DAFTAR PUSTAKA

Ali, S. dkk. (2017) 'Enzyme-based solutions for textile processing and dye contaminant biodegradation — a review', pp. 14005–14018. doi: 10.1007/s11356-017-8998-1.

Anam, C. (2007) 'Analisis gugus fungsi pada sampel uji, bensin dan spiritus menggunakan metode Spektroskopi FTIR', *Berkala Fisika*, 10(1), pp. 79–83.

Arikunto, S. (2002) 'Prosedur suatu penelitian: pendekatan praktek', *Edisi Revisi Kelima. Penerbit Rineka Cipta. Jakarta*.

ASTM (2004) 'Standard Table of Commercial Moisture Regains for Textile Fibers'. West Conshohocken, United States: ASTM Internationa, pp. 1–2.

Balaji, V. dan Ebenezer, P. (2008) 'Optimization of extracellular lipase production in Colletotrichum gloeosporioides by solid state fermentation', *Indian J Sci Technol*, 1, pp. 1–8.

Blow, D. (1991) 'Lipase reach the surface', *Nature*, 351, pp. 444–445.

Boediono, S. (2017) *Menristekdikti Resmikan Fasilitas Unit Produksi Enzim BPPT – PT Petrosida Gresik, Biro Kerjasama dan Komunikasi Publik Kemristekdikdikti dan Humas BPPT*.

Bu, Y. dkk. (2019) 'Surface Modification of Aliphatic Polyester to Enhance Biocompatibility', *frontiers in Bioengineering and Biotechnology*, 7(May), pp. 1–10. doi: 10.3389/fbioe.2019.00098.

Buchert, J. dkk. (2000) 'Scouring of Cotton with Pectinases, Proteases, and Lipases.', *Textile Chemist & Colorist & American Dyestuff Reporter*, 32(5).

Dachriyanus, D. (2004) *Analisis Struktur Senyawa Organik Secara Spektroskopi*. Padang: Lembaga Pengembangan Teknologi Informasi dan Komunikasi (LPTIK) Universitas Andalas.

Damaso, M. C. T. dkk. (2008) 'Utilization of agroindustrial residues for lipase production by solid-state fermentation', *Brazilian Journal of Microbiology*, 39(4), pp. 676–681.

El-bendary, M. A., El-ola, S. M. A. dan Moharam, M. E. (2010) 'Enzymatic Surface Hydrolysis of Poly (Ethyleneterepthalate) by Lipase Enzyme and its Production', 4(2), pp. 1207–1216.

El-ola, S. M. A., Moharam, M. E. dan El-bendary, M. A. (2013) 'Optimum conditions for surface modification of PET by lipase enzymes produced by Egyptian bacilli in comparison with standard one', 38(June), pp. 165–172.

El-shemy, N. S., El-hawary, N. S. dan El-sayed, H. (2016) 'Basic and Reactive-Dyeable Polyester Fabrics Using Lipase Enzymes', *Journal of Chemical Engineering & Process Technology*, 7(November), pp. 1–5. doi: 10.4172/2157-

7048.1000271.

Gouveia, I. C. dan Antunes, L. C. (2009) 'Improving surface energy and hydrophilization of poly (ethylene terephthalate) by enzymatic treatments', *Proceedings of the International Conference on Biomedical Electronics and Devices*, pp. 268–275. doi: 10.5220/0001552102680275.

Hasan, M.M.B., Calvimontes, A., Synytska, A. dan D. (2008) 'Effects of Topographic Structure on Wettability of Differently Woven Fabrics', *Textile Research Journal*, 78(11), pp. 996–1003. doi: 10.1177/0040517507087851.

Hasan, F., Shah, A. A. dan Hameed, A. (2006) 'Industrial applications of microbial lipases', *Enzyme and microbial technology*, 39(October 2005), pp. 235–251. doi: 10.1016/j.enzmictec.2005.10.016.

Herzog, K., Mu, R. dan Deckwer, W. (2006) 'Mechanism and kinetics of the enzymatic hydrolysis of polyester nanoparticles by lipases', *Polymer Degradation and Stability*, 91, pp. 2486–2498. doi: 10.1016/j.polymdegradstab.2006.03.005.

