

DAFTAR PUSTAKA

- [1] I. Sukmana, Peluang dan tantangan aplikasi baut tulang mampu terdegradasi berbasis logam magnesium, *Dinamika Teknik Mesin* 6 (2016) 93–98.
- [2] M.B. Donsu, A.C. Lengkong, R.B. V Rawung, Gambaran Penyembuhan Tulang Sekunder pada Fraktur dengan Anatomical Reduction Fixation Tipe Plate and Screw di RSUP Prof. Dr. RD Kandou Periode 2019–2020, *E-CliniC* 9 (2021).
- [3] J. Li, L. Qin, K. Yang, Z. Ma, Y. Wang, L. Cheng, D. Zhao, Materials evolution of bone plates for internal fixation of bone fractures: A review, *J Mater Sci Technol* 36 (2020) 190–208. <https://doi.org/10.1016/j.jmst.2019.07.024>.
- [4] N. Eliaz, Corrosion of metallic biomaterials: A review, *Materials* 12 (2019). <https://doi.org/10.3390/ma12030407>.
- [5] I. Sukmana, A.Y. Eka Risano, M. Arif Wicaksono, R. Adi Saputra, Perkembangan dan Aplikasi Biomaterial dalam Bidang Kedokteran Modern: A Review, *INSOLOGI: Jurnal Sains Dan Teknologi* 1 (2022) 635–646. <https://doi.org/10.55123/insologi.v1i5.1037>.
- [6] L. Ghasemi-Mobarakeh, D. Kolahreez, S. Ramakrishna, D. Williams, Key terminology in biomaterials and biocompatibility, *Curr Opin Biomed Eng* 10 (2019) 45–50. <https://doi.org/10.1016/j.cobme.2019.02.004>.
- [7] B.D. Ratner, A pore way to heal and regenerate: 21st century thinking on biocompatibility, *Regen Biomater* 3 (2016) 107–110. <https://doi.org/10.1093/RB/RBW006>.
- [8] S. Wang, Y. Xu, J. Zhou, H. Li, J. Chang, Z. Huan, In vitro degradation and surface bioactivity of iron-matrix composites containing silicate-based bioceramic, *Bioact Mater* 2 (2017) 10–18. <https://doi.org/10.1016/j.bioactmat.2016.12.001>.

- [9] C.P. Gupta, Role of iron (Fe) in body, *IOSR Journal of Applied Chemistry* 7 (2014) 38–46.
- [10] M. Dehestani, E. Adolfsson, L.A. Stanciu, Mechanical properties and corrosion behavior of powder metallurgy iron-hydroxyapatite composites for biodegradable implant applications, *Mater Des* 109 (2016) 556–569. <https://doi.org/10.1016/j.matdes.2016.07.092>.
- [11] T. Kraus, F. Moszner, S. Fischerauer, M. Fiedler, E. Martinelli, J. Eichler, F. Witte, E. Willbold, M. Schinhammer, M. Meischel, P.J. Uggowitzer, J.F. Löffler, A. Weinberg, Biodegradable Fe-based alloys for use in osteosynthesis: Outcome of an in vivo study after 52 weeks, *Acta Biomater* 10 (2014) 3346–3353. <https://doi.org/10.1016/j.actbio.2014.04.007>.
- [12] A. Arifin, A.B. Sulong, N. Muhamad, J. Syarif, M.I. Ramli, Powder injection molding of HA/Ti6Al4V composite using palm stearin as based binder for implant material, *Mater Des* 65 (2015) 1028–1034. <https://doi.org/10.1016/j.matdes.2014.10.039>.
- [13] W.S.W. Harun, R.I.M. Asri, J. Alias, F.H. Zulkifli, K. Kadirgama, S.A.C. Ghani, J.H.M. Shariffuddin, A comprehensive review of hydroxyapatite-based coatings adhesion on metallic biomaterials, *Ceram Int* 44 (2018) 1250–1268. <https://doi.org/10.1016/j.ceramint.2017.10.162>.
- [14] J. Triyono, S. Susmartini, E. Susilowati, S.A. Murdiyantara, Shellac Coated Hydroxyapatite (HA) Scaffold for Increasing Compression Strength, *Adv Mat Res* 1123 (2015) 378–382. <https://doi.org/10.4028/www.scientific.net/amr.1123.378>.
- [15] E. Purwanto, S.A. Kristiawan, E. Safitri, F. Pratama, Modulus of Elasticity and Tensile Strength on Textile Rein-Forced Concrete Using Cantula Fiber (*Agave Cantula Roxb*), (2019).
- [16] W.W. Rahardjo, E. Pujiyanto, B.A. Saputro, A. Majid, J. Triyono, *Agave Cantula fiber-reinforced biocomposites of*

