



DAFTAR PUSTAKA

- Ahile, U.J., Wuana, R.A., Itodo, A.U., Sha'Ato, R., and Dantas, R.F., 2020a, A Review on The Use of Chelating Agents as An Alternative to Promote Photo-Fenton at Neutral pH: Current Trends, Knowledge Gap and Future Studies, *Sci. Total Environ.*, 710, 134872.
- Ahile, U.J., Wuana, R.A., Itodo, A.U., Sha'Ato, R., and Dantas, R.F., 2020b, Stability of Iron Chelates During Photo-Fenton Process: The role of pH, Hydroxyl Radical Attack and Temperature, *J. Water Process Eng.*, 36, 101320.
- Ahmed, B., Limem, E., Abdel-Wahab, A., and Nasr, B., 2011, Photo-Fenton Treatment of Actual Agro-Industrial Wastewaters, *Ind. Eng. Chem. Res.*, 50, 6673–6680.
- Anetasia, M., 2013, Perubahan Kadar Air dan Suhu Tanah Akibat Pemberian Mulsa Organik Pada Pertanaman Nanas (*Ananas comosus*) PT Great Giant Pineapple (PT GGP) Terbanggi Besar Lampung Tengah, *J. Agrotek Tropika.*, 1, 2, 213–218.
- Anggorowati, A.A. and Ayucitra, A., 2022, Degradasi Fenol dalam Limbah Cair Secara Fotooksidasi, *Sci. J. Widya Tek.*, 21, 7–13.
- Askari, A., Vahabzadeh, F., and Mardanpour, M.M., 2021, Quantitative Determination of Linear Alkylbenzene Sulfonate (LAS) Concentration and Simultaneous Power Generation in A Microbial Fuel Cell-Based Biosensor, *J. Clean. Prod.*, 294, 126349.
- Asok, A.K. and Jisha, M.S., 2012, Biodegradation of The Anionic Surfactant Linear Alkylbenzene Sulfonate (LAS) by Autochthonous *Pseudomonas* sp., *Water. Air. Soil Pollut.*, 223, 5039–5048.
- Badmus, S.O., Amusa, H.K., Oyehan, T.A., and Saleh, T.A., 2021, Environmental Risks and Toxicity of Surfactants: Overview of Analysis, Assessment, and Remediation Techniques, *Environ. Sci. Pollut. Res.*, 28, 62085–62104.
- Bautista, P., Mohedano, A.F., Gilarranz, M.A., Casas, J.A., and Rodriguez, J.J., 2007, Application of Fenton Oxidation to Cosmetic Wastewaters Treatment, *J. Hazard. Mater.*, 143, 128–134.
- Birawidha, D.C., Sari, Y.M.A., Hendronursito, Y., Isnugroho, K., Amin, M., and Manurung, P., 2018, Ekstraksi Asam Oksalat dari Belimbing Wuluh (*Averrhoa bilimbi* L) dengan Larutan NaOH dan HNO₃, *Pros. Semnas Sinta FT UNILA*, 1, 2655–2914.



Bokare, A.D. and Choi, W., 2014, Review of Iron-Free Fenton-Like Systems for Activating H_2O_2 in Advanced Oxidation Processes, *J. Hazard. Mater.*, 275, 121–135.

Borba, F.H., Leichtweis, J., Bueno, F., Pellenz, L., Inticher, J.J., and 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, B., 2009, Degradasi Surfaktan Linear Alkilbenzena Sulfonat (LAS) sebagai Bahan Deterjen Pembersih, *Makara J. Sci.*, 13, 125–133.

Bulin, C.D.Q.M., Suratman, A., and Roto, 2018, Validation of Analytical Method Determination of Sodium Dodecyl Benzene Sulfonate (DBS) in Catfish (*Clarias batrachus L.*) by Spectrophotometric Using Methylene Blue, *J. Appl. Chem. Sci.*, 5, 414–417.

Burlachenko, A.S., Salishcheva, O. V., Dyshlyuk, L.S., and Prosekov, A.Y., 2021, Investigation of The Kinetic Regularities of The Process of Biodegradation of Betaine Surfactant by Bacteria of The Genus *Pseudomonas*, *Appl. Sci.*, 11, 1–9.

Ceristrisani, N., 2013, Fotodegradasi Surfaktan Anionik Natrium Dodesil Benzena Sulfonat Terkatalisis TiO_2 , Thesis, Jurusan Kimia FMIPA, UGM, Yogyakarta.

Chakma, S. and Moholkar, V.S., 2016, Investigations in Sono-Enzymatic Degradation of Ibuprofen, *Ultrason. Sonochem.*, 29, 485–494.