Hsieh, Y. dan Cram, L. A. (1998) 'Enzymatic Hydrolysis to Improve Wetting and Absorbency of Polyester Fabrics', *Textile Research Journal*. doi: 10.1177/004051759806800501.

Kaewthong, W. dkk. (2005) 'Continuous production of monoacylglycerols by glycerolysis of palm olein with immobilized lipase', *Process Biochemistry*, 40(5), pp. 1525–1530.

Kasiram, M. (2010) 'Metodologi penelitian: Kualitatif--kuantitatif'. Uin-Maliki Press.

Kim, H. R. dan Song, W. S. (2006) 'Lipase Treatment of Polyester Fabrics', *Fibers and Polymers*, 7(4), pp. 339–343.

Kristanti, N. D. (2001) 'Pemurnian parsial dan karakterisasi lipase ekstraseluler dari kapang r', *Oryzae Tr*, 32.

Kumar, J. A. dan Kumar, M. S. (2019) 'A study on improving dyeability of polyester fabric using lipase enzyme', *AUTEX Research Journal*, pp. 1–7. doi: 10.2478/aut-2019-0030.

Kurnia, D. R. D. (2010) *Studi aktivitas enzim lipase dari Aspergillus niger sebagai biokatalis pada proses gliserolisis untuk menghasilkan monoasilgliserol*. Universitas Diponegoro.

Lee, S. H. dan Song, W. S. (2010) 'Surface Modification of Polyester Fabrics by Enzyme Treatment', *Fibers and Polymers*, 11(1), pp. 54–59. doi: 10.1007/s12221-010-0054-4.

Lehninger, A. L. dkk. (2005) *Lehninger principles of biochemistry*. Macmillan.

Linfield, W. M. dkk. (1984) 'Lipid-Lipase Interactions. I. Fat Splitting with Lipase from Candida rugosa', *JAOCS*, 61(6), pp. 1067–1071.

Liu, X. dan Kokare, C. (2017) *Microbial Enzymes of Use in Industry*, *Biotechnology of Microbial Enzymes*. Elsevier Inc. doi: 10.1016/B978-0-12-803725-6.00011-X.

Madhu, A. dan Chakraborty, J. N. (2017) 'Developments in application of enzymes for textile processing', *Journal of Cleaner Production*, 145, pp. 114–133. doi: 10.1016/j.jclepro.2017.01.013.

Majumdar, A. (2013) *Process control in textile manufacturing*. Woodhead P. Edited by A. Majumdar. New Delhi: Woodhead Publishing.

Mojsov, K. (2011) 'Application of enzymes in the textile industry : a review', *II International Congress "Engineering, Ecology and Materials in the Processing Industry"*, pp. 230–239.

Mojsov, K. (2014) 'Biopolishing Enzymes and their Applications in Textiles : A Review', *Tekstilna industrija*, 61, pp. 20–24.

Mojsov, K. dkk. (2020) 'Enzymatic treatment of wool fabrics with lipase in the improvement of some propertires of wool fabrics', *Tekstilna Industrija*, pp. 4–11. doi: 10.5937/tekstind2001004M.

Mongay, C. (1974) 'A Britton-Robinson buffer of known ionic strength', *Annali di Chimica*, 64, pp. 409–412.

Mueller, R. (2006) 'Biological degradation of synthetic polyesters — Enzymes as potential catalysts for polyester recycling', *Process Biochemistry*, 41, pp. 2124–2128. doi: 10.1016/j.procbio.2006.05.018.

Murni, S. W. dkk. (2011) 'Produksi, Karakterisasi, dan Isolasi Lipase dari Aspergillus niger', *Prosiding Seminar Nasional Teknik Kimia "Kejuangan"*, pp. 1–7.

Murray, R. K. dkk. (2014) *Harper's illustrated biochemistry*. Mcgraw-hill.

