

DAFTAR PUSTAKA

- Abdullah, K., dan Khairunrijal, Y., 2010, Biosorptive Removal of Cu(II), Ni(II), and Pb(II) Ions from Aqueous Solution Using Coconut Dregs Residue, *J. Colloid Interf. Sci.*, 292, 354-362.
- Ahangaran, F., Hassanzadeh, A, dan Nouri, S, 2013, Surface Modification of $\text{Fe}_3\text{O}_4@\text{SiO}_2$ Microsphere by Silane Coupling Agent, *Int. Nano. Lett.*, 3 (23), 1-5.
- Alagarasi, 2011, Sorption of Nonionic Organic Contaminants to Single and Dual Organic Cation Bentonites from Water, *Environmental Science and Technology*, 29 (3), 685-692.
- Arum, Y., Oh, Y.O., Kang, H.W., Ahn, S.H. dan Oh, J., 2015, Chitosan-Coated Fe_3O_4 Magnetite Nanoparticles as Carrier of Cisplatin for Drug Delivery, *Fish Aquat. Sci.*, 18 (1), 89-98.
- Aryanto, A., Nasir, M. and Zulfikar, M.A., 2007, Pemanfaatan Resin Chitosan-Amin untuk Recover Emas dari Limbah Pengolahan Emas, *Jurnal Ilmiah Pendidikan Biologi*, (4) 2, 95-99.
- Atakli., Gandhi, M.R., and Meenakshi, S., 2013, Removal of Copper (II) Using Chitin/Chitosan Nano Hydroxypatite Composite, *J. Biol. Macromol.*, 48, 119-124.
- Braggman, F.J and Goncalves, M. 2006, Processing of Residual Copper(II) Solutions via Ion Exchange, *Environmental Science and Technology*, 29 (1), 625-632.
- C. Yuwei, and W. Jianlong. 2011, Preparation and characterization of magnetic chitosan nanoparticles and its application for Cu(II) removal, *Chem. Eng. J.*, 168, 286-292.
- Callister, Jr., 2007, State of The Art of Technologies for Metal Remover from Industries Effluent, *Rev. Sci. Eau.*, 12 (4), 687-711.
- Efhiliana, Y., 2017, Adsorpsi ion Cr(VI) Menggunakan Core-Shell $\text{Fe}_3\text{O}_4@\text{SiO}_2/\text{C}_{16}\text{H}_{33}\text{N}^+(\text{CH}_3)_3$ dengan Abu Vulkanik Gunung Kelud sebagai Sumber Silika, *Tesis*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Eko Budiyanto, 2012, Pemanfaatan Daun Nanas (*Ananas comosus*) Sebagai Adsorben Logam Ag dan Cu pada Limbah Industri Politik di Kotagede Yogyakarta, *Skripsi*, Jurusan Pendidikan Kimia FMIPA UNY, Yogyakarta
- Enggrit, E., 2011, Pengaruh Cu (II) dan Ni (II) terhadap Konstanta Laju dan Energi Aktivasi Adsorpsi-Desorpsi Au(II) oleh Asam Humat, *Skripsi*, Jurusan Kimia FMIPA Universitas Gadjah Mada.

