

## DAFTAR PUSTAKA

- Adha, N. E., 2017, The effectiveness of metronidazole gel based chitosan inhibits the growth of bacteria *Aggregatibacter actinomycetemcomitans*, *Porphyromonas gingivalis*, *Fusobacterium nucleatum* (In vitro). *Int. J. Appl. Dent. Sci.*, 2(3), 30-37.
- Aguilar, A., Zein, N., Harmouch, E., Hafdi, B., Bornert, F., Offner, D., Clauss, F., Fioretti, F., Huck, O., Benkirane-Jessel, N., and Hua, G., 2019, Application of Chitosan in Bone and Dental Engineering, *Molecules.*, 16(24), 3009.
- Ahmed, H.M.A., Luddin, N., Kannan, T.P., Mokhtar, K.I., and Ahmad, A., 2017, White Mineral Trioxide Aggregate Mixed with Calcium Chloride Dihydrate: Chemical Analysis and Biological Properties, *Restor. Dent. Endod.*, 42(3), 176-187.
- Aldea, E., Giurginca, M., Miculescu, F., and Demetrescu, I., 2007, Infrared and SEM Technique in Supporting Ti and TiAl-V Alloy Behaviour in Afnor and Tani-Zucchi solutions, *J. Optoelectron. Adv. Mater.*, 9 (11), 3396–3399.
- Al-Hezaimi, K., Al-Shalan, T.A., Naghshbandi, J., Oglesby, S., Simon, J.H., and Rotsein, I., 2006, Antibacterial Effect of Two Mineral Trioxide Aggregate (MTA) Preparations Against *Enterococcus faecalis* and *Streptococcus sanguis* In Vitro, *J. Endod.*, 32, 1053-1056.
- Alzraikat, H., Taha, N.A., dan Salameh, A., 2016, A Comparison of Physical and Mechanical Properties of Biodentine and Mineral Trioxide Aggregate Cement, *Int. J. Dent.*, 4, 121-126.
- Amalia, R., 2021, *KARIES GIGI: Perspektif Terkini Aspek Biologis, Klinis, dan Komunitas*, UGM Press.
- Ariani, M. G.A., dan Hadriyanto, W., 2013, Perawatan Ulang Saluran Akar Insisivus Lateralis Kiri Maksila dengan Medikamen Kalsium Hidroksida-Chlorhexidine, *Maj Ked Gi.*, 201 (1), 52-57.
- Asgary, S., Parirokh, M., Eghbal, M.J., and Brink, F., 2005, Chemical Differences between White and Gray Mineral Trioxide Aggregate, *J. Endod.*, 31(2), 101-103.
- Asgary, S., Parirokh, M., Eghbal, M.J., Stowe, S., and Brink, F., 2006, A qualitative X-ray Analysis of White and Grey Mineral Trioxide Aggregate Using Compositional Imaging, *J. Mater. Sci: Mater. Med.*, 17, 187-191.
- Asgary, S., Parirokh, M., Eghbal, M.J., Stowe, S., and Brink, F., 2004, A Comparative Study of White Mineral Trioxide Aggregate and White Portland Cement Using X-Ray Microanalysis, *Aust. Endod. J.*, 30(3) 89-92.

