

DAFTAR PUSTAKA

- Abitbol, T., Rivkin, A., Cao, Y., Nevo, Y., Abraham, E., Shalom, T.B., Lapidot, S., Shoseyov, O. 2016. Nanocellulose, a tiny fiber with huge applications. *Current Op in Biotech.* 39:76-88.
- Ahmed, M., El-Hadi. 2017. Increase the elongation at break of poly (lactic acid) composites for use in food packaging films. *Scientific Reports.* 7:1-14.
- Alhareb, A.O., Akil, H.M., Ahmad, Z.A. 2016. Impact strength, fracture toughness and haredness improvement of PMMA denture base through addition of nitrile rubber/ceramic fillers. *The Saudi Journal for Dental Research.* 2-9.
- Al-Harbi, F.A., Abdel-Halim, M.S., Gad, M.M., Fouda, S.M., Baba, N.Z., AlRumaih, H.S., Akhtar, S. 2019. Effect of nanodiamond addition on flexural strength, impact strength and surface roughness of PMMA denture base. *J of Prosthodont.* 28(1):417-425.
- Alla, R.K., Raghavendra, K.N.S., Vyas, R., Konankanchi, A., 2015. Conventional and contemporary polimers for the fabrication of denture prosthesis: part I-overview, composition and properties. *Int J of Applied Sci.* 1(4):82-89.
- American Standard Testing and Material. 2004. Standart Test Method for Determining the Charpy Impact Resistance of Notched Specimens of Plastics, ASTM International. D-6110 (4):1-15.
- American Standard Testing and Material. 2010. Standart Test Method for Determining the Izod Pendulum Impact Resistance of Plastics. ASTM International. D-256 (10):1-20.
- Anusavice, K.J., Shen, C., Rawis, R. 2012. *Phillips Science of Dental Materials 12 th Ed.* Elsevier Science. St. Louis.
- Asar, N.V., Albayrak, H., Korkmarz, T., Turkyilmaz, I. 2013. Influence of various metal oxides on mechanical and physical properties of heat-cured polymethyl methacrylate denture base resins. *J Adv Prosthodont.* 5:241-247.
- Asim, M. 2017. Nanocellulose: Preparation Method and Applications. *Cellulose-Reinforced Nanofibre Composites.* 1: 261-276.
- Balos, S., Puskar, T., Potran, M., Markovic, D., Pilic, B., Pavlicevic, J., Kojic, V. 2016. Modulus elasticity, flexural strength and biocompatibility of

- polymethyl methacrylate resin with low addition of nanosilica. *RRJDS*. 4(1):26-33.
- Berthomieu, C., dan Hienerwadel, R. 2009. Fourier transform infrared (FTIR) spectroscopy. *Photosynth Res*. 101:157-170.
- Budiharjo, A., Wahyuningtyas, E., Sugiarto, E. 2014. Pengaruh lama pemanasan pasca polimerisasi dengan microwave terhadap monomer sisa dan kekuatan transversa pada reparasi plat gigi tiruan resin akrilik. *J Ked Gigi*. 5(2):113.
- Bugaev, K.O., Zelenia, A.A., Volodi, V.A. 2012. Vibrational spectroscopy of chemical species in silicon and silicon-rich nitride thin films. *Int J of Spectroscopy*, 1(1):1-5.
- Carr, A.B. 2011. *McCracken's Removable Partial Prosthodontics*. Edisi 12. Elsevier Mosby. Saint Louis.
- Chirayil, C.J., Joy, J., Mathew, L., Mozetic, M., Koetz, J., Thomas, S. 2014. Isolation and characterization of cellulose nanofibrils from helicteres isora plants. *Ind Crops Prod*. 59(1):27-34.
- Correa, A.C., Teixeira, E. M., Pessan, L.A., Mattoso, L.H.C. 2010. Cellulose nanofibers from curaua fibers. *Cellulose*. 17:1183-1192.
- Craig, R.G., Power, J.M. 2011. *Restorative Dental Materials 13th ed*. Mosby Year Book Inc. St Louis. 190-257.
- Dima, S.O., Panaitescu, D.M., Orban, C., Ghiurea, M., Doncea, S.M., Fierascu, R.C., Nistor, C.L., Alexandrescu, E., Nicolae, C.A., Trica, B., Moraru, A., Oancea, F. 2017. Bacterial nanocellulose from side-streams of kombucha beverages production: preparation and physical-chemical properties. *Polymers*. 9(374):1-24.
- Duygu, D., Udoh, A.U., Ozer, T.B., Akbulut, A., Erkaya, I.A., Yildiz, K., Guler, D. 2012. Fourier transform infrared (FTIR) spectroscopy for identification of chlorella vulgaris beijerinck 1890 and scenedesmus obliquus (turpin) kutzing 1833. *African J of Biotech*. 11(16):3817-3824.
- Effendi, D.B., Rosyid, N.H., Nandiyanto, A.B.D., Mudzakir, A. 2015. Review : sintesis nanoselulosa. *J Integrasi Proses*. 5(2):61-74.
- Evelyna, A., Sutanto, D., Tiffany, E. 2017. Chitosan 2% effect on prohibiting the growth of candida albicans on heatcured acrylic resin. *JMKG*. 6(2):17-24.
- Fahma, F., Hori, N., Iwata, T., Takemura, A. 2012. The morphology and properties of poly(methyl methacrylate)-cellulose nanocomposites

