DAFTAR PUSTAKA

Agbeboh, N. I., I. O. Oladele, O. O. Daramola, A. A. Adediran, O. O. Olasukanmi, dan M. O. Tanimola. 2020. "Environmentally Sustainable Processes for the Synthesis of Hydroxyapatite." *Heliyon* 6 (4): e03765. https://doi.org/10.1016/j.heliyon.2020.e03765.

Ali, Asif, Ning Zhang, dan Rafael M Santos. 2023. "Applied Sciences Mineral Characterization Using Scanning Electron Microscopy (SEM): A Review of the Fundamentals , Advancements , and Research Directions."

Alsabi, Halimah A., Manal E. Shafi, Suad H. Almasoudi, Faten A.M. Mufti, Safaa A. Alowaidi, Somia E. Sharawi, dan Alaa A. Alaswad. 2024. "From Waste to Catalyst: Transforming Mussel Shells into a Green Solution for Biodiesel Production from Jatropha Curcas Oil." *Catalysts* 14 (1). https://doi.org/10.3390/catal14010059.

Amini, Ami R., Douglas J. Adams, Cato T. Laurencin, dan Syam P. Nukavarapu. 2012. "Optimally Porous and Biomechanically Compatible Scaffolds for Large-Area Bone Regeneration." *Tissue Engineering - Part A* 18 (13–14): 1376–88. https://doi.org/10.1089/ten.tea.2011.0076.

Andoh, Collins Nana, Francis Attiogbe, Nana Osei Bonsu Ackerson, Mary Antwi, dan Kofi Adu-Boahen. 2024. "Fourier Transform Infrared Spectroscopy: An Analytical Technique for Microplastic Identification and Quantification." *Infrared Physics and Technology* 136 (April 2023): 105070. https://doi.org/10.1016/j.infrared.2023.105070.

Anggraini, R. M., dan Yusril Yusuf. 2019. "The Effect of Stirring Time on the Characteristics of Carbonated Hydroxyapatite from Pearl Shells (Pinctada Maxima)." *IOP Conference Series: Materials Science and Engineering* 546 (4). https://doi.org/10.1088/1757-899X/546/4/042002.

Anjaneyulu, U., Deepak K. Pattanayak, dan U. Vijayalakshmi. 2016. "Snail Shell Derived Natural Hydroxyapatite: Effects on NIH-3T3 Cells for Orthopedic Applications." *Materials and Manufacturing Processes* 31 (2): 206–16. https://doi.org/10.1080/10426914.2015.1070415.

Arokiasamy, Pilomeena, Mohd Mustafa Al Bakri Abdullah, Shayfull Zamree Abd Rahim, Salmabanu Luhar, Andrei Victor Sandu, Noorina Hidayu Jamil, dan Marcin Nabiałek. 2022. "Synthesis Methods of Hydroxyapatite from Natural Sources: A Review." *Ceramics International* 48 (11): 14959–79. https://doi.org/10.1016/j.ceramint.2022.03.064.

Ballester, Paloma, Isabel Mármol, Julián Morales, dan Luis Sánchez. 2007. "Use of Limestone Obtained from Waste of the Mussel Cannery Industry for the Production of Mortars." *Cement and Concrete Research* 37 (4): 559–64. https://doi.org/10.1016/j.cemconres.2007.01.004.

Bang, L. T., B. D. Long, dan R. Othman. 2014. "Carbonate Hydroxyapatite and Silicon-Substituted Carbonate Hydroxyapatite: Synthesis, Mechanical Properties, and Solubility Evaluations." *The Scientific World Journal* 2014. https://doi.org/10.1155/2014/969876.

Belete, T. T., M. C.M. Van De Sanden, dan M. A. Gleeson. 2019. "Effects of Transition Metal Dopants on the Calcination of CaCO3 under Ar, H2O and H2." *Journal of CO2 Utilization* 31 (February): 152–66. https://doi.org/10.1016/j.jcou.2019.03.006.

Benataya, K., M. Lakrat, L. L. Elansari, dan E. Mejdoubi. 2020. "Synthesis of B-Type Carbonated Hydroxyapatite by a New Dissolution-Precipitation Method." *Materials Today: Proceedings* 31: S83–88. https://doi.org/10.1016/j.matpr.2020.06.100.

Bokov, Dmitry, Abduladheem Turki Jalil, Supat Chupradit, Wanich Suksatan, Mohammad Javed Ansari, Iman H. Shewael, Gabdrakhman H. Valiev, dan Ehsan Kianfar. 2021. "Nanomaterial by Sol-Gel Method: Synthesis and Application." *Advances in Materials Science and Engineering* 2021. https://doi.org/10.1155/2021/5102014.

