

## DAFTAR PUSTAKA

- Akbari, B., Tavandashti, M. P. and Zandrahimi, M. (2011) ‘Particle size characterization of nanoparticles- a practical approach’, *Iranian Journal of Materials Science and Engineering*, 8(2), pp. 48–56.
- Alvarez-Figueroa, M. J. and Blanco-Méndez, J. (2001) ‘Transdermal delivery of methotrexate: Iontophoretic delivery from hydrogels and passive delivery from microemulsions’, *International Journal of Pharmaceutics*, 215(1–2), pp. 57–65. doi: 10.1016/S0378-5173(00)00674-8.
- Amalliyah, B. (2014) ‘Stabilitas Fisika Sediaan Body Scrub Mengandung Bekatul, Rice Bran Oil, Virgin Coconut Oil (VCO), Kopi dan Ekstrak Aloe Vera Dengan Bahan Pengawet DMDM Hydantoin dan Natrium Benzoat’, *Jurnal Ilmiah Mahasiswa Universitas Surabaya*, 3(1), pp. 1–16.
- Anindhita, M. A. and Oktaviani, N. (2016) ‘Formulasi Self-Nanoemulsifying Drug Delivery System ( SNEDDS ) Ekstak Daun Pepaya ( Carica papaya L .) dengan Virgin Coconut Oil ( VCO ) sebagai Minyak Pembawa’, *Jurnal Pena Medika*, 6(2), pp. 103–111.
- Avadi, M. R. et al. (2010) ‘Preparation and characterization of insulin nanoparticles using chitosan and Arabic gum with ionic gelation method’, *Nanomedicine: Nanotechnology, Biology, and Medicine*. Elsevier Inc., 6(1), pp. 58–63. doi: 10.1016/j.nano.2009.04.007.
- Ayuningtyas, D. D. R., D. N. dan V. A. R. (2017) ‘Optimasi komposisi polietilen glikol dan lesitin sebagai kombinasi surfaktan pada sediaan nanoemulsi kafein’, *e-Jurnal Pustaka Kesehatan*, 5(1), pp. 157–163.
- Bouchemal, K. et al. (2004) ‘Nano-emulsion formulation using spontaneous emulsification: Solvent, oil and surfactant optimisation’, *International Journal of Pharmaceutics*, 280(1–2), pp. 241–251. doi: 10.1016/j.ijpharm.2004.05.016.
- Chen, M. L. (2008) ‘Lipid excipients and delivery systems for pharmaceutical development: A regulatory perspective’, *Advanced Drug Delivery Reviews*, 60(6), pp. 768–777. doi: 10.1016/j.addr.2007.09.010.
- Chime, S. A., F. C. K. dan A. A. and Attama (2014) *Nanoemulsions- Advances in Formulation, Characterization and Applications in Drug Delivery*, intech.
- Choiri, P. N. (2017) ‘Formulasi dan Karakterisasi Sediaan SNEDDS (Self-Nanoemulsifying Drug Delivery System) Loratadin.’, *Skripsi*.

