

### เอกสารอ้างอิง

- กัญจนา บุณยเกียรติ. 2544. ใบโอดีเซล : พลังงานทางเลือกใหม่สำหรับเครื่องยนต์ดีเซล. วารสารวิทยาศาสตร์. 148-152.
- ฉัตรชัย สังษ์ผุด. 2540. การย่อยสลายน้ำมันปาล์มโดยจีนในตัวทำละลายอินทรีย์โดยใช้เอนไซม์ไลเพสต์ริงรูป. วิทยานิพนธ์วิทยาศาสตร์มหาบัณฑิต. มหาวิทยาลัยสงขลานครินทร์.
- ไฟจตร จันทวงศ์. 2530. คู่มือการใช้ประโยชน์และตรวจสอบคุณภาพของพืชน้ำมันและน้ำมันพืช 52 ชนิด. กรุงเทพฯ ช โรงพิมพ์ครุสภากัดพร้าว.
- มาตรฐานอุตสาหกรรม. 1267-2537. น้ำมันดีเซลสำหรับเครื่องยนต์หมุนเร็ว.
- ฉุณิชัย พิริยยุทธ. 2540. การย่อยสลายน้ำมันปาล์มโดยเอนไซม์ไลเพสท์รูป. วิทยานิพนธ์วิทยาศาสตร์มหาบัณฑิต. มหาวิทยาลัยสงขลานครินทร์.
- สาโรจน์ ศรีศันสนีกุล. 2538. วิศวกรรมเคมีพื้นฐาน 1. พิมพ์ครั้งที่ 1. กรุงเทพฯ : โรงพิมพ์จุฬาลงกรณ์มหาวิทยาลัย.
- อาภาสสรา ชุมิดา. 2537. เทคนิคที่สำคัญทางชีวเคมี ใน คู่มือทางชีวเคมี. หน้า 32-56. กรุงเทพฯ. โรงพิมพ์สมมิตรพรินติ้ง.
- Balcao, V.M., Piava, A.L. and Malcata, F.K. 1996. Bioreactors with immobilized lipase: State of art. Enzyme Microb. Technol. 18 : 392-416.
- Brady, C., Metcalfe, L., Slaboszewski, D. and Frank, D. 1988. Lipase immobilized on a hydrophobic microporous support for the hydrolysis of fats. J. Am. Oil Chems. 65 : 917-921.
- Chu, B.S., Ghazali, H.M., Lai, O.M., Che Man, Y.B. and Yusof, S. 2001. Phisical and chemical properties of a lipase-tranesterified palm stearin/palm kernel olein blend and its isopropanol-solid and high melting triacylglycerol fraction. Food chemistry. 76 : 155-164.
- Crabbe, E., Nolasco-Hipolito, C., Kobayashi, G., Sonomoto, K. and Ishizaki A. 2001. Biodiesel production from crude palm oil and evaluation of butanol extraction and fuel properties. Process Biochem. 37:65-71.

- Dossat, V., Combes, D. and Marty, A. 2002. Lipase-catalysed transterification of high oleic sunflower oil. *Enzyme Microbial Technol.* 30 : 90-94.
- Freedman, B., Pryde, E.H. and Mounts, T.L. 1984. Variables affecting the yields of fatty acid esters from transesterified vegetable oils. *J. Am. Oil Chem. Soc.* 61 : 1638-1643.
- Fukuda, H., Kondo, A. and Noda H. 2001. Biodiesel fuel production by transterification of oils. *J. Biosci. Bioeng.* 92 : 405-416.
- Garcia, H.S., Yang, B. and Parkin, K.L. 1995. Continuous reactor for enzymatic glycerolysis of butter oil in the absence of solvent. *Food Res. Int.* 28 : 605-609.
- Gilbert, E.J. 1993. *Pseudomonas* Lipase: biochemical properties and molecular cloning. *Enzyme Microb. Technol.* 156:634-636.
- Helga, H., Kristin, W. and Bjorn, S. 1998. Alcoholysis and glyceride synthesis with immobilized lipase on controlled-pore glass of varying hydrophobicity in supercritical carbon dioxide. *Enzyme Microb. Technol.* 22 : 360-367.
- Hoegh, I., Patkar, S., Halkier, T. and Hansen. M.T. 1995. Two lipases from *Candida antarctica* cloning and expression in *Aspergillus oryzae*. *Can. J. Botan.* 73 : S868 – S875.
- Hui, Y.H. 1996. Palm oil. In Bailey's Industrial Oil and Fat Products. Vol II : Edible oil and fat : Oli and oilseeds, pp. 271-367. New York : Jonh wiley and sons, INC.
- Jham, G.N., Teles, F.F.F. and Campos, L.G. 1982. Use of aqueous HCl/MeOH as esterification reagent for analysis of fatty acids derived from soybean lipids. *J. Am. Oil Chem. Soc.* 59 : 132-133.
- Kaijeda, M., Samukawa, T., Kondo. and Fukuda, H. 2000. Effect of methanol and water contents on production of biodiesel fuel from plant oil catalyzed by various lipases in a solvent free system. *J. Biosci. Bioeng.* 91 : 12-15.
- Kaijeda, M., Samukawa, T., Matsumoto, T., Ban, K., Kondo, A., Shimada, Y., Noda, H., Nomoto, F., Ohtsuka, K., Izumoto, E. and Fukuda, H. 1999. Biodiesel fuel