Borciani, Giorgia, Tiziana Fischetti, Gabriela Ciapetti, Matteo Montesissa, Nicola Baldini, dan Gabriela Graziani. 2023a. "Marine Biological Waste as a Source of Hydroxyapatite for Bone Tissue Engineering Applications." *Ceramics International* 49 (2): 1572–84. https://doi.org/10.1016/j.ceramint.2022.10.341.

———. 2023b. "Marine Biological Waste as a Source of Hydroxyapatite for Bone Tissue Engineering Applications." *Ceramics International* 49 (2): 1572–84. https://doi.org/10.1016/j.ceramint.2022.10.341.

Bunaciu, Andrei A., Elena gabriela Udriştioiu, dan Hassan Y. Aboul-Enein. 2015. "X-Ray Diffraction: Instrumentation and Applications." *Critical Reviews in Analytical Chemistry* 45 (4): 289–99. https://doi.org/10.1080/10408347.2014.949616.

Bushroa, A. R., R. G. Rahbari, H. H. Masjuki, dan M. R. Muhamad. 2012. "Approximation of Crystallite Size and Microstrain via XRD Line Broadening Analysis in TiSiN Thin Films." *Vacuum* 86 (8): 1107–12. https://doi.org/10.1016/j.vacuum.2011.10.011.

Cé de Andrade, Júlia, Fernando Cabral, Frank Jorg Clemens, Jaqueline Leite Vieira, Milena B.P. Soares, Dachamir Hotza, dan Márcio Celso Fredel. 2023. "Effect of Stearic Acid on the Mechanical and Rheological Properties of PLA/HA Biocomposites." *Materials Today Communications* 35 (June): 1–7. https://doi.org/10.1016/j.mtcomm.2023.106357.

Chakrabarty, Debojit, and Samiran Mahapatra. 1999. "Aragonite Crystals with Unconventional Morphologies." *Journal of Materials Chemistry* 9 (11): 2953–57. https://doi.org/10.1039/a905407c.

Charlena, Charlena, Sulistioso Giat Sukaryo, dan Moch. Irgham Zuhfria. 2016. "Hydroxyapatite Coating on Alloys CoCrMo-TiN with Sol-Gel Method." *Indonesian Journal of Fundamental and Applied Chemistry* 1 (3): 55–60. https://doi.org/10.24845/ijfac.v1.i3.55.

Chitra, S., S. Rajeshkumar, dan Nibin K. Mathew. 2023. "Bioceramics: From Concept to Clinic." *Advanced Bioceramics: Properties, Processing, and Applications*, 199–218. https://doi.org/10.1201/9781003258353-11.

Choudhary, Priyanka, Guru Angad, Dev Veterinary, O P Choudhary, Guru Angad, dan Dev Veterinary. 2018. "Uses of Transmission Electron Microscope in Microscopy and Its Advantages and Disadvantages," no. May.

Clark, Melody S., Lloyd S. Peck, Jaison Arivalagan, Thierry Backeljau, Sophie Berland, Joao C.R. Cardoso, Carlos Caurcel, *et al*. 2020. "Deciphering

Mollusc Shell Production: The Roles of Genetic Mechanisms through to Ecology, Aquaculture and Biomimetics." *Biological Reviews* 95 (6): 1812–37. https://doi.org/10.1111/brv.12640.

Coreño A., J., O. Coreño A., J. J. Cruz R., dan C. Rodríguez C. 2005. "Mechanochemical Synthesis of Nanocrystalline Carbonate-Substituted Hydroxyapatite." *Optical Materials* 27 (7): 1281–85. https://doi.org/10.1016/j.optmat.2004.11.025.

Dame, Notre. 2018. "The University of Notre Dame Notes on the Biology of Margaritifera Margaritifera Margaritifera (Lin .) in Central Massachusetts Author (s): Douglas G . Smith Source : The American Midland Naturalist , Vol . 96 , No . 1 (Jul ., 1976), Pp . 252-256 Pub" 96 (1): 252–56.

Diao, Yu, Pengjin Li, Qingsong Hu, Jianyou Huang, dan Xin Guo. 2023. "Investigation on Coal Dust Prevention by Biomimetic Mineralized Dust Suppressant with Polyacrylic Acid Modifier." *Journal of Environmental Chemical Engineering* 11 (6): 111223. https://doi.org/10.1016/j.jece.2023.111223.