- Christiansen, A., Backensfeld, T. and Weitschies, W. (2010) ‘Effects of non-ionic surfactants on in vitro triglyceride digestion and their susceptibility to digestion by pancreatic enzymes’, *European Journal of Pharmaceutical Sciences*. Elsevier B.V., 41(2), pp. 376–382. doi: 10.1016/j.ejps.2010.07.005.
- Cicilia, F. S. (2016) ‘Hasil akhir evaluasi stabilitas fisik VCO adalah diperoleh nilai HLB 6 yang menghasilkan sedaan dengan stabilitas fisik yang optimum pada tiap uji (Cicilia, F. S., 2016).’, *Skripsi*.
- Date, A. A. et al. (2010) ‘Self-nanoemulsifying drug delivery systems: Formulation insights, applications and advances’, *Nanomedicine*, 5(10), pp. 1595–1616. doi: 10.2217/nmm.10.126.
- Farida, Y., Rahmat, D. and Widia Amanda, A. (2018) ‘Uji Aktivitas Antiinflamasi Nanopartikel Ekstrak Etanol Rimpang Temulawak (*Curcuma xanthorrhiza Roxb.*) dengan Metode Penghambatan Denaturasi Protein (Anti-Inflammation Activity Test of Nanoparticles Ethanol Extract of Temulawak Rhizome (*Curcuma xanthorrhiza*’), *Jurnal Ilmu Kefarmasian Indonesia*, 16(2), pp. 225–230.
- Fase, D. and Triglyceride, M. L. (2016) ‘Comparison of Physical Stability Properties of Pomegranate Seed Oil Nanoemulsion Dosage Forms With Long-Chain Triglyceride and Medium-Chain Triglyceride As the Oil Phase’, *Comparison of Physical Stability Properties of Pomegranate Seed Oil Nanoemulsion Dosage Forms With Long-Chain Triglyceride and Medium-Chain Triglyceride As the Oil Phase*, 21(2), pp. 93–98. doi: 10.22146/tradmedj.12823.
- Fitria K, M. (2017) ‘OPTIMASI TWEEN 80 DAN LESITIN DALAM NANOEMULSI ANTIMIKROBA MINYAK BIJI KETUMBAR (*Coriandrum sativum L.*)’.
- Ghareeb, M. M. (2019) ‘Design and in vitro characterization of a topical nanoemulsion-enriched hydrogel of econazole nitrate’, *Journal of Applied Pharmaceutical Science*, 9(1), pp. 51–57. doi: 10.7324/JAPS.2019.90108.
- Gokhale, J. P., Mahajan, H. S. and Surana, S. S. (2019) ‘Quercetin loaded nanoemulsion-based gel for rheumatoid arthritis: In vivo and in vitro studies’, *Biomedicine and Pharmacotherapy*. Elsevier, 112(January), p. 108622. doi: 10.1016/j.bioph.2019.108622.
- Han, B. et al. (2019) ‘Experimental investigation of the strong stability, antibacterial and anti-inflammatory effect and high bioabsorbability of a perilla oil or linseed oil nanoemulsion system’, *RSC Advances*. Royal Society of Chemistry, 9(44), pp. 25739–25749. doi: 10.1039/c9ra03595h.

- Helmy, S. A., El-Bedaiwy, H. M. and El-Masry, S. M. (2020) ‘Applying Biopharmaceutical Classification System criteria to predict the potential effect of Cremophor®RH 40 on fexofenadine bioavailability at higher doses’, *Therapeutic Delivery*, 11(7), pp. 447–464. doi: 10.4155/tde-2020-0042.
- Hidayati, S. (2009) ‘Emulsi Metil Ester Sulfonat dari CPO’, *Jurnal Teknologi Industri dan Hasil Pertanian*, 14(1), pp. 38–44.
- Huda, N. and Wahyuningsih, I. (2018) ‘Karakterisasi Self-Nanoemulsifying Drug Delivery System (SNEDDS) Minyak Buah Merah (Pandanus conoideus Lam.)’, *Jurnal Farmasi Dan Ilmu Kefarmasian Indonesia*, 3(2), p. 49. doi: 10.20473/jfiki.v3i22016.49-57.
- Kakoty, M. and Gogoi, S. B. (2019) *Evaluation of Surfactant Formulation for EOR in Some Depleted Oil Fields of Upper Assam*. Springer International Publishing. doi: 10.1007/978-3-030-01929-7.
- Khor, Y. P. et al. (2014) ‘A comparative study of the physicochemical properties of a virgin coconut oil emulsion and commercial food supplement emulsions’, *Molecules*, 19(7), pp. 9187–9202. doi: 10.3390/molecules19079187.
- Krug, J. (2005) *Kinetic pattern formation at solid surfaces, Collective Dynamics of Nonlinear and Disordered Systems*. doi: 10.1007/3-540-26869-3\_2.
- Kumar, R., Soni, G. C. and Prajapati, S. K. (2017) ‘Formulation development and evaluation of Telmisartan Nanoemulsion’, *International Journal of Research and Development in Pharmacy & Life Sciences*, 06(04), pp. 2711–2719. doi: 10.21276/ijrdpl.2278-0238.2017.6(4).2711-2719.
- Lestari, M. and Binarjo, A. (2013) ‘Formulasi Cold Cream Propranolol Untuk Penghantaran Transdermal Dengan Basis Emulsi Yang Mengandung Vco (Virgin Coconut Oil)’, *Pharmaciana*, 3(2). doi: 10.12928/pharmaciana.v3i2.429.
- Mahmoud, H. (2013) ‘Design and optimization of self-nanoemulsifying drug delivery systems of simvastatin aiming dissolution enhancement’, *African Journal of Pharmacy and Pharmacology*, 7(22), pp. 1482–1500. doi: 10.5897/ajpp2013.2987.
- Makadia A. Hiral et al. (2013) ‘Self-nano Emulsifying Drug Delivery System (SNEDDS): Future Aspects | Makadia | Asian Journal of Pharmaceutical Research’, *Asian Journal of Pharmaceutical Research*, 3(1), pp. 21–27. Available at: <http://www.i-scholar.in/index.php/Ajpr/article/view/42755>.
- Marten, B. and Å, M. P. (2006) ‘Medium-chain triglycerides’, 16, pp. 1374–1382.

