

DAFTAR PUSTAKA

- Alfanaar, R., 2014, Studi Adsorpsi dan Desorpsi Reduktif pada Pembentukan Nanopartikel Emas dari Printed Circuit Boards, *Tesis*, jurusan kimia FMIPA UGM, Yogyakarta.
- Al-Harashsheh dan Kingman, S. W., 2004. Microwave-assisted leaching a review, *73*, 189-203.
- Ardhayanti, L.I., and Santosa, S. J., 2016, Synthesis of Magnetite-Mg/Al Hydrotalcite and Its Application as Adsorbent for Navy Blue and Yellow F3G Dyes. *Procedia Eng.*, 148, 1380-1387.
- Banerjee, S. K. and Moskowitz, B. M., 1985. Hitchhiker's Guide to Magnetism Bruce M. Moskowitz, <https://www.irm.umn.edu/hg2m/hg2m.pdf>, diaskes pada tanggal 16 Agustus 2016.
- Bejoy, N., 2001, Hydrotalcite: The Clay that Cures, *Resonance*, 6, 57-61.
- Behnamfard, A., Salarirad, M. M., and Veglio, F., 2013, Process development for Recovery of Copper and Precious Metals from Waste Printed Circuit Boards with Emphasize on Palladium and Gold Leaching and Precipitation. *Waste Manage.*, 33, 2354-2363.
- Birloaga, I., De Michelis, I., Ferella, F., Buzatu, M., and Vegliò, F., 2013, Study on The Influence of Various Factors in The Hydrometallurgical Processing of Waste Printed Circuit Boards for Copper and Gold Recovery, *Waste Manage.*, 33, 935-941.
- Carlos, L., Einschlag, F.S.G., González, M. C., and Mártire, D. O., 2013, Applications of Magnetite Nanoparticles for Heavy Metal Removal from Wastewater, *Waste Water Treatment Technol. Recent Anal. Dev.*, 63-78.
- Cavani, F., Trifiro, F., dan Vaccari, A., 1991, Hydrotalcyte-type Anionic Clays: Preparations, Properties and Applications, *Catal. today*, 11,173-301.
- Celo, V., Dabek-zlotorzynska, E., Mathieu, D., & Okonskaia, I, 2010, Validation of A Simple Microwave-Assisted Acid Digestion Method Using Microvessels for Analysis of Trace Elements in Atmospheric PM_{2.5} in Monitoring and Fingerprinting Studies, *The Open Chem. Biomed. Method. J.*, 23, 143-152.
- Chen, M., & Ma, L. Q., 1996, Comparison of Three Aqua Regia Digestion Methods for Twenty Florida Soils, *Soil Sci. Soc. Am. J.*, 65, 491-499.

- Dąbrowski, A., 2001, Adsorption-From Theory to Practice. *Adv. Colloid Interfac.*, 93, 135-224.
- Effendy, 2007, *Perspektif Baru Kimia Koordinasi*, Bayumedia Publishing, Malang.
- El-Kharrag, R., Amin, A., and Greish, Y. E., 2012, Low Temperature Synthesis of Monolithic Mesoporous Magnetite Nanoparticles, *Ceramics Int.*, 38, 627-634.
- Fu, Z., Liao, H., Xiong, D., Zhang, Z., Jiang, Y., and Yin, D., 2007, A highly-efficient and environmental-friendly method for the preparation of Mn(III)-Salen complexes encapsulated HMS by using microwave irradiation, *Micropor. Mesopor. Mat.*, 106, 298-303.
- Ghandoor, H. El, Zidan, H. M., Khalil, M. M. H., and Ismail, M. I. M., 2012, Synthesis and Some Physical Properties of Magnetite (Fe₃O₄) Nanoparticles, *Int. J. Electrochem. Sci*, 7, 5734-5745.
- Gramatyka, P., Nowesielki, R., and Sakiewicz P., 2007. Recycling of waste Electrical and Electronic Equipment. *J. Achievements Mater. Manufacturing Engineering*, 20, 535-538
- Guo, X., Liu, J., Qin, H., Liu, Y., Tian, Q., and Li, D., 2015, Recovery of Metal Values from Waste Printed Circuit Boards Using an Alkali Fusion-leaching-separation Process. *Hydrometallurgy*, 156, 199-205.
- Handayani, N. W. D., 2013, Sintesis Magnetit Mg/Al-NO₃ Hidrotalsit (UMHT) dengan bantuan metode sonokimia dan aplikasinya sebagai adsorben [AuCl₄]⁻, *Skripsi*, jurusan kimia FMIPA UGM, Yogyakarta.
- Hamzah, Z., Rahman, M. N. A., Yasin, Y., Sumari, S. M., and Saat, A., 2011, Removal of Copper from Aqueous Solution by Adsorption Using Magnesium Aluminium Hydrogenphosphate Layered Double Hydroxide, *J. Nucl. Technol.*, 8, 60-67.
- Ho, Y.S., and Ofomaja, A. E., 2006, Kinetic Studies of Copper Ion Adsorption on Palm Kernel Fibre, *J. Hazard. Mater.*, 137, 1796-1802.
- Huang, K., Guo, J., and Xu, Z., 2009, Recycling of Waste Printed Circuit Boards: A Review of Current Technologies and Treatment Status in China. *J. Hazard. Mater.*, 164, 399-408.
- Hwang, J., Shi, S., Xu, Z., and Huang, X., 2002, Oxygenated Leaching of Copper Sulfide Mineral under Microwave-Hydrothermal Conditions, *J. Miner. Mater. Characterization Eng.*, 1(2), 111-119.