- prepared by immersion precipitation method. *J of Applied Polymer Sci.* 4:1-6.
- Ferasima, R., Zulkarnain, M., Nasution, H. 2013. Pengaruh penambahan serat kaca dan serat polietilen terhadap kekuatan impak dan transversal pada bahan basis gigi tiruan resin akrilik polimerisasi panas. *IDJ.* 2(1):27-37.
- Groover, M.P. 2010. *Fundamentals of modern manufacturing*. Edisi 4. John Wiley & Sons. USA. 170-73.
- Gunadi, H.A., Margo, A., Burhan, L.K., Suryatenggara, F., Setiabudi, I. 2016. *Ilmu Geligi Tiruan Sebagian Lepasan Jilid II*. EGC. Jakarta.
- Halib, N., Perrone, F., Cemazar, M., Dapas, B., Farra, R., Abrami, M., Chiarappa, G., Forte, G., Zanconatti, F., Pozzato, G., Murena, L., Fiotti, N., Lapasin, R., Cansolino, L., Grassi, G., Grassi, M. 2017. Potential applications of nanocellulose-containing materials in the biomedical field. *MDPI Materials.* 10(977):1-31.
- Hamad, Q.A. 2017. Study of the effect of nano ceramic particles on some physical properties of acrylic resin. *Eng and Tech J.* 35(2):124-129.
- Hameed, H.K., dan Rahman, H.A. 2015. The effect of addition nanoparticle ZrO₂ on some properties of autoclave processed heat cured acrylic denture base material. *J Bagh Coll Dentistry.* 27(1):32-39.
- Hasratiningsih, Z., Takarini, V., Cahyanto, A., Faza, Y., Asri, L.A.T.W., Purwasasmita, B.S. 2017. Hardness evaluation of PMMA reinforced with two different calcinations temperatures of ZrO₂-Al₂O₃-SiO₂ filler system. *IOP Conf. Series: Materials Science and Engineering.* 172:1-7.
- Hossain, M.I., Zaman, H., Rahman, T. 2018. Derivation of nanocellulose from native rice husk. *Chem Eng Research Bulletin.* 20:19-22.
- Ioelovich, M. 2012. Optimal conditions for isolation of nanocrystalline cellulose particles. *JNN.* 2(2):9-13.
- Ishak, Z.A.M. 2011. Editorial Corner-A Personal View Rice Husk; Turning Wastes into Wealth. *EXPRESS Poly. Lett.* 5(7):569.
- Ismiyati, T., Siswomihardjo, W., Soesatyo, M.H.N.E., Rochmadi, R. 2017. Campuran kitosan dengan resin akrilik sebagai bahan gigi tiruan penghambat candida albicans. *MKGI.* 3(3):139-145.
- Jang, D.E., Lee, J.Y., Jang, H.S., Son, M.K. 2015. Color stability, water sorption and cytotoxicity of thermoplastic acrylic resin for non dental clasp denture. *J Adv Prosthodont.* 7:278-287.

