

DAFTAR PUSTAKA

- [1] N. Xue *et al.*, “Bone Tissue Engineering in the Treatment of Bone Defects,” Jul. 01, 2022, *MDPI*. doi: 10.3390/ph15070879.
- [2] E. H. Schemitsch, “Size Matters: Defining Critical in Bone Defect Size!,” *J Orthop Trauma*, vol. 31, pp. S20–S22, Oct. 2017, doi: 10.1097/BOT.0000000000000978.
- [3] A. Nauth, M. D. Mckee, T. A. Einhorn, J. T. Watson, R. Li, and E. H. Schemitsch, “Managing Bone Defects.” [Online]. Available: www.jorthotrauma.com
- [4] M. da S. Brasilino *et al.*, “Mate tea (*Ilex paraguariensis*) improves bone formation in the alveolar socket healing after tooth extraction in rats,” *Clin Oral Investig*, vol. 22, no. 3, pp. 1449–1461, Apr. 2018, doi: 10.1007/s00784-017-2249-1.
- [5] I. Zein, D. W. Hutmacher, K. Cheng Tan, and S. Hin Teoh, “Fused deposition modeling of novel scaffold architectures for tissue engineering applications,” 2021.
- [6] S. Wei, J. X. Ma, L. Xu, X. S. Gu, and X. L. Ma, “Biodegradable materials for bone defect repair,” Dec. 01, 2020, *BioMed Central Ltd*. doi: 10.1186/s40779-020-00280-6.
- [7] L. H. Fu, C. Qi, Y. J. Liu, W. T. Cao, and M. G. Ma, “Sonochemical synthesis of cellulose/hydroxyapatite nanocomposites and their application in protein adsorption,” *Sci Rep*, vol. 8, no. 1, Dec. 2018, doi: 10.1038/s41598-018-25566-7.
- [8] P. Melnikov and R. V. Gonçalves, “Preparation and characterization of strontium hydroxyapatite $\text{Sr}_{10}(\text{PO}_4)_6(\text{OH})_2 \cdot 10\text{H}_2\text{O}$ suitable for orthopedic applications,” *Mater Lett*, vol. 150, pp. 89–92, Jul. 2015, doi: 10.1016/j.matlet.2015.02.110.
- [9] X. Zhang *et al.*, “Template-assisted, sol-gel fabrication of biocompatible, hierarchically porous hydroxyapatite scaffolds,” *Materials*, vol. 12, no. 8, 2021, doi: 10.3390/ma12081274.
- [10] S. C. Cox, J. A. Thornby, G. J. Gibbons, M. A. Williams, and K. K. Mallick, “3D printing of porous hydroxyapatite scaffolds intended for use in bone tissue engineering applications,” *Materials Science and Engineering C*, vol. 47, pp. 237–247, Feb. 2022, doi: 10.1016/j.msec.2014.11.024.

- [11] A. Mehatlaf, A. Atiyah, and S. Farid, "An Experimental Study of Porous Hydroxyapatite Scaffold Bioactivity in Biomedical Applications," *Engineering and Technology Journal*, vol. 39, no. 6, pp. 977–985, Jun. 2021, doi: 10.30684/etj.v39i6.2059.
- [12] R. Z. LeGeros, "Calcium phosphate-based osteoinductive materials," Nov. 2008. doi: 10.1021/cr800427g.
- [13] S. Bailliez and A. Nzihou, "The kinetics of surface area reduction during isothermal sintering of hydroxyapatite adsorbent," *Chemical Engineering Journal*, vol. 98, no. 1–2, pp. 141–152, Mar. 2004, doi: 10.1016/j.cej.2003.07.001.
- [14] J. H. Ryu *et al.*, "Synergistic Effect of Porous Hydroxyapatite Scaffolds Combined with Bioactive Glass/Poly(lactic- co-glycolic acid) Composite Fibers Promotes Osteogenic Activity and Bioactivity," *ACS Omega*, vol. 4, no. 1, pp. 2302–2310, Jan. 2020, doi: 10.1021/acsomega.8b02898.
- [15] G. K. Saeed, A. F. Essa, and S. A. A. Said, "Preparation and characterization of hydroxyapatite powder and study of hydroxyapatite - Alumina Composite," in *Journal of Physics: Conference Series*, IOP Publishing Ltd, Aug. 2020. doi: 10.1088/1742-6596/1591/1/012006.
- [16] A. A. Mehatlaf, S. B. H. Farid, and A. A. Atiyah, "Fabrication and Investigation of Bioceramic Scaffolds by a Polymer Sponge Replication Technique," *IOP Conf Ser Mater Sci Eng*, vol. 1076, no. 1, p. 012080, Feb. 2021, doi: 10.1088/1757-899x/1076/1/012080.
- [17] Q. Liang, J. Dong, J. Ren, C. Xiao, and C. Deng, "Intensified cross-linking dramatically improved the mechanical properties of hydroxyapatite and cellulose composites for repairing bone segmental defects," *Mater Adv*, vol. 5, no. 6, pp. 2556–2569, Feb. 2024, doi: 10.1039/d3ma00974b.
- [18] A. S. Budiadin *et al.*, "Bovine Hydroxyapatite-Based Bone Scaffold with Gentamicin Accelerates Vascularization and Remodeling of Bone Defect," *Int J Biomater*, vol. 2021, 2021, doi: 10.1155/2021/5560891.
- [19] G. Fernandez de Grado *et al.*, "Bone substitutes: a review of their characteristics, clinical use, and perspectives for large bone defects management," Jun. 02, 2023, *SAGE Publications Ltd*. doi: 10.1177/2041731418776819.

