

## DAFTAR PUSTAKA

- Achilias, D.S., Roupakias, C., Megalokonomos, P, Lappas, A.A., Antonokou, E.V. 2007.”*Chemical Recycling of Plastics Wastes made from Polyethylene (LDPE and HDPE) and Polypropane (PP)*”. Journal of Hazardous Materials 149: 536-542.
- Aguado J. Serrano DP, San Miguel G, Castro MC, Madrid S. 2007. “*Feedstock Recycling of Polyethylene in a Two Step Thermo-Catalytic Reaction System*”. J Anal Appl Pyrol 79: 415-423.
- Agustine, R.L. 1996.”*Heterogeneous Catalysis for The Synthetic Chemist*”. Marcel Dekker Inc., New York.
- Aji, Zulfikar Rachman. 2008. “*Studi Pengaruh Pengujian Tarik Pada Film Plastik BOOP (Biaxial Oriented Polypropylene)*”. Skripsi Departemen Teknik Metalurgi dan Material, Fakultas Teknik. Universitas Indonesia.
- Al Ayinla dan P. Eleke. 2010. “*Effect of Low Density Polyethylene (LDP) Waste on Physical Characteristics of Agricultural Land*”. Journal of Research in National Development Vol. 8 No 2.
- Anonim<sup>1</sup>.2015.”*Plastik Sebagai Kemasan Pangan*”.  
<http://ik.pom.go.id/v2016/artikel/Plastiksebagaiemasanpangan.pdf>  
diakses pada 14 Januari 2016.
- Anonim<sup>2</sup>.2016.”*Kemasan Pangan Plastik*”.  
<http://www.enviro.bppt.go.id/sipop/Brosur/Leaflet-Kemasan-Pangan.pdf>  
diakses pada 14 Januari 2016.
- Aprian, Ramadhan P. Dan Munawar, Ali. 2012. “*Pengolahan Sampah Plastik Menjadi Minyak Menggunakan Proses Pirolisis*”. Envirotek: jurnal ilmiah Teknik Lingkungan Vol 4 No 1. ISSN 2085-501-X.
- Aridito, Muhammad Noviansyah. 2016. “*Kajian Sustainability Pemanfaatan Teknologi Pirolisis pada Pemungutan Minyak dan Aluminium dari Limbah Plastik Polyethylene berlapis aluminium foil (Al-PE)*”. Tesis. Magister Teknologi untuk Pengembangan Berkelanjutan Program Studi Ilmu Lingkungan. Universitas Gadjah Mada. Yogyakarta
- Arryanto, Yateman. 2009. ”*Rekayasa Material Berbasis Sumber Daya Alam Silika-Alumina, Material Canggih*”. Kelompok Material Jurusan Kimia FMIPA Universitas Gadjah Mada. ISBN 979-1707-70-7.