- Azadi, N., Fallahdoost, A., Mehrvarzfar, P., Rakhshan, H., and Rakhshan, V., 2012, A Fourweek Solubility Assesment of H-26 and For New Root Canal Sealers, *Dent. Res. J. (Isfahan)*, 9(1), 31-35.
- Barakat, I., Elpatal, M., Abushanan, A., Elrady, B.E.A., 2020, Antibacterial Effect of Metronidazole vs Chlorhexidine Solutions in Treatment of Root Canals of Primary Anterior Teeth, *Ori. Res.*, 4(21), 396-399.
- Bastruk, F. B., Nekoofar, M.H., Gunday, M., and Dummer, P.M.H., 2018, X-ray Diffraction Analysis of MTA Mixed and Placed with Various Techniques., *Clin Oral Investig.*, 22(4), 1675-1680.
- Belio-Reyes, I.A., Bucio, L., and Criz-Chavez., 2009, Phase Composition of ProRoot Mineral Trioxide Aggregate by X-Ray Power Diffraction., *J. Endod.*, 35(6), 875-878.
- Ber, B. S., Hatton, J.F., and Stewart, G.P., 2007, Chemical Modification of Proroot MTA to Improve Handling Characteristics and Decrease Setting Time, *J endod.*, 33(10), 1-4.
- Bonsor, S.J., and Pearson, G.J., 2013, *A Clinical Guide to Applied Dental Materials*, Churchill Livingstone Elsevier.
- Borges, A.H., Pedro, P.L., Semanoff., Segundo, A., Miranda, C.E., Pecora, J.D., Cruz., and Filho, A.M., 2011, Radiopacity Evaluation of Portland and MTA-Based Cements by Digital Radiographic System, *J. Appl. Oral. Sci.*, 19(3), 228-232.
- Caldas, R.R., Le Gall, F., Revert, K., Rault, G., Virmaux, M., Gouriou, S., Hery-Arnaud, G., Barbier, G., and Boisrame, S., 2015, Pseudomonas aeruginosa and Periodontal Pathogens in the Oral Cavity and Lungs of Cystic Fibrosis Patients: a Case-Control Study, *J. Clinical. Micro.*, 53(6), 1898-1907.
- Camilleri, J., 2007, Hydration Mechanisms of Mineral Trioxide Aggregate, *Inter. Endod. J.*, 40(6), 462-470.
- Camilleri, J., 2014, Composition and Setting Reaction, In: Camilleri, J. (eds) *Mineral Trioxide Aggregate in Dentistry*, Springer Heidelberg.
- Camilleri, J., 2015, Mineral Trioxide Aggregate : Present and Future Developments, *Endod. Topics.*, 32, 31-46.
- Camilleri, J., Montesin, F.E., Brady, K., Sweeney, R., Curtis, R.V., and Ford, T.R.P., 2005, The Constitution of MIneral Trioxide Aggregate, *Dent Mater.*, 21(4), 297-303.
- Chang, S., 2012, Chemical Characteristics of Mineral Trioxide Aggregate and Its Hydration Reaction, *Restor. Dent. Endod.*, 37(4), 188-193.

- Chatterjee, M., Anju, C.P., Biswas, L., Kumar, V.A., Mohan, C.G., and Biswas, R., 2016, Antibiotic resistance in *Pseudomonas aeruginosa* and alternative therapeutic options, *Inter. J. Medic. Micro.*, 306(1), 48-58.
- Chen, S., Shi, L.S., Lou, J., and Engqvist., 2006, Physicochemical Properties of Calcium Silicate Cements for Endodontic Treatment, *J. Endod.*, 9(35), 1288-1291.
- Chen, S., Shi, L.S., Lou, J., and Engqvist, H., 2018, A Novel Fast-Setting Mineral Trioxide Aggregate: Its Formulation, Chemical-Physical Properties and Cytocompatibility, *Appl. Mater. Interfaces.*, 10(24), 20334-20341.
- Chiang, T.Y., and Ding, S.J., 2010, Comparative Physicochemical and Biocompatible Properties of Radiopaque Dicalcium Silicate Cement and Mineral Trioxide Aggregate, *J. Endod.*, 36(10), 1683-1687.
- Chopra, M., Kaur, P., Bernela, M., Thakur, R., 2014, Surfactant assisted nisin loaded chitosan-carageenan nanocapsule synthesis for controlling food pathogens, *Food Control.*, 37, 158-164.
- Colombo, M., Bassi, C., Beltrami, R., Vigorelli, P., Spinelli, A., Cavada, A., Dagna, A., Chiesa, M., and Poggio, C., 2017. Radiographic Technical Quality of Root Canal Treatment Performed by a New Rotary Single-File System, *J. Odontomatologic. Sci.*, 8(1), 18-22.
- Coomaraswamy, K.S., Lumley, P.J., and Hofmann., 2007, Effect of Bismuth Oxide Radiopacifier Content on The Material Properties of an Endodontic Portland Cement-Based (MTA-Like) System, *J. Endod.*, 33(3), 295-298.
- Csaba, N., and Alonso, M.J., 2014, Biodegradable Polymer Nanoparticles as Protein Delivery Systems, *J. Control. Release.*, 190(28), 53-4.
- Dailey, Y. M., 2001, Are Antibiotics Being Used Appropriately for Emergency Dental Treatment, *Brit. Dent. J.*, (7), 391-393.
- De Deus, G., Camilleri, J., Primus, C.M., Duarte, M.A.H., and Bramante, C.M., 2014, Introduction to Mineral Trioxide Aggregate, In: Camilleri, J. (eds) *Mineral Trioxide Aggregate in Dentistry*, Springer, Heidelberg.
- Deligianni, E., Pattison, S., Berrar, D., Ternan, N.G., Haylock, R.W., Moore, J.E., Elborn, S.J., 2010, *Pseudomonas aeruginosa* Cystic Fibrosis Isolates of Similar RAPD Genotype Exhibit Diversity in Biofilm Forming Ability in Vitro, *BMC. Micro.*, 10(38), 1-13.
- Dewi, F., Asrianti, D., and Margono, A., 2018, Microleakage Evaluation of Modified Mineral Trioxide Aggregate Effect Toward Marginal Adaptation On Cervical Dentin Perforation, *Int J App Pharm.*, 9(10).

