, Sidoarjo, East Java. *Int. J. ChemTech Res.* 8: 358–363.
- Darnas, Y., Irsyad, M., dan Suprihanto , 2013, Ekstraksi Aluminium dari Tanah Lempung Gambut. *Jurnal Teknik Lingkungan UNDA* 10: 11–19.
- Direktorat Jenderal Perikanan Budidaya , 2014, *Laporan Tahunan Direktorat Produksi Tahun 2013*.
- Dong, L., Li, Y., Yan, J., dan Shu, X. , 2014, Efficient Extraction of SiO₂ dan Al₂O₃ from Coal Gangue by Means of Acidic Leaching. *Adv. Mater. Res.* 878: 149–156.
- Dzmitry, M. dan Klimenty, B. , 2016, A Porous Materials Production with an Electric Discharge Sintering. *Int. J. Refract. Met. Hard Mater.* 59: 67–77.
- El-Naggar, A.Y. , 2013, Characterization of Modified dan Polymer Coated Alumina Surfaces by Infrared Spectroscopy. *J. Spectrosc.* 2013: 1–5.
- Gómez-Mascaraque, L.G., Soler, C., dan Lopez-Rubio, A. , 2016, Stability dan Bioaccessibility of EGCG within Edible Micro-Hydrogels. Chitosan vs. Gelatin, a Comparative Study. *Food Hydrocoll.* 61: 128–138.
- Jackson, S.D. dan Wigzell, F.A. , 2008, Characterizing the Processes of Calcination dan Reduction in the Preparation of Supported Cobalt Catalysts. In, *AIChE Annual Meeting*.
- Karakhanov, E.A., Glotov, A.P., Nikiforova, A.G., Vutolkina, A. V, Ivanov, A.O., Kardashev, S. V, et al. , 2016, Catalytic Cracking Additives Based on Mesoporous MCM-41 for Sulfur Removal. *Fuel Process. Technol.* 153: 50–57.
- Karim, A.A. dan Bhat, R. , 2009, Fish Gelatin: Properties, Challenges, dan Prospects as an Alternative to Mammalian Gelatins. *Food Hydrocoll.* 23: 563–576.
- Kementerian Lingkungan Hidup , 2014, *Status Lingkungan Hidup Indonesia 2013*.
- Kittiphattanabawon, P., Benjakul, S., Visessanguan, W., dan Shahidi, F. , 2010, Comparative Study on Characteristics of Gelatin from the Skins of Brown dan Blacktip Shark as Affected by Extraction Conditions. *Food Hydrocoll.* 24: 164–171.

- Klass, D.L. , 2004, Biomass for Renewable Energy, Fuels, dan Chemicals. *J. Environ. Qual.* 1: 193–212.
- Lang, N. dan Tuel, A. , 2005, Alkali-Containing Mesoporous (Alumino) Silicate Materials with Very High Metal Loading. *Microporous Mesoporous Mater.* 77: 147–157.
- Looi, P.Y., Mohamed, A.R., dan Tye, C.T. , 2012, Hydrocracking of Residual Oil Using Molybdenum Supported Over Mesoporous Alumina as a Catalyst. *Chem. Eng. J.* 181–182: 717–724.
- Lu, M., Liu, X., Li, Y., Nie, Y., Lu, X., Deng, D., et al. , 2016, Hydrocracking of Bio-alkanes Over Pt/Al-MCM-41 Mesoporous Molecular Sieves for Bio-jet Fuel Production. *J. Renew. Sustain. Energy* 8: 1–12.
- Mad-Ali, S., Benjakul, S., Prodpran, T., dan Maqsood, S. , 2016, Interfacial Properties of Gelatin from Goat Skin as Influenced by Drying Methods. *LWT - Food Sci. Technol.* 73: 102–107.
- Maschio, G., Koufopoulos, C., dan Lucchesi, A. , 1992, Pyrolysis, a Promising Route for Biomass Utilization. *Bioresour. Technol.* 42: 219–231.