- production from plant oil catalyzed by *Rhizopus Oryzae* lipase in a water containing system without an organic solvent. *J. Biosci. Bioeng.* 88 : 627-631.
- Kamini, N.R. and Iefuji, H. 2001. Lipase catalyzed methanolysis of vegetable oils in aqueous medium by *Cryptococcus spp.* S-2. *Process Biochem.* 37 : 405-410.
- Kaewthong, W. and H-Kittikun, A. 2001. Monoacylglycerols production with immobilized lipase. *Songklanakarin J. Sci. Technol.* 23(1) : 149-157.
- Kazlauskas, R.J. and Bornsheuer, U.T. 1997. Biotransformations with lipase. In *Biotechnology* (eds. H.J. Rehm, G. Reed, A. Puhler, P.J.W. Stadler and D.R. Kelly) Vol. VIII : Biotransformation, pp. 226. Weinheim :VCH Verlagagesellschaft mbH.
- Kenedy, R.J. and Cabral, J.M.S. 1987. Enzyme immobilization, pp. 349-402. In J.F.Kenedy (ed.). *Biotechnology*. 7a. : Enzyme Technology. Fed. Repub. Of Germany. Weinheim.
- Kimura, Y., Tanaka, A., Somonato, K., Nihira, T. and Fukuki, S. 1983. Application of immobilized lipase to hydrolysis of triacylglyceride. *Eur. J. Appl. Microb. Biotechnol.* 17 : 107-122.
- Kose, O., Tuter, M. and Aksoy, H.A. 2002. Immobilized *Candida antarctica* lipase – catalyzed alcoholysis of cotton seed oil in a solvent – medium. *Bioresource Technol.* 83 : 125-129.
- Kosugi, Y., Tanaka, H. and Tomizuka, N. 1990. Continuous hydrolysis of oil by immobilized lipase in a countercurrent reactor. *Biotechnol. Bioeng.* 36 : 617-622.
- Kosugi, Y. and Tomizuka, N. 1995. Continuous lipolysis reactor with a loop connecting and immobilized lipase column and oil-water separator. *J. Am. Oil Chem. Soc.* 72 : 1329-1332.
- Krawczyk, T. 1996. Biodiesel alternative fuel makes inroads but hurdles remain. *Inform.* 7 : 801-829.