- Dijken, J.W., Wing, K.R., and Ruyter, I.E., 2007, An Evaluation of the Radipacity of Composite Restorative Materials Used in Class I and Class II Cavities, *Acta Odontol. Scand.*, 47(6), 401-407.
- Dosunmu, E., Chaudhari, A.A., Singh, S.R., Dennis, V.A., and Pillai, S.R., 2015, Silver-Coated Carbon Nanotubes Downregulate the Expression of Pseudomonas Aeruginosa Virulence Genes: A Potential Mechanism For Their Antimicrobial Effect, *Inter. J. Nano.*, 10, 5025-5034.
- Duarte, M.A., Demarci, A.C., Yamashita, J.C., Kuga, M.C., and Fraga, S.C., 2003, pH and Calcium Ion Release of Two Root-End Filling Materials, *Oral Surg, Oral Med. Oral Pathol. Oral Radiol, Endod.*, 95, 345-347.
- El-Hamid, H.K.A., Abo-Almaged, H.H., and Radwan, M.M., 2017, Synthesis, Characterization and Antimicrobial Activity of Nano-Crystalline Tricalcium Silicate Bio-Cement, *J.Appl. Pharm. Sci.*, 7(10), 1-8.
- Estrela, C., Bammann, L.L., Estrela, C.R., Silva, R.S., and Pecora, J.D., 2000, Antimicrobial and Chemical Study of MTA, Portland Cement, Calcium Hydroxide Paste, Sealpex and Dycal, *Braz. Dent.*, 11(1), 3-9.
- Fa'izzah, M., Widjijono, W., Kamiya, Y., and Nuryono, N., 2020. Synthesis and Characterization of White Mineral Trioxide Aggregate Using Precipitated Calcium Carbonate Extracted from Limestone, *Key Eng. Mater.*, 330-335.
- Faouzi, H., Maurice., Rida, A., 2014, Synthesis and Characterization of Amorphous Silica Nanoparticles from Aqueous Silicates Using Cationic Surfactants, *Mater. Miner.*, 1, 24.
- Farrugia, C., Baca, P., Camilleri, J., and Moliz, M.T.A., 2017, Antimicrobial Activity of ProRoot MTA in Contact with Blood, *Sci. Rep.*, 7, 41359-41369.
- Febrianifa, E., Hadriyanto, W., dan Kristanti, Y., 2016, Perbedaan Daya Antibakteri Siler Saluran Akar Berbahan Dasar Seng Oksida Eugenol, Resin Epoksi dan Mineral Trioxide Aggregate Terhadap Enterococcus Faecalis, *J Ked Gi.*, 7(2), 41-47.
- Fridland, M., and Rosada., 2003, Mineral Trioxide Aggregate (MTA) Solubility and Porosity with Different Water-Topowder Ratios, *J. Endod.*, 29(12), 814-817.
- Gandolfi, M.G., Siboni, F., and Botero, T., 2015, Calcium Silicate and Calcium Hydroxide Materials for Pulp Capping: Biointeractivity, Porosity, Solubility and Bioactivity of Current Formulations, *J. Appl. Biomater. Func.*, 131, 43-60.
- Gao, Y., Liu, L., and Zhang, Z., 2009, Mechanical Performance of Nano-CaCO<sub>3</sub> Filled Polystyrene Composites, *Acta Mech. Solid Sin.*, 22(6), 555-562.