Chauhan, S. and Sharma, K., 2014, Effect of Temperature and Additives on The Critical Micelle Concentration and Thermodynamics of Micelle Formation of Sodium Dodecyl Benzene Sulfonate and Dodecyltrimethylammonium Bromide in Aqueous Solution: A Conductometric Study, *J. Chem. Thermodyn.*, 71, 205–211.

Checa-Fernandez, A., Santos, A., Romero, A., and Dominguez, C.M., 2021, Application of Chelating Agents to Enhance Fenton Process in Soil Remediation: A Review, *Catalysts*, 11, 1–43.

Cheng, M., Zeng, G., Huang, D., Lai, C., Xu, P., Zhang, C., and Liu, Y., 2016, Hydroxyl Radicals Based Advanced Oxidation Processes (AOPs) for Remediation of Soils Contaminated with Organic Compounds: A review, *Chem. Eng. J.*, 284, 582–598.

Clarizia, L., Russo, D., Di Somma, I., Marotta, R., and Andreozzi, R., 2017, Homogeneous Photo-Fenton Processes at Near Neutral pH: A review, *Appl.*



Catal. B Environ., 209, 358–371.

Collivignarelli, M.C., Carnevale Miino, M., Baldi, M., Manzi, S., Abbà, A., and Bertanza, G., 2019, Removal of Non-Ionic and Anionic Surfactants from Real Laundry Wastewater by Means of A Full-Scale Treatment System, *Process Saf. Environ. Prot.*, 132, 105–115.

Conte, L.O., Schenone, A. V., and 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.

Corona, R.R.B., Sad, C.M.S., da Silva, M., Lopes, D.L., Leite, J.S.D., Glória, G.M., Gonçalves, G.R., Filgueiras, P.R., and de Castro, E.V.R., 2021, Adsorption of Anionic Surfactant in Graphite Oxide: A study for Treatment of Laundry Wastewater, *J. Environ. Chem. Eng.*, 9.

Cowan-Ellsberry, C., Belanger, S., Dorn, P., Dyer, S., Mcavoy, D., Sanderson, H., Versteeg, D., Ferrer, D., and Stanton, K., 2014, Environmental Safety of The Use of Major Surfactant Classes in North America, *Crit. Rev. Environ. Sci. Technol.*, 44, 1893–1993.

Cserháti, T., Forgács, E., and Oros, G., 2002, Biological Activity and Environmental Impact of Anionic Surfactants, *Environ. Int.*, 28, 337–348.

Delforno, T.P., Belgini, D.R.B., Hidalgo, K.J., Centurion, V.B., Lacerda-Júnior, G. V., Duarte, I.C.S., Varesche, M.B.A., and Oliveira, V.M., 2020, Anaerobic Reactor Applied to laundry Wastewater Treatment: Unveiling The Microbial Community by Gene and Genome-Centric Approaches, *Int. Biodeterior. Biodegrad.*, 149, 104916.

Dou, J., Alpert, P.A., Corral Arroyo, P., Luo, B., Schneider, F., Xto, J., Huthwelker, T., Borca, C.N., Henzler, K.D., Raabe, J., Watts, B., Herrmann, H., Peter, T., Ammann, M., and Krieger, U.K., 2021, Photochemical Degradation of Iron(III) Citrate/Citric Acid Aerosol Quantified with The Combination of three Complementary Experimental Techniques and A Kinetic Process Model, *Atmos. Chem. Phys.*, 21, 315–338.

Dutt, M.A., Hanif, M.A., Nadeem, F., and Bhatti, H.N., 2020, A Review of Advances in Engineered Composite Materials Popular For Wastewater Treatment, *J. Environ. Chem. Eng.*, 8, 104073.

Faria, P.C.C., Órfão, J.J.M., and Pereira, M.F.R., 2008, Activated Carbon Catalytic Ozonation of Oxamic and Oxalic Acids, *Appl. Catal. B Environ.*, 79, 237–243.

García, A.B.E., Szymański, K., Mozia, S., and Pérez, J.A.S., 2021, Treatment of Laundry Wastewater by Solar Photo-Fenton Process at Pilot Plant Scale,



Environ. Sci. Pollut. Res., 28, 8576–8584.

Gautam, A., Kshirsagar, A., Biswas, R., Banerjee, S., and Khanna, P.K., 2016, Photodegradation of Organic Dyes Based on Anatase and Rutile TiO₂ Nanoparticles, *RSC Adv.*, 6, 2746–2759.

Giannakis, S., Rtimi, S., and Pulgarin, C., 2017, Light-Assisted Advanced Oxidation Processes for The Elimination of Chemical and Microbiological Pollution of Wastewaters in Developed and Developing Countries, *Molecules*, 22, .