Pera, L. M. dkk. (2006) 'Catalytic properties of lipase extracts from Aspergillus niger', *Food Technology & Biotechnology*, 44(January), pp. 247–252.

Prayudie, U. (2015) 'Modifikasi permukaan serat poliester menggunakan sistem plasma non termal tekanan atmosfer dengan metode lucutan korona oleh ionisasi udara', *Arena Tekstil*, 30, pp. 45–54.

Pujari, A. (2018) 'Highlights of a strong growth market – Polyester fibers & PET', in. Houston, Texas, US, p. 33.

Purohit, J. dkk. (2012) 'Polyester polyol derived from waste poly (ethylene terephthalate) for coating application on mild steel', *Chemical Sciences Journal*.

Rani, H. and Widodo, Y. R. (2013) 'Optimasi Proses Pembuatan Bubuk (Tepung) Kedelai Optimization Process Soybean Flouring', *Jurnal Penelitian Pertanian Terapan*, 13(3), pp. 188–196.

Retnoningtyas, E. S. (2013) 'Aplikasi Crude Enzim Selulase dari Tongkol Jagung

(Zea mays L) pada produksi Etanol dengan Metode Simultaneous Saccharification and Fermentation (SSF)', *Reaktor*, 14(4), pp. 272–276.

Rohaeti, E. (2017) 'Kajian Tentang Kain Poliester Antibakteri dan Antikotor', *Prosiding Seminar Nasional Kimia UNY 2017*, pp. 285–296.

Shapiro, A. (2018) 'What is the difference between crude type and purified enzyme?'

SNI 08-0276 (2009) *Cara uji kekuatan tarik dan mulur kain tenun*. Indonesia: Badan Standarisasi Nasional.

Stevens, M. P. (2001) 'Kimia polimer', *Diterjemahkan oleh Iis Sopyan. Jakarta: Pradya Paramita*.

Sudjana Nana, I. (2010) 'Penelitian dan penilaian pendidikan', *Sinar Baru algesindo, Bandung*.

Sulistyani, M. (2018) 'Spektroskopi Foerier Transform Infra Red dengan metode Reflektansi (ATR-FTIR) pada Optimasi Pengkuran Sprektrum Vibrasi Vitamin C', 1(2), pp. 39–43.

Sutrisno, A. (2017) *Teknologi Enzim*. Universitas Brawijaya Press.

Tang, K. M., Kan, C. dan Fan, J. (2017) 'Comparison of Test Methods for Measuring Water Absorption and Transport Test Methods of Fabrics', *Measurement*, 97, pp. 126–137. doi: 10.1016/j.measurement.2016.10.054.

Taylor, P., Gupta, D. dan Chaudhary, H. (2015) 'The Journal of The Textile Institute Topographical changes in polyester after chemical, physical and enzymatic hydrolysis', (May 2015), pp. 37–41. doi: 10.1080/00405000.2014.934046.

Toha, A. H. . (2011) 'Ensiklopedia Biokimia Biologi Molekuler'. Jakarta: EGC, p. 884.

Traore, M. K. dan Buschle-Diller, G. (2000) 'Environmentally friendly scouring processes.', *Textile Chemist & Colorist & American Dyestuff Reporter*, 32(12).

Treichel, H. dkk. (2010) 'A Review on Microbial Lipases Production', *Food Bioprocess Technol*, 3, pp. 182–196. doi: 10.1007/s11947-009-0202-2.

Walter, T. dkk. (1995) 'Enzymatic degradation of a model polyester by lipase from Rhizopus delemar', 0229(94), pp. 218–224.

Winarno, F. G. (1995) 'Enzim Pangan. Cetakan ke 2', *PT. Gramedia. Jakarta*.

Yoshiharu; A.Tsuchida; Katsuraya, K. (2016) *High-Performance and Specialty Fibers*. Springer Japan.

Zimmermann, W., Wei, R. dan Zimmermann, W. (2017) 'Microbial enzymes for the recycling of recalcitrant petroleum-based plastics : How far are we? Minireview', *Microbial Biotechnology published*, (March). doi: 10.1111/1751-7915.12710.