- Garrait, G., Beyssac, E., and Subirade, M., 2014, Development of a Novel Drug Delivery System: Chitosan Nanoparticles Entrapped in Alginate Microparticles, *J. Microencapsul.*, 31(4), 363-372.
- Ghadafi, M., Santosa, S.J., Kamiya, Y., and Nuryono, N., 2020, Free Na and Less Fe Compositions of SiO<sub>2</sub> Extracted from Rice Husk Ash as The Silica Source For Synthesis of White Mineral Trioxide Aggregate, *KEM.*, 840, 311-317.
- Grossman, L., 1976, Physical Properties of Root Canal Cements, *J. Endod.*, 2(6), 166-175.
- Grossman, L., Oliet, S., and Del Rio, C.E., 1988, *Endodontic Practice*, 11<sup>th</sup> ed., Lea & Febiger, Philadelphia.
- Guo, B. L., and Gao, Q.Y., 2007, Preparation and Properties of a pH/Temperature-Responsive Carboxymethyl Chitosan/Poly(N- Isopropylacrylamide) Semi-IPN Hydrogel for Oral Delivery of Drugs, *Carbohydrate. Res.*, 342, 2416-2422.
- Güven, Y., Tuna, B.T., Dincöl, M.E., and Oya, O.A., 2004, X-Ray Diffraction Analysis of MTA-Plus MTA-Angelus and Diaroot Bioaggregate, *Eur. J.Dent.*, 8, 211-215.
- Hajardhini, P., Susilowati, H., dan Yulianto, H.D.K., 2020, Rongga Mulut Sebagai Reservoir Potensial untuk Infeksi *Pseudomonas aeruginosa*, *Odonto. Dent. J.*, 7(2), 125-135.
- Hamidah, M.N., Rianingsih, L., dan Ramadhon, 2019, Aktivitas Antibakteri Isolat Bakteri Asam Laktat Dari Peda Dengan Jenis Ikan Berbeda Terhadap *E. coli* Dan *S. aureus*. *J. Ilmu. Tekno. Perik.*, 1(2), 11-21.
- He, Y., Trotignon, J.P., Loty, B., Tcharkhtchi, A., and Vedu, J., 2002, Effect of Antibiotics on the Properties of Poly(Methylmethacrylate)-Based Bone Cement.
- Holland, R., Souza, V., Nery, M.J., Otoboni, F.J.A., Bernabe, P.F., and Dezan, J.E., 1999, Reaction of Rat Connective Tissue to Implanted Dentin Tubes Filled with Mineral Trioxide Aggregate of Calcium Hydroxide, *J. Endod.*, 25(3), 161-166.
- Hou, H., Nieto, A., Ma, F., Freeman, W.R., Sailor, M.J., and Cheng, I., 2014, Tunable Sustained Intravitreal Drug Delivery System for Daunorubicin Using Oxidized Porous Silicon, *J. Controlled Release.*, 178, 46-54.
- Hsieh, S.C., Teng, N.C., Lin, Y.C., Lee, P.Y., Ji, D.Y., Chen, C.C., Ke, E.S., Lee, S.Y., and Yang, J.C., 2009, A Novel Accelerator for Improving the Handling Properties of Dental Filling Materials, *J. Endod.*, 35(9), 1292-1295.