doi: 10.1016/j.idairyj.2006.06.015.

- Martien, R. *et al.* (2012) ‘Perkembangan teknologi nanopartikel sebagai sistem penghantaran obat’, *Majalah Farmaseutik*, 8(1), pp. 133–144.
- Mohamadi Saani, S., Abdolalizadeh, J. and Zeinali Heris, S. (2019) ‘Ultrasonic/sonochemical synthesis and evaluation of nanostructured oil in water emulsions for topical delivery of protein drugs’, *Ultrasonics Sonochemistry*. Elsevier, 55(March), pp. 86–95. doi: 10.1016/j.ulstsonch.2019.03.018.
- Munawiroh, S. Z., Handayani, F. S. and Nugroh, B. H. (2020) ‘Optimasi Formulasi Nanoemulsi Minyak Biji Anggur Energi Tinggi dengan Box Behnken Design (BBD)’, *Majalah Farmasetika.*, 4(Suppl 1), pp. 93–99. doi: 10.24198/mfarmasetika.v4i0.25864.
- N.M.D. Listyorini, N.L.P.D. Wijayanti, K. W. A. (2018) ‘OPTIMASI PEMBUATAN NANOEMULSI VIRGIN COCONUT OIL’, *JURNAL KIMIA* 12, 1, pp. 8–12.
- Nanjawade, Basavaraj K.; Kadam, Vikrant T.; Srichana, T. (2013) ‘Nanoemulsions Formation and Their Potential Applications’, *Reviews in Nanoscience and Nanotechnology*, 2(4), pp. 261–274.
- Nevin, K. G. and Rajamohan, T. (2006) ‘Virgin coconut oil supplemented diet increases the antioxidant status in rats’, *Food Chemistry*, 99(2), pp. 260–266. doi: 10.1016/j.foodchem.2005.06.056.
- Norulaini, N. A. N. *et al.* (2009) ‘Effects of supercritical carbon dioxide extraction parameters on virgin coconut oil yield and medium-chain triglyceride content’, *Food Chemistry*. Elsevier Ltd, 116(1), pp. 193–197. doi: 10.1016/j.foodchem.2009.02.030.
- Nurdianti, L., Aryani, R. and Indra, I. (2017) ‘Formulasi dan Karakterisasi SNE (Self Nanoemulsion) Astaxanthin dari Haematococcus pluvialis sebagai Super Antioksidan Alami’, *Jurnal Sains Farmasi & Klinis*, 4(1), p. 36. doi: 10.29208/jsfk.2017.4.1.168.
- Nurfauziah, R. and Rusdiana, T. (2018) ‘Review: Formulasi Nanoemulsi Untuk Meningkatkan Kelarutan Obat Lipofilik’, *Farmaka Suplemen*, 16, pp. 352–360.
- Olii, A. T. *et al.* (2014) ‘Pengembangan, Evaluasi, dan Uji Aktivitas Antiinflamasi Akut Sediaan Nanoemulsi Spontan Minyak Jintan Hitam’, *Jurnal Farmasi Indonesia*, 7(2), pp. 77–83.
- Oppusunggu, J. R., Siregar, V. R. and Masyithah, Z. (2015) ‘Pada Sintesis Surfaktan Dari Asam Oleat’, *Jurnal Teknik Kimia USU*, 4(1), pp. 25–29.