- hydroxyapatite/shellac as a dental material, *Journal of Natural Fibers* 19 (2022) 13012–13024.
- [17] Standard Handbook of Biomedical Engineering & Design, in: 2004: pp. 32.1 – 32.61.
- [18] E.F. Morgan, G.U. Unnikrisnan, A.I. Hussein, Bone Mechanical Properties in Healthy and Diseased States, *Annu Rev Biomed Eng* 20 (2018) 119. <https://doi.org/10.1146/ANNUREV-BIOENG-062117-121139>.
- [19] L. Røhl, E. Larsen, F. Linde, A. Odgaard, J. Jørgensen, Tensile and compressive properties of cancellous bone, *J Biomech* 24 (1991) 1143–1149. [https://doi.org/10.1016/0021-9290\(91\)90006-9](https://doi.org/10.1016/0021-9290(91)90006-9).
- [20] M.S. Ghiasi, J.E. Chen, E.K. Rodriguez, A. Vaziri, A. Nazarian, Computational modeling of human bone fracture healing affected by different conditions of initial healing stage, *BMC Musculoskelet Disord* 20 (2019). <https://doi.org/10.1186/s12891-019-2854-z>.
- [21] E.A. Friis, T.A. DeCoster, J.C. Thomas, Mechanical testing of fracture fixation devices, in: *Mechanical Testing of Orthopaedic Implants*, Elsevier, 2017. <https://doi.org/10.1016/B978-0-08-100286-5.00007-X>.
- [22] L. Joskowicz, C. Milgrom, A. Simkin, L. Tockus, Z. Yaniv, Biomedical Paper FRACAS: A System for Computer-Aided Image-Guided Long Bone Fracture Surgery, 1998.
- [23] R. Gorejová, L. Haverová, R. Oriňaková, A. Oriňak, M. Oriňak, Recent advancements in Fe-based biodegradable materials for bone repair, *J Mater Sci* 54 (2019) 1913–1947. <https://doi.org/10.1007/s10853-018-3011-z>.
- [24] F.S. Irwansyah, A.I. Amal, E.P. Hadisantoso, A.R. Noviyanti, D. Rakhmawaty Eddy, R. Risdiana, S. Suryana, S. Bin, M. Zain, How to Make and Characterize Hydroxyapatite from Eggshell Using the Hydrothermal Method: Potential Insights for Drug Delivery System,

- Indonesian Journal of Science & Technology 8 (2023) 469–486.
<https://doi.org/10.17509/ijost.v8i3.60825>.
- [25] H. Kanno, T. Aizawa, K. Hashimoto, E. Itoi, Enhancing percutaneous pedicle screw fixation with hydroxyapatite granules: A biomechanical study using an osteoporotic bone model, *PLoS One* 14 (2019).
<https://doi.org/10.1371/journal.pone.0223106>.
- [26] S. and B.I. Dyah Rahmawawti, Aplikasi Hidroksiapatit Sebagai Bone Filler Pasca Pencabutan Gigi, vol. 9, no. 2, pp. 39–46, Sep. 2020., *Jurnal Material Kedokteran Gigi* 9 (2020) 49–46.
- [27] C. Coelho, R. Nanabala, M. Ménager, S. Commereuc, V. Verney, Molecular changes during natural biopolymer ageing - The case of shellac, *Polym Degrad Stab* 97 (2012) 936–940.
<https://doi.org/10.1016/j.polymdegradstab.2012.03.024>.
- [28] B.D. Ratner, S.J. Bryant, Biomaterials: Where we have been and where we are going, *Annu Rev Biomed Eng* 6 (2004) 41–75.
<https://doi.org/10.1146/annurev.bioeng.6.040803.140027>.
- [29] H. Zwipp, S. Rammelt, S. Barthel, Calcaneal fractures - Open reduction and internal fixation (ORIF), *Injury* 35 (2004) 46–54.
<https://doi.org/10.1016/j.injury.2004.07.011>.
- [30] A. Gefen, Erratum: Optimizing the biomechanical compatibility of orthopedic screws for bone fracture fixation (*Medical Engineering and Physics* (2002) 24 (337-347) PII: S1350453302000279), *Med Eng Phys* 25 (2003) 433. [https://doi.org/10.1016/S1350-4533\(03\)00053-5](https://doi.org/10.1016/S1350-4533(03)00053-5).
- [31] B. Hanson, C. Van Der Werken, D. Stengel, Surgeons' beliefs and perceptions about removal of orthopaedic implants, *BMC Musculoskelet Disord* 9 (2008). <https://doi.org/10.1186/1471-2474-9-73>.
- [32] A.R. Amini, J.S. Wallace, S.P. Nukavarapu, Short-Term and Long-Term Effects of Orthopedic Biodegradable Implants, 2011.