Diao, Yu, Pengjin Li, Jianyou Huang, Shi Liu, Xin Guo, dan Chenlei Jiao. 2023. "Investigation on Mechanical Properties of Biomimetic Mineralized Mortar Incorporated with Boric Acid Modifier." *Journal of Building Engineering* 73 (April): 106755. https://doi.org/10.1016/j.jobe.2023.106755.

Dorozhkin, Sergey V. 2010. "Calcium Orthophosphates as Bioceramics: State of the Art." *Journal of Functional Biomaterials* 1 (1): 22–1074. https://doi.org/10.3390/jfb1010022.

Ebrahimi, Masoud, Sahebali Manafi, dan Fariborz Sharifianjazi. 2023. "The Effect of Ag2O and MgO Dopants on the Bioactivity, Biocompatibility, and Antibacterial Properties of 58S Bioactive Glass Synthesized by the Sol-Gel Method." *Journal of Non-Crystalline Solids* 606 (January): 122189. https://doi.org/10.1016/j.jnoncrysol.2023.122189.

Edahwati, Luluk, Sutiyono Sutiyono, Aninda Ikaputri, dan Moh Nur Fuadzi. 2023. "Application Of The Sol-Gel Hydroxhapatite Synthesis Method From Green Clam Shell." *International Journal of Science, Technology & Management* 4

(4): 866–71. https://doi.org/10.46729/ijstm.v4i4.864.

Galvan-Ruiz, Miguel, dan Mario Enrique Rodriguez-Garcia. 2009. "Characterization of Calcium Carbonate, Calcium Oxide, and Calcium Hydroxide as Starting Point to the Improvement of Lime for Their Use in Construction." *Journal of Materials in Civil Engineering 21* 11 (November 2009): 625–708. https://doi.org/http://dx.doi.org/10.1061/(ASCE)0899-1561(2009)21:11(694) "Final.

Gao, Xiao, Jie Li, Kaiming Hu, Yanyang Zhao, Yu Han, Fang Liu, Maurice E. Tucker, dan Zuozhen Han. 2023. "Calcification of Cell Membranes: From Ions to Minerals." *Chemical Geology* 617 (July 2022): 121266. https://doi.org/10.1016/j.chemgeo.2022.121266.

Grunenwald, A., C. Keyser, A. M. Sautereau, E. Crubézy, B. Ludes, dan C. Drouet. 2014. "Revisiting Carbonate Quantification in Apatite (Bio)Minerals: A Validated FTIR Methodology." *Journal of Archaeological Science* 49 (1): 134–41. https://doi.org/10.1016/j.jas.2014.05.004.

Hafner, Bob. 2007. "Scanning Electron Microscopy." *Exp Tech Condens Matter Phys*. Vol. 2. Twin Cities 4/16/2007. https://doi.org/10.21273/hortsci.9.5.414.

Harrington, George F., dan José Santiso. 2021. "Back-to-Basics Tutorial: X-Ray Diffraction of Thin Films." *Journal of Electroceramics* 47 (4): 141–63. https://doi.org/10.1007/s10832-021-00263-6.

Hastie, Lee C., Mark R. Young, dan Phillip J. Boon. 2000. "Growth Characteristics of Freshwater Pearl Mussels, Margaritifera Margaritifera (L.)." *Freshwater Biology* 43 (2): 243–56. https://doi.org/10.1046/j.1365-2427.2000.00544.x.

Hazri, M M, dan N F Nasir. 2020. "Calcium Oxide from Waste Shells as Potential Green Catalyst for Biodiesel Production." *Research Progress in Mechanical and Manufacturing Engineering* 1 (1): 44–55. https://doi.org/10.30880/rpmme.2020.01.01.006.

Helms, C. R. 1983. "Materials Characterization." *NATO ASI Series, Series E: Applied Sciences*, no. 62: 210–25. https://doi.org/10.1007/978-94-009-6842-4_6.

Hench, Larry L., dan Jon K. West. 1990. "The Sol-Gel Process." *Chemical Reviews*

90 (1): 33–72. https://doi.org/10.1021/cr00099a003.

Holzmann, Philipp, Eugenia Niculescu-Morzsa, Hannes Zwickl, Florian Halbwirth, Monika Pichler, Michael Matzner, Florian Gottsauner-Wolf, dan Stefan Nehrer. 2010. "Investigation of Bone Allografts Representing Different Steps of the Bone Bank Procedure Using the CAM-Model." *Altex* 27 (2): 97–103. https://doi.org/10.14573/altex.2010.2.97.