- Overview, A. N., Dyslexia, O. N. and Treatment, I. T. S. (2019) ‘Journal of Global Pharma Technology’, (October).
- Paolino, D. *et al.* (2019) ‘Mathematical models as tools to predict the release kinetic of fluorescein from lyotropic colloidal liquid crystals’, *Materials*, 12(5). doi: 10.3390/ma12050693.
- Patil, S. L. *et al.* (2012) ‘International Journal of Pharmacy and Biological Sciences (eISSN: 2230-7605) SELF EMULSIFYING DRUG DELIVERY SYSTEM (SEDDS): A Review’, 2(2). Available at: www.ijpbs.com.
- Priani, S. E., Somantri, S. Y. and Aryani, R. (2020) ‘Formulasi dan Karakterisasi SNEDDS (Self Nanoemulsifying Drug Delivery System) Mengandung Minyak Jintan Hitam dan Minyak Zaitun’, *Jurnal Sains Farmasi & Klinis*, 7(1), p. 31. doi: 10.25077/jsfk.7.1.31-38.2020.
- Probowati, A., Giovanni, P. C. and Ikhsan, D. (2012) ‘Pembuatan Surfaktan dari Minyak Kelapa Murni (VCO) melalui Proses Amidasi dengan Katalis NaOH’, *Jurnal Teknologi Kimia dan Industri*, 1 (1), pp. 424–432.
- Qadir, A. *et al.* (2016) ‘Critical steps and energetics involved in a successful development of a stable nanoemulsion’, *Journal of Molecular Liquids*. Elsevier B.V., 214, pp. 7–18. doi: 10.1016/j.molliq.2015.11.050.
- Rachmawati, H., D. H. Rasaputri, R. A., Susilowidodo, S. T. Darijanto, Y. C. and Sumirtapura (2010) ‘The Influence Of Oils And Surfactants On The Formation of Self Nanoemulsifying Drug Delivery Systems (SNEDDS) Containing Therapeutic Protein.’, *Materials Science and Technology*, pp. 247–252.
- Rao, J. and McClements, D. J. (2010) ‘Stabilization of phase inversion temperature nanoemulsions by surfactant displacement’, *Journal of Agricultural and Food Chemistry*, 58(11), pp. 7059–7066. doi: 10.1021/jf100990r.
- Reningtyas, R. and Mahreni (2015) ‘Biosurfaktan’, *Eksperi*, XII(2), pp. 12–22.
- Rodríguez-Burneo, N., Busquets, M. A. and Estelrich, J. (2017) ‘Magnetic nanoemulsions: Comparison between nanoemulsions formed by ultrasonication and by spontaneous emulsification’, *Nanomaterials*, 7(7). doi: 10.3390/nano7070190.
- Sari, A. . and Herdiana, Y. (2016) ‘Review : Formulasi Nanoemulsi terhadap peningkatan kualitas obat’, *Farmaka*, 16(1), pp. 247–254. Available at: <http://jurnal.unpad.ac.id/farmaka/article/view/17530/pdf>.
- Sarmah, S. *et al.* (2019) ‘Characterization and identification of the most appropriate nonionic surfactant for enhanced oil recovery’, *Journal of*

*Petroleum Exploration and Production Technology*. Springer International Publishing, (0123456789). doi: 10.1007/s13202-019-0682-1.

