



DAFTAR PUSTAKA

- Alghrairi, M., Sulaiman, N., & Mutashar, S. (2020). Health care monitoring and treatment for coronary artery diseases: Challenges and issues. In *Sensors (Switzerland)* (Vol. 20, Issue 15, pp. 1–23). MDPI AG. <https://doi.org/10.3390/s20154303>
- B, S., & Tontowi, A. E. (2019). OPTIMASI DESAIN STENT PLA MENGGUNAKAN METODE RESPONSE SURFACE (RSM) UNTUK MEMPEROLAH FLEKSIBILITAS TERBAIK. *Jurnal Teknosains*, 8(1), 1–88. <https://doi.org/10.22146/teknosains.35387>
- Banabic, D., Barlat, F., Cazacu, O., & Kuwabara, T. (2010). Advances in anisotropy and formability. In *International Journal of Material Forming* (Vol. 3, Issue 3, pp. 165–189). <https://doi.org/10.1007/s12289-010-0992-9>
- Baradaran, Y., Baghani, M., Kazempour, M., Hosseini, S. K., Karimpour, M., & Baniassadi, M. (2021). Design and Shape Optimization of a Biodegradable Polymeric Stent for Curved Arteries Using FEM. *Frontiers in Mechanical Engineering*, 7. <https://doi.org/10.3389/fmech.2021.689002>
- Barsanescu, P. D., & Comanici, A. M. (2017). von Mises hypothesis revised. *Acta Mechanica*, 228(2), 433–446. <https://doi.org/10.1007/s00707-016-1706-2>
- Bathe, K. J. (2008). Finite Element Method. *Wiley Encyclopedia of Computer and Engineering*, 1–12. <https://doi.org/10.1002/9780470050118.ecse159>
- Bobel, A. C., Petisco, S., Sarasua, J. R., Wang, W., & McHugh, P. E. (2015). Computational Bench Testing to Evaluate the Short-Term Mechanical Performance of a Polymeric Stent. *Cardiovascular Engineering and Technology*, 6(4), 519–532. <https://doi.org/10.1007/s13239-015-0235-9>
- Brambilla, A., Pennati, G., Petrini, L., & Berti, F. (2023). Stents in Congenital Heart Disease: State of the Art and Future Scenarios. In *Applied Sciences (Switzerland)* (Vol. 13, Issue 17). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/app13179692>
- Chen, C., Xiong, Y., Li, Z., & Chen, Y. (2020). Flexibility of biodegradable polymer stents with different strut geometries. *Materials*, 13(15). <https://doi.org/10.3390/ma1315332>
- Chen, W., & Dai, F. (2021). Evaluation of Talent Cultivation Quality of Modern Apprenticeship Based on Context-Input-Process-Product Model. *International Journal of Emerging Technologies in Learning*, 16(4), 197–212. <https://doi.org/10.3991/ijet.v16i14.24053>