- Azizah, Utiya. 2004. "*Polimer*". Direktorat Jendral Pendidikan Dasar dan Menengah, Departemen Pendidikan Nasional. Surabaya.
- Bagri R. William. 2001. "*Catalytic Pyrolysis of Polyethylene*". J Anal Appl Pyrol 63: 29-41.
- Bayus, Jacob; Ge, Changfeng; Thorn, Brian. 2016. "A Preliminary Environmental Assesment of Foil and Metallized Film Centered Laminates". Resources, Conservation, and Recycling Journal 115 : 31-41.
- Bilmeyer, W.F.1994. "*Textbook of Polimer Science 3<sup>rd</sup> Edition*". Jhon Wiley & Son. New York.
- Buekens A.G., Huang H. 1998. "*Catalytic Plastic Cracking for Recovery of Gasoline-range Hydrocarbons from Municipal Plastic Waste*". Resources, Cconservation, and Recycling 23: 163-181.
- Calgar, A. and Aydinli, B. 2009. "*Isothermal Co-Pyrolysis of Hazelnut Shell and Ultra-high Molecular Weight Polyethylene: The Effect of Temperature and Composition On the Amount of Pyrolysis Product*". Journal of Analytical and Applied Pyrolysis 86: 304-309.
- Champbell, I.M. 1988. "*Catalysis at Surface*". Chapman and Hall
- Damanhuri, E. 2010. "*Diktat Pengelolaan Sampah*". Teknik Lingkungan. Institut Teknologi Bandung. Bandung,
- Danarto YC., Muh. Kurniawan A.M., Yanuar Raka Siwi. 2012. "*Pengolahan Sampah Botol Plastik Menjadi Monomer BHET Sebagai Bahan Baku Plastik Dengan Proses Solvolysis*". Simposium Nasional RAPI XI FT UMS.
- Dewi, Indah Noor Dwi Kusuma. 2014. "*Karakteristik Minyak Hasil Pirolisis Batch Sampah Plastik Polyethylene dan Polypropylene Pada Berbagai Suhu*". Tesis. Magister Teknik Sistem Fakultas Teknik. Universitas Gadjah Mada. Yogyakarta
- Dharini, Mega dan Trihadiningrum, Yulinah. 2011. "*Studi Terhadap Timbulan Sampah Plastik Multilayer serta Upaya Reduksi yang Dapat Diterapkan di Kecamatan Jambangan Surabaya*". Tesis. Jurusan Teknik Lingkungan, Fakultas Teknik Sipil dan Perencanaan. Institut Teknologi Sepuluh November. Surabaya.
- Diebold, J.P. 2000. "*A review of Chemical and Physical Mechanisms of The Storage Stability of Fast Pyrolysis Bio-oils*". NREL/SR-570-27613: 53.

- Donaj PJ, Kaminsky W, Buzeto F, Yang W. 2012. "Pyrolysis of Polyolefins for Increasing Monomers Recovery". Waste Manage 32: 840-846.
- Eddy, H. 2004. "Potensi Dan Pemanfaatan Zeolit di Provinsi Jawa Barat dan Banten". Dirjen Geologi dan Sumber Daya Mineral Republik Indonesia.
- Eissen, Marco dan Hungerühler, Kondrad. 2003. "Mass Efficiency as Metric for The Effectiveness of Catalyst". Journal of Royal Society Chemistry.
- European Commision DG Environment. 2011. "Plastic Waste in The Environment".  
<http://ec.europa.eu/environment/waste/studies/pdf/plastics.pdf>  
diakses pada 8 Desember 2016
- Gao F. 2010. "Pyrolysis of Waste Plastics into Fuel". University of Canterbury
- Haag, W.O., R.M. Lago dan P.B. Weisz. 1984. "The Active Site of Acidic Aluminosilicate Catalysts". Nature 309, 589-591.
- Hadiwiyoto, Soewodo. 1983. "Penanganan dan Pemanfaatan Sampah". PT. Bintang Mas Yogyakarta.
- Hazrat, M. A., Rasul, M. G., Khan, M.M.K. 2015. "A Study on Thermo-Catalytic Degradation for Production of Clean Transport Fuel and Reducing Plastic Wastes". Procedia Engineering 105: 865-876.
- Himawanto, D. A. 2011. "Kinetika Global Proses Slow Pyrolysis Municipal Solid Waste Terseleksi dan Analisa Thermogravimetry Refuse Derived Fuel". Disertasi. Program Studi teknik Mesin. Universitas Gadjah Mada. Yogyakarta
- Hopewell, Jefferson; Drovak, Robert; and Kosior, Edward. 2009. "Plastic Recycling: Challenges and Opportunities". Phil. Trans.R.Soc.B 364: 2115-2126.
- Hwang, E.Y., Kim J.R, Choi, J.K., Woo H.C., Park D.W. 2002. "Performance of Acid Treated Natural Zeolites in Catalytic Degradation of Polypropylene". Journal of Analytical and Applied Pyrolysis 62: 351-364.
- Idrus A., Titisari AD., Sudiyo R., Soekrisno R. 2006. "Development of a Zeolites Based Industry Trough an Integrated Study on Characterization, Quality Improvement, and Utilization as Additive Fertilizer Materials of Natural Zeolite Deposits from Yogyakarta, Indonesia". Proceeding Final Report Hi-Link Project Research : 1-4.