- Sato, Y. *et al.* (2019) ‘Development of a rolling ball viscometer for simultaneous measurement of viscosity, density, bubble-point pressure of CO<sub>2</sub> - expanded liquids’, *Fluid Phase Equilibria*. Elsevier Ltd, 487, pp. 71–75. doi: 10.1016/j.fluid.2019.01.017.
- Savardekar, P. and Bajaj, A. (2016) ‘International Journal of Research in Pharmacy and Chemistry Nanoemulsions-a Review’, *Ijrpc 2016*, 6(2), pp. 312–322.
- Seibert, J. B. *et al.* (2019) ‘Seasonality study of essential oil from leaves of *Cymbopogon densiflorus* and nanoemulsion development with antioxidant activity’, *Flavour and Fragrance Journal*, 34(1), pp. 5–14. doi: 10.1002/ffj.3472.
- Shah, P., Bhalodia, D. and Shelat, P. (2010) ‘Nanoemulsion: A pharmaceutical review’, *Systematic Reviews in Pharmacy*, 1(1), pp. 24–32. doi: 10.4103/0975-8453.59509.
- shinoda, K. and Lindman, B. (1987) ‘Organized Surfactant Systems: Microemulsions’, *Langmuir*, 3(2), pp. 135–149. doi: 10.1021/la00074a001.
- Singh, T. G. and Sharma, N. (2016) *Nanobiomaterials in cosmetics: Current status and future prospects*, *Nanobiomaterials in Galenic Formulations and Cosmetics: Applications of Nanobiomaterials*. Elsevier Inc. doi: 10.1016/B978-0-323-42868-2.00007-3.
- Sokolov, Y. V. (2014) ‘Nanoemulsion formation by low-energy methods: a review’, *Vіsnik farmacії*, 0(3(79)), pp. 16–19. doi: 10.24959/nphj.14.1981.
- Solanum, L. and Nsp, A. S. (2015) ‘ANTIOXIDANT ACTIVITY OF CREAM DOSAGE FORM OF TOMATO EXTRACT (*Solanum lycopersicum L.*)’, *Traditional Medicine Journal*, 18(3), pp. 132–140. doi: 10.22146/tradmedj.8214.
- Sonnevillaaubrun, O. (2004) ‘Nanoemulsions: a new vehicle for skincare products’, *Advances in Colloid and Interface Science*, 108–109(03), pp. 145–149. doi: 10.1016/s0001-8686(03)00146-5.
- Stephanie (2015) ‘Pengaruh Variasi fase Minyak Virgin Coconut Oil terhadap stabilitas Fisik Nanoemulsi Minyak Biji Delima dengan kombinasi Surfaktan Tween 80 dan Kosurfaktan PEG 400’, *Skripsi*, Fakultas F(Universitas Sanata Dharma, Yogyakarta), pp. 19–20.
- Streck, L. *et al.* (2019) ‘Tailoring microstructural, drug release properties, and