- [33] C.S. Obayi, R. Tolouei, C. Paternoster, S. Turgeon, B.A. Okorie, D.O. Obikwelu, G. Cassar, J. Buhagiar, D. Mantovani, Influence of cross-rolling on the micro-texture and biodegradation of pure iron as biodegradable material for medical implants, *Acta Biomater* 17 (2015) 68–77. <https://doi.org/10.1016/j.actbio.2015.01.024>.
- [34] Y. Zhao, J. Feng, H. Yu, W. Lin, X. Li, Y. Tian, M. Zhao, Comparative Study on Biodegradation of Pure Iron Prepared by Microwave Sintering and Laser Melting, *Materials* 15 (2022). <https://doi.org/10.3390/ma15041604>.
- [35] D.P. Wermuth, T.C. Paim, I. Bertaco, C. Zanatelli, L.I.S. Naasani, M. Slaviero, D. Driemeier, A.C. Tavares, V. Martins, C.F. Escobar, L.A.L. dos Santos, L. Schaeffer, M.R. Wink, Mechanical properties, in vitro and in vivo biocompatibility analysis of pure iron porous implant produced by metal injection molding: A new eco-friendly feedstock from natural rubber (*Hevea brasiliensis*), *Materials Science and Engineering C* 131 (2021). <https://doi.org/10.1016/j.msec.2021.112532>.
- [36] P. Layrolle, A. Ito, T. Tateishi, Sol-gel synthesis of zinc containing calcium phosphate biomaterials, *Phosphorus Research Bulletin* 6 (1996) 63–66.
- [37] A. Singh, Hydroxyapatite, a biomaterial: Its chemical synthesis, characterization and study of biocompatibility prepared from shell of garden snail, *Helix aspersa*, 2012.
- [38] S.X. Han, Z.W. Ning, K. Chen, J. Zheng, Preparation and tribological properties of Fe-hydroxyapatite bioceramics, *Biosurf Biotribol* 3 (2017) 75–81. <https://doi.org/10.1016/j.bsbt.2017.07.001>.
- [39] V. V Silva, F.S. Lameiras, R.Z. Domingues, Microstructural and mechanical study of zirconia-hydroxyapatite (ZH) composite ceramics for biomedical applications, 2001. www.elsevier.com/locate/compscitech.

- [40] C. Coelho, R. Nanabala, M. Ménager, S. Commereuc, V. Verney, Molecular changes during natural biopolymer ageing - The case of shellac, *Polym Degrad Stab* 97 (2012) 936–940. <https://doi.org/10.1016/j.polymdegradstab.2012.03.024>.
- [41] N. Acaralı, S. Demir, Physical and chemical effects of quartet structure (bamboo / zinc borate / shellac / surfactant) on organic coatings, *Journal of the Indian Chemical Society* 98 (2021). <https://doi.org/10.1016/j.jics.2021.100043>.
- [42] Y. Farag, C.S. Leopold, Physicochemical properties of various shellac types, *Dissolut Technol* 16 (2009) 33–39. <https://doi.org/10.14227/DT160209P33>.
- [43] W. W. Raharjo, D. Aries H, R. Fitriyan, Sifat Tarik dan Lentur Komposit rHDPE/Serat Cantula dengan Variasi Panjang Serat, (2015).
- [44] D. Prasetyo, W.W. Raharjo, Pengaruh penambahan coupling agent terhadap kekuatan mekanik komposit polyester-cantula dengan anyaman serat 3D angle interlock, *Mekanika* 12 (2013).
- [45] Ronald F. Gibson, *Principles of Composite Material Mechanics*, CRC PRESS, New York, 2016.
- [46] H. Nurrohman, Pengaruh Variasi Temperatur Dan Waktu Holding Sintering Terhadap Sifat Mekanik Dan Morfologi Biodegradable Material Mg-Fe-Zn Dengan Metode Metalurgi Serbuk Untuk Aplikasi Orthopedic Devices, Jurusan Teknik Material Dan Metalurgi, Fakultas Teknologi Industri, ITS, Surabaya (2016).
- [47] T. Suwanda, Optimalisasi tekanan kompaksi, temperatur dan waktu sintering terhadap kekerasan dan berat jenis aluminium pada proses pencetakan dengan metalurgi serbuk, *Semesta Teknika* 9 (2006) 187–198.
- [48] Y.M.Z. Ahmed, M.I. Riad, A.S. Sayed, M.K. Ahlam, M.E.H. Shalabi, Correlation between factors controlling preparation of porous copper