- Hu, D., Ren, Q., Li, Z., and Zhang, L., 2020, Chitosan-Based Biomimetically Mineralized Composite Materials in Human Hard Tissue Repair, *Molecules*, 25(20), 4785.
- Humanishi, C., Kitamoto, K., Tanaka, S., and Otsuka, M., 1996, A Self-setting TTCP-DCPD Apatite Cement for Release of Vancomycin, *J. Biomed. Mater. Res.*, 33(3), 139-143.
- Ikrom, A.D.T.R., Wira, R.A., Perkasa, B.B., Tiara, R.N., dan Wasito., 2014, Studi in Vitro Ekstrak Etanol Daun Kamboja (*Plumeria alba*) sebagai Anti *Aeromonas hydrophila*, *J. Sains. Veterine.*, 32(1), 105-116.
- Inajati, I., dan Untara, R.T.E., 2016, Apeksikasi dengan Mineral Trioxide Aggregate dan Perawatan Intracoronal Bleaching pada Gigi Insisivus Sentralis Kiri Maksila Non Vital Diskolorasi, *Majalah Kedokteran Gigi Indonesia*, 2(2), 101-108.
- Indurkar, A. R., Sangoi, V.D., Patil, P.B., dan Nimbalkar, M.S., 2018, Rapid Synthesis of Bi<sub>2</sub>O<sub>3</sub> Nano-Needles via "green route" and Evaluation of Its Antifungal Activity, *IET Nanobiotechnol.*, 12, 496-499.
- Irawan, R. M., Margono, A., dan Djauhar, N., 2017, The Comparison of Calcium Ion Release and pH Changes from Modified MTA and Bioceramics in Regeneration, *IOPConf. Series: J. Physics.*, 884(1), 012110.
- Islam, I., Chng, H.K., dan Yap, A.U.J., 2006, X-ray Diffraction Analysis of Mineral Trioxide Aggregate and Portland Cement, *Int. Endod. J.*, 39, 220-225.
- Jain, N., Gaurav, K., Jain., Javed, S., Iqbal, Z., Talegaonkar, S., Farhan, J., Ahmad., and Roop., 2008, Recent Approaches for the Treatment of Periodontitis, *Drug Discovery Today.*, 22(13).
- Jia, B., Zhang, B., Li, J., Qin, J., Huang, Y., Huang, M., Ming, Y., Jiang, J., Chen, R., Xiao, Y., and Du, J., 2024, Emerging Polymeric Materials for Treatment of Oral Diseases: Design Strategy Towards a Unique Oral Environment, *Chem Soc Rev.*, 53(7), 3209-3632.
- Kamali, A., Javadpour, S., Javid, B., Kianvash Rad, N., and Naddaf, D.S., 2017, Effect of Chitosan and Zirconia on Setting Time, Mechanical Strength, and Bioactivity of Calcium Silicate-Based Cement, *Int J Appl Ceram Technol.*, 14, 135-144.
- Kao, C.T., Shie, M.Y., Huang, t.h., and Ding, S.J., 2009, Properties of an Accelerated Mineral Trioxide Aggregate-Like Root-End Filling Material, *J. Endod.*, 35(2), 239-242.

- Kartinawanti, A. T., dan Asy'ari, A.K., 2021, Penyakit Pulpa dan Perawatan Saluran Akar Satu Kali Kunjungan: Literatur Review, *J. Ilmu. Ked. Gi.*, 2(4), 2579-7239.
- Kartini., 1997, *Studi Tentang Mutu Kitin Kitosan yang Dihasilkan dari Limbah Kulit Kepiting (Sylla Serrata)*, Fakultas Perikanan Universitas Brawijaya.
- Kementerian Kesehatan RI., 2018, *Riset Kesehatan Dasar: Badan Penelitian dan Pengembangan Tenaga Kesehatan Kemenkes*, Jakarta.
- Khan, S.I.R., Ramachandran, A., Deepalakshmi, M., dan Kumar, K.S., 2012, Evaluation of pH and Calcium Ion Release of Mineral Trioxide Aggregate and New Root-End Filling Material, *E. J. Dent.*, 2, 166-9.
- Killay, A., 2013, Kitosan Sebagai Anti Bakteri pada Bahan Pangan yang Aman dan Tidak Berbahaya, *Prosiding FMIPA Universitas Pattimura*.
- Kim, E.C., Lee, B.C., Chang, H.S., Lee, W., Hong, C.U., and Min, K.S., 2008, Evaluation of The Radiopacity and Cytotoxicity of Portland Cements Containing Bismuth Oxide, *Oral Surg. Oral Med. Oral Pathol.*, 105(1), 54-57.
- Kumari, S., Mittal, A., Daud, S., Dhaundiyal, A., Abraham, A., dan Yendrembam, B., 2018, Comparative Evaluation of Physical and Chemical Properties of Calcium Silicate-Based Root-End Filling Materials (Mineral Trioxide Aggregate And Biodentine): An In Vitro Study, *Indian J. Dent. Sci*, 10, 197-202.
- Kurdowski, W., 2013, *Cement and Concrete Chemistry*, Springer, New York.
- Kwon, S., Kwon, H.J., Choi, J.I., Lee, H.Y., Russell, A.G., Lee, S.G., Kim, T., and Jang, S.S., 2020, Toward Enhanced CO<sub>2</sub> Adsorption on Bimodal Calcium-Based Materials with Porous Truncated Architectures, *Appl. Surf. Sci.*, 505, 144512.
- Labib, G. S., 2014, Metronidazol and Pentoxifylline Films for the Local Treatment of Chronic Periodontal Pockets: Preparation in Vitro Evaluation and Clinical Assessment, *Expert Opin. Drug Deliv.*, 11(6), 855-865.
- Lee, B.S., Lin, H.P., Chan, J.C.C., Wang, W.C., Hung, P.H., Tsai, Y.H., and Lee, Y.L., 2018, A Novel Sol-Gel-Derived Calcium Silicate Cement with Short Setting Time for Application in Endodontic Repair of Perforation, *Int. J. Nanomedicine.*, 13, 261-271.
- Li, Q., and Coleman, N.J., 2015, The Hydration Chemistry of Proroot MTA, *Dent. Mater. J.*, 34(4), 458-465.