- antichagasic efficacy of biocompatible oil-in-water benznidazol-loaded nanoemulsions’, *International Journal of Pharmaceutics*. Elsevier B.V., 555, pp. 36–48. doi: 10.1016/j.ijpharm.2018.11.041.
- Suciati, T., Aliyandi, A. and Satrialdi (2014) ‘Development of transdermal nanoemulsion formulation for simultaneous delivery of protein vaccine and artin-m adjuvant’, *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(6), pp. 536–546.
- Sukmawati, A. (2020) ‘Meta Analisis Model Problem Based Learning Dalam Meningkatkan Kemampuan Berpikir Kritis Pada Pembelajaran Matematika’, 3(2), pp. 63–68.
- Sun, M. & Han, J. (2011) ‘Design, Preparation and In Vitro Evaluation of Paclitaxel-Loaded Self\_Nanoemulsifying Drug Delivery System’, *Asian Journal of Pharmaceutical Science*, 6(1), pp. 18–25.
- Swasano et al. (2012) ‘Sintesis Surfaktan Alkil Poliglikosida Dari Glukosa Dan Dodekanol Dengan Katalis Asam’, *Jurnal Teknik Kimia USU*, 1(1), pp. 5–9. doi: 10.32734/jtk.v1i1.1398.
- Syukri, Y. et al. (2021) ‘Development of new indonesian propolis extract-loaded self-emulsifying: Characterization, stability and antibacterial activity’, *Advanced Pharmaceutical Bulletin*, 11(1), pp. 120–129. doi: 10.34172/apb.2021.013.
- Tamala, Y. (2016) ‘PENGARUH TWEEN 80, PROPYLENGLIKOL DAN VCO DALAM FORMULASI HAIR TONIC NANOEMULSI EKSTRAK DAUN MANGKOKAN (*Polyscias scutellaria*) DAN DAUN TEH (*Camellia sinensis*)’.
- Teknologi, J. et al. (2013) ‘SINTESIS ESTER METIL RANTAI MEDIUM DARI MINYAK KELAPA DENGAN CARA Chemical Methanolysis in Synthesis of High Medium Chain Fatty Acids Methyl Ester from Coconut Oil’, 33(2), pp. 182–188.
- Tirmiara, N., Arianto, A. and Bangun, H. (2018) ‘Formulasi Dan Evaluasi Sediaan Nanoemulsi Gel Vitamin E (Alfa Tokoferol) Sebagai Anti-Aging kulit’, *Talenta Conference Series: Tropical Medicine (TM)*, 1(3), pp. 099–105. doi: 10.32734/tm.v1i3.270.
- Venkata, S., Rao, R. and Shao, J. (2008) ‘Self-nanoemulsifying drug delivery systems ( SNEDDS ) for oral delivery of protein drugs I . Formulation development’, 362, pp. 2–9. doi: 10.1016/j.ijpharm.2008.05.018.
- Vysakh, A. et al. (2014) ‘International Immunopharmacology Polyphenolics isolated from virgin coconut oil inhibits adjuvant induced arthritis in rats

- through antioxidant and anti-inflammatory action', *International Immunopharmacology*. Elsevier B.V., 20(1), pp. 124–130. doi: 10.1016/j.intimp.2014.02.026.
- Wahyuni, N. (2010) 'Modifikasi Kaolin Dengan Surfaktan Benzalkonium Klorida Dan Karakterisasinya Menggunakan Spektrofotometer Infra Merah', *Jurnal Sains dan Terapan Kimia*, 4(1), pp. 1–14.
- Wulansari, S. A., Sumiyani, R. and Aryani, N. L. D. (2019) 'Pengaruh Konsentrasi Surfaktan Terhadap Karakteristik Fisik Nanoemulsi Dan Nanoemulsi Gel Koenzym Q10', *Jurnal Kimia Riset*, 4(2), p. 143. doi: 10.20473/jkr.v4i2.16164.
- Yandi Syukri, Ziyyatul Kholidah, L. C. (2019) 'Formulasi dan Studi Stabilitas Self-Nano Emulsifying Propolis menggunakan Minyak Kesturi , Cremophor RH 40 dan PEG 400', *Jurnal Sains Farmasi dan Klimis*, 6(3), pp. 265–273.
- Yuliasari, S., Hamdan and Syafrial (2014) 'Aplikasi Nanoteknologi Untuk Pangan Fungsional Mendukung Diversifikasi Pangan', *Food Service*, 71(9), pp. 1475–1482.
- Zhao, S. et al. (2018) 'The stability of three different citrus oil-in-water emulsions fabricated by spontaneous emulsification', *Food Chemistry*, 269, pp. 577–587. doi: 10.1016/j.foodchem.2018.07.062.

