

## DAFTAR PUSTAKA

- Abadi, M.H.S., Delbari, A., Fakoor, Z., and Baedi, J., 2015, Effects of Annealing Temperature on Infrared Spectra of SiO<sub>2</sub> Extracted From Rice Husk, *J. Ceram. Sci. Tech*, 46, 41–46.
- Agung M, G.F., Hanafie Sy, M.R., and Mardina, P., 2013, Ekstraksi Silika Dari Abu Sekam Padi Dengan Pelarut NaOH, *J. Konversi UNLAM*, 2, 28–31.
- Ahn, J.W., Kim, J.H., Park, H.S., Kim, J.A., Han, C., and Kim, H., 2005, Synthesis of single phase aragonite precipitated calcium carbonate in Ca(OH)<sub>2</sub>-Na<sub>2</sub>CO<sub>3</sub>-NaOH reaction system, *Korean J. Chem. Eng.*, 22, 852–856.
- Alam, M.S. and Chowdhury, M.A., 2020, Characterization of epoxy composites reinforced with CaCO<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>-MgO-TiO<sub>2</sub>/CuO filler materials, *Eng. J. Alexandria.*, 221, 110-118.
- Asgary, S., Eghbal, M.J., Parirokh, M., Ghoddusi, J., Kheirieh, S., and Brink, F., 2009, Comparison of Mineral Trioxide Aggregate's Composition with Portland Cements and a New Endodontic Cement, *JOEN*, 35, 243–250.
- Asgary, S., Parirokh, M., Eghbal, M.J., and Brink, F., 2005, Chemical differences between white and gray mineral trioxide aggregate, *J. Endod.*, 31, 101–103.
- Ashraf, W., Olek, J., and Atakan, V., 2015, A Comparative Study of the Reactivity of Calcium Silicates during Hydration and Carbonation Reactions, *14th Int. Congr. Cem. Chem.*, 1–14.
- Azat, S., Korobeinyk, A. V, Moustakas, K., and Inglezakis, V.J., 2019, Sustainable production of pure silica from rice husk waste in Kazakhstan, *J. Clean. Prod.*, 217, 352–359.
- Aziz, M., 2010, Batu Kapur dan Peningkatan Nilai Tambah Serta Spesifikasi untuk Industri, *J. Teknol. Miner. dan Batubara*, 3, 116–131.
- Bakar, R.A., Yahya, R., and Gan, S.N., 2016, Production of High Purity Amorphous Silica from Rice Husk, *Procedia Chem.*, 19, 189–195.
- Belío-Reyes, I.A., Bucio, L., and Cruz-Chavez, E., 2009, Phase Composition of ProRoot Mineral Trioxide Aggregate by X-Ray Powder Diffraction, *J. Endod.*, 35, 875–878.
- Bentz, D.P. and Stutzman, P.E., 1994, Evolution of porosity and calcium hydroxide in laboratory concretes containing silica fume, *Cem. Concr. Res.*, 24, 1044–1050.
- Bikharudin, A., 2019, Sintesis dan karakterisasi semen WMTA Berbahan Dasar Batu Kapur Sebagai Kandidat Bahan Medikamen Pulpotomi, *Tesis, Departemen. Kim. Fak. Mat. Ilmu Pengetah Alam, Univ. Gadjah Mada, Yogyakarta.*
- Brindley, G., 1976, ICDD Grant-in-Aid, *Proc. Int. Cont*, 3, 45-48.
- Bur, N., 1982, Elements of Optical Mineralogy, *Stand (U.S) monogr*, 19, .
- Camilleri, J., 2007, Hydration mechanisms of mineral trioxide aggregate, *Int. Endod. J.*, 40, 462–470.
- Chen, S., Shi, L., Luo, J., and Engqvist, H., 2018, Novel Fast-Setting Mineral Trioxide Aggregate: Its Formulation, Chemical-Physical Properties, and Cytocompatibility, *ACS Appl. Mater. Interfaces*, 10, 20334–20341.