- Fajarah, M.H.R., Shahtahmasebi, N. Rezaee Roknabadi, 2013, Study of Structural and Magnetic Properties on Superparamagnetic Fe₃O₄@SiO₂ Core-Shell Nanocomposites Synthesizes, *Phys. E Low-Dimensi Syst Nanostruct.*, 53, 207-216
- Gao M., Li W., Dong J., Zhang Z., Yang B., 2011, Synthesis and characterization of superparamagnetic Fe₃O₄ @SiO core-shell composite nanoparticles, *World Journal of Condensed Matter Physic*, vol. 1, pp. 49-54.
- Giyatmi, dkk. 2008. *Penurunan Kadar Cu, Cr dan Ag Dalam Limbah Cair Industri Perak di Kotagede setelah Diadsorpsi dengan Tanah Liat dari Daerah Godean*. Jurnal Seminar Nasional IV SDM Teknologi Nuklir ISSN 1978-0176.
- H. Yong-Mei, C. Man, and H. Zhong-Bo. 2010, *Effect removal of Cu(II) ions from aqueous solution by amino-functionalized magnetic nanoparticles*, J. Hazard. Mater., 184, 392-399.
- Hosokawa, J.M., Mallakpour, S. and Khadem, E., 2007, Chitosan/CaCO₃-silan Nanocomposites Synthesis Characterization, Invitro, Bioactivity and Cu (II) Adsorption Properties, *J. Biol. Macromol.*, 114, 149-160
- Ismail, H., Shuhelmy, S. dan Edyham, M.R., 2002, The Effect of Silane Coupling Agent Curing Characteristics and Mechanical Properties of Bamboo Fiber Filled Natural Rubber Composites, *Eur., Polym. J.*, 38, 39-47.
- Karthikeyan, G., Ambalangan, K, dan Andal, N.M., 2004, Adsorption Dynamics and Equilibrium Studies of Zn(II) onto Chitosan, *J. Chem, Sci.*, 116 (2), 119-127.
- L. Borlido, A.M. Azevedo, A.C.A. Roque and M.R. Aires-Barros, 2013, Magnetic separations in biotechnology, *Biotechnol. Adv.* 31 1374–1385.
- Lin, W.M., Sun, S. dan Wang, A., 2007, Adsorption Properties of Carboxymethyl-Chitosan and Crosslinked Carboxymethyl-Chitosan Magnetite with Cu (II) as Template, *Sep. Purif. Technol.* 50, 200-207.
- M. Ma, Y. Zhang, W. Yu, H.Y. Shen, H.Q. Zhang, N. Gu., 2003, Preparation and characterization of magnetite nanoparticles coated by amino silane, *Colloids Surf. A Physicochem. J. Eng. Asp.* 212 (2-3) 219–226.
- Marlina Daeng, dkk., 2011, Kajian Kinetika Adsorpsi Cu (II) pada Magnetit (Fe₂O₃) Hasil Hidrolisis Oksidatif terhadap Fe (II). *Tesis*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Molinari., Ahmaruzzaman, M., 2009, Industrial Waste as Low Cost Potential Adsorbent for The Treatment of Wastewater Laden with Heavy Metal, *Adv. Colloid Interf. Sci.*, 160, 30-53.

- Moreno., Ali, Li. and Gupta, V.K., 2010, Advance in Water Treatment by Adsorption Technology, *Nat. Protoc.*, 2, 2668-2673.
- Navarro., Ramesh, A. and Ueda, K., 2003, Adsorption of Gold (II), Palladium (II), and Platinum (IV) Onto Glycenin Modified Cross-Linked Chitosan Resin, *Bioresour. Tech*, 99 (9), 3802-3810.
- Neto, Y.S., Wu, F.C., and Juang, R.S., 2015, A Review and Experimental Verification of Using Chitosan and Its Derivative as Adsorbent for Selected Heavy Metals, *J. Environ. Manage*, 90, 799-807.
- Ngah, V.W., Zhang, X., and Cai, Y., 2011, Chitosan-Coated Octadecyl-Functionalized Magnetite Nanoparticles: Preparation and Application in Extraction of Trace Pollutants from Enviromental Water Samples, *Anal. Chem*, 81, 2360-2368.
- Nuwidiyani, 2014, Synthesis of Hydroxiapatite-Chitosan from Biogenic Waste, *KKU Eng.J.*, 41 (3), 270-276.
- Okube, M., Yasue, T. and Sasaki, S., 2012, Crystal Structure of Magnetite in The Origin at Centre, *J. Synchrontron Radiat.*, 19, 759-767.
- Park, S.Y., Lee, B.I., Jung, S.T. dan Park, H.J., 2001, Biopolymer Composit Film Based on Carrageenan and Chitosan, *Mater. Res. Bulk*. 36, 511-519.
- Petcharoen, K. and Sirrivat, A., 2012, Synthesis and Characterizat on of Magnetite Nanoparticles Via The Chemical Co-precipitation Method, *Mater. Res. Bulk*, 36, 511-519.
- Phillipova., Li, J. and Zhao. G, Effect of pH Ionic Strength, Foreign ions, and Chitosan Added on The Adsorption of Cu (II) from Aqueous Solution to GMZ Bentonite, *Colloid. Sur. A.*, 350, 196-203.
- Rachmawati., 2007, Sintesis Nanopartikel Magnetit (Fe_3O_4) dengan Template Silika (SiO_2) dan Karakterisasi Sifat Kemagnetannya, *Indonesian Journal of Applied Physics*, 5 (1), 23-30.
- Rinaudo A.S., 2006, A Review and Experimental Verification of Using Chitosan and its Derivatives as Adsorbents for Selective Heavy Metals, *J. Environ. Manage*. 92, 800-808.
- Riyanto A., 2012, Sintesis nanopartikel Fe_3O_4 (*magnetite*) dan potensinya sebagai bahan material aktif pada permukaan sensing biosensor berbasis surface Plasmon resonance (SPR), *Tesis*, Universitas Gadjah Mada, Yogyakarta.
- Roto, Roto., Yusran, Yusran., Kuncaka, Agus., 2016., Magnetic Adsorbent of $\text{Fe}_3\text{O}_4@ \text{SiO}_2$ Core-Shell Nanoparticles Modified with Thiol Group for Chloroauric ion Adsorption, *App. Surf.Sci.* 337: 30-36.