- Li, Q., Hurt, A.P., and Coleman, N.J., 2019, The Application of  $^{29}\text{Si}$  NMR Spectroscopy to the Analysis of Calcium Silicate-Based Cement Using Biodentine<sup>TM</sup> as an Example, *J. Funct. Biomater.*, 10(25), 1-18.
- Marciano, M.A., Costa, R.M., Camilleri, J., Mondelli, R.F.L., Guimaraes, B.M., and Duarte, M.A.H., 2014. Assessment of Color Stability of WMTA Angelus and Bismuth Oxide in Contact with Tooth Structure, *J. Endod.*, 40(8), 1235-1240.
- Mariyam., Sunarintyas., dan Nuryono., 2023, Improving Mechanical, Biological, and Adhesive Properties of Synthesized Mineral Trioxide Aggregate by Adding Chitosan, *Inor. Chem. Communications.*, 149, 110446.
- Masyithah, Z.N., Herman, A., dan Rijai, L., 2015, Aktivitas Antibakteri Ekstrak Daun Pacar (Lawsonia Inermis L), *J. Sains dan Kesehatan.*, 1(1), 21-28.
- Matica, M. A. Achmann, F.L., Tondervik, A., Sletta, H., and Ostafe, V., 2019, Chitosan as a Wound Dressing Starting Material: Antimicrobial Properties and Mode of Action, *Int. J. Molecular. Sci.*, 5889 (20), 1-33.
- Milani, A. S., Froughreyhani, M., Aghdam, S.C., Pournaghiazar., and Jafarabadi, M.A., 2013, Mixing with Propylene Glycol Enhances The Bond Strength of Mineral Trioxide Aggregate to Dentin, *J. Endod.*, 39(11), 1452-1455.
- Min, K. S., Kim, H.I., Park, H.J., Pi, S.H., Hong, C.U., and Kim, E.C., 2007. Human Pulp Cells Response to Portland Cement in vitro, *J. Endod.*, 33, 163-166.
- Misra, P., Bains, R., Loomba, K., Singh, A., Sharma, V.P., Murthy, R.C., and Kuma, R., 2017, Measurement of pH and Calcium Ions Release from Different Calcium Hydroxide Pate at Different Intervals of Time: Atomic Spectrophotometric Analysis, *J Oral Biol Carniofac Res.*, 7, 36-41.
- Mohammadi, Z., Giardino, L., Palazzi, F., and Shalavi, S., 2012, Antibacterial Activity of New Mineral Trioxide Aggregate -Based Root Canal Sealer, *Int Dent J.*, 62, 70-73.
- Mohammadi, Z., Shalavi, S., and Rehm, B.H.A., 2017, Pseudomonas aeruginosa Lifestyle: A Paradigm for Adaptation, Survival, and Persistence, *Front Cell Infect Microbial.*, 7(39), 1-29.
- Moradali, M.F., Ghods, S., and Rehm, B.H.A., 2017, Pseudomonas aeruginosa Lifestyle: A Paradigm for Adaptation, Survival, and Persistence. *Frontiers in Cellular and Infection Microbiology.*, 7(39), 1-29.
- Noh, Y. S., Chung, S.H., Bae, K.S., Baek, S.H., Kum, K.Y., Lee, W.C., Shon, W.J., and Rhee, S.H., 2015, Mechanical Properties and Microstructure Analysis of Mineral Trioxide Aggregate Mixed with Hydrophilic Synthetic Polymer:

Mineral Trioxide Aggregate Mixed with PVA, *J. Biomed. Mater. Res.*, 103, 777-782.

Perirokh, M., and Torabinejad, M., 2010, Mineral Trioxide Aggregate: A Comprehensive Literature Review Part 1: Chemical, Physical, and Antibacterial Properties, *J. Endod.*, 36, 16-27.