- Corral-Núñez, C., Fernández-Godoy, E., Casielles, J.M., Estay, J., Bersezio-Miranda, C., Cisternas-Pinto, P., and Batista-de Oliveira Jr, O., 2016, the Current State of Calcium Silicate Cements in Restorative Dentistry: a Review, *Rev. Fac. Odontol. Univ. Antioquia*, 27, 425–441.
- Costa, A.S. and Paranhos, C.M., 2018, Systematic evaluation of amorphous silica production from rice husk ashes, *J. Clean. Prod.*, 192, 688–697.
- Costa, J.A.S., Sarmiento, V.H.V., Romão, L.P.C., and Paranhos, C.M., 2019, Adsorption of organic compounds on mesoporous material from rice husk ash (RHA), *Biomass Convers. Biorefinery*, 160, 111–117.
- Eddy, D.R. and Noviyanti, A.R., 2018, Isolasi Silika dari Sekam Padi dengan Metode Sol-Gel dan Pemanfaatannya pada Sintesis Kalsium Silikat, *Jurnal kartika kimi.*, 1, 5–10.
- Elmore, S., 2007, Apoptosis: A Review of Programmed Cell Death, *Toxicol. Pathol.*, 35, 495–516.
- Fa'izzah, M., 2019, Pemanfaatan PCC dari Batu Kapur untuk Pembuatan WMTA sebagai Kandidat Bahan Perawatan Endodontik, *Tesis, Departemen. Kim. Fak. Mat. Ilmu Pengetah Alam, Univ. Gadjah Mada, Yogyakarta.*
- Flaxbart, D., 1999, Kirk–Othmer Encyclopedia of Chemical Technology, Fourth Edition, 27-Volume Set Wiley Interscience: New York, 1992–1998. \$7884. ISBN 0-471-52704-1., *J. Am. Chem. Soc.*, 121, 2339.
- Freire, L.G., Carvalho, C.N., Ferrari, P.H.P., Siqueira, E.L., and Gavini, G., 2010, Influence of dentin on pH of 2% chlorhexidine gel and calcium hydroxide alone or in combination, *Dent. Traumatol.*, 26, 276–280.
- Ghadafi, M., 2019, Pemanfaatan Silika Abu Sekam Padi untuk Bahan Dasar Pembuatan White Mineral Trioxide Aggregate yang Berpotensi sebagai Bahan Endodontik, *Tesis, Departemen. Kim. Fak. Mat. Ilmu Pengetah Alam, Univ. Gadjah Mada, Yogyakarta.*
- Gu, S., Rasimick, B.J., Deutsch, A.S., and Musikant, B.L., 2006, Radiopacity of dental materials using a digital X-ray system, *Dent. Mater.*, 22, 765–770.
- Hench, L.L., 2006, The story of Bioglass, *J. Mater. Sci. Mater. Med.*, 17, 967–978.
- Hughes, T.L., Methven, C.M., Jones, T.G.J., Pelham, S.E., Fletcher, P., and Hall, C., 1995, Determining cement composition by Fourier transform infrared spectroscopy, *Adv. Cem. Based Mater.*, 2, 91–104.
- Indurkar, A.R., Sangoi, V.D., Patil, P.B., and 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 Nanobiotechnology*, 12, 496–499.
- Islam, I., Kheng Chng, H., and Jin Yap, A.U., 2006, Comparison of the physical and mechanical properties of MTA and portland cement, *J. Endod.*, 32, 193–197.
- Kalapathy, U., Proctor, A., and Shultz, J., 2002, An improved method for production of silica from rice hull ash, *Bioresour. Technol.*, 85, 285–289.
