

DAFTAR PUSTAKA

- [1] H. E. Z. A. a, "Stress and Deformation of Optimally Shaped Silicon Microneedles," *Hafzaliza Erny Zainal Abidin a*, pp. 1-8, 2020.
- [2] S. Amilia Shafa*1, "Microneedle: Teknologi Baru Penghantar Vaksin COVID-19," *Artikel Review*, pp. 85-98, 2021.
- [3] V. Annisa*, "Sistem Penghantaran Obat Transdermal Dissolving," *Acta Pharm Indo (2020) Vol 8 No 1: hal 36-44*.
- [4] T. Waghulea, "Microneedles: A smart approach and increasing potential for transdermal," *Biomedicine & Pharmacotherapy*, vol. 109, pp. 1249-1258, 2019.
- [5] K. Ita, "Transdermal Delivery of Drugs with Microneedles—Potential," *pharmaceutics*, pp. 90-105, 2015.
- [6] B. J. V. M. L. A. A. S. A.R. Kalaiarasi*, "Design, Analysis and Modelling of Micro Needle for Transdermal Drug Delivery System," *Journal of Chemical and Pharmaceutical Sciences*, pp. 47-50, .
- [7] P. K. Podder1, "Design, Simulation and Study of MEMS Based Micro-needles and," 2011.
- [8] T. M. T. M. I. A. & S. R. NUR AFIQAH MUSTAFA KAMAL, "Improving Rate of Gelatin/Carboxymethylcellulose Dissolving Microneedle for Transdermal Drug Delivery," *Sains Malaysiana 49(9)(2020): 2269-2279*.
- [9] M. A. M. a. E. v. d. H. Julien van Kuilenburg, "Contact modelling of human skin: What," *Institution of mechanical engineers*, pp. 1-13, 2012.
- [10] 2. *. M. Sarmadi1, "Multi-objective Optimization of Microneedle Design for Transdermal".
- [11] P. Y. Vaibhav Rastogi, "Transdermal drug delivery system: An overview," *pharmaceuteus*, vol. 6, pp. 160-170, 2012.

- [12] C. Cm, N. Bj, E. Pm, G. La, and E. Macher, “What is the ‘ true ’ function of skin ?,” in Blackwell Munksgaard 2002, R. Paus and Hamburg, Eds. 226 Clinical Res Building 415 Curie Boulevard Philadelphia, PA 19104–6142 USA: EXPERIMENTAL DERMATOLOGY, 2002, pp. 159–187.
- [13] R. F. Donnelly, T. R. R. Singh, D. I. J. Morrow, and A. D. Woolfson, “Transdermal Delivery Applications,” in Microneedle-Mediated Transdermal and Intradermal Drug Delivery, 1st ed., Belfast, UK: John Wiley & Sons, Ltd, 2012, pp. 79–112
- [14] P. K. Podder, D. Mallick, D. P. Samajdar, and A. Bhattacharyya, “Design , Simulation and Study of MEMS Based Micro-needles and Micro-pump for Biomedical Applications,” 2011, pp. 1–7.
- [15] N. Abser and S. Islam, “Mechanical Feasibility Analysis of Process Optimized Silicon Microneedle for Biomedical Applications,” in 6th International Conference on Electrical and Computer Engineering ICECE 2010, 2010, no. 18–20, pp. 222–225.
- [17] S. J. R. Kalangi and Bagaian, “Histofisiologi Kulit,” J. Biomedik, vol. 5, no. 3, pp. 12–20, 2013, doi: 10.35790/jbm.5.3.2013.4344.
- [18] “Transdermal.” Universitas Gajah Mada, pp. 1–11.
- [19] J. J. MAHAKUD and Z. R. KHAN, “Theoretical And Practical Approach For Transdermal Drug Delivery Using MICRONEEDLES For Successful Skin Penetration.” ITER, S’O’A UNIVERSITY, Bhubaneswar , Odisha , India, pp. 1–40, 2013