- Mazar, A., Jemaa, N., Wafa Al Dajani, W., Marinova, M., dan Perrier, M. , 2017, Furfural Production from a Pre-Hydrolysate Generated Using Aspen dan Maple Chips. *Biomass dan Bioenergy* 104: 8–16.
- Meynen, V., Cool, P., dan Vansant, E.F. , 2009, Verified Syntheses of Mesoporous Materials. *Microporous Mesoporous Mater.* 125: 170–223.
- Moulijn, J.A., Leeuwen, P.W.N.M.V., dan Santen, R.A.V. , 1993, *Catalysis : An Integrated Approach to Homogeneous, Heterogeneous dan Industrial Catalysis* Elsevier, Amsterdam.
- Al Mubarak, M.A.S., As Silmi, N.A., Trisunaryanti, W., dan Sutarno , 2014, Variation of Alumina Sources on the Synthesis of High-Silica Mordenite from Lapindo Mud without Organic Template. *Int. J. Acad. Sci. Res.* 2: 26–30.
- Muthu, G.K., Garg, S., Soni, K., Kumar, M., Gupta, J.K., Sharma, L.D., et al. , 2008, Synthesis dan Characterization of Acidic Properties of Al-SBA-15 Materials with Varying Si/Al Ratios. *Microporous Mesoporous Mater.* 114: 103–109.
- Nagarajan, M., Benjakul, S., Prodpran, T., Songtipya, P., dan Kishimura, H. , 2012, Characteristics dan Functional Properties of Gelatin from Splendid Squid (*Loligo formosana*) Skin as Affected by Extraction Temperatures. *Food Hydrocoll.* 29: 389–397.
- Pak, J.-J., Jo, J.-O., Park, C.-H., Kang, J.-G., dan Shin, D.-H. , 2008, Recovery of

- Molybdenum from Spent Acid by Ammonia Gas Neutralization. *Mater. Trans.* 49: 202–207.
- Parida, K.M., Pradhan, A.C., Das, J., dan Sahu, N. , 2009, Synthesis dan Characterization of Nano-Sized Porous Gamma-Alumina by Control Precipitation Method. *Mater. Chem. Phys.* 113: 244–248.
- Putra, A.N.H.E., Tjahjanto, R.T., dan Khunur, M.M. , 2013, Optimasi Ekstraksi Silika dan Alumina dari Lumpur Sidoarjo. *Kim. Student J.* 2: 365–371.
- Robson, H. dan Lillerud, K.P. , 2001, *Verified Syntheses of Zeolitic Materials* 2nd ed. Elsevier, AMsterdam.
- Rojiba, A. dan Wisnu , 2016, Aspek Politis Lumpur Lapindo Sidoarjo Tahun 2006-2014. *AVATARA, e-Journal Pendidik. Sej.* 4: 508–521.
- Shaw, D.J. , 1992, *Introduction to Colloid & Surface Chemistry* 4th ed. Butterworth-Heinemann, Burlington.
- Shevla, G. , 1979, *Textbook of Macro dan Semimicro Qualitative Inorganic Analysis* 5th ed. Longman Group Limited, London.
- Sinthusamran, S., Benjakul, S., dan Kishimura, H. , 2014, Characteristics dan Gel Properties of Gelatin from Skin of Seabass (*Lates calcarifer*) as Influenced by Extraction Conditions. *Food Chem.* 152: 276–284.
- Song, K., Guan, J., Wu, S., dan Kan, Q. , 2009, Synthesis dan Characterization of Strong Acidic Mesoporous Alumino-Silicates Constructed of Zeolite MCM-22 Precursors. *Catal. Commun.* 10: 631–634.
- Sriningsih, W., Saerodji, M.G., Trisunaryanti, W., Triyono, Armunanto, R., dan Falah, I.I. , 2014, Fuel Production from LDPE Plastic Waste over Natural Zeolite Supported Ni, Ni-Mo, Co dan Co-Mo Metals. *Procedia Environ. Sci.* 20: 215–224.