Hamd, W.S. and Dutta, J., 2020, Heterogeneous Photo-Fenton Reaction and Its Enhancement Upon Addition of Chelating Agents, Elsevier Inc., pp, 303-330.

He, D.Q., Luo, H.W., Huang, B.C., Qian, C., and Yu, H.Q., 2016, Enhanced Dewatering of Excess Activated Sludge Through Decomposing its Extracellular Polymeric Substances by A Fe@Fe₂O₃-based Composite Conditioner, *Bioresour. Technol.*, 218, 526–532.

He, J., Yang, X., Men, B., Yu, L., and Wang, D., 2015, EDTA Enhanced Heterogeneous Fenton Oxidation of Dimethyl Phthalate Catalyzed by Fe₃O₄: Kinetics and Interface Mechanism, *J. Mol. Catal. A Chem.*, 408, 179–188.

Hendra, H., Barlian, E., Razak, A., and Sanjaya, H., 2016, Photo-Degradation of Surfactant Compounds Using Uv Rays with Addition of TiO₂ Catalysts in Laundry Waste, *Sainstek J. Sains dan Teknol.*, 7, 59.

Hu, Y., Li, Y., He, J., Liu, T., Zhang, K., Huang, X., Kong, L., and Liu, J., 2018, EDTA-Fe(III) Fenton-Like Oxidation for The Degradation of Malachite Green, *J. Environ. Manage.*, 226, 256–263.

Huang, X., Hou, X., Zhao, J., and Zhang, L., 2016, Hematite Facet Confined Ferrous Ions as High Efficient Fenton Catalysts to Degrade Organic Contaminants by Lowering H₂O₂ Decomposition Energetic Span, *Appl. Catal. B Environ.*, 181, 127–137.

Hwa, L. and Riadi, L., 2012, Simulasi Pengolahan Limbah Cair Berwarna dengan Foto Fenton pada Sistem Kontinyu, *J. Tek. Kim. Indones.*, 11, 74–80.

Hyun, S., Vermillion, B., Newton, C., Fall, M., Li, X., Kaewprag, P., Lenz, E.R., Fall, Monica, Li, Xiaobai, and Kaewprag, Pacharmon, 2013, Predictive Validity of The Braden Scale for Patients in Intensive Care Units, 22, 514–520.

Jariyanorasade, A. and Junyapoon, S., 2018, Factors Affecting The Degradation of Linear Alkylbenzene Sulfonate By TiO₂ Assisted Photocatalysis and Its



Kinetics, *EnvironmentAsia*, 11, 45–60.

Jeong, J. and Yoon, J., 2005, pH effect on OH Radical Production in Photo/Ferrioxalate System, *Water Res.*, 39, 2893–2900.

Jiang, Z., Wang, L., Lei, J., Liu, Y., and Zhang, J., 2019, Photo-Fenton Degradation of Phenol by CdS/rGO/Fe²⁺ at Natural pH with In Situ-Generated H₂O₂, *Appl. Catal. B Environ.*, 241, 367–374.

Joseph, C.G., Farm, Y.Y., Taufiq-Yap, Y.H., Pang, C.K., Nga, J.L.H., and Li Puma, G., 2021, Ozonation Treatment Processes for The Remediation of Detergent Wastewater: A Comprehensive Review, *J. Environ. Chem. Eng.*, 9, 106099.

Kalal, S., Singh Chauhan, N.P., Ameta, N., Ameta, R., Kumar, S., and Punjabi, P.B., 2014, Role of Copper Pyrovanadate as Heterogeneous Photo-Fenton Like Catalyst for The Degradation of Neutral Red and Azure-B: An Eco-Friendly Approach, *Korean J. Chem. Eng.*, 31, 2183–2191.

Kholidah, K., Wahyuni, E.T., and Sugiharto, E., 2021, Fotodegradasi Terkatalisis TiO₂-H₂O₂ pada Pengolahan Limbah Cair Industri Mie Soun, *J. Tek. Kim. dan Lingkung.*, 5, 164–174.

Khorsandi, H., Mohammadi, A., Kariminejad, F., Haghghi, M., Karimzadeh, S., Khorsandi, J., and Aghapour, A.A., 2016, Optimizing Linear Alkyl Benzene Sulfonate Removal Using Fenton Oxidation Process in Taguchi Method, *J. Water Chem. Technol.*, 38, 266–272.

Kohantorabi, M., Giannakis, S., Gholami, M.R., Feng, L., and Pulgarin, C., 2019, A systematic Investigation on The Bactericidal Transient Species Generated by Photo-Sensitization of Natural Organic Matter (NOM) During Solar and Photo-Fenton Disinfection of Surface Waters, *Appl. Catal. B Environ.*, 244, 983–995.