- Kwon, D.Y., Song, H.N. and Yeon, S.H. 1996. Synthesis of medium-chain glycerides by lipase in organic solvent. *J. Am. Oil Chem. Soc.* 73 : 1521-1525.
- Lee, S.Y. and Rhee, J.S. 1993. Production and partial purification of a lipase from *Pseudomonas putida* 3SK. *Enzyme Microb. Technol.* 15 : 617-623.
- Linko, Y.Y., Lamsa, M., Wu, X., Uosukainen, W., Sappala, J., and Linko, P. 1998. Biodegradable products by lipase biocatalysis. *J. Biotechnol.* 66 : 41-50.
- Lowry, O.H., Rosebrough, N.J., Farr, L.A. and Randall, R.J. 1951. Protein measurement with the folin phenol reagent. *J. Biol. Chem.* 193 : 265-275.
- Ma, F. and Hanna, M.A. 1999. Biodiesel production. *Bioresource Technol.* 70 : 1-15
- Malcata, F.X., Reyes, H.R., Garcia, H.S., Hill, C.G. and Amundson, C.H. 1992. Kinetic and mechanism of catalyzed by immobilized lipase. *Enzyme Microb. Technol.* 14 : 426-446.
- Macrae, A.R. 1983. Lipase-catalyzed interesterification of oils and fat. *J. Am. Oil Chem. Soc.* 61 : 1067-1071.
- Mittebach, M.W. 1990. Lipase catalysed alcoholysis of sunflower oil. *J. Am. Oil Chem. Soc.* 67 : 168-170.
- Millqvist, A., Adlercreutz, P. and Mattiasson, B. 1994. Lipase-catalyzed alcoholysis of triglycerides for the preparation of 2-monoglycerides. *Enzyme Microb. Technol.* 16 : 1042-1047.
- Montero, S., Blanco, A., Virto, D.M., Landata, C.L., Agud, I., Solazabal, R., Lascarry, M.L., Robobales, D.M., Lama, J.M., and Serra, L.J. 1993. Immobilization of *Candida rugosa* lipase and some properties of the immobilized enzyme. *Enzyme Microb. Technol.* 15(3) : 239-247.
- Nelson, Y.A., T.A. Foglia, and W.N. Marmer. 1996. Lipase-catalyzed production of biodiesel. 73 : 1191-1195.
- Okumura, S., M. Iwai and Y. Tsujisaka. 1981. The effect of reverse action on triglyceride hydrolysis by lipase. *Agric. Biol. Chem.* 45 : 180-189.

- Patel, M.T., Nagaragan, R. and Kilara, A. 1995. Characteristics of lipase-catalyzed hydrolysis of triglycerols in aerosol-ot/iso-octane reverse-micellar media. *Appl. Biochem. Biotechnol.* 22 : 1-14.
- Perrin, D.D. and Dempsey, B. 1974. Buffer for pH and Metal Ion Control. Chapman and Hall. London.
- Pronk, W., Boswinkel, G. and Riet, K.L. 1992. Parameters in fluevcing hydrolysis kinetics of lipase in a hydrophilic membrane bioreactor. *Enzyme Microb. Technol.* 14 : 214-220.
- Rosu, R., Uozaki, Y., Iwasaki, Y. and Yamane, T. 1997. Repeated use of immobilized lipase for monoacylglycerol production by solid-phase glycerolysis of olive oil. *J. Am. Oil Chem. Soc.* 74 : 445-450.
- Shimada, Y., Maruyama, K., Sugihara, A., Moriyama, S. and Tominaga, Y. 1997a. Purification of docosahexaenoic acid from tuna oil by a two-step enzymatic method : hydrolysis and selective esterification. *J. Am. Oil Chem. Soc.* 74(11) : 1441-1446.
- Shimada, Y., Watanabe, Y., Samukawa, T., Sugihara, A., Noda, H., Fukada, H. and Tominaga, Y. 1999. Conversion of plant oil to biodiesel using immobilized *Candida antarctica* lipase. *J. Am. Oil Chem. Soc.* 76 : 789-793 .
- Srivastava, A. and Prasad, R. 2000. Triglycerides-based diesel fuels. *Renewable and Sustainable Energy Reviews.* 4 : 111-133.
- Van der Padt, A., Sewalt, J.J.W., Agoston, S.M.I. and Van't Riet, K. 1992. *Candida rugosa* lipase stability during acylglycerol synthesis. *Enzyme Microb. Technol.* 14 : 805-812.
- Yamane, T. 1987. Enzyme technology for the lipid industry : An engineering overview. *J. Am. Oil Chem. Soc.* 64 : 1657-1661.

Ziejeski, M., Kaufman, K.R., Schwab, A.W. and Pryde, E.H. 1984. Diesel engine evaluation of a nonionic sunflower oil aqueous ethanol microemulsion. J. Am. Oil Chem. Soc. 61 : 1620-1626.