

## DAFTAR PUSTAKA

- Alchin, D., & Wansbrough, H. (2012). Ion Exchange Resins. *XIII-Water-D-Ion Exchange Resins*. <https://doi.org/10.1021/ja01510a069>
- Andhika, M. (2008). Upaya Inhibisi Pembentukan Kerak Silika (Silica Scaling) Menggunakan Asam Poliakrilat (PAA) dan Asam Borat (BA) Dalam Pipa Brine Panasbumi. *Universitas Indonesia*.
- Aziz, A., & Ola, K. K. (2019). Kajian Terbentuknya Scaling pada Komponen Turbin Uap Pembangkit Listrik Tenaga Panas Bumi Skala Kecil. *Jurnal Teknologi Lingkungan*, 20(1), 29. <https://doi.org/10.29122/jtl.v20i1.2832>
- Bayu, H., Prihandoko, D., & Sriwinarno, H. (2016). Penggunaan Natrium Klorida (NaCl) Sebagai Regeneran Resin Amberlite IR 120 Na dalam Menurunkan Kesadahan Total Air Sumur. *Jurnal Rekayasa Lingkungan*, 16(2).
- Borrmann, T., Johnston, J. H., & McBrearty, R. (2009). *Nano-Structured Calcium Silicate—A Solution To the Formation of Silica Scale in Geothermal Water and a Useful Product*. 104–109.
- Brown, K. (2011). Thermodynamics and kinetics of silica scaling. *Proceedings International Workshop on Mineral Scaling 2011, May*, 1–9. <https://doi.org/10.1002/jcc.21990>
- Chandrasekara, Nainanayake Pathirannehelage Ganga Nilmini. 2016. Study of a New Process for the Efficient Regeneration of Ion exchange Resins. Environmental and Mathematical Sciences, University of New South Wales.
- Chen, S. (2019). *Hydrodynamics and Growth of Colloidal Silica in Geothermal Reinjection*. October.
- Ciptadi, S., & Patangke, S. (2001). Evaluasi Potensi Silica Scaling Pada Pipa Produksi Lapangan Panasbumi Lahendong – Sulawesi Utara. *Proceeding of the 5th INAGA Annual Scientific Conference and Exhibitions, November 1995*.
- Dewan Energi Nasional. (2019). *Outlook Energi Indonesia 2019*.
- DuPont. (2020a). *DuPont Ion Exchange Resins Tech Fact*.
- DuPont. (2020b). *DuPont™ AmberLite™ IRC120 Na Ion Exchange Resin Product Data Sheet*.
- Fogler, H. S. (2016). *Elements of Chemical Reaction Engineering* (5th ed.). Prentice Hall.
- Foo, K. Y., & Hameed, B. H. (2010). Insights Into The Modeling of Adsorption Isotherm Systems. *Chemical Engineering Journal*, 156(1), 2–10. <https://doi.org/10.1016/j.cej.2009.09.013>
- Frank De Silva and Bill Koebel. 2000. Effect Of Temperature On The Ion Exchange Process In A Fixed Bed. Water Quality Products.
- Freundlich, H.M.F. 1906. Over The Adsorption In Solution. *Journal Physical Chemistry*