Lan, Q., Liu, H., Li, F. bai, Zeng, F., and Liu, C. shuai, 2011, Effect of pH on Pentachlorophenol Degradation in Irradiated Iron/Oxalate Systems, *Chem. Eng. J.*, 168, 1209–1216.

Lee, H.J., Lee, H., and Lee, C., 2014, Degradation of Diclofenac and Carbamazepine by The Copper(II)-Catalyzed Dark and Photo-Assisted Fenton-Like Systems, *Chem. Eng. J.*, 245, 258–264.

Li, G., Qiu, S., Ma, F., Ji, Y., and 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.



- Li, H., Yang, Y., Gao, J., Li, X., Zhou, Z., Wang, N., Du, P., Zhang, T., and Feng, J., 2020, Degradation of Sodium Dodecyl Benzenesulfonate by Vacuum Ultraviolet Irradiation, *J. Water Process Eng.*, 34, 101172.
- Li, X., Chen, L., Li, Q., Zhang, J., Zhang, X., Zheng, K., and Tian, X., 2016, Structural Characteristics and Interfacial Relaxation of Nanocomposites Based on Polystyrene and Modified Layered Double Hydroxides, *Colloid Polym. Sci.*, 294, 815–822.
- Lina, C.R., 2022, Peningkatan Efektivitas Proses Foto-Fenton Pada pH 7 dalam Fotodegradasi Dodesil Benzena Sulfonat dalam Air Limbah Laundry dengan Cara Penambahan Asam Sitrat sebagai Pengkhelat, Thesis, Jurusan Kimia FMIPA, UGM, Yogyakarta.
- Ling, L., Zhang, D., Fan, C., and Shang, C., 2017, A Fe(II)/Citrate/UV/PMS Process for Carbamazepine Degradation at A Very Low Fe(II)/PMS Ratio and Neutral pH: The mechanisms, *Water Res.*, 124, 446–453.
- Lolo, E.U., Pambudi, Y.S., Gunawan, R.I., and Widianto, W., 2020, Pengaruh Koagulan PAC dan Tawas terhadap Surfaktan dan Kecepatan Pengendapan Flok dalam Proses Koagulasi Flokulasi, *J. Serambi Eng.*, 5, 1295–1305.
- Maryani, Y. and Kustiningsih, I., 2015, Determination and Characterization of Photocatalytic Products of Linear Alkyl Sulphonate by High Performance Liquid Chromatography and Nuclear Magnetic Resonance, *Procedia Chem.*, 17, 216–223.
- Masalvad, S.K.S. and Sakare, P.K., 2020, Application of photo Fenton Process for Treatment of Textile Congo-Red Dye Solution, *Mater. Today Proc.*, 46, 5291–5297.
- Milidrag, G.P., Prica, M., Kerkez, D., Dalmacija, B., Kulic, A., Tomasevic Pilipovic, D., and 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.
- Miranzadeh, M.B., Zarjam, R., Dehghani, R., Haghghi, M., Badi, H.Z., Marzaleh, M.A., and Tehrani, A.M., 2016, Comparison of Fenton and Photo-Fenton Processes for Removal of Linear Alkyle Benzene Sulfonate (LAS) from Aqueous Solutions, *Polish J. Environ. Stud.*, 25, 1639–1648.
- Muniyan, R., Varatharajan, S., Naz, S., Nandicoori, V.K., and Gurunathan, J., 2017, Allium Sativum Linn. Contains Linear Alkylbenzene Sulfonates that Alter Membrane Fluidity for The Inhibition Of Mycobacterium Tuberculosis H37RA, *Asian J. Pharm. Clin. Res.*, 10, 100–111.



- Nunes, R.F. and Teixeira, A.C.S.C., 2022, An Overview on Surfactants as Pollutants of Concern: Occurrence, Impacts and Persulfate-Based Remediation Technologies, *Chemosphere*, 300, 134507.
- O'Dowd, K. and Pillai, S.C., 2020, Photo-Fenton Disinfection at Near Neutral pH: Process, Parameter Optimization and Recent Advances, *J. Environ. Chem. Eng.*, 8, 104063.
- Opoku, E.E.O. and Boachie, M.K., 2020, The Environmental Impact of Industrialization and Foreign Direct Investment, *Energy Policy*, 137, 111178.
- Ou, X., Zhang, F., Zhang, C., Zou, X., Bi, X., Wang, D., Li, H., and Zhang, S., 2019, Photodegradation of Malachite Green Catalyzed by Aqueous Iron(III)-Citrate Complex: Roles of Iron(II) and Hydrogen Peroxide, *ChemistrySelect*, 4, 2089–2094.
- Palmer, M. and Hatley, H., 2018, The Role of Surfactants in Wastewater Treatment: Impact, Removal and