- [20] U. G. Longo *et al.*, “Tissue Engineered Strategies for Pseudoarthrosis,” 2022.
- [21] L. Solomin, A. Komarov, A. Semenistyy, G. A. Sheridan, and S. R. Rozbruch, “Universal Long Bone Defect Classification,” *Journal of Limb Lengthening & Reconstruction*, vol. 8, no. 1, pp. 54–62, Jan. 2022, doi: 10.4103/jllr.jllr_3_22.
- [22] Y. Xia, H. Wang, Y. Li, and C. Fu, “Engineered bone cement trigger bone defect regeneration,” Aug. 22, 2022, *Frontiers Media S.A.* doi: 10.3389/fmats.2022.929618.
- [23] D. Smrke, P. Roman, M. Veselko, and B. Gubi, “Treatment of Bone Defects — Allogenic Platelet Gel and Autologous Bone Technique,” in *Regenerative Medicine and Tissue Engineering*, InTech, 2020. doi: 10.5772/55987.
- [24] H. Elhawary, A. Baradaran, J. Abi-Rafah, J. Vorstenbosch, L. Xu, and J. I. Efanov, “Bone Healing and Inflammation: Principles of Fracture and Repair,” *Semin Plast Surg*, vol. 35, no. 3, pp. 198–203, Aug. 2021, doi: 10.1055/s-0041-1732334.
- [25] S. Fan, X. Sun, C. Su, Y. Xue, X. Song, and R. Deng, “Macrophages—bone marrow mesenchymal stem cells crosstalk in bone healing,” 2023, *Frontiers Media SA.* doi: 10.3389/fcell.2023.1193765.
- [26] S. Liu, C. Hu, and Z. Ren, “Bone Tissue Engineering: Scaffolds with Osteoinductivity for Bone Regeneration,” 2023, *Hindawi Limited.* doi: 10.1155/2017/1038476.
- [27] M. Prakasam, J. Locs, K. Salma-Ancane, D. Loca, A. Largeteau, and L. Berzina-Cimdina, “Fabrication, Properties and Applications of Dense Hydroxyapatite: A Review,” *J Funct Biomater*, vol. 6, no. 4, pp. 1099–1140, Dec. 2020, doi: 10.3390/jfb6041099.
- [28] H. Khalid and A. A. Chaudhry, “Basics of hydroxyapatite-structure, synthesis, properties, and clinical applications,” in *Handbook of Ionic Substituted Hydroxyapatites*, Elsevier, 2019, pp. 85–115. doi: 10.1016/B978-0-08-102834-6.00004-5.
- [29] S. Wei, J. X. Ma, L. Xu, X. S. Gu, and X. L. Ma, “Biodegradable materials for bone defect repair,” Dec. 01, 2020, *BioMed Central Ltd.* doi: 10.1186/s40779-020-00280-6.
- [30] E. Liodaki, R. Kraemer, P. Mailaender, and F. Stang, “The use of bone graft substitute in hand surgery a prospective observational study,”