- via sintering technique using experimental design, *Powder Technol* 175 (2007) 48–54. <https://doi.org/10.1016/j.powtec.2007.01.027>.
- [49] C.A.O. da Motta, J. de Souza, V. Martins, L. Shaeffer, E.G. Rossini, L.V. Biehl, D.A. de Jesus Pacheco, C.O.D. Martins, J.L.B. Medeiros, Enhancing composite materials through fly ash reinforcement through powder metallurgy, *Mater Chem Phys* 307 (2023) 128124.
- [50] J. Li, R.A. Laghari, A review on machining and optimization of particle-reinforced metal matrix composites, *The International Journal of Advanced Manufacturing Technology* 100 (2019) 2929–2943. <https://doi.org/10.1007/s00170-018-2837-5>.
- [51] H. Siddhi Jailani, A. Rajadurai, B. Mohan, A. Senthil Kumar, T. Sornakumar, Development and properties of aluminium silicon alloy fly ash composites, *Powder Metallurgy* 54 (2011) 474–479.
- [52] S.O. Wijayanto, A.P. Bayuseno, Analisis kegagalan material pipa ferrule nickel alloy n06025 pada waste heat boiler akibat suhu tinggi berdasarkan pengujian: mikrografi dan kekerasan, *Jurnal Teknik Mesin* 1 (2013) 33–39.
- [53] H. Sahdiah, R. Kurniawan, Optimasi Tegangan Akselerasi pada Scanning Electron Microscope–Energy Dispersive X-Ray Spectroscopy (SEM-EDX) untuk Pengamatan Morfologi Sampel Biologi, *Jurnal Sains Dan Edukasi Sains* 6 (2023) 117–123.
- [54] A. Pambudi, M. Farid, H. Nurdiansah, Analisa morfologi dan spektroskopi infra merah serat bambu betung (*Dendrocalamus asper*) hasil proses alkalisasi sebagai penguat komposit absorpsi suara, *Jurnal Teknik ITS* 6 (2017) F435–F440.
- [55] B. Fazlali, S. Upadhyay, S. Ashokbhai Ashodia, F. Mesquita, S. V. Lomov, V. Carvelli, Y. Swolfs, Specimen designs for accurate tensile testing of unidirectional composite laminates, *Compos Part A Appl Sci Manuf* 175 (2023) 107799. <https://doi.org/10.1016/j.compositesa.2023.107799>.

- [56] J M Hodgkinson, *Mechanical Testing of Advanced Fibre Composites*, CRC Press, New York, 2000.
- [57] L.S. Moura, G.D. Vittoria, A.H.G. Gabriel, E.B. Fonseca, L.P. Gabriel, T.J. Webster, É.S.N. Lopes, A highly accurate methodology for the prediction and correlation of mechanical properties based on the slimmness ratio of additively manufactured tensile test specimens, *J Mater Sci* 55 (2020) 9578–9596. <https://doi.org/10.1007/s10853-020-04654-y>.
- [58] Joseph R. Davis, *Tensile Testing*, Second Edition, ASM International, Ohio, 2004.
- [59] *Operation, Maintenance, and Repair of Land-Based Gas Turbines*, Elsevier, 2021. <https://doi.org/10.1016/C2019-0-02860-9>.
- [60] N.H. Sari, S. Sinarep, Analisa Kekuatan Bending Komposit Epoxy Dengan Penguatan Serat Nilon, *Dinamika Teknik Mesin* 1 (2011).
- [61] E.J. Barbero, S.-H. Fu, I. Raftoyiannis, Ultimate bending strength of composite beams, *Journal of Materials in Civil Engineering* 3 (1991) 292–306.
- [62] M.A. Haq, V. Naubnome, N. Fauji, Pengaruh Fraksi Volume terhadap Kekuatan Tarik dan Bending Komposit Serat Serabut Kelapa Bermatriks Poliester, *Rotor* 15 (2022) 53–57.
- [63] L. Liu, K. Gebresellasie, B. Collins, H. Zhang, Z. Xu, J. Sankar, Y.-C. Lee, Y. Yun, Degradation Rates of Pure Zinc, Magnesium, and Magnesium Alloys Measured by Volume Loss, Mass Loss, and Hydrogen Evolution, *Applied Sciences* 8 (2018) 1459. <https://doi.org/10.3390/app8091459>.
- [64] R.G. Estrada, M. Multigner, N. Fagali, R.M. Lozano, M. Muñoz, S.C. Cifuentes, B. Torres, M. Lieblich, Metastable FeMg particles for controlling degradation rate, mechanical properties, and biocompatibility of Poly(l-lactic) acid (PLLA) for orthopedic applications, *Heliyon* 9 (2023) e22552. <https://doi.org/10.1016/j.heliyon.2023.e22552>.