- Ikhsan, N. A., 2011, Kajian Adsorpsi-Desorpsi [AuCl₄]⁻ pada Mg /Al Hidrotalsit, *Tesis*, jurusan kimia FMIPA UGM, Yogyakarta.
- Jin, X., Bailey, Y.S, and Lynch, A.T., 1996, Kinetics of Singel and Multiple Metal Ion Sorption Processes on Humic Substance, *Soil Sci.*, 8, 161-509.
- Kloprogge, J. T., Hickey, L., and Frost, R. L., 2004, The Effects of Synthesis pH and Hydrothermal Treatment on the Formation of Zinc Aluminum Hydrotalcites. *J. Solid State Chem.*, 177, 4047-4057.
- Koyanaka, H., Takeuchi, K., & Loong, C., 2005, Gold Recovery from Parts-per-trillion-level Aqueous Solutions by a Nanostructured Mn₂O₃ Adsorbent, *Sep. Purif. Technol. Gold*, 43, 9-15.
- Laurent, S., Forge, D., Port, M., Roch, A., Robic, C., Vander Elst, L., and Muller, R. N., 2008, Magnetic Iron Oxide Nanoparticles: Synthesis, Stabilization, Vectorization, Physicochemical Characterizations and Biological Applications, *Chem. Reviews*, 108, 2064-2110.
- Miyata, S., 1980, Physico-Chemical Properties of Synthetic Hydrotalcites in Relation to Composition. *Clays Clay Miner.*, 28, 50-56.
- Nakajima, A., Ohe, K., Baba, Y., and Kijima, T., 2003, Mechanism of Gold Adsorption by Persimmon Tannin Gel, *Anal. Sci.*, 19, 1075-1077.
- Navarro, P., Vargas, C., and Alonso, M., 2006, *The Adsorption of Gold on Activated Carbon from Ammoniacal Solutions*, Departamento de Ingeniería Metalúrgica, Universidad de Santiago de Chile. Chile. *Gold Bull.*, 93-97.
- Oscik J., 1982, *Adsorption*, John Willey and Sons.Inc., New York.
- Paclawski, K., and Fitzner K., 2004, Kinetick pf Gold(III) Chloride Complex Reduction using Sulfur (IV), *Metall. Mater. T.*, 35B,1071.
- Perera, J., Weerasekera, M., and Kottegoda, N., 2015, Slow Release Anti-Fungal Skin Formulations Based on Citric Acid Intercalated Layered Double Hydroxides Nanohybrids. *Chem. J. Cent.*, 9, 1-7.
- Petcharoen, K., and Sirivat, A., 2012, Synthesis and Characterization of Magnetite Nanoparticel via the Chemical Co-precipitation Method, *Mater. Sci. Eng.* 177, 421-427.
- Parajuli, D., Adhikari, Chaitanya, R., Kawakita, H., Kajiyama, K., and Ohto, K., 2007, Persimmon Peel Gel for the Selective Recovery of Gold, *Hidrometallurgy*, 87, 133-139.