Hosseini, Behnam, Seyed Mehdi Mirhadi, Mehdi Mehrazin, Mohsen Yazdanian, dan Mahmood Reza Kalantar Motamedi. 2017. "Synthesis of Nanocrystalline Hydroxyapatite Using Eggshell and Trimethyl Phosphate." *Trauma Monthly* 22 (5). https://doi.org/10.5812/traumamon.36139.

Ismail, R., D. F. Fitriyana, Y. I. Santosa, S. Nugroho, A. J. Hakim, M. S. Al Mulqi, J. Jamari, dan A. P. Bayuseno. 2021. "The Potential Use of Green Mussel (Perna Viridis) Shells for Synthetic Calcium Carbonate Polymorphs in Biomaterials." *Journal of Crystal Growth* 572 (July): 126282. https://doi.org/10.1016/j.jcrysgro.2021.126282.

Ismail, Rifky, Tezara Cionita, Wong Ling Shing, Deni Fajar Fitriyana, Januar Parlaungan Siregar, Athanasius Priharyoto Bayuseno, Fariz Wisda Nugraha, Rilo Chandra Muhamadin, Ramli Junid, dan Nor Azam Endot. 2022. "Synthesis and Characterization of Calcium Carbonate Obtained from Green Mussel and Crab Shells as a Biomaterials Candidate." *Materials* 15 (16). https://doi.org/10.3390/ma15165712.

Jiang, Haiyan, Yi Duan, Hao Li, dan Aihe Wang. 2023. "New Insight into Highly Efficient Removal of Tetracycline by Calcined Hydroxyapatite Activated Peroxymonosulfate: The Role of Calcium Carbonate and Phosphate Group." *Journal of Water Process Engineering* 55 (August): 104207. https://doi.org/10.1016/j.jwpe.2023.104207.

Jimi, Eijiro, Shizu Hirata, Kenji Osawa, Masamichi Terashita, Chiaki Kitamura, dan Hidefumi Fukushima. 2012. "The Current and Future Therapies of Bone Regeneration to Repair Bone Defects." *International Journal of Dentistry* 2012: 1–7. https://doi.org/10.1155/2012/148261.

Jinno, Tetsuya, Dwight T. Davy, dan Victor M. Goldberg. 2002. "Comparison of

Hydroxyapatite and Hydroxyapatite Tricalcium-Phosphate Coatings." *Journal of Arthroplasty* 17 (7): 902–9. https://doi.org/10.1054/arth.2002.34821.

Jmal, Nouha, dan Jamel Bouaziz. 2017. "Synthesis, Characterization and Bioactivity of a Calcium-Phosphate Glass-Ceramics Obtained by the Sol-Gel Processing Method." *Materials Science and Engineering C* 71: 279–88. https://doi.org/10.1016/j.msec.2016.09.058.

Joksa, Aiga Anna, Laura Komarovska, Darta Ubele-Kalnina, Arturs Viksna, dan Karlis Agris Gross. 2023. "Role of Carbonate on the Crystallization and Processing of Amorphous Calcium Phosphates." *Materialia* 27 (July 2022): 101672. https://doi.org/10.1016/j.mtla.2022.101672.

Joshi, Krishna J., dan Nitin M. Shah. 2023. "Structural, Morphological & Optical Studies of Hydroxyapatite Microplates Synthesized Using Hydrothermal Technique." *Materials Today: Proceedings*, no. xxxx: 1–6. https://doi.org/10.1016/j.matpr.2023.01.411.

Kannan, M. Bobby, dan Karly Ronan. 2017. "Conversion of Biowastes to Biomaterial: An Innovative Waste Management Approach." *Waste Management* 67: 67–72. https://doi.org/10.1016/j.wasman.2017.05.045.

Kaygili, Omer, Sergey V. Dorozhkin, dan Serhat Keser. 2014. "Synthesis and Characterization of Ce-Substituted Hydroxyapatite by Sol-Gel Method." *Materials Science and Engineering C* 42: 78–82. https://doi.org/10.1016/j.msec.2014.05.024.

Kee, Chia Ching, Hanafi Ismail, dan Ahmad Fauzi Mohd Noor. 2013. "Effect of Synthesis Technique and Carbonate Content on the Crystallinity and Morphology of Carbonated Hydroxyapatite." *Journal of Materials Science and Technology* 29 (8): 761–64. https://doi.org/10.1016/j.jmst.2013.05.016.