- Keller, L.R., Buseck, P., 1989, Tscherms Mineral ICDD Grant-in-Aid, *Arizona State Univ., Tempe. AZ, USA.*
- Kem, A., Eysel, W., 1993, Mineralogisch-Petrograph, *Inst. Univ. Heidelberg, Ger. / ICDD Grant-in-Aid.*
- Kirboga, S. and Oner, M., 2013, Effect of the experimental parameters on calcium

- carbonate precipitation, *Chem. Eng. Trans.*, 32, 2119–2124.
- Kontoyannis, C.G. and Vagenas, N. V., 2000, Calcium carbonate phase analysis using XRD and FT-Raman spectroscopy, *Analyst*, 125, 251–255.
- Kurdowski, Wiesław, 2014, Cement and concrete chemistry, New York London.
- Kurdowski, Wieslaw, 2014, Concrete Properties BT - Cement and Concrete Chemistry,. In, Kurdowski,W. (ed). Springer Netherlands, Dordrecht, pp. 369–532.
- Lee, F., 1979, Crstallogr, *Glas. J. Appl*, 12, 120-126.
- Li, L., Yang, Y., Lv, Y., Yin, P., and Lei, T., 2020, Porous calcite  $\text{CaCO}_3$  microspheres: Preparation, characterization and release behavior as doxorubicin carrier, *Colloids Surfaces B Biointerfaces*, 186, 132-135.
- Lukman, M.W., 2013, Sintesis Biomaterial Komposit  $\text{CaO-SiO}_2$  Berbasis Material Alam (Batuan Kapur dan Pasir Kuarsa) dengan Variasi Suhu Pemanasan dan Pengaruhnya Terhadap Porositas, Kekerasan dan Mikrostruktur, *Skripsi, Jur. Fis. Fak. Mat. dan Ilmu Pengetah. Alam, Univ. Negeri Malang*.
- Medenach, J.S., 1994, College of Ceramics ICDD Grant-in-Aid, *Alfred Univ Alfred, New York, USA*,.
- Mehta, A. and Ugwekar, R.P., 2015, Extraction of Silica and other related products from Rice Husk, *Int. J. Eng. Res. Appl.*, 5, 43–48.
- Meiszterics, A., Rosta, L., Peterlik, H., Rohonczy, J., Kubuki, S., Henits, P., and Sinkó, K., 2010, Structural characterization of gel-derived calcium silicate systems, *J. Phys. Chem. A*, 114, 10403–10411.
- Meng, W., Kumar, A., and Khayat, K.H., 2019, Effect of silica fume and slump-retaining polycarboxylate-based dispersant on the development of properties of portland cement paste, *Cem. Concr. Compos.*, 99, 181–190.
- Mittal, D., 1997, Silica from ash, *Resonance*, 2, 64–66.
- Mohammadi, Z. and Dummer, P.M.H., 2011, Properties and applications of calcium hydroxide in endodontics and dental traumatology, *Int. Endod. J.*, 44, 697–730.
- Mohammadi, Z., Shalavi, S., and Yazdizadeh, M., 2012, Antimicrobial Activity of Calcium Hydroxide in Endodontics: A Review, *Chonnam Med. J.*, 48, 133.
- Mujiyanti, Nuryono, Kunarti, Eko Sri, D.R.N., 2010, Sintesis dan Karakterisasi Silika Gel dari Abu Sekam Padi yang diimobilisasi dengan 3-(Trimetoksisilil)-1-Propanol, *J. Sains dan Terap. Kim.*, 150–167.
- Mumme.W., 1995, ICDS 81100, *Jahrb. Monatsh.*, 6, 78-80.
- Nalco Water, an E.C., 2018, Nalco Water Handbook, T.,H.B.C. and R. and Ausburn.,M. and the production supervisor was R.A. (eds) United States of America.
- Nikravan, M., Ramezaniannour, A.A., and Maknoon, R., 2018, Technological and environmental behavior of petrochemical incineration bottom ash (PI-BA) in cement-based using nano- $\text{SiO}_2$  and silica fume (SF), *Constr. Build. Mater.*, 191, 1042–1052.