- Indonesia Solid Waste Association. "*Fenomena Sampah Plastik di Indonesia*".  
<http://inswa.or.id/?p=1026>  
diakses pada 15 Desember 2015.
- Istadi. 2011. "*Teknologi Katalis Untuk Konversi Energi: Fundamental dan Aplikasi*". Graha Ilmu. Yogyakarta.
- Jawad A. Batthi. 2010. "*Current State and Potential For Increasing Plastic Recycling in the U.S.*". Thesis. Departement Of Earth and Environment Engineering Fu Foundation School Of Engineering and Applied Science, Columbia University. Columbia.
- Jelita, Rinny. 2015. "*Pengaruh Suhu dan Laju Pemanasan Terhadap Laju Proses Pirolisis serta Kualitas dan Kuantitas Produk Pirolisis Plastik Kemasan Polyethylene dan Polypropylene berlapis Aluminium*". Tesis. Magister Teknik Proses Departemen Teknik Kimia. Universitas Gadjah Mada. Yogyakarta.
- Kirk, R.E. and Othmer, D.F. 1979. "*Encyclopedia of Chemical Technology, 3<sup>ed</sup>*". The Inter Science Encyclopedia, Inc. New York.
- Kementerian Negara Lingkungan Hidup (KNLH) Republik Indonesia<sup>1</sup>. 2008. "*Statistik Persampahan Indonesia*".  
diakses pada 13 Desember 2015.
- Kementerian Negara Lingkungan Hidup (KNLH) Republik Indonesia<sup>2</sup>. 2015.  
<http://www.menlh.go.id/rangkaian-hlh-2015-dialog-penanganan-sampah-plastik/>  
diakses pada 14 Desember 2015.
- Klass, D.L. 1998. "*Biomass for Renewable Energy, Fuels, and Chemicals*". Academic Press.
- Lee, K.H. 2006. "*Thermal and Catalytic Degradation of Waste HDPE*". UK: John Wiley & Sons, Ltd.
- Lestari, D.Y. 2010. "*Kajian Modifikasi dan Karakterisasi Zeolit Alam Dari Berbagai Negara*". Prosiding Seminar Nasional Kimia dan Pendidikan Kimia. ISBN: 978.
- Li, K., Lee, S.W., Yuan G., Lei, ., Weeranchanchai, S.L.P., Yang, Y., and Wang, J.Y. 2016. "*Investigation into the Catalytic Activity of Microporous and Mesoporous Catalyst in the Pyrolysis of Waste Polyethylene and Polypropylene Mixture*". Energies 9, 341.