Koutsopoulos, S. 2002. "Synthesis and Characterization of Hydroxyapatite Crystals: A Review Study on the Analytical Methods." *Journal of Biomedical Materials Research* 62 (4): 600–612. https://doi.org/10.1002/jbm.10280.

Labanni, Arniati, Zulhadjri, Dian Handayani, Yutaka Ohya, dan Syukri Arief. 2020. "Size Controlled Synthesis of Well-Distributed Nano-Silver on Hydroxyapatite Using Alkanolamine Compounds." *Ceramics International* 46

(5): 5850–55. https://doi.org/10.1016/j.ceramint.2019.11.035.

Landi, E., G. Celotti, G. Logroscino, dan A. Tampieri. 2003. "Carbonated Hydroxyapatite as Bone Substitute." *Journal of the European Ceramic Society* 23 (15): 2931–37. https://doi.org/10.1016/S0955-2219(03)00304-2.

Layrolle, Pierre, Atsuo Ito, dan Tetsuya Tateishi. 1998. "Sol-Gel Synthesis of Amorphous Calcium Phosphate and Sintering into Microporous Hydroxyapatite Bioceramics." *Journal of the American Ceramic Society* 81 (6): 1421–28. https://doi.org/10.1111/j.1151-2916.1998.tb02499.x.

Li, Chunde, Chen Wang, Aldo R. Boccaccini, dan Kai Zheng. 2023. "Sol-Gel Processing and Characterization of Binary P2O5-CaO and Ternary P2O5-CaO-Li2O Mesoporous Phosphate Bioactive Glasses." *Journal of Non-Crystalline Solids: X* 17 (January): 100159. https://doi.org/10.1016/j.nocx.2023.100159.

Linggawati, Amilia. 2016. "Preparation and Characterization of Calcium Oxide Heterogeneous Catalyst Derived from Anadara Granosa Shell for Biodiesel Synthesis." *KnE Engineering* 1 (1): 0–8. https://doi.org/10.18502/keg.v0i0.494.

Liu, Dean-mo, Quanzu Yang, Tom Troczynski, dan Wenjea J Tseng. 2002. "Structural Evolution of Sol – Gel-Derived Hydroxyapatite" 23: 1679–87.

Liu, Quan, Jukka Pekka Matinlinna, Zhuofan Chen, Chengyun Ning, Guoxin Ni, Haobo Pan, dan Brian W. Darvell. 2015a. "Effect of Thermal Treatment on Carbonated Hydroxyapatite: Morphology, Composition, Crystal Characteristics and Solubility." *Ceramics International* 41 (5): 6149–57. https://doi.org/10.1016/j.ceramint.2014.11.062.

———. 2015b. "Effect of Thermal Treatment on Carbonated Hydroxyapatite: Morphology, Composition, Crystal Characteristics and Solubility." *Ceramics International* 41 (5): 6149–57. https://doi.org/10.1016/j.ceramint.2014.11.062.

Lu, Jiayu, Shengqian Ruan, Yi Liu, Tao Wang, Qiang Zeng, dan Dongming Yan. 2022. "Morphological Characteristics of Calcium Carbonate Crystallization in CO2 Pre-Cured Aerated Concrete." *RSC Advances* 12 (23): 14610–20.

https://doi.org/10.1039/d2ra01901a.

Madupalli, Honey, Barbara Pavan, dan Mary M.J. Tecklenburg. 2017. "Carbonate Substitution in the Mineral Component of Bone: Discriminating the Structural Changes, Simultaneously Imposed by Carbonate in A and B Sites of Apatite." *Journal of Solid State Chemistry* 255: 27–35. https://doi.org/10.1016/j.jssc.2017.07.025.

Midorikawa, Kazuma, Sachiko Hiromoto, dan Tomoyuki Yamamoto. 2024. "Carbonate Content Control in Carbonate Apatite Coatings of Biodegradable Magnesium." *Ceramics International* 50 (4): 6784–92. https://doi.org/10.1016/j.ceramint.2023.12.021.

Mondal, Sudip, Sumin Park, Jaeyeop Choi, Thi Thu Ha Vu, Vu Hoang Minh Doan, Truong Tien Vo, Byeongil Lee, dan Junghwan Oh. 2023. "Hydroxyapatite: A Journey from Biomaterials to Advanced Functional Materials." *Advances in Colloid and Interface Science* 321 (October). https://doi.org/10.1016/j.cis.2023.103013.

