



DAFTAR PUSTAKA

- Ambaryanto, 2011, Pengaruh Surfaktan dan Hidrokarbon terhadap Zooxanthellae, *Ilmu Kelauatan*, 16(1), 30-34.
- Anonim, 2014, Peraturan Menteri Lingkungan Hidup No 5 Tahun 2014: Tentang Baku Mutu Air Limbah.
- Apriyani, N., 2017, Penurunan Kadar Surfaktan Dan Sulfat Dalam Limbah Laundry, *Media Ilmiah Teknik Lingkungan*, 53,1689–1699.
- Aris, A. dan Sharratt, P.N., 2007, Evaluation of Photo-Fenton Degradation of Reactive Black 5 Using Response Surface Method, *Malaysian J. Civ. Eng.*, 19, 26–41.
- Astuti, F., 2018, Efek Fotodegradasi Pada Pengolahan Surfaktan Anionik Dari Limbah Laundry, *J. Ilm. Tek. Kim.*, 2.
- Borba, F.H., Leichtweis, J., Bueno, F., Pellenz, L., Inticher, J.J., dan Seibert, D., 2019, Pollutant removal and acute toxicity assessment (*Artemia salina*) of landfill leachate treated by photo-Fenton process mediated by oxalic acid, *J. Water Process Eng.*, 28, 159–168.
- Budiawan., Fatima, Y., dan Khairani, N., 2010, Optimasi Biodegradabilitas Dan Uji Toksisitas Hasil Degradasi Surfaktan Linear Alkilbenzena Sulfonat (Las) Sebagai Bahan Deterjen Pembersih, *MAKARA Sci. Ser.*, 13, 125–133.
- Ceristrisani, N., 2013, *Fotodegradasi DBS dengan Fotokatalis TiO₂*, Thesis, Jurusan Kimia FMIPA, UGM, Yogyakarta
- Chaerunisah dan Sopiah, R.N., 2006, Laju Degradasi Surfaktan Linear Alkil Benzena Sulfonat (LAS) Pada Limbah Deterjen Secara Anaerob pada Reaktor Lekat Diam Biromedia Sarang Tawon, *J. Teknol. Lingkungan*, 73, 243–250.
- Chakma, S. dan Moholkar, V.S., 2016, Mechanistic analysis of hybrid sono-photo-ferrioxalate system for decolorization of azo dye, *J. Taiwan Inst. Chem. Eng.*, 60, 469–478.
- Chen, C., Dairong, C., Jiao, X., dan Wang, C., 2006, Electronic Supplementary Information, *The Royal Society of Chemistry*, 235, 12-17.
- Conte, L.O., Schenone, A. V., dan Alfano, O.M., 2016, Photo-Fenton degradation of the herbicide 2,4-in aqueous medium at pH conditions close to neutrality, *J. Environ. Manage.*, 170, 60–69.



Dai, S., Liu, G., Qian, Y., and Cheng, X.U., 2001, The Sorption Behavior of Complex Pollution System Composed of Alicarb and Surfactant SDBS, *Wat. Res.*, 35, 9, 2286-2290.

Darmawan, M.D. dan Agung R, T., 2020, Penyisihan Linear Alklybenzene Sulfonate (LAS) Dan Total Dissolved Solid (TDS) Menggunakan Proses Fotokatalis dengan Kombinasi katalis TiO₂-ZnO, *J. Envirotek*, 12, 35–43.

Faria, P.C.C., Órfão, J.J.M. and Pereira, M.F.R., 2008, Activated carbon catalytic ozonation of oxamic and oxalic acids, *Appli. Cata. B: Environ.* 79(3), 237-243.

Fenton, H.J.H., 1894, Oxidation of tartaric acid in presence of iron, *J. Chem. Soc.* 65, 899– 910.

Hanif, N.M., Adnan, S.N.N., Latif, M.T., Zakaria, Z., Abdullahand, M.P., dan Othman, M.R., 2012, The composition of surfactants in river water and its influence to the amount of surfactants in drinking water, *World Appl. Sci. J.*, 17, 970–975.

He, Y., Zhuang, X., Lei, C., Lei, L., Hou, Y., Mai, Y. and Feng, X., 2019. Porous carbonnanosheets: Synthetic strategies and electrochemical energy related applications. *Nano Today*, 24, 103-119.

