

- Aswani, I, Kalla, R, Rasyid, R. Konverso Gliserol Menjadi Akrolein Dengan Metode Gelombang Ultrasonik. Teknik Kimia. Universitas Muslim Indonesia. Vol. 29/No. 2/Desember 2021
- Fachrodji, A. 2010. “Model Daya Saing Produk Gondorukem di Pasar Internasional dan Implikasinya terhadap Pengembangan Industri Gondorukem di Indonesia”, Tesis. Fakultas kehutanan. Institut Pertanian Bogor.
- Felthouse, T. R., Burnett, J. C., Horrell, B., Mummey, M. J., & Kuo, Y.-J. 2001. *Maleic Anhydride, Maleic Acid, and Fumaric Acid. Kirk-Othmer Encyclopedia of Chemical Technology.*
- Fiebach, K. 1993. Resins, Natural, dalam Ullmann’s, Encyclopedia of Industrial Chemistry. vol. A23, pp 73-88, VCH Verlagsgese
- Hardhianti, M. P. W., Rochmadi, & Azis, M. M. 2022. Kinetic studies of esterification of rosin and pentaerythritol. Processes, 10(1). <https://doi.org/10.3390/pr10010039>
- James, M.N.G. & Williams, G.J.B. 1974. A Refinement of the Crystal Structure of Maleic Acid. Acta Crystallographica. B30 (5) : 1249-1275
- Karlberg, A. T. dan Hagvall, L. 2018. Colophony: Rosin in Unmodified and Modified Form. Sweden :University of Gothenburg
- Khadafi, M., 2014. PENGOLAHAN GONDORUKEM MENJADI BAHAN PENDARIHAN SEBAGAI ADITIF PADA PEMBUATAN KERTAS. Balai Besar Pulp dan Kertas
- Kirk, R. E. dan Othmer, D. F. 2007. Rosin dan Rosin Derivate. Encyclopedia of Chemical Technology. Volume ke21. New York : The Interscience Encyclopedia. Inc.
- Kusumadiya, P. 2009. PEMBUATAN DARIH ROSIN MALEAT SECARA LANGSUNG DARI GETAH PINUS DAN APLIKASINYA PADA KERTAS. Institut Pertanian Bogor
- Kolio D. Troev. 2018. Chapter 4 - Reactivity of P–H Group of Hypophosphorous Acid and Its Derivatives. Academic press Reactivity of PH Group of Phosphorus Based Compounds. Pages 199-244.
- Ladero, M. Gracia, M., Tamayo, J. J., Ahumada, I. L., Trujillo, F., Ochoa, F. G., (2011). Kinetic modelling of the esterification of rosin and glycerol: Application to industrial operation. *Chemical Engineering Journal*, 169(1–3), 319–328. <https://doi.org/10.1016/j.cej.2011.03.012>
- Lin, R., Li, H., Long, H., Su, J. and Huang, W., 2014, Synthesis of Rosin Acid Starch Catalyzed by Lipase, 2014.