- Chen, W. H., Carrera Uribe, M., Kwon, E. E., Lin, K. Y. A., Park, Y. K., Ding, L., & Saw, L. H. (2022). A comprehensive review of thermoelectric generation optimization by statistical approach: Taguchi method, analysis of variance (ANOVA), and response surface methodology (RSM). In *Renewable and Sustainable Energy Reviews* (Vol. 169). Elsevier Ltd. <https://doi.org/10.1016/j.rser.2022.112917>
- Clare, J., Ganly, J., Bursill, C. A., Sumer, H., Kingshott, P., & de Haan, J. B. (2022). The Mechanisms of Restenosis and Relevance to Next Generation Stent Design. In *Biomolecules* (Vol. 12, Issue 3). MDPI. <https://doi.org/10.3390/biom12030430>
- Dewi, N. A. (2019). *OPTIMIZATION OF DESIGN PARAMETERS OF POLY L-LACTIC ACID AND POLY D, L-LACTIC ACID STENTS USING FINITE ELEMENT METHOD AND RESPONSE SURFACE METHOD THESIS Composed By.* Universitas Gadjah Mada.
- Di Bucchianico, A. (2007). Coefficient of Determination (R²) Related Articles Analysis of Variance; Correlation; Dependence; Degrees of Freedom; Lack of Fit. *Encyclopedia of Statistics in Quality and Reliability.* <https://doi.org/10.1002/9780470061572.eqr173>
- Fareed, M., Suri, K., Qureshi, A., Muhammad, ;, Memon, Z., & Qureshi, A. I. (2008). Treatment of unruptured intracranial aneurysms using internally expanding coils. In *Article in Journal of Vascular and Interventional Neurology* (Vol. 1, Issue 2). <https://www.researchgate.net/publication/224770608>
- Greaves, G. N., Greer, A. L., Lakes, R. S., & Rouxel, T. (2011). Poisson's ratio and modern materials. In *Nature Materials* (Vol. 10, Issue 11, pp. 823–837). Nature Publishing Group. <https://doi.org/10.1038/nmat3134>
- Institute for Health Metrics and Evaluation. (n.d.). Indonesia. HeathData.org. Available at: <https://www.healthdata.org/research-analysis/health-by-location/profiles/indonesia> (Accessed: 31 May 2024)
- Khalaj, R., Tabriz, A. G., Junqueira, L. A., Okereke, M. I., & Douroumis, D. (2024). 3D printed stents using Fused deposition modelling. *Journal of Drug Delivery Science and Technology*, 97. <https://doi.org/10.1016/j.jddst.2024.105724>
- Khatami, M., Doniavi, / Ali, Amir, /, Abazari, M., & Fotouhi, M. (2024). Flexibility and Geometric Optimization of a New Structure for a Polymer Stent with the Finite Element Method. *Sharif Journal of Mechanical Engineering.* <https://doi.org/10.24200/j40.2023.60261.1637>
- Korei, N., Solouk, A., Haghbin Nazarpak, M., & Nouri, A. (2022). A review on design characteristics and fabrication methods of metallic cardiovascular stents. In *Materials Today Communications* (Vol. 31). Elsevier Ltd. <https://doi.org/10.1016/j.mtcomm.2022.103467>



Krishnaiah, K., & Shahabudeen, P. (2012). *APPLIED DESIGN OF EXPERIMENTS AND TAGUCHI METHODS*. PHI Learning Private Limited.

Krittawong, C., Kumar, A., Wang, C., Narasimhan, B., Mahtta, D., Jneid, H., Baber, U., Mehran, R., Tang, W., Ballantyne, C. M., & Virani, S. S. (2020). Coronary artery disease in the young in the US population-based cohort. *Am J Cardiovasc Dis*, 10(3), 189–194.

Montgomery, D. C., & Runger, G. C. (2003). *Applied statistics and probability for engineers*. Wiley.

Myers, R. H., Montgomery, D. C., & Anderson-cook, C. M. (2009). *RESPONSE SURFACE METHODOLOGY* (D. J. Balding, N. A. C. Cressie, G. M. Fitzmaurice, I. M. Johnstone, & G. Moltenberghs, Eds.; Third). John Wiley & Sons, Inc.

Pan, C., Han, Y., & Lu, J. (2021). Structural design of vascular stents: A review. In *Micromachines* (Vol. 12, Issue 7). MDPI AG. <https://doi.org/10.3390/mi12070770>

Pauck, R. G., & Reddy, B. D. (2015). Computational analysis of the radial mechanical performance of PLLA coronary artery stents. *Medical Engineering and Physics*, 37(1), 7–12. <https://doi.org/10.1016/j.medengphy.2014.09.014>

Pelleg, J. (2013). *Mechanical Properties of Materials* (G. M. L. Gladwell, Ed.; Vol. 190). Springer Dordrecht Heidelberg New York London. <https://doi.org/10.1007/978-94-007-4342-7>

Pelton, A. R., & Duerig, T. W. (2004). *SMST-2003 : Proceedings of the International Conference on Shape Memory and Superelastic Technologies, 5 May to 8 May 2003, Asilomar Conference Center, Pacific Grove, California, USA*. SMST Society.