- Ruiz, M., Sastre, A.M dan Guibal, E., 2010. Palladium Sorption on Glutaraldehyde Crosslinked Chitosan, *React Funct Polym*, 45, 155-173.
- Said, Nusa I, Arie Herlambang dan Wahyu Hidayat, 2007, “*Teknologi Pengolahan Air Limbah*” BBPT, Jakarta.
- Saound, Fernandez., 2006, Adsorption Properties of $\text{Fe}_3\text{O}_4@\text{SiO}_2$ -Chitosan and Crosslinked Carboxymethyl-Chitosan Resin with Cu (II) as Template, *Sep. Purif. Technol.* 49, 197-204.
- Sulistiyono, 2012, Dampak Tumpahan Minyak (*Oil Spill*) di Perairan Laut pada Kegiatan Industri Migas dan Metode Penanggulangannya, *Forum Teknologi*, 3 (1), 49-57.
- Syauqiah, I., Amalia, M., dan Kartini, H.A., 2011. Analisis Variasi Waktu dan Kecepatan Pengaduk Pada Proses Adsorpsi Limbah Logam Berat Dengan Arang Aktif. *Info Teknik*, 12 (1), 11 – 20.
- T. Alka, S. Neeraj, Efficiency of superparamagnetic nano iron oxide loaded poly (acrylamide-co-acrylic acid) hydrogel in uptaking Pb^{2+} ions from water. *Int. Res. J. Environ. Sci.* 1 (5) (2012) 6–13.
- Teja, A.S. dan Koh, P., 2009, Synthesis, Properties, and applications of magnetic iron oxide nanoparticles, *Prog., Cryst, Growth Charact. Mater.*, 55, 22-45.
- Vinanda, H.S., 2019, Sintesis Nanopartikel $\text{Fe}_3\text{O}_4@\text{SiO}_2$ Termodifikasi Kitosan sebagai Adsorben ion $[\text{AuCl}_4]^-$, *Skripsi*, Jurusan Kimia FMIPA Universitas Gadjah Mada
- Velegol, S.B., Fleming, B.D., Biggs, S., Wanless, E.J., and Tilton, R.D., 2000, Counterion Effects on Hexadecyltrimethylammonium Surfactant Adsorption and Self-Assembly on Silica, *Langmuir*, 16, 2548-2556.
- W.S. Wan Ngah, and S. Fatinathan. 2008, *Adsorption of Cu(II) ions in aqueous solution using chitosan beads, chitosan-GLA beads and chitosan-alginate beads*, *Chem. Eng. J.*, 143, 62-72.
- W. Wu, Q. He, C. Jiang., 2008, Magnetic iron oxide nanoparticles: synthesis and surface functionalization strategies, *Nanoscale Res. Lett.* 3, 397–415.
- Wahyudi., Waluyo., dan Widodo, A., 2015, Abu Vulkanik Gunung Kelud sebagai Sumber SiO_2 pada Preparasi Fotokatalis $\text{TiO}_2/\text{SiO}_2$ dan Uji Aktivitasnya untuk Fotoreduksi Ce(VI) , *Indonesian Journal of Applied Physics*, , 7 (1), 53-70
- Wang, J., Zheng, Y., Kang, Y., dan Wang, A., 2013, Investigation of Oil Sorption Capability of PBMA/ SiO_2 Coated Kapok Fiber, *Chemical Engineering Journal*, 223, 632-637.

- Wang X. S., Zhu L., Lu H. J., Surface properties and adsorption of Cu (II) on nanoscale magnetite in aqueous solutions, *Journal of Desalination*, vol. 276, 2011, pp. 154-160.
- Webber, W.J. Jr., 1981, *Adsorption Processes*, University of Michighan, USA.
- Wisnu, AW., 1994, *Dampak Pencemaran Lingkungan*, Andi Offet, Yogyakarta.
- X. Zhao, Y. Shi, T. Wang, Y. Cai, G. Jiang, 2008, Preparation of silica-magnetite nanoparticle mixed hemimicelle sorbents for extraction of several typical phenolic compounds from environmental water samples, *J. Chromatogr. A* 1188 (2) 140–147.
- Yan Aiguo., 2008, The Enrichment and Separation of Race Gold, Platinum and Copper from The Ores Based on Co-Precipitation, *Gold*, 27, 42-44.
- Yuan, Q., Li, N., Geng, W., Chi, Y., and Li, X., 2012, Preparation of Magnetically Recoverable $\text{Fe}_3\text{O}_4@ \text{SiO}_2@ \text{meso-TiO}_2$ Nanocomposites with Enhanced Photocatalytic Ability, *Mater. Res. Bull.*, 47, 2396-2402