- Stefanidis, S.D., Kalogiannis, K.G., Iliopoulou, E.F., Michailof, C.M., Pilavachi, P.A., dan Lappas, A.A. , 2014, A Study of Lignocellulosic Biomass Pyrolysis via the Pyrolysis of Cellulose, Hemicellulose dan Lignin. *J. Anal. Appl. Pyrolysis* 105: 143–150.
- Tabarestani, H.S., Maghsoudlou, Y., Motamedzadegan, A., dan Sadeghi Mahoonak, A.R. , 2010, Optimization of Physico-Chemical Properties of Gelatin Extracted from Fish Skin of Rainbow Trout (*Onchorhynchus mykiss*). *Bioresour. Technol.* 101: 6207–6214.
- Trisunaryanti, W., Lisna, P.S., Kartini, I., Sutarno, Falah, I.I., dan Triyono , 2016, Extraction of Gelatin from Bovine Bone dan its Use as Template in Synthesis of Mesoporous Silica. *Asian J. Chem.* 28: 996–1000.

- Triyono, Khoiri, H.M., Trisunaryanti, W., dan Dewi, K. , 2015, Synthesis of NH₂/MCM-41 Catalysts Using Silica of Sidoarjo Mud dan Their Characterization for Palm Oil Transesterification. *IOSR J. Appl. Chem.* 8: 50–56.
- Ulfa, M., Trisunaryanti, W., Falah, I.I., dan Kartini, I. , 2015, Characterization of Gelatines Extracted From Cow Bone for Carbon Synthesis. *IOSR J. Appl. Chem.* 8: 57–63.
- Upare, D.P., Park, S., Kim, M.S., Jeon, Y.P., Kim, J., Lee, D., et al. , 2017, Selective Hydrocracking of Pyrolysis Fuel Oil into Benzene, Toluene dan Xylene over CoMo/Beta Zeolite Catalyst. *J. Ind. Eng. Chem.* 46: 356–363.
- Upare, D.P., Park, S., Kim, M.S., Kim, J., Lee, D., Lee, J., et al. , 2016, Cobalt Promoted Mo/Beta Zeolite for Selective Hydrocracking of Tetralin dan Pyrolysis Fuel Oil into Monocyclic Aromatic Hydrocarbons. *J. Ind. Eng. Chem.* 35: 99–107.
- Velasquez, M., Santamaria, A., dan Batiot-Dupeyrat, C. , 2014, Selective Conversion of Glycerol to Hydroxyacetone in Gas Phase Over La₂CuO₄ Catalyst. *Appl. Catal. B Environ.* 160–161: 606–613.
- Wang, X., Zhou, G., Zhang, H., Du, S., Xu, Y., dan Wang, C. , 2011, Immobilization dan Catalytic Activity of Lipase on Mesoporous Silica Prepared from Biocompatible Gelatin Organic Template. *J. Non. Cryst. Solids* 357: 3027–3032.
- Wangtueai, S. dan Noomhorm, A. , 2009, Processing Optimization dan Characterization of Gelatin from Lizardfish (*Saurida* spp.) Scales. *LWT - Food Sci. Technol.* 42: 825–834.
- Whitten, K., Davis, R.E., Peck, L.M., dan Stanley, G. , 2004, General Chemistry 7th ed. Thomson: Brooks Cole.
- Xu, B., Yang, Y., Xu, Y., Han, B., Wang, Y., Liu, X., dan Yan, Z. , 2017, Synthesis dan Characterization of Mesoporous Si-Modified Alumina with High Thermal Stability. *Microporous Mesoporous Mater.* 238: 84–89.
- Zhao, C., Jiang, E., dan Chen, A. , 2016, Volatile Production from Pyrolysis of Cellulose, Hemicellulose dan Lignin. *J. Energy Inst.* 1–12.
- Zhao, W., Shehzad, H., Yan, S., Li, J., dan Wang, Q. , 2017, Acetic Acid Pretreatment Improves the Hardness of Cooked Potato Slices. *Food Chem.* 228: 204–210.