- Lopez A., Marco, I.de., Caballero, B.M., Laresgoiti, A., Adrados, A. 2011. *"Influence of Time and Temperature on Pyrolysis of Plastic Waste in A Semi-Batch Reactor"*. Chemical Journal Engineering 173: 62-71.
- Marcilla A., Beltran, M.I., Navarro, R. 2009. *"Evolution of Products During the Destratation of Polyethylene in a Batch Reactor"*. Journal of Analytical and Applied Pyrolysis 79: 403-408.
- Marcilla A, Beltran MI., Navaro R. 2009. *"Thermal and Catalytic Pyrolysis of Polyethylene over the HZMS5 and HUSY Zeolites in Batch Reactor Under the Dynamic Conditions"*. Appl Catal B Environ 86: 78-86.
- Marsh, Kenneth and Bugusu, Betty. *"Food Packing – Roles, Materials, and Enviromental Issues"*. Journal of Food Science 2007 Vol 7. Nr 3.
- Mastral FJ, Esperanza E, Gracia P, Juste M. *"Pyrolysis of High-Density Polyethylene in a Fluidized Bed Reactor, Influence of the Temperature and Residence Time"*. J Anal Appl Pyrol 63: 1-15.
- Miandad, R. M.A. Barakat, Asad S. Aburiazazia, M. Rehan, A.S. Nizami. *"Catalytic Pyrolysis of Plastic Waste: A review"*. Process Safety and Environmental Protection 102: 822-838.
- Mizkolozi, N., Barth, L., Deak, G. 2006. *"Thermal Degradation of Polyethylene and Polystyrene from Packaging Industry over different Catalysts into Fuel-like Feed stocks"*. Polym. Degrad. Stab 91: 517-526.
- Mujiarto, Imam. 2005. *"Sifat Karakteristik Material Plastik dan Bahan Aditif"*. Jurnal Traksi Vol. 3 No. 2. AMNI. Semarang.
- Muli, Neviani. 2016. *"Peran Serta Pemulung Dalam Pengurangan Sampah Di TPA Piyungan Daerah Istimewa Yogyakarta"*. Tesis Magister Teknik Sistem Fakultas Teknik. Universitas Gadjah Mada. Yogyakarta.
- Mulyadi, Tedi. 2014. *"Pengertian Katalis dan Katalisis"*. <http://budisma.net/2014/12/pengertian-katalis-dan-katalisis.html>  
Diakses pada 14 Januari 2016.
- Naimah, Siti; Ermawati, Rahyani; Pudjiastuti, Wiwik; Arianita C., Agustina. 2013. *"Penentuan Umur Simpan Produk Olahan Dengan Penambahan Partikel Nano TiO<sub>2</sub> pada Kemasan Jerigen"*. Jurnal Sains Materi Indonesia Vol. 14, No. 4: 266-271. ISSN: 1411-1098.
- Onay, Odan Kockar, O.M. 2004. *"Fixed-Bed Pyrolysis of Rapessed (Brassica napus L.)"*. Journal of Biomass and Energy 26: 289-299.

- Panda, Achyut K., Singh, R.K. 2013. "*Experimental Optimization of Process for The Thermo-Catalytic Degradation of Waste Polypropylene to Liquid Fuel*". Advances in Energy Engineeing (AEE) Volume 1, Issue 3.
- Prabir, B. 2010."Biomass Gasification and Pyrolysis". Elsevier Science Publishing Co Inc. ISBN: 978-0-12-374988-8.
- Rizka, P.P. A. dan Juliastuti, S.R. 2013. "*Pembuatan Stirena dari Limbah Plastik Dengan Metode Pirolisis*". Jurnal Teknik Pomits Vol. 2. No. 1. ISSN: 2337-3539.
- Sakata, Y., Uddin, M.A., Koizumi, K., Muratra, K. 1996. "*Thermal Degradation of Polyethylene Mixed with Polyvinyl Chloride and Polyethylene Terephthalate*". Polym. Degrad.Stab. 53 (1) : 111-117.
- Sampurno, R. Budi. "*Aplilikasi Polimer dalam Industri Kemasan*". Indonesian Journal of Material Science Edisi Khusus: 15-22. ISSN: 1411-1098.
- Sa'diyah Khalimatus, Juliastuti Sri Rachmania. 2015." *Pengaruh Jumlah Katalis Zeolit Alam Pada Produk Proses Pirolisis Limbah Plastik Polipropilen (PP)*". Jurnal Bahan Alam Terbaharukan (JBAT) 4 (2).
- Scheirs, J dan Kaminsky, W. 2006."Feedstock Recycling and Pyrolysis of Waste Plasctic: Converting Waste Plastic into Diesel and Other Fuels". John Wiew & Sons, Ltd. UK.
- Setiadi dan Pertiwi A. 2007. "*Preparasi Dan Karakterisasi Zeolit Alam Untuk Konversi Senyawa ABE Menjadi Hidrokarbon*". Prosiding Konggres dan Simposium Nasional Kedua MKICS 2007. ISSN: 0216-4183. Departemen Teknik Kimia. Fakultas Teknik Universitas Indonesia. Jakarta.
- Sharuddin, S.D.A, Abnisa F., Daud W.M.A.W., Aroua M.K. 2016. "*A Review on Pyrolysis of Plastic Wastes*". Energy Conversion and Management 115: 308-326.
- Stark, D.Timothy; Martin, W. Jeffrey; Gerbasi T., Gina; Thalhamer, Todd; Gortner, R. Edwin. 2012. "*Aluminium Waste Reaction Indicators in a Municipal Solid Waste Landfill*" Journal of Geotechnologyand Geoenvironmental Engineering 138 (2): 252-261.
- Stevens, E. 2001."Green Plastic: An Introduction to The New Science of Biodegradable Plastic". NJ: Princeton University Press. Princeton.