- Medicine (United States)*, vol. 95, no. 24, Jun. 2020, doi: 10.1097/MD.0000000000003631.
- [31] K. Azzaoui *et al.*, “Synthesis of nanostructured hydroxyapatite in presence of polyethylene glycol 1000,” *Available online www.jocpr.com Journal of Chemical and Pharmaceutical Research*, no. 5, pp. 1209–1216, 2022, [Online]. Available: www.jocpr.com
 - [32] I. Postic and H. Sheardown, “Poly(ethylene glycol) induces cell toxicity in melanoma cells by producing a hyperosmotic extracellular medium,” *J Biomater Appl*, vol. 33, no. 5, pp. 693–706, Nov. 2021, doi: 10.1177/0885328218807675.
 - [33] S. I. Roohani-Esfahani, P. Newman, and H. Zreiqat, “Design and Fabrication of 3D printed Scaffolds with a Mechanical Strength Comparable to Cortical Bone to Repair Large Bone Defects,” *Sci Rep*, vol. 6, Jan. 2021, doi: 10.1038/srep19468.
 - [34] S. Ghanaati, J. Lorenz, K. Obreja, J. Choukroun, C. Landes, and R. A. Sader, “Nanocrystalline hydroxyapatite-based material already contributes to implant stability after 3 months: A clinical and radiologic 3-year follow-up investigation,” *Journal of Oral Implantology*, vol. 40, no. 1, pp. 103–109, 2023, doi: 10.1563/AAID-JOI-D-13-00232.
 - [35] M. J. Azuraini *et al.*, “Surface Modification of Sponge-like Porous Poly(3-hydroxybutyrate-co-4-hydroxybutyrate)/Gelatine Blend Scaffolds for Potential Biomedical Applications,” *Polymers (Basel)*, vol. 14, no. 9, May 2022, doi: 10.3390/polym14091710.
 - [36] Z. I. Dhary, A. A. Atiyah, and S. B. H. Farid, “The simple method to prepare hydroxyapatite scaffolds exhibiting high porosity,” in *AIP Conference Proceedings*, American Institute of Physics Inc., Jul. 2022. doi: 10.1063/5.0094016.
 - [37] S. Rahman, K. H. Maria, M. S. Ishtiaque, A. Nahar, H. Das, and S. M. Hoque, “Evaluation of a novel nanocrystalline hydroxyapatite powder and a solid hydroxyapatite/Chitosan-Gelatin bioceramic for scaffold preparation used as a bone substitute material,” *Turk J Chem*, vol. 44, no. 4, pp. 848–900, 2020, doi: 10.3906/KIM-1912-40.
 - [38] F. Schönweger *et al.*, “New insights into osteointegration and delamination from a multidisciplinary investigation of a failed hydroxyapatite-coated hip joint replacement,” *Materials*, vol. 13, no. 21, pp. 1–17, Nov. 2020, doi: 10.3390/ma13214713.

- [39] M. M. Bahir, A. Rajendran, D. Pattanayak, and N. Lenka, "Fabrication and characterization of ceramic-polymer composite 3D scaffolds and demonstration of osteoinductive propensity with gingival mesenchymal stem cells," *RSC Adv*, vol. 13, no. 38, pp. 26967–26982, Sep. 2023, doi: 10.1039/d3ra04360f.
- [40] A. Nikmah and R. Kurniawan, "Sintesis Hydroxyapatite Nanoparticle dari Limbah Cangkang Bekicot dan Aktivitas Antibakterinya sebagai Kandidat Material Biomedis," *Jurnal Sains dan Edukasi Sains*, vol. 7, no. 1, pp. 23–28, Feb. 2024, doi: 10.24246/juses.v7i1p23-28.
- [41] L. Mendoza-Cerezo, J. M. Rodríguez-Rego, A. Soriano-Carrera, A. C. Marcos-Romero, and A. Macías-García, "Fabrication and characterisation of bioglass and hydroxyapatite-filled scaffolds," *J Mech Behav Biomed Mater*, vol. 144, Aug. 2023, doi: 10.1016/j.jmbbm.2023.105937.
- [42] L. El Milla, D. J. Indrani, and B. Irawan, "SINTESIS DAN UJI POROSITAS SCAFFOLD HIDROKSIAPATIT/ALGINAT Nomer 1," 2021.
- [43] A. Setiabudi *et al.*, "Karakterisasi Material: Prinsip dan Aplikasinya dalam Penelitian Kimia:UPI PRESS," 2020.
- [44] N. Bariyah, A. Pascawinata, and K. Kunci Abstrak, "GAMBARAN KARAKTERISTIK SCAFFOLD HIDROKSIAPATIT GIGI MANUSIA DENGAN METODE PLANETARY BALL MILL MENGGUNAKAN UJI SCANNING ELECTRON MICROSCOPE (SEM)."
- [45] O. A. Osuchukwu, A. Salihi, I. Abdullahi, and D. O. Obada, "Experimental data on the characterization of hydroxyapatite produced from a novel mixture of biowastes," *Data Brief*, vol. 42, Jun. 2022, doi: 10.1016/j.dib.2022.108305.
- [46] N. A. S. Mohd Pu'ad, P. Koshy, H. Z. Abdullah, M. I. Idris, and T. C. Lee, "Syntheses of hydroxyapatite from natural sources," May 01, 2019, *Elsevier Ltd*. doi: 10.1016/j.heliyon.2019.e01588.