- Garcia-Reyes, R. B., & Rangel-Mendez, J. R. (2010). Adsorption Kinetics of Chromium(III) Ions on Agro-Waste Materials. *Bioresource Technology*, 101(21), 8099–8108. <https://doi.org/10.1016/j.biortech.2010.06.020>
- Harland, C. E. 1994) Ion exchange: Theory and practice. Cambridge: Royal Society of Chemistry
- Ho, Y. S., Ng, J. C. Y., & McKay, G. (2000). Kinetics of Pollutant Sorption by Biosorbents: Review. *Separation and Purification Methods*, 29(2), 189–232. <https://doi.org/10.1081/SPM-100100009>
- Kementerian Energi dan Sumber Daya Mineral. (2016). Program Strategis. *Energi*, 2. [https://www.esdm.go.id/assets/media/content/FIX2\\_Jurnal\\_Energi\\_Edisi\\_2\\_17112016.pdf](https://www.esdm.go.id/assets/media/content/FIX2_Jurnal_Energi_Edisi_2_17112016.pdf)
- Koponen, Antti. 2020. Optimization of ion exchange resin regeneration.
- Kusuma, G. A., Mangindaan, G., Pakiding, M., Elektro, T., Sam, U., Manado, R., & Manado, J. K. B. (2018). Analisa Efisiensi Thermal Pembangkit Listrik Tenaga Panas Bumi Lahendong Unit 5 dan 6 di Tompaso. *Jurnal Teknik Elektro Dan Komputer*, 7(2), 123–134.
- Langmuir, Irving. 1918. The Adsorption Of Gases On Plane Surfaces Of Glass, Mica And Platinum. Journal American Chemical Society.
- Lestari, D. E., & Utomo, S. B. (2007). Karakteristik Kinerja Resin Penukar Ion pada Sistem Air Bebas Mineral (GCA 01) RSG-Gas. *Seminar Nasional III SDM Teknologi Nuklir*.
- Li, Q. Yue, H. Sun, Y. Su, B. Gao, A. 2010. Comparative study on the properties, mechanisms and process designs for the adsorption of non-ionic or anionic dyes onto cationic–polymer/bentonite, *J. Environ. Manage.*
- Mckay, G., Al-Duri, B., & Mckee, S. (1993). Development of Solutions to Two-Resistance Mass Transport Models Based on External and Pore Diffusion. Part I: Theoretical Development. *Developments in Chemical Engineering and Mineral Processing*, 1(2–3), 129–145. <https://doi.org/10.1002/apj.5500010204>
- Misak, Nasr Z. 2000. Some aspects of the application of adsorption isotherms to ion exchange reactions. Department of Nuclear Chemistry, Hot Laboratories Centre, Atomic Energy Authority, Post. No. 13759, Cairo, Egypt
- Milliar, G. J., Miller, G. L., Couperthwaite, S. J., & Papworth, S. (2016). Factors Influencing Kinetic and Equilibrium Behaviour of Sodium Ion Exchange with Strong Acid Cation Resin. *Separation and Purification Technology*.
- Mintari, D. (2015). *Analisa kadar Fe dengan Metode Permanganometri Menggunakan Resin Penukar Ion (Ion Exchanger) Dalam Air Sungai Banjarsari*.
- Nachod, F. C., & Schubert, J. 2013. Ion exchange technology. Elsevier Science.
- Ocampo, D. J. D. D., Salaz, B. V., Shorr, M., Saucedo Israel, M., & González, N. R. (2005). Review of Corrosion and Scaling Problems in Cerro Prieto Geothermal Field over 31 Years of Commercial Operations. *Proceedings World Geothermal*

Congress, April, <https://www.geothermal-energy.org/pdf/IGAstandard/WGC/2005/2012.pdf>