Hu, Y., Li, Y., He, J., Liu, T., Zhang, K., Huang, X., Kong, L., dan Liu, J., 2018, EDTA-Fe(III) Fenton-like oxidation for the degradation of malachite green, *J. Environ. Manage.*, 226, 256–263.

Huang, Y.H., Huang, Y.J., Tsai, H.C., and Chen, H.T., 2010, Degradation of Phenol Using Low Concentrарion of Ferric Ions by The Photo-Fenton Process, *J. Taiwan Inst. Chem. Eng.*, 41(6), 699-704.

Jeong, J. dan Yoon, J., 2005, pH effect on OH radical production in photo/ferrioxalate system, *Water Res.*, 39, 2893–2900.

Jurado, E., Fernández-Serrano, M., Núñez-Olea, J., Luzón, G., dan Lechuga, M., 2006, Simplified spectrophotometric method using methylene blue for determining anionic surfactants: Applications to the study of primary biodegradation in aerobic screening tests, *Chemosphere*, 65, 278–285.

Kang, Y.W. and Hwang, K.Y., 2000, Effects of reaction conditions on the oxidation efficiency in the Fenton process, *Water Res.*, 34 (10), 2786–2790.

Koppenol, W.H., 1993, The Centennial of The Fenton Reaction, *Free Rad. Bio and Med.*, 15, 645–651.



Leswana, N.F., 2015, *Pengaruh Konsentrasi H_2O_2 dan Fe^{2+} dalam Proses Fotofenton terhadap Penurunan Nilai COD dalam Limbah Laundry*, Skripsi, Jurusan Kimia FMIPA, UGM, Yogyakarta.

Li, G., Qiu, S., Ma, F., Ji, Y., dan Jiang, X., 2018, Degradation of RhB by a sono-Fenton-like process with an iron-foam in the presence of oxalic acid, *Anal. Methods*, 10, 3976–3983.

Lolo, E.U., Pambudi, Y.S., Gunawan, R.I., dan Widianto, W., 2020, Pengaruh Koagulan PAC dan Tawas Terhadap Surfaktan dan Kecepatan Pengendapan Flok Dalam Proses Koagulasi Flokulasi, *J. Serambi Eng.*, 5, 1295–1305.

Manousaki, E., Psillakis, E., Kalogerakis, N., Mantzavinos, D., 2004, Degradation of Sodium Dedocylbenzene in Water by Ultrasonic Irradiation, *Water Res.*, 38, 3751-3759.

Martínez-Huitl, C.A., Rodrigo, M.A., Sires, I., Scialdone, O., 2015. Single and coupled electrochemical processes and reactors for the abatement of organic water pollutants: a critical review. *Chem. Rev.*, 115, 13362e13407

Milidrag, G.P, Prica, M., Kerkez, D., Dalmacija, B., Kulic, A., Pilipovic, D.T, dan Tomin, M.B, 2018, A comparative study of the decolorization capacity of the solar-assisted Fenton process using ferrioxalate and Al, Fe-bentonite catalysts in a parabolic trough reactor, *J. Taiwan Inst. Chem. Eng.*, 93, 436–449.

Molina-Muñoz, M., Poyatos, J.M., Sánchez-Peinado, M., Hontoria, E., González-López, J., dan Rodelas, B., 2009, Microbial community structure and dynamics in a pilot-scale submerged membrane bioreactor aerobically treating domestic wastewater under real operation conditions, *Sci. Total Environ.*, 407, 3994–4003.

Morgan, B. dan Lahav, O., 2007, The effect of pH on the kinetics of spontaneous $Fe(II)$ oxidation by O_2 in aqueous solution - basic principles and a simple heuristic description, *Chemosphere*, 68, 2080–2084.

Naldoni, A., Schiboula, A., Bianchi, C.L., dan Bremner, D.H., 2011, Mineralisation of surfactants using ultrasound and the advanced fenton process, *Water. Air. Soil Pollut.*, 215, 487–495.

Purnamasari, E.N., 2014, Karakteristik Kandungan Linear Alkyl Benzene Sulfonat (Las) pada Limbah Cair Laundry, *J. Media Tek.*, 11, 32–36.