Mourdikoudis, Stefanos, Roger M. Pallares, dan Nguyen T.K. Thanh. 2018. "Characterization Techniques for Nanoparticles: Comparison and Complementarity upon Studying Nanoparticle Properties." *Nanoscale* 10 (27): 12871–934. https://doi.org/10.1039/c8nr02278j.

Nations, Food and Agriculture Organization of the United. 2023. *World Food and Agriculture – Statistical Yearbook 2023*. *World Food and Agriculture – Statistical Yearbook 2023*. https://doi.org/10.4060/cc8166en.

Nawrotek, Katarzyna, Jacek Grams, Robert Sobczyk, Monika Kubicka, Beata Czeladzińska, dan Piotr Jóźwiak. 2023. "Effect of Chitosan Structure and Deposition Time on Structural and Mechanical Properties of Chitosan-Hydroxyapatite Tubular-Shaped Electrodeposits for Biomedical Applications." *Polymer Testing* 123 (April). https://doi.org/10.1016/j.polymertesting.2023.108061.

Nedeau, Ethan Jay. 2009. *Freshwater Mussels Pacific Northwest*.

Osuchukwu, O. A., A. Salihi, I. Abdullahi, dan D. O. Obada. 2022. "Synthesis and Characterization of Sol–Gel Derived Hydroxyapatite from a Novel Mix of

Two Natural Biowastes and Their Potentials for Biomedical Applications." *Materials Today: Proceedings* 62: 4182–87. https://doi.org/10.1016/j.matpr.2022.04.696.

Patty, Diana Julaidy, Ari Dwi Nugraheni, Ika Dewi Ana, dan Yusril Yusuf. 2022. "Dual Functional Carbonate-Hydroxyapatite Nanocomposite from Pinctada Maxima and Egg-White for Bone Tissue Engineering." *Journal of Biomaterials Science, Polymer Edition* 33 (8): 1043–62. https://doi.org/10.1080/09205063.2022.2036934.

Pawarangan, I., dan Y. Yusuf. 2018. "Characteristics of Hydroxyapatite from Buffalo Bone Waste Synthesized by Precipitation Method." *IOP Conference Series: Materials Science and Engineering* 432 (1). https://doi.org/10.1088/1757-899X/432/1/012044.

Permatasari, Hestining A., Mona Sari, Aminatun, Tri Suciati, Kiagus Dahlan, dan Yusril Yusuf. 2021. "Nano-Carbonated Hydroxyapatite Precipitation from Abalone Shell (Haliotis Asinina) Waste as the Bioceramics Candidate for Bone Tissue Engineering." *Nanomaterials and Nanotechnology* 11: 1–9. https://doi.org/10.1177/18479804211032851.

Permatasari, Hestining Ajeng. 2019. "SINTESIS DAN KARAKTERISASI KARBONAT HIDROKSIAPATIT BERBAHAN DASAR CANGKANG KERANG ABALON (HALIOITIS ASININA) MENGGUNAKAN METODE PRESIPITASI DENGAN VARIASI SUHU KALSINASI DAN LAMA WAKTU AGING." *Universitas Gadjah Mada*.

Pieters, Ilse Y., Natasja M.F. Van den Vreken, Heidi A. Declercq, Maria J. Cornelissen, dan Ronald M.H. Verbeeck. 2010. "Carbonated Apatites Obtained by the Hydrolysis of Monetite: Influence of Carbonate Content on Adhesion and Proliferation of MC3T3-E1 Osteoblastic Cells." *Acta Biomaterialia* 6 (4): 1561–68. https://doi.org/10.1016/j.actbio.2009.11.002.

Porter, A., N. Patel, R. Brooks, S. Best, N. Rushton, dan W. Bonfield. 2005. "Effect of Carbonate Substitution on the Ultrastructural Characteristics of Hydroxyapatite Implants." *Journal of Materials Science: Materials in Medicine* 16 (10): 899–907. https://doi.org/10.1007/s10856-005-4424-1.

Rajabi-Zamani, A. H., A. Behnamghader, dan A. Kazemzadeh. 2008. "Synthesis of Nanocrystalline Carbonated Hydroxyapatite Powder via Nonalkoxide Sol-Gel Method." *Materials Science and Engineering C* 28 (8): 1326–29. https://doi.org/10.1016/j.msec.2008.02.001.

Safarzadeh, M., Chin Fei Chee, S. Ramesh, dan M. N.Ahmad Fauzi. 2020. "Effect of Sintering Temperature on the Morphology, Crystallinity and Mechanical Properties of Carbonated Hydroxyapatite (CHA)." *Ceramics International* 46 (17): 26784–89. https://doi.org/10.1016/j.ceramint.2020.07.153.