- Núñez, D., Elgueta, E., Varaprasad, K., and Oyarzún, P., 2018, Hydroxyapatite nanocrystals synthesized from calcium rich bio-wastes, *Mater. Lett.*, 230, 64–68.
- Okiji, T. and Yoshida, K., 2009, Reparative Dentinogenesis Induced by Mineral

- Trioxide Aggregate: A Review from the Biological and Physicochemical Points of View, *Int. J. Dent.*, 2009, 1–12.
- Othman, A., Isa, N., Othman, R., and Sabri, S.N.M., 2017, Producing Precipitated Calcium Carbonate by Flowing Ionic Solution from Column,. In, *AIP Conference Proceedings.*, pp. 1–7.
- Pirzadeh-ashraf, A., Lotfi, M., Zarandi, A., Yazdani, E., Mozafari, A., and Pornasrollah, A., 2018, Effect of containing silica fume on cytotoxicity of white mineral trioxide aggregate, *Dent Res J*, 15, 146–149.
- Prasad, B.S.K. and Naik, C.T., 2017, Mineral trioxide aggregate in endodontics, *Int. J. Appl. Dent. Sci.*, 3, 71–75.
- Prasad, R. and Pandey, M., 2012, Rice Husk Ash as a Renewable Source for the Production of Value Added Silica Gel and its Application : An Overview,7, .
- Rahman, A., 2014, Pengaruh Penambahan Silika fume dan SuperPlasticizer dengan Pemakaian Semen Tipe PPC dan Tipe PCC terhadap Peningkatan mutu Beton, *skripsi. Jur. Tek. sipil Fak. Tek. Univ. negeri semarang.*
- Rajasekharan, S., Vercruysse, C., Martens, L., and Verbeeck, R., 2018, Effect of exposed surface area, volume and environmental pH on the calcium ion release of three commercially available tricalcium silicate based dental cements, *Materials (Basel).*,11, 121-126.
- Ribeiro, D.A., Sugui, M.M., Matsumoto, M.A., Duarte, M.A.H., Marques, M.E.A., and Salvadori, D.M.F., 2006, Genotoxicity and cytotoxicity of mineral trioxide aggregate and regular and white Portland cements on Chinese hamster ovary (CHO) cells in vitro, *Oral Surgery, Oral Med. Oral Pathol. Oral Radiol. Endodontology*, 101, 258–261.
- Rouse, R., 1980, Kristallagr. Kristallgeom, Kristallphys, Kristallchem, *Dept. Geol. Sci. Univ. Michigan, Ann Arbor, MI, USA.*
- Sadhasivam, S., Chen, J.C., Savitha, S., Hsu, M.X., Hsu, C.K., Lin, C.P., and Lin, F.H., 2012, Synthesis of partial stabilized cement-gypsum as new dental retrograde filling material, *Mater. Sci. Eng. C*, 32, 1859–1867.
- 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, 97–100.
- Setianingsih, T. and Sutarno, 2018, Prinsip Dasar dan Aplikasi Metode Difraksi Sinar-X, UB Press.
- Da Silva, E.J., Andrade, C., Tay, L., and Herrera, D., 2012, Furcal-perforation repair with mineral trioxide aggregate: Two years follow-up, *Indian J. Dent. Res.*, 23, 542–545.
- Simatupang, P.H., Cendana, U.N., Nasjono, J.K., and Cendana, U.N., 2017, Pengaruh Penambahan Silica Fume Terhadap Kuat Tekan Reactive Powder Concrete, *J. Tek. Sipil*, 6, 219–230.
- Singh, J. and Singh, H., 2015, A review on utilization of rice husk ash in concrete, *Int. J. Innov. Eng. Res. Technol. [IJIERT]*, 2, 1–7.
- Sriyanti., D., 2005, Sinteis bahan Hibrida Amino-Silika dari Abu Sekam Padi Melalui Proses Sol-gel, *J. Kim. Sains Apl.*, 1–8.