Petrini, L., Migliavacca, F., Auricchio, F., & Dubini, G. (2004). Numerical investigation of the intravascular coronary stent flexibility. *Journal of Biomechanics*, 37(4), 495–501. <https://doi.org/10.1016/j.jbiomech.2003.09.002>

Polanec, B., Kramberger, J., & Glodež, S. (2020). A review of production technologies and materials for manufacturing of cardiovascular stents. *Advances in Production Engineering And Management*, 15(4), 390–402. <https://doi.org/10.14743/APEM2020.4.373>

Prasath, M. K. (2018). *ScienceDirect Application of Taguchi and Response Surface Methodology (RSM) in Steel Turning Process to Improve Surface Roughness and Material Removal Rate*. www.sciencedirect.com

Pratama, I. D. (2017). *OPTIMASI PARAMETER DESAIN STENT BERBAHAN BAKU POLY L-LACTIC ACID (PLLA) UNTUK MEMPEROLEH SIFAT MEKANIS OPTIMAL BERDASARKAN NILAI RECOIL*,



FORESHORTENING DAN TEGANGAN VON MISES MENGGUNAKAN METODE RESPONSE SURFACE. Universitas Gadjah Mada.

Raeni, F. (2018). *OPTIMASI DESAIN STENT BERMATERIAL KOMPOSIT PLLA CNT UNTUK MEMPEROLEH FLEKSIBILITAS TERBAIK MENGGUNAKAN METODE RESPONSE SURFACE.* Universitas Gadjah Mada.

Rofiyati, W. R., & Pangastuti, H. S. (2020). Factors Associated Quality of Life Patients with Coronary Stent in Dr Sardjito Hospital Yogyakarta. *Jurnal Ners Dan Kebidanan Indonesia*, 8(1), 9. [https://doi.org/10.21927/jnki.2020.8\(1\).9-16](https://doi.org/10.21927/jnki.2020.8(1).9-16)

Rokom. (2023). *Cegah Penyakit Jantung Dengan menerapkan Perilaku Cerdik Dan Patuh – Sehat Negeriku, Sehat Negeriku Sehatlah Bangsaku.* Available at: <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20230925/4943963/cegah-penyakit-jantung-dengan-menerapkan-perilaku-cerdik-dan-patuh/> (Accessed: 31 May 2024)

Schiavone, A., Qiu, T. Y., & Zhao, L. G. (2017). Crimping and deployment of metallic and polymeric stents - finite element modelling. *Vessel Plus*, 1, 12–21. <https://doi.org/10.20517/2574-1209.2016.03>

Septiani, E. G. (2017). *Optimasi Parameter Desain Stent Berbahan Baku Poly-L-Lactic Acid (PLLA) untuk Memperoleh Fleksibilitas Terbaik Menggunakan Metode Response Surface.* Universitas Gadjah Mada.

Setyo Nugroho, A., Astutik, E., & Dwi Tama, T. (2022). Risk Factors for Coronary Heart Disease in Productive Age Group in Indonesia Article in Malaysian Journal of Medicine and Health Sciences . In *Malaysian Journal of Medicine and Health Sciences* (Vol. 18, Issue 2). <https://www.researchgate.net/publication/359938073>

Tomberli, B., Mattesini, A., Baldereschi, G. I., & Di Mario, C. (2018). A Brief History of Coronary Artery Stents. *Revista Española de Cardiología (English Edition)*, 71(5), 312–319. <https://doi.org/10.1016/j.rec.2017.11.022>

Tontowi, A. E., Adani, R. A., Setyanintyas, I. S., & Taufiq, N. (2014). *Analysis of User Acceptability Factors for Optimum Design of Coronary Stent.* 1–7. <https://doi.org/10.13140/2.1.1885.2805>

Tontowi, A. E., Ikra, P., & Siswomihardjo, W. (2013). Mapping of Coronary Stent Demand of Several Hospitals in Indonesia and Its Forecasting. *2013 3rd International Conference on Instrumentation, Communications, Information Technology, and Biomedical Engineering (ICICI-BME) 436* Bandung, 436–439. <https://doi.org/1109/ICICI-BME.2013.6698542>