- [65] C.G. Hynes, E. Morra, P. Walsh, F. Buchanan, Degradation of biomaterials, in: *Tissue Eng*, Elsevier, 2023: pp. 213–259. <https://doi.org/10.1016/B978-0-12-824459-3.00032-9>.
- [66] L.I.U. Xueshu, C. Fei, A review of void formation and its effects on the mechanical performance of carbon fiber reinforced plastic, *Engineering Transactions* 64 (2016) 33–51.
- [67] R. Zhou, Z. Li, J. Sun, Crack deflection and interface debonding in composite materials elucidated by the configuration force theory, *Compos B Eng* 42 (2011) 1999–2003.
- [68] I.P. Lokantara, I.P. Lokantara, Analisis Kekuatan Impact Komposit Polyester-Serat Tapis Kelapa Dengan Variasi Panjang Dan Fraksi Volume Serat Yang Diberi Perlakuan NaOH, *Dinamika Teknik Mesin: Jurnal Keilmuan Dan Terapan Teknik Mesin* 2 (2012). <https://dinamika.unram.ac.id/index.php/DTM/article/view/111> (accessed November 13, 2024).
- [69] E. Purwanto, S.A. Kristiawan, E. Safitri, F.Y. Kartika, Effect of volume fraction and aspect ratio of Agave fiber *Cantula Roxb* against compressive strength and direct tensile strength, *AIP Conf Proc* 2114 (2019). <https://doi.org/10.1063/1.5112424/913346>.
- [70] C.C. Barber, M. Burnham, O. Ojameruaye, M.D. McKee, A systematic review of the use of titanium versus stainless steel implants for fracture fixation, *OTA International* 4 (2021) e138. <https://doi.org/10.1097/OI9.000000000000138>.
- [71] D. Prasetyo, W. Wisnu Raharjo, Pengaruh Penambahan Coupling Agent Terhadap Kekuatan Mekanik Komposit Polyeteer-Cantula dengan Anyaman Serat 3D Angle Interlock, 2013.
- [72] K. Tikupadang, M.B. Palungan, A. Buku, H. Manuhutu, The Utilization of Agave *Cantula Roxb* as Composite Strength on Fishing Boat Hull, *IOP Conf Ser Mater Sci Eng* 1088 (2021) 012101. <https://doi.org/10.1088/1757-899x/1088/1/012101>.

- [73] M.Z.R. Khan, S.K. Srivastava, M.K. Gupta, Tensile and flexural properties of natural fiber reinforced polymer composites: A review, *Journal of Reinforced Plastics and Composites* 37 (2018) 1435–1455.
- [74] F.A. Nugraha, I.A. Purniawan, H. Purwaningsih, Pengaruh Komposisi Zn dan Temperatur Casting Terhadap Morfologi dan Sifat Mekanik Paduan Mg-Zn untuk Aplikasi Biodegradable Orthopedic Devices, Skripsi. Fakultas Teknologi Industri, Institut Teknologi Sepuluh November, Surabaya (2017).
- [75] T.G. Tihan, M.D. Ionita, R.G. Popescu, D. Iordachescu, Effect of hydrophilic–hydrophobic balance on biocompatibility of poly(methyl methacrylate) (PMMA)–hydroxyapatite (HA) composites, *Mater Chem Phys* 118 (2009) 265–269. <https://doi.org/10.1016/J.MATCHEMPHYS.2009.03.019>.
- [76] M.S. Salim, M. Rafidya, B. Ramadhan, E. Wahyu, A. Fanani, D. Ariawan, E. Surojo, *Mekanika: Majalah Ilmiah Mekanika* Effect of Alkaline Treatment and Fumigation (Fumigation) on the Mechanical Properties of Fiber Unsaturated Polyester-Cantula Composite with Compression Molding Method, (2022). <https://doi.org/10.20961/mekanika.v21i2.51493>.
- [77] C.H. Liao, L.M. Shollenberger, Survivability and long-term preservation of bacteria in water and in phosphate-buffered saline, *Lett Appl Microbiol* 37 (2003) 45–50. <https://doi.org/10.1046/J.1472-765X.2003.01345.X>.
- [78] S. Agustina, I.K.G. Wiryawan, S. Suharti, The importance of rumen anaerobic fungi on fiber degradation in ruminants, *Ber Biol* 19 (2020) 231–238.