- Steffen, R. and Waes, H. Van, 2009, Understanding mineral trioxide aggregate / Portland-cement : A review of literature and background factors,10, .

- Sucipto, E., 2007, Hubungan Pemapaan Partikel Debu Pada Pengolahan Batu Kapur Terhadap Penurunan Kapasitas Fungsi Paru, *Progr. Magsiter Ilmu Lingkungan Progr. Pascasarj. Univ. Diponegoro Semarang*,.
- Suka, I.G., Simanjuntak, W., Sembiring, S., and Trisnawati, E., 2008, Karakteristik Silika Sekam Padi Dari Provinsi Lampung Yang Diperoleh Dengan Metode Ekstraksi, *Mipa*, 37, 47–52.
- Suprastiwi, E., 2018, Material Bioaktif dalam Ruang Lingkup Perawatan Konservasi Gigi, 100.
- Suyanta, S dan Kuncaka, A., 2011, Utilization of Rice Husk As Raw Material in Synthesis of Mesoporous Silicates MCM-41, *Indones. J. Chem.*, 11, 279–284.
- Swanson, Fuyat, 1953, System of Mineralogy, *Natl. Bur Stand*, I, .
- Tchakouté, H.K., Rüschler, C.H., Kong, S., and Ranjbar, N., 2016, Synthesis of sodium waterglass from white rice husk ash as an activator to produce metakaolin-based geopolymer cements, *J. Build. Eng.*, 6, 252–261.
- Teir, S., Eloneva, S., Fogelholm, C.J., and Zevenhoven, R., 2006, Stability of calcium carbonate and magnesium carbonate in rainwater and nitric acid solutions, *Energy Convers. Manag.*, 47, 3059–3068.
- Torabinejad, M., Hong, C.U., Lee, S.J., Monsef, M., and Pitt Ford, T.R., 1995, Investigation of mineral trioxide aggregate for root-end filling in dogs, *J. Endod.*, 21, 603–608.
- Unal, G.C., Maden, M., and Isidan, T., 2010, Repair of Furcal Iatrogenic Perforation with Mineral Trioxide Aggregate : Two Years Follow-up of Two Cases, 4, 475–481.
- Vogel's qualitative inorganic analysis, 1997, *Anal. Chim. Acta*, 343, 297.
- Voicu, G., Bădănoiu, A.I., Andronescu, E., and Chifiruc, C.M., 2013, Synthesis, characterization and bioevaluation of partially stabilized cements for medical applications, *Cent. Eur. J. Chem.*, 11, 1657–1667.
- Voicu, G., Noiu, and Andronescu, E., 2012, Sol-gel Synthesis of White Mineral Trioxide Aggregate with Potential use as Biocement, 7, 1639–1646.
- Voytekhovsky, Y.L., 2020, System of Mineralogy Revisited, *Miner. J.*, 4, 277–288.
- Wahyudi Dede; K, Citra Fitriani; Hernawan, K.T., 2017, Sintesis Precipitated Calcium Carbonated Dengan Asam Stearat Sebagai Pengubah Permukaan, *J. Keramik dan Gelas Indones.*, 87–95.
- Wardhani, S., Prasetya, F., Khunur, M.M., Purwonugroho, D., and Prananto, Y.P., 2018, Effect of CO<sub>2</sub> Flow Rate and Carbonation Temperature in the Synthesis of Crystalline Precipitated Calcium Carbonate ( PCC ) from Limestone, *J. Chem. Indones*, 18, 573–579.
- Wong-Ng. W., McMurdie, H., Paretzkin, B. Hubbard, C.D., 1988, Powder Diraction, *NBS, Gaithersbg. MD, USA*, 3, .
- Yadav, P., Rao, Y., Jain, A., Relhan, N., and Gupta, S., 2013, Treatment of internal resorption with mineral trioxide aggregates: A case report, *J. Clin. Diagnostic Res.*, 7, 2400–2401.