Tontowi, A. E., Pratama, I., Hariawan, H., RInastiti, M., & Siswomihardjo, W. (2015). Strength and Displacement of Open Cell Designs of Coronary Stent in Responding of Various Inflated Pressures. *2015 4th International Conference on Instrumentation, Communications, Information Technology, and*



Biomedical Engineering (ICICI-BME) Bandung, 18–21.
<https://doi.org/10.1109/ICICI-BME.2015.7401307>

Ullah, M., Wahab, A., Khan, S. U., Zaman, U., Rehman, K. ur, Hamayun, S., Naeem, M., Ali, H., Riaz, T., Saeed, S., Alsuhaiibani, A. M., & Refat, M. S. (2023). Stent as a Novel Technology for Coronary Artery Disease and Their Clinical Manifestation. In *Current Problems in Cardiology* (Vol. 48, Issue 1). Elsevier Inc. <https://doi.org/10.1016/j.cpcardiol.2022.101415>

Utami, A. S. M. K. (2017). *Optimasi Parameter Desain Stent dengan Linkage Terpilih Berbahan Baku Poly-L-Lactic Acid untuk Memperoleh Fleksibilitas Terbaik dengan Menggunakan Response Surface Method (RSM)*. Universitas Gadjah Mada.

Vaizasatya, A., De Mattos, G., Li, V. Z. C., & Xu, Z. (2013). A Product Development Methodology: Design and Simulation of Coronary Stents. In *Journal of Medical* (Vol. 7). http://asmedigitalcollection.asme.org/medicaldevices/article-pdf/7/3/030937/6235651/med_007_03_030937.pdf

Vishnu, J., Manivasagam, G., Mantovani, D., Udduttula, A., Coathup, M. J., Popat, K. C., Ren, P.-G., & Prashanth, K. G. (2022). Balloon expandable coronary stent materials: a systematic review focused on clinical success. *In Vitro Models*, 1(2), 151–175. <https://doi.org/10.1007/s44164-022-00009-w>

Wajdi, F., Tontowi, A. E., & Kusumaningtyas, I. (2018). Finite Element Investigation of GO Reinforced PLLA Stent Deployment. *2018 1st International Conference on Bioinformatics, Biotechnology, and Biomedical Engineering (BioMIC)*, Yogyakarta, Indonesia, 1–6. <https://doi.org/10.1109/BIOMIC.2018.8610617>

Waksman, R. (2007). Promise and challenges of bioabsorbable stents. In *Catheterization and Cardiovascular Interventions* (Vol. 70, Issue 3, pp. 407–414). <https://doi.org/10.1002/ccd.21176>

Watson, T., Webster, M. W. I., Ormiston, J. A., Ruygrok, P. N., & Stewart, J. T. (2017). Long and short of optimal stent design. In *Open Heart* (Vol. 4, Issue 2). BMJ Publishing Group. <https://doi.org/10.1136/openhrt-2017-000680>

Weir, N. A., Buchanan, F. J., Orr, J. F., & Dickson, G. R. (2004). Degradation of poly-L-lactide. Part 1: In vitro and in vivo physiological temperature degradation. *Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine*, 218(5), 307–319. <https://doi.org/10.1243/0954411041932782>

Workshopscience, I. (2024). *Steps to Analyzing a Material's Properties From Its Stress/Strain Curve Introduction: Steps to Analyzing a Material's Properties From Its Stress/Strain Curve*. <https://www.instructables.com/Steps-to-Analyzing-a-Materials-Properties-from-its/>



UNIVERSITAS
GADJAH MADA

Optimalisasi Parameter Desain Kombinasi Open dan Close Cell untuk Memperoleh Desain Stent

Dengan

Fleksibilitas Terbaik Menggunakan Response Surface Methodology

DARYWAN DAMAR BAASITH, Prof. Ir. Alva Edy Tontowi, M.Sc., Ph.D., IPU., ASEAN Eng.

Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Wu, W., Yang, D. Z., Qi, M., & Wang, W. Q. (2007). An FEA method to study flexibility of expanded coronary stents. *Journal of Materials Processing Technology*, 184(1–3), 447–450.
<https://doi.org/10.1016/j.jmatprotoc.2006.12.010>