Permana, D., Purwanto, M., Ramadhan, L.O., dan Atmaja, L., 2015, Synthesis and Characterization of Chitosan/Phosphotungstic Acid Montmorillonite Modified By Silane for DMFC Membrane, *Indo. J. Chem.*, 3(15), 218-225.

Petri, W. A., 2001, *Antimicrobial Agents Penicillins, Cephalosporins, and Other  $\beta$ -Lactam Antibiotics*. In: *Hardman JG, Limbird LE, Gilman AG, eds. Goodman & Gilman's The Pharmacological Basis of Therapeutics. 10th Ed*, McGraw-Hill, New York.

Pires-de-Souza, F.C.P., Moraes, P.C., Garcia, L.F.R., Aguilar, F.G., and Watanabe, E., 2013, Evaluation of pH, Calcium Ion Release and Antimicrobial Activity of a New Calcium Aluminate Cement, *Braz. Oral.Res.*, 27(4), 324-330.

Poggio, C., Arciola, C.R., Dagna, A., Colombo, M., Bianchi, S., and Visai, L., 2010, Solubility of Root Canal Sealers: A Comparative Study , *Int. J. Artif. Organs.*, 33(9), 676-681.

Popa, L., Ghica, M.V., and Dinu-Pirvu, E.D., 2013, Periodontal Chitosan-gels Designed for Improved Local Intra-pocket Drug Delivery, *Farmacia.*, 2(61).

Poulet, P.P., Duffaut, D., and Lodter, J.P., 1999, Metronidazole Susceptibility Testing of Anaerobic Bacteria Associated with Periodontal Disease, *J. Clin. Periodontol.*, 26, 261-263.

Pradip, K. D., Dutta, J.D., dan Tripathi, V.S., 2004, Chitin and Chitosan: Chemistri, Properties and Application, *J. Sci. Ind. Res.*, 63, 20-31.

Prasad, K., dan Naik, C.T., 2017, Mineral Trioxide Aggregate in Endodontics, *Inter J. Appl. Dent. Sci. Manipulation.*, 3(1), 71-75.

Primus, C.M., Gutmann, J.L., Yapp, R., and Tay, F., 2014, Physical Properties of New Generation Tricalcium Silicate Dental Materials, *Bioceram. Dev. Appl.*, 4, 1.

Purwanti, N., Sjahriza, A., Wukirsari, T., dan Wahyono, D., 2009, *Kitosan : Sumber Biomaterial Masa Depan*, IPB Press, Bogor.

Radwan, M.M., and Khallaf, M.E., 2022, Hydration Behavior of an Experimental Tricalcium Silicate/Tetracalcium Phosphate Bio-Cement In Streptococcus Thermophiles Bacterial Solution in Comparison with Distilled Water Used

as a Root Canal Furcation Perforation Repair Material, *Bulletin of the National Research Center.*, 46, 207.

- Rahman, I.W., Fadlilah, R.N., Ka'bah., Kristiana, H.N., and Dirga, A., 2022, Potensi Ekstrak Daun Jambu Biji (*Psidium guajava*) dalam Menghambat pertumbuhan *Serratia marcescens*, *J. Ilmu Alam dan Lingkungan.*, 13(1), 14-22.
- Rajasekharan, S., Vercruyse, C., Martens, L., and Verbeeck, R., 2018, Effect of Exposed Surface Area, Volume and Enviromental pH on the Calcium Ion Release of Three Commercially Available Tricalcium Silicate Based Dental Cements, *Materials.*, 11(123), 2-14.
- Ray, H.A., and Trope, M., 1995, Perapical Status of Endodontically Treated Teeth in Relation to the Technical Quality off the Root Filling and The Coronal Restoration, *Int. Endod. J.*, 28, 12-8.
- Relucenti, M., Familiari, G., Donfrancesco, O., Taurino, M., Li, X., Chen, R., Artini, M., Papa, R., and Selan, L., 2021, Microscopy Methods for Biofilm Imaging: Focus on SEM and VP-SEM Pros and Cons, *Biology.*, 51(10), 1-17.
- Rieuwpassa, I.E., Yunus, M., dan Arsana, I.W.S., 2011, Identifikasi *Pseudomonas aeruginosa* dan Tes Sensitivitas Siprofloksasin pada Abses Periodontal, *Dentofasial.*, 10(3), 151-155.
- Roberts, H.W., Toth, J., Berzins, D., and Charlton, D., 2008, Mineral Trioxide Aggregate Material Use in Endodontic Treatment: a Review of the Literature, *Dent. Mater. J.*, 2(24), 149-164.
- Roda, R. P., 2007, Antibiotic Use in Dental Practice, *Med Oral Patol Oral Cir Bucal.*, 12, 186-192.
- Saghiri, M.A., Asgar, K., Lotfi, M., and Garcia-Godoy, F., 2012, Nanomodification of Mineral Trioxide Aggregate for Enhaced Physiochemical Properties, *Int. Endod. J.*, 45 (11), 979-988.
- Saghiri, M.A., Kazerani, H., Morgano, S.M., and Gutmann, J.L., 2020, Evaluation of Mechanical Activation and Chemical Synthesis for Particel Size Modification of White Mineral Trioxide Aggregate, *Eur. Endod. J.*, 5(2), 128-133.
- Salehi, G., Behnamghader, A., Pazouki, M., and Mozafari, M., 2020, Metronidazole-loaded Glass Ionomer Dental Cements, *Appl. Ceramic. Tech.*, 17, 1985–1997.