Rachmawati, B., Surya, Y. P., Mirwan, M., 2014, Proses Elektrokoagulasi Pengolahan Limbah Laundry, *Jurnal Ilmiah Teknik Lingkungan*, 6, 15- 22.



Rahimah, Z., Heldawati, H., dan Syauqiah, I., 2018, Pengolahan Limbah Deterjen Dengan Metode Koagulasi-Flokulasi Menggunakan Koagulan Kapur Dan Pac, *Konversi*, 5, 13.

Ramcharan, T. dan Bissessur, A., 2016, Analysis of Linear Alkylbenzene Sulfonate in Laundry Wastewater by HPLC-UV and UV-Vis Spectrophotometry, *J. Surfactants Deterg.*, 19, 209–218.

Smulders, E., 2012, Efektivitas Penurunan Kadar Dodesilbenzen Sulfonat (DBS) dari Limbah Detergen yang diolah dengan Lumpur Aktif, *Jurnal Kimia*, 4(1), 49-53.

Song, Y., Lee, H., Ko, J., Tyu, J., Kim, M., dan Sohn, D., 2014, Preparation and Characterization of Surfactant-Exfoliated Graphene, *Bull Korean Chem. Soc.*, 35, 7.

Souza, B.M., Dezotti, M.W.C., Boaventura, R.A.R. and Vilar, V.J.P., 2014. Intensification of a solar photo-Fenton reaction at near neutral pH with ferrioxalate complexes: A case study on diclofenac removal from aqueous solutions, *Chem. Eng. J.* 256, 448-457.

Szabó-Bárdos, E., Markovics, O., Horváth, O., Toro, N., dan Kiss, G., 2011, Photocatalytic degradation of benzenesulfonate on colloidal titanium dioxide, *Water Res.*, 45, 1617–1628.

Xiao, K., Pei, K., Wang, H., Yu, W., Liang, S., Hu, J., Hou, H., Liu, B., dan Yang, J., 2018, Citric acid assisted Fenton-like process for enhanced dewaterability of waste activated sludge with in-situ generation of hydrogen peroxide, *Water Res.*, 140, 232–242.

Xue, Y., Lu, S., Fu, X., Sharma, V.K., Mendoza-Sanchez, I., Qiu, Z. and Sui, Q., 2018. Simultaneous removal of benzene, toluene, ethylbenzene and xylene (BTEX) by CaO₂ based Fenton system: Enhanced degradation by chelating agents. *Chem. Eng. J.*, 331, 255-264.

Ye, Z., Sirés, I., Zhang, H., dan Huang, Y.H., 2019, Mineralization of pentachlorophenol by ferrioxalate-assisted solar photo-Fenton process at mild pH, *Chemosphere*, 217, 475–482.

Ying, G.G., 2006, Fate, behavior and effects of surfactants and their degradation products in the environment, *Environ. Int.*, 32, 417–431.

Yu, W., Yang, J., Shi, Y., Song, J., Shi, Y., Xiao, J., Li, C., Xu, X., He, S., Liang, S., Wu, X., Hu, J., 2016. Roles of iron species and pH optimization on



UNIVERSITAS
GADJAH MADA

Pengaruh Penambahan Asam Oksalat pada Proses Fenton terhadap Penurunan Konsentrasi Surfaktan Anionik dalam Air Limbah Laundry

DWI ANITASARI, Prof. Dr. Endang Tri Wahyuni, M.S. ; Dr.rer.nat Nurul Hidayat Aprilita, S.Si., M.Si.

Universitas Gadjah Mada, 2021 | Diunduh dari <http://etd.repository.ugm.ac.id/>

sewage sludge conditioning with Fenton's reagent and lime, *Water Res.*, 95 (1), 124-133.

Yuan, D., Zhang, C., Tang, S., Li, X., Tang, J., Rao, Y., Wang, Z., dan Zhang, Q., 2019, Enhancing CaO₂ fenton-like process by Fe(II)-oxalic acid complexation for organic wastewater treatment, *Water Res.*, 163, 114861.

Zhang, Y. dan Zhou, M., 2019, A critical review of the application of chelating agents to enable Fenton and Fenton-like reactions at high pH values, *J. Hazard. Mater.*, 362, 436–450.