- Pambudi, N. A., Itoi, R., Yamashiro, R., CSS Syah Alam, B. Y., Tusara, L., Jalilinasrabad, S., & Khasani, J. (2015). The Behavior of Silica in *Geothermal brine* from Dieng Geothermal Power plant, Indonesia. *Geothermics*, 54, 109–114. <https://doi.org/10.1016/j.geothermics.2014.12.003>
- Permana, M. A. I., Nandaliarsyad, N., Haq, A. Q. A., Nawansari, M., & Mulyana, C. (2017). Kajian Potensi Silica Scaling pada Pipa Produksi Pembangkit Listrik Tenaga Panas Bumi (Geothermal). *Material Dan Energi Indonesia*, 07(01), 38–42.
- Perry, S., Perry, R. H., Green, D. W., & Maloney, J. O. (2000). Perry's Chemical Engineer's Handbook. In *Choice Reviews Online* (Vol. 38, Issue 02). <https://doi.org/10.5860/choice.38-0966>
- Putera, A. D. P., Wiranda, A., Mergiana, S., Perdana, I., & Olvianas, M. (2018). Assessing silica precipitation using calcium hydroxide addition on Dieng's *geothermal brine*. *IOP Conference Series: Earth and Environmental Science*, 200(1). <https://doi.org/10.1088/1755-1315/200/1/012022>
- Redlich, O.J., Peterson, D.L. 1959. A Useful Adsorption Isotherm. *Journal Physical Chemistry*.
- Sekaran, G. (2014). *Amberlite IR 120 Cation Exchanger Mixed Matrix Membrane For Iron Removal*.
- Setiawan, F. A., M. H. P. P., Alfredo, D., & Perdana, I. (2018). *Mitigation of Silica Scaling from Dieng's Geothermal brines using Ca(OH)<sub>2</sub>*.
- Setiawan, F. A., Rahayuningsih, E., Petrus, H. T. B. M., Nurpratama, M. I., & Perdana, I. (2019). Kinetics of silica precipitation in *geothermal brine* with seeds addition: minimizing silica scaling in a cold re-injection system. *Geothermal Energy*, 7(1). <https://doi.org/10.1186/s40517-019-0138-3>
- Spitzmüller, L., Goldberg, V., Held, S., Grimmer, J. C., Winter, D., Genovese, M., Koschikowski, J., & Kohl, T. (2021). Selective silica removal in geothermal fluids: Implications for applications for geothermal power plant operation and mineral extraction. *Geothermics*, 95(May), 102141. <https://doi.org/10.1016/j.geothermics.2021.102141>
- Sposito, Garrison. 1979. Derivation of the Langmuir equation for ion exchange reactions in soils. *Soil Sci. Soc. Am. T.* 43:197- 198.
- Srikanth, M. V., Sunil, S. A., Rao, N. S., Uhumwangho, M. U., & Ramana Murthy, K. V. (2010). Ion-Exchange Resins as Controlled Drug Delivery Carriers. *Journal of Scientific Research*, 2(3), 597. <https://doi.org/10.3329/jsr.v2i3.4991>
- Suharso, & Buhani. (2015). *Penanggulangan Kerak*.
- Toteja, R S D. Jangida, B L. Sundaresan, M . 1991. Changes in thermodynamic parameters in the exchange of alkaline earth metals with sodium ions in Dowex-50Wx 8 and Amberlyst-15 resins in aqueous medium. *Indian Journal of Chemistry*.

- Treybal, R. E. (1981). Mass Transfer Operation. In *McGraw-Hill Book Co.*  
<https://doi.org/10.4161/cbt.4.3.1637>
- Ulya, M. R., Perdana, I., & Mulyono, P. (2018). Pengaruh Penambahan Surfaktan Sodium Lignosulfonat (SlS) Dalam Proses Pengendapan Nano Calcium Silicate (Ncs) Dari *Geothermal brine*. *Jurnal Rekayasa Proses*, 11(2), 54.  
<https://doi.org/10.22146/jrekpros.28245>
- Vogel, A. I. (1989). *Vogel's Textbook of Quantitative Chemical Analysis* (5th ed.). Longman Scientific & Technical ; Wiley. <https://doi.org/10.1038/100304b0>
- Wheaton, R. M., & Lefevre, L. J. (2000). Fundamentals of Ion Exchange. *DOWEX Ion Exchange Resins*.
- Yu L.J., Shukla S.S., Dorris K.L., Shukla A.,Margrave J.L. 2003. Adsorption of Chromium from Aqueous Solutions. Hazard Mater.
- Zagorodni, A. A. (2006). Ion Exchange Materials: Properties and Applications. In *Elsevier Science*. <https://doi.org/10.1016/b978-008044552-6/50003-4>