- Syamsiro Mochamad, Saptoadi Harwin, Norsujianto Tinton, Noviasri Putri, Cheng Shuo, Alimuddin Zainal, Yoshikawa Kunio. 2014. *"Fuel Oil Production From Municipal Plastic Waste in Sequential Pyrolysis and Catalytic Reforming Reactors"*. Energy Procedia 47: 180-188.
- Syamsiro, Mochamad. 2015. *"Kajian Pengaruh Penggunaan Katalis Terhadap Kualitas Produk Minyak Hasil Pirolisis Sampah Plastik"*. Jurnal Teknik. Universitas Janabadra. Yogyakarta. Vol 5. No 1: 47-56
- Tadeus, Astro, dkk. 2013. *"Karakterisasi Katalis Zeolit-Ni Regenerasi Dan Tanpa Regenerasi Dalam Reaksi Perengkahan Katalik"*. JKK Vol 2 (1) ISSN: 2303-1077: 24-49.
- Tchobanoglous, George dan Kreith, Frank. 1983. *"Handbook of Solid Waste Management, 2<sup>nd</sup> Edition"*. McGraw-Hill Companies, Inc.
- Tri Sunarti, W. 1996. *"Characterization and Modification of Indonesian Natural Zeolite and Their Properties For Hydrocracking of Paraffin"*. J. Jpn Petro 1: 20-25.
- Uddin MA, Koizumi K, Murata K. Sakata Y. 1996. *"Thermal and Catalytic Degradation of Structurally Different Types of Polyethylene into Fuel Oil"*. Polym Degrad Stab 56: 37-44.
- Valavanidid A, Llipoulos N, Gotsis G, Fiotakis K. 2008. *"Presistent Free Radicals and PHAs Generated in Particulate Soot Emissions and Residual Ash From Controlled Combustion of Common Type of Plastics"*. World Health Organization (WHO).
- Wahono, Satriyo Krido. 2008. *"Kajian: Pemanfaatan Zeolite Lokal Gunungkidul-Yogyakarta untuk Optimasi Sistem Biogas"*. Seminar Nasional Fundamental dan Aplikasi Teknik Kimia ITS. ISSN 1410-5667.
- Wigiatmo. 1995. *"Studi Daur Ulang Sampah Plastik"*. Skripsi S-1 FMIPA. Universitas Gadjah Mada. Yogyakarta.
- Windarti, Tri dan Suseno, Ahmad. 2004. *"Katalis Zeolit Alam Asam Sebagai Katalis Dalam Proses Katalitik Polietilena"*. JKSA Vol VII No. 3.
- Xingzhong, Y. 2006. *"Converting Waste Plastic into Liquid Fuel by Pyrolysis: Development in China"*. UK: John Wiley & Sons, Ltd.
- Yuliandra, Yebi. 2015. *"Pirolisis Sampah Plastik Polistirena (Styrofoam) dan Ampah Plastik Berlapis Aluminium Foil Untuk Menghasilkan Bahan Bakar"*. Tesis. Magister Teknik Sistem. Fakultas Teknik Universitas Gadjah Mada. Yogyakarta.

Zhenming Qian, Zhongai Gao, Menglan Qi, et. al. 1993. “*Treatment and Proposal of Solid Waste Beijing*”. Higher Education Press .China.