- Ma G, Zhang T, Wu J, Hou C, Ling L, Wang B. Preparation and properties of glycerin ester of tung oil modified rosin. *J Appl Polym Sci* 2013;130(3):1700–6.
- Mardiah, M, Samadhi, T. W, Wulandari, W, Aqsha, A, Situmorang, Y.A, Indarto, A. Recent Progress on Catalytic of Rosin Esterification Using Different Agent of Reactant. *AgriEngineering* 2023, 5, 2155-2169.
- Melnyk, I.V., *et. al.* 2012. Sorption properties of porous spray-dried microspheres functionalized by phosphonic acid groups. *Microporous Mesoporous Mater.* 153, 171-177.
- M. N. G James, G. J. B Williams. 1974. A Refinement of the Crystal Structure of Maleic Acid. *Acta Crystallographica.* B30 (5): 12491275.  
[doi:10.1107/S0567740874004626](https://doi.org/10.1107/S0567740874004626)
- O’Neil, J.M, Smith, A, and Heckleman, E. P. 2001. *The Mark Index an Encyclopedia of Chemical, Drug, and Biological.* New York: Merk Research Laboratories
- Purnavita, S. 2017. FORMULASI VERNIS POLIESTER BERBASIS GONDORUKEM - ASAM LAKTAT DAN GLISEROL DENGAN KATALIS SnCl<sub>2</sub>. Fakultas Teknik Universitas Wahid Hasyim Semarang.
- Prakoso, T, Kumalasari, I, Jiwandaru, B, Soerawidjaja, T. H, Azis, M. M, Indarto, A. 2021. Synthesis of Maleic-Modified Rosin Ester from Pine Rosin. Department of Bioenergy Engineering and Chemurgy, Insitut Teknologi Bandung, 45363 Sumedang, Indonesia
- Rachmawati, M. A. 2011. ESTERIFIKASI GONDORUKEM MALEAT DENGAN GLISEROL. Bogor : Institut Pertanian Bogor
- Shiqin, S, Xueli, C, Meiyuan, M, Yue, L, Guanghao, W, Hailong, Y, Shiwei, L, Shitao, Y. High-efficient esterification of rosin and glycerol catalyzed by novel rare earth Lewis acidic ionic liquid: Reaction development and mechanistic study. *Journal of the Taiwan Institute of Chemical Engineers.* Volume 127, 2021, Pages 1-6, ISSN 1876-1070
- Silitonga, Toga. 1988. The Influence of Maleic Unhydride Acid on Rosin Soap Properties. *Forest Product Research Journal.* Vol 5, No 4: 173-176
- Siregar, M. R. U. 2002. “Pengaruh Penambahan Asam Maleat dan Asam Fumarat Terhadap Rendemen dan Kualitas Gondorukem Modifikasi”. Fakultas Kehutanan. Intitut Pertanian Bogor
- Solomons, T. W. G dan Fryhle C. B. 2011. *Organic Chemistry*, 10th ed. New Jersey : John Wiley & Sons, Inc.
- Sun, Z. 2016. Design og a Highly Efficient Indium-Exchanged Heteropolytungtic Acid for Glycerol Esterification with Acetic Acid. *Catalysis Surveys from Asia.* 20:82-90

- Susanti, S, Sriyana, H. Y, Purnavita, S. PEMBUATAN VERNIS BERBAHAN GONDORUKEM YANG DIMODIFIKASI GLISEROL DAN PADUAN LINSEED OIL DENGAN MINYAK BIJI KARET MENGGUNAKAN METODE ESTERIFIKASI TANPA KATALIS. *Akademi Kimia Industri Santo Paulus Semarang. Inovasi Teknik Kimia. Vol. 2, No. 1, Hal 54-59*
- Wang, L. 2016. A Supported Nano ZnO Catalyst Based on a Spent Fluid Cracking Catalyst (FC3R) for The Heterogeneous Esterification of Rosin. *Reaction Kinetics, Mechanisms and Catalysis. 119:219-233*
- Wang, X. 2019. An effective flame retardant containing hypophosphorous acid for poly (lactic acid): Fire performance, thermal stability and mechanical properties. *Polymer testing, 78, 105940*
- Wardani, C. 2007. Pemanfaatan Gliserol sebagai Bahan Baku Sintesa Gliserol Karbonat. Bogor : Fakultas Teknologi Pertanian.
- Wiyono, B., 2007. *Effect of Maleic Anhydride Concentration on Properties of Maleopimaric Rosin directly made from Merkus Pine Resin. Jurnal Penelitian Hasil Hutan Vol. 25 No. 1, 28-40*
- Wiyono, B., 2009. Chemical Treatment on Indonesian Pine Oleoresin and Rosin in Making Fortified Rosin used for Sizing Agent in Paper Making Process. Ehime University, Japan, in press.
- Y. Li, M. Niu, X. Xu, H. Bian, J. Chen, J. Wen, C. Yu, M. Liang, L. Ma, F. Lai and X. Liu. 2020. *Characteristics and Kinetics of Glycerol Ester of Rosin via Oxidation Process under Ultraviolet Irradiation. Guangxi University. DOI: 10.1039/C9NJ04439F*
- Zhou, D., Wang, L., Chen, X., Wei, X., Liang, J., Tang, R., Xu, Y. (2020). *Reaction mechanism investigation on the esterification of rosin with glycerol over annealed Fe<sub>3</sub>O<sub>4</sub>/MOF-5 via kinetics and TGA-FTIR analysis. Chemical Engineering Journal, 126024. DOI:10.1016/j.cej.2020.126024*