- Jatuadomi, Gunawan, P.N., Siagian, K.V. 2016. Alasan pemakaian gigi tiruan lepasan pada pasien poliklinik gigi di BLU RSUP Prof. Dr. R.D. Kandou Manado. *J e-GiGi*. 4(1):40-45.
- Johar, N., Amad, I., Dufresnec, A. 2012. Extraction, preparation and characterization of cellulose fibres and nanocrystals. *Ind Crops Prod*. 37:93-99.
- Julianto, H., Farid, M., Rasyida, A. 2017. Ekstraksi nanoselulosa dengan metode hidrolisis asam sebagai penguat komposit absorpsi suara. *Jurnal Teknik ITS*. 6(2):242-245.
- Kaushik, M., Chen, W.C., Van de Ven, T.G.M., Moores, A. 2014. An improved methodology for imaging cellulose nanocrystals by transmission electron microscopy. *Nordic Pulp & Paper Research Journal*. 29(1):77-84.
- Khalil, A.H.P.S., Saurabh, C.K., Adnan, A.S., Fazita, N.M.R., Syakir, M.I., Davoudpour, Y., Rafatullah, M., Abdullah, C.K., Haafiz, M.K.M., Dungani, R. 2016. A review on chitosan-cellulose blends and nanocellulose reinforced chitosan biocomposites : properties and their applications. *Carbohydrate Polymers*. 150:216-226.
- Kim, I.Y., Seo, S.J., Moon, H.S., Yoo, M.K., Park, I.Y., Kim, B.C., Cho, C.S. 2008. Chitosan and its derivatives for tissue engineering applications. *Biotechnol Adv*. 26(1):1-21.
- Kohli, S., dan Bhatia, S. 2013. Polyamides in dentistry. *Int J of Scientific Study*. 1(1):20-25.
- Krkic, N., Lasic, V., Suput, D. 2012. Improvement of mechanical properties of chitosan film. *Journal on Processing and Energy in Agriculture*. 16(3):103-105
- Li, W., Yue, J., Liu, S. 2012. Preparation of nanocrystalline cellulose via ultrasound and its reinforcement capability for poly(vinyl alcohol) composites. *Ultrasonics Sonochemistry*. 19:479-485.
- Lin, N., Dufresene, A. 2014. Nanocellulose in biomedicine: current status and future prospect. *EPJ*. 10:1-64.
- Lu, P., Hsieh, Y. 2012. Preparation and characterization of cellulose nanocrystal from rice straw. *Carbohydrate Polymers*. 87:564-573.
- Lu, P., Hsieh, Y. 2010. Preparation and properties of cellulose nanocrystals : rods, spheres, and network. *Carbohydrate Polymers*. 82:329-336.

- Luduena, L., Fasce, D., Alvarez, V.A., Stefani, P.M. 2012. Nanocellulose from rice husk following alkaline treatment to remove silica. *BioResources*. 6(2):1440-1453.
- Lubis, K. 2015. Metoda-metoda karakterisasi nanopartikel perak. *J Pengabdian Kepada Masyarakat*. 21(79):50-55.
- Manappallil, J.J. 2015. *Basic Dental Materials*. Edisi 4. Jaypee Brother Medical Publisher. New Delhi.
- Machado, A.L., Bochio, B.C., Wady, A.F., Jorge, J.H., Canevarolo Jr, S.V., Vergani, C.E. 2012. Impact strength of denture base and relines acrylic resins: an in vitro study. *J of Dent Biomech*. 3:1-7.
- Mardiunti, A.D. 2019. Pengaruh Penambahan Nanoselulosa Sekam Padi (*O. sativa* L.) Terhadap Kekuatan Kompresi pada Plat Ortodonti Resin Akrilik Self Cure dengan Metode Spray-on. *Skripsi*. Jurusan Kedokteran Gigi, Fakultas Kedokteran. Universitas Jenderal Soedirman. Purwokerto. (Tidak dipublikasikan).
- McCabe, J.F., dan Walls, A.W.G. 2008. *Applied Dental Materials*. Edisi 9. Terjemahan oleh Siti Sunarintyas. EGC. Jakarta.
- Khalaf, H.M. 2014. The effect of polypropilene fibers in different lengths on some properties of heat-cured acrylic resin processed by autoclave. *MDJ*. 11(1): 57-61.
- Mulyadi. 2019. Isolasi dan karakterisasi selulosa : review. *Jurnal Saintika Unpam*. 1(2):177-182.
- Noort, R.V. 2014. *Introduction to Dental Materials*. Mosby Elsevier. New York.
- Nugroho, W. 2014. Pembuatan Cellulose Powder dari Ampas Tebu dengan Variasi Konsentrasi dan Volume Larutan H₂SO₄. *Skripsi*. Fakultas Teknik Departemen Teknik Kimia Universitas Gadjah Mada. Yogyakarta (Tidak dipublikasikan).
- Oliveira, F.B., Bras, J., Pimenta, M.T.B., Curvelo, A.A.S., Belgacem, M.N. 2016. Production of cellulose nanocrystals from sugarcane bagasse fiber and pith. *Ind Crops Prod*. 10:1-10.
- Pambudi, A., Farid, M., Nurdiansah, H. 2017. Analisis morfologi dan spektroskopi infra merah serat bamboo betung (*dendrocalamus asper*) hasil proses alkalisasi sebagai penguat komposit absorpsi suara. *Jurnal Teknik ITS*. 6(2):441-444.
- Pandey, J.K., Takagi, H., Nakagaito, A.N., Kim, H. 2015. *Handbook of Polymer Nanocomposites, Processing, Performance and Application Volume:*