Sánchez-Salcedo, Sandra, Mercedes Vila, Alfredo Diaz, Carlos Acosta, Ivan Barton, Andrea Escobar, dan Maria Vallet-Regí. 2016. "Synthesis of HA/β-TCP Bioceramic Foams from Natural Products." *Journal of Sol-Gel Science and Technology* 79 (1): 160–66. https://doi.org/10.1007/s10971-016-4038-8.

Sanosh, K. P., Min Cheol Chu, A. Balakrishnan, T. N. Kim, dan Seong Jai Cho. 2009. "Preparation and Characterization of Nano-Hydroxyapatite Powder Using Sol-Gel Technique." *Bulletin of Materials Science* 32 (5): 465–70. https://doi.org/10.1007/s12034-009-0069-x.

Sari, Mona, Puspa Hening, Chotimah, Ika Dewi Ana, dan Yusril Yusuf. 2021. "Porous Structure of Bioceramics Carbonated Hydroxyapatite-Based Honeycomb Scaffold for Bone Tissue Engineering." *Materials Today Communications* 26 (January): 102135. https://doi.org/10.1016/j.mtcomm.2021.102135.

Sharma, Ravi, D P Bisen, Usha Shukla, dan B G Sharma. 2012. "X-Ray Diffraction: A Powerful Method of Characterizing Nanomaterials." *Recent Research in Science and Technology* 4 (8): 77–79. http://recent-science.com/.

Sharma, Surender Kumar, Dalip Singh Verma, Latif Ullah Khan, Shalendra Kumar, dan Sher Bahadar Khan. 2018. "Handbook of Materials Characterization." *Handbook of Materials Characterization*, no. September: 1–613. https://doi.org/10.1007/978-3-319-92955-2.

Singh, K. S., dan S. G. Sawant. 2022. "Identification of CaCO3 Polymorphs of Shellfish by FTIR Spectroscopy and Evaluation of Metals Adsorption by Powdered Exoskeleton Shell." *Indian Journal of Geo-Marine Sciences* 51 (4):

304–9. https://doi.org/10.56042/IJMS.v51i04.44058.

Srichanachaichok, Wiranchana, dan Dakrong Pissuwan. 2023. "Micro/Nano Structural Investigation and Characterization of Mussel Shell Waste in Thailand as a Feasible Bioresource of CaO." *Materials* 16 (2). https://doi.org/10.3390/ma16020805.

Stringer, Chloe A., dan Amy L. Prendergast. 2023a. "Freshwater Mollusc Sclerochronology: Trends, Challenges, and Future Directions." *Earth-Science Reviews* 247 (October): 104621. https://doi.org/10.1016/j.earscirev.2023.104621.

———. 2023b. "Freshwater Mollusc Sclerochronology: Trends, Challenges, and Future Directions." *Earth-Science Reviews* 247 (November): 104621. https://doi.org/10.1016/j.earscirev.2023.104621.

Šupová, Monika. 2015. "Substituted Hydroxyapatites for Biomedical Applications: A Review." *Ceramics International* 41 (8): 9203–31. https://doi.org/10.1016/j.ceramint.2015.03.316.

Szurkowska, Katarzyna, dan Joanna Kolmas. 2017. "Hydroxyapatites Enriched in Silicon – Bioceramic Materials for Biomedical and Pharmaceutical Applications." *Progress in Natural Science: Materials International* 27 (4): 401–9. https://doi.org/10.1016/j.pnsc.2017.08.009.

Taji, Lulu Sekar, Deden Eko Wiyono, Achmad Dwitama Karisma, dan Eva Oktavia Ningrum. 2022. "Hydroxyapatite Based Material: Natural Resources, Synthesis Methods, 3D Print Filament Fabrication, and Filament Filler." *IPTEK The Journal of Engineering* 8 (1): 26. https://doi.org/10.12962/j23378557.v8i1.a12830.

Tang, Guoke, Zhiqin Liu, Yi Liu, Jiangming Yu, Xing Wang, Zhihong Tan, dan Xiaojian Ye. 2021. "Recent Trends in the Development of Bone Regenerative Biomaterials." *Frontiers in Cell and Developmental Biology* 9 (May): 1–18. https://doi.org/10.3389/fcell.2021.665813.