- Salamão, R., Milena, L. M., Wakamatsu, M. H., and Pandolfeli, C.C., 2011, Hydrotalcite Synthesis via Co-precipitation Reaction Using MgO and Al(OH)₃ Precursors, *Ceramics Int.*, 37, 3063-3070
- Santosa, S. J., 2014, Sorption Kinetics of Cd(II) Species on Humic Acid-based Sorbent, *Clean Soil, Air, Water*, 42, 760-766.
- Santosa, S.J., Siswanta, D., Sudiono, S., and Sehol, M., 2007, Synthesis and Utilization of Chitin-humic Acid Hybrid as adsorbent for Cr(III). *Surf. Sci.*, 601, 5148-5154
- Santosa, S. J., Kunarti, E.S., and Karmanto, 2008, Synthesis and Utilization of Mg/Al Hydrotalcite for removing Dissolved Humic Acid, *Appl. Surf. Sci.*, 254, 7612-7617.
- Shou, J., Jiang, C., Wang, F., Qiu, M., and Xu, Q., 2015, Fabrication of Fe₃O₄/Mg Al-Layered Double Hydroxide Magnetic for The effective Decontamination of Co(II) from Synthetic Waste water, *J. Mol. Liq.*, 207 216-223.
- Silalahi, D.S.V., 2013, Sintesis Magnetit Mg/Al-NO₃ Hidrotalsit (MHT) dengan Metode Kopresipitasi dan Aplikasinya Sebagai Adsorben [AuCl₄]⁻, *Skripsi*, jurusan FMIPA UGM, Yogyakarta.
- Stum, W., and Morgan, J. J., 1996, *Aquatic Chemistry: Chemical Equilibria in Natural Water*, 3rd ed., John Wiley and Sons, Inc, New York.
- Suh, M. P., Kim, I. S., Shim, B. Y., Hong, D., and Yoon, T. S., 1996, Extremely Facile Template Synthesis of Gold(III) Complexes of A Saturated Azamacrocyclic and Crystal Structure of A Six-Coordinate Gold(III) Complex, *Inorg. Chem.*, 35, 3595-3598.
- Sun, T.M., & Yen, W.T., 1993, Kinetics of Gold Chloride Adsorption onto Activated Carbon, *Miner. Eng.*, 6, 17-29.
- Szalatkiewicz, J., 2014, Metal Content in Printed Circuit Board Waste, *J. Environ. Stud.*, 23, 2365-2369.
- Theiss, F. L., 2012, *Synthesis and Characterization of Layered Double Hydroxides and Their Application for Water Purification*. Master of Applied Science Queensland University of Technology.
- Tong, Z., Shichi, T., and Takagi, K., 2003, Oxidation Catalysis of A Manganese(III) Porphyrin Intercalated in Layered Double Hydroxide Clays, *Mater. Lett.*, 57, 2258-2261.

- Trifiro, F., and Vaccari, A., 1996, *Comprehensive Supramolecular Chemistry*, pent: Vogtle, F., Atwood, J. E. D., Davies, Acniol, D., Pergamon Press, Oxford, 251-291.
- Tripathi, A., Kumar, M., Sau, D. C., Agrawal, A., and Chakravarty, S., 2012, Leaching of Gold from the Waste Mobile Phone Printed Circuit Boards (PCBs) with Ammonium Thiosulphate, *Int. J. Metall. Eng.*, 1, 17-21.
- Thomas, W.J. and Crittenden, B. D., 1998, *Adsorption Technology and Design*, Butterworth-Hienemann., Oxford.
- Wang, S., Qian, K., Bi, X., and Huang, W., 2009, Influence of Speciation of Aqueous HAuCl₄ on the Synthesis, Structure, and Property of Au Colloids, *J. Phys. Chem.*, 340, 6505-6510.
- Wang, J., Zhou, J., Li, Z., Liu, Q., and Yang, P., 2010, Design of Magnetic and Fluorescent Mg-Al Layered Double Hydroxides by Introducing Fe₃O₄ Nanoparticles And Eu³⁺ Ions For Intercalation of Glycine, *Mater. Res. B.*, 45, 640-645.
- Weber, W. J., and DiGiano F., 1996, *Process Dynamics in Environmental Systems*, Walter John Wiley & Sons, Inc , New York.
- Wihadi, M. N. K., 2014, Hidrotalsit Mg-Al-NO₃ Sebagai Adsorben Untuk Pungut Ulang Logam Emas Dari Larutan [AuCl₄]⁻, *Tesis*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Wojnicki, M., Rudnik, E., Luty-Błoch, M., Paclawski, K., and Fitzner, K., 2012, Kinetic Studies Of Gold(III) Chloride Complex Reduction and Solid Phase Precipitation in Acidic Aqueous System Using Dimethylamine Borane as Reducing Agent. *Hydrometallurgy*, 127-128, 43-53.
- Wu, X. L., Wang, L., Chen, C. L., Xu, A. W., and Wang, X. K., 2011, Water-dispersible Magnetite-graphene-LDH Composites for Efficient Arsenate Removal, *J. Mater. Chem.*, 21, 17353-17359.
- Xie, X., An, X., Wang, X., and Wang, Z., 2003, Preparation, Characterization and Application of ZnAlLa-Hydrotalcite-Like Compounds, *J. Nat. Gas Chem.*, 12, 259-63.
- Zhao, S., Yi, H., Tang, X., Kang, D., Wang, Li, kai., and Duan, K., 2012, Characterization of Zn-Ni-Fe Hydrotalcite-derived Oxides and Their Application in the Hydrolysis of Carbonyl Sulphide, *Appl. Clay Sci.*, 56, 84-89.