Polymer Nanocomposites of Cellulose Nanoparticles. Springer. London. p21.

- Peng, B.L., Dhar, N., Liu, H.L., Tam, K.C. 2011. Chemistry and applications of nanocrystalline cellulose and its derivatives: a nanotechnology perspective, *Can J Chem Eng.* 89:1191-1206.
- Pereira, A.L.S, Nascimento, D.M., Filho, M.S.M., Morais, J.P.S., Vasconcelos N.F., Feitosa, J.P.A., Brigida, A.I.S., Rosa, M.F. 2014. Improvement of polyvinyl alcohol properties by adding nanocrystalline cellulose isolated from banana pseudotems. *Carbohydr Polym.* 112:165-172.
- Putri, M.L., Sugiarno, E., Kusuma, H.A. 2016. Pengaruh jenis fiber dan surface treatment ethyl acetate terhadap kekuatan fleksural dan impak pada reparasi plat gigi tiruan resin akrilik. *JKG.* 7(2):111-117.
- Razalie, L.P. 2017. Pengaruh Penambahan Aluminium Oksida terhadap Kekuatan Fleksural dan Impak pada Bahan Basis gigi tiruan Resin Akrilik Polimerisasi Panas. *Skripsi*. Fakultas Kedokteran Gigi Universitas Sumatera Utara. Medan. (Tidak dipublikasikan).
- Riyadi, W. 2019. Pengaruh Penambahan Nanoselulosa Sekam Padi (*O. sativa L.*) terhadap Kekuatan Fleksural Bahan Basis Gigi tiruan Resin Akrilik Polimerisasi Panas. *Skripsi*. Jurusan Kedokteran Gigi Fakultas Kedokteran Universitas Jenderal Soedirman. Purwokerto. (Tidak dipublikasikan).
- Salman, A.D., Jani, G.H., Fatalla, A.A. 2017. Comparative study of the effect of incorporating SiO₂ nano-particles on properties of polymethyl methacrylate denture bases. *Biomedical & Pharmacology Journal.* 10(3):1525-1535.
- Salman, T.A., Khalaf, H.A. 2015. The influence of adding of modified ZrO₂ – TiO₂ nanoparticles on certain physical and mechanical properties of heat polymerized acrylic resin. *J Bagh Coll Dentistry.* (3):27.
- Sanchez, O., Sierra, R., Almeciga-Diaz, C.J. 2011. Delignification process of agro-industrial wastes an alternative to obtain fermentable carbohydrates for producing fuel. *Alternative Fuel.* 8:111-154.
- Sari dan Wardani. 2015. *Pengelolaan dan Analisis Data Statistik dengan SPSS*. Cetakan I. Yogyakarta.
- Seo, Yu-Ri., Kim, Jin-Woo., Hoon, S., Kim, J., Chung, J.H., Lim, Ki-Taek. 2018. Cellulose-based nanocrystals: sources and applications via agricultural byproducts. *J. Biosyst. Eng.* 43(1):59-71.
- Somani, M.V., Khandelwal, M., Punia, V., Sharma, V. 2019. The effect of incorporating various reinforcement materials on flexural strength and

- impact strength of polymethylmethacrylate: a meta analysis. *J Indian Prosthodont.* 19:101-112.
- Steel, R.G.D., dan Torrie, J.H. 2003. *Statistika Dasar*. Diterjemahkan oleh: Sumantri, B. Gramedia Pustaka Utama. Jakarta.
- Sulastrri, S., Kristianingrum, S. 2010. Berbagai macam senyawa silika: sintesis, karakterisasi dan pemanfaatan. *Pros Sem Nas Pen.* UNY. K211-K216.
- Taczala, J., Sawicki, J., Pietrasik, J. 2020. Chemical modification of cellulose microfibers to reinforce poly(methyl methacrylate) used for dental application, *MDPI Materials.* 13:1-13.
- Talari, F.S., Qujeq, D., Amirian, K., Ramezani, A., Pourkhalil, H., Alvavaz, A. 2016. Evaluation the effect of cellulose nanocrystalline particles on fleksural strength and surface hardness of autopolymerized temporary fixed restoration resin. *IJBR.* 7(5):152-160.
- Tamimi, M., dan Herdyastuti, N. 2013. Analisis gugus fungsi dengan menggunakan spektroskopi FT-IR dari variasi kitin sebagai substrat kitinase bakteri *Pseudomonas* sp. TNH-54. *UNESA J of Chem.* 2(2):47-51.
- Tandon, R., Gupta, S., Agarwal, S.K. 2010. Denture base materials: form past to future. *IJDS.* 33-5.
- Teixeira, M.A., Paiva, M.C., Amorim, M.T.P., Felgueiras, H.P. 2020. Electrospun nanocomposites containing cellulose and its derivates modified with specialized biomolecules for an enhanced wound healing. *MDPI Nanomaterials.* 10(557):1-64
- Thomas, B., Raj, M.C., Athira, K.B., Rubiyah, M.H., Joy, J., Moores, A., Drisko, G.L., Sanchez, C. 2017. Nanocellulose, a Versatile Green Platform: From Biosources to Materials and Their Applications. ACS, A-AY.
- Toivonen, M.S., Kurki-Suonio, S., Schacher, F.H., Hietala, S., Rojas, O.J., Ikkala, O. 2015. Water-resistant, transparent hybrid nanopaper by physical cross-linking with chitosan. *Biomacromolecules.* 16:1062–1071.
- Tripathi, K.K., Govilla, O.P., Warriar, R., Ahuja, V. 2011. *Biology of O. sativa L. (Rice)*. Departemen of Biotechnology Ministry of Science and Technology. India.
- Tsukamoto, J., Duran, N., Tasic, L. 2013. Nanocellulose and bioethanol production from orange waste using isolated microorganism. *J Braz Chem Soc.* 24(9):1537-1543.

- Umma, T.F. 2014. Pengaruh volume ekstrak minyak atsiri daun mint (*Mentha piperita* L.) yang Ditambahkan dalam Resin Akrilik Polimerisasi Kimia terhadap Kekuatan Transversal. *Skripsi*. Fakultas Kedokteran Gigi Universitas Muhammadiyah Yogyakarta. Yogyakarta. (Tidak dipublikasikan).
- Wu, T., Farnood, R., O'Kelly, K., Chen, B. 2014. Mechanical behavior of transparent nanofibrillar cellulose-chitosan nanocomposite films in dry and wet conditions. *Journal of the Mechanical Behavior of Biomedical Materials*. 32:279–286
- Yang, X., Han, F., Xu, C., Jiang, S., Huang, L., Liu, L., Xia, Z. 2017. Effects of preparation methods on the morphology and properties of nanocellulose (NC) extracted from corn husk. *Industrial Crops & Products*. 100:241-247.
- Zarb, G., Hobkirk, J.A., Eckert, S.E., Jacob, R.F. 2012. *Prosthetic Treatment for Edentulous Patients*. Edisi 13. Elsevier Mosby. Singapore. h.133-141.
- Zeni, M., Favero, D., Pachero, D. 2015. Preparation of microcellulose (Mcc) and nanocellulose (Ncc) from Eucalyptus Kraft Ssp Pulp. *iMedPub J*. 1(1):1-5.