Tokeshi, M., N. Ota, dan T. Kawai. 2000. "A Comparative Study of Morphometry in Shell-Bearing Molluscs." *Journal of Zoology* 251 (1): 31–38. https://doi.org/10.1017/S0952836900005057.

Trinkunaite-Felsen, Juste, Aleksandra Prichodko, Miroslav Semasko, Ramunas Skaudzius, Aldona Beganskiene, dan Aivaras Kareiva. 2015. "Synthesis and Characterization of Iron-Doped/Substituted Calcium Hydroxyapatite from Seashells Macoma Balthica (L.)." *Advanced Powder Technology* 26 (5): 1287–93. https://doi.org/10.1016/j.apt.2015.07.002.

Vélez-Henao, Johan Andrés, Franz Weinland, dan Norbert Reintjes. 2021. "Life Cycle Assessment of Aquaculture Bivalve Shellfish Production — a Critical Review of Methodological Trends." *International Journal of Life Cycle Assessment* 26 (10): 1943–58. https://doi.org/10.1007/s11367-021-01978-y.

Venkateswarlu, K., M. Sandhyarani, T.A. Nellaippan, dan N. Rameshbabu. 2014. "Estimation of Crystallite Size, Lattice Strain and Dislocation Density of Nanocrystalline Carbonate Substituted Hydroxyapatite by X-Ray Peak Variance Analysis." In *Procedia Materials Science*, 5:212–21. https://doi.org/10.1016/j.mspro.2014.07.260.

Wang, Wenhao, dan Kelvin W.K. Yeung. 2017. "Bone Grafts and Biomaterials Substitutes for Bone Defect Repair: A Review." *Bioactive Materials* 2 (4): 224–47. https://doi.org/10.1016/j.bioactmat.2017.05.007.

Wati, Rosita, dan Yusril Yusuf. 2019. "Effect of Sintering Temperature on Carbonated Hydroxyapatite Derived from Common Cockle Shells (Cerastodermaedule): Composition and Crystal Characteristics." *Key Engineering Materials* 818 KEM: 37–43. https://doi.org/10.4028/www.scientific.net/KEM.818.37.

Wu, Shih Ching, Hsueh Chuan Hsu, Shih Kuang Hsu, Chien Pei Tseng, dan Wen Fu Ho. 2017a. "Preparation and Characterization of Hydroxyapatite Synthesized from Oyster Shell Powders." *Advanced Powder Technology* 28 (4): 1154–58. https://doi.org/10.1016/j.apt.2017.02.001.

———. 2017b. "Preparation and Characterization of Hydroxyapatite Synthesized from Oyster Shell Powders." *Advanced Powder Technology* 28 (4): 1154–58. https://doi.org/10.1016/j.apt.2017.02.001.

Xu, Qingmeng, Feifan Xu, Chen Sun, Xiao Huang, dan Hongjie Luo. 2023. "Cellulose Nanocrystals Lime Mortar Based on Biomimetic Mineralization."

Construction and Building Materials 366 (September 2022): 130209. https://doi.org/10.1016/j.conbuildmat.2022.130209.

Zhan, Junxiong, Jinshan Lu, dan Di Wang. 2022. "Review of Shell Waste Reutilization to Promote Sustainable Shellfish Aquaculture." *Reviews in Aquaculture* 14 (1): 477–88. https://doi.org/10.1111/raq.12610.

Zhang, Jie, Da Ren Chen, dan Sheng Chieh Chen. 2022. "A Review of Emission Characteristics and Control Strategies for Particles Emitted from 3D Fused Deposition Modeling (FDM) Printing." *Building and Environment* 221 (April): 109348. https://doi.org/10.1016/j.buildenv.2022.109348.

Zhang, Wenmin, Guowen Qian, Luhui Zhang, Qixuan He, dan Jiandong Ye. 2022. "Fabrication and in Vitro Evaluation of Ca11B2Si4O22 Ceramic for Bone Tissue Engineering." *Materials Letters* 325 (July): 2–5. https://doi.org/10.1016/j.matlet.2022.132807.

Ziuganov, Valery, Eduardo San Miguel, Richard J. Neves, Angeles Longa, Carlos Fernández, Rafaela Amaro, Victor Beletsky, Ekaterina Popkovitch, Sviatoslav Kaliuzhin, dan Torbjörn Johnson. 2000. "Life Span Variation of the Freshwater Pearl Shell: A Model Species for Testing Longevity Mechanisms in Animals." *Ambio* 29 (2): 102–5. https://doi.org/10.1579/0044-7447-29.2.102