- Saliba, E., Abassi, G.S., Vowles, R., Camilleri, J., and Hooper, S., 2009, Evaluation of Strength and Radiopacity of Portland Cement with Varying Additions of Bismuth Oxide, *Int. Endod. J.*, 42(4), 322-328.
- Saravanapavan, P., and Hench, L.L., 2003, Mesoporous Calcium Silicate Glasses. I. Synthesis, *J. Non-Cryst. Solids.*, 318(1-2), 1-13.
- Saraya, M. E.S.I., dan Rokhba, H.H.A.E.I., 2017, Formation and Stabilization of Vaterite Calcium Carbonate by Using Natural Polysaccharide, *ANP.*, 6, 158-182.
- Sarkar, N. K., Caicedo, R., Ritwik, P., Moiseyeva, R., and Kawashima, I., 2005, Physicochemical Basis of The Biologic Properties of Mineral Trioxide Aggregate, *J. Endod.*, 31(2), 97-100.
- Sassone, L.M., Fidel, R., Fidel, S., Vieira, M., and Hirata, R., 2003, The influence of organic load on antimicrobial activity of different concentrations of NaOCl and chlorhexidine in vitro, *Intl Endod J.*, 36:848-52.
- Schwach-Abdellaoui, K., Vivien.-Castioni, N., and Gurny, R., 2000, Local Delivery of Antimicrobial Agents for The Treatment of Periodontal Diseases, *European. J. Pharm. Biopharm.*, 50, 83-99.
- Shah, P.M.M., Chong, B.S., Sidhu, S.K., and Ford, T.R.P., 1996, Radiopacity of Potential Root-End Filling Materials, *Oral Surg. Oral Med.*, 81(4), 476-479.
- Shahi, S., Ghasemi, N., Rahimi, S., Yavari, H.R., Samiei, M., Janani, M., Bahari, M., and Moheb, S., 2015, The Effect of Different Mixing Methods on the Flow Rate and Compressive Strength of Mineral Trioxide Aggregate and Calcium-Enriched Mixture, *Iran. Endod. J.*, 10(1), 55-58.
- Soedjono, I.A., 2014, Perbandingan Ion Kalsium MTA Angelus dan Biodentine, *Thesis*, Universitas Indonesia, Jakarta.
- Solanki, N.P., Venkappa, K.K., and Shah, N.S., 2018, Biocompatibility and Sealing Ability of Mineral Trioxide Aggregate and Biodentine as Root and Filling Material: A Systematic Review, *J Conserv Dent.*, 21(1), 10-15.
- Suardi, H. N., 2014, Antibiotik dalam Dunia Kedokteran Gigi, *Cakradonya Dent J.*, 6(2), 678-744.
- Subhi, H., Husein, A., Mohamad, D., and Nurul, A., 2020, Physicochemical, Mechanical and Cytotoxicity Evaluation of Chitosan-based Accelerated Portland Cement, *J. Mater. Res. Technol.*, 9, 11574-11586.
- Subrata, A. E. P., and Bernadrd, O.I., 2019, Influence of Two Root Canal Obturation Techniques with Resin Based Sealer to Enterococcus Faecalis Penetration, *J. Ind. Dent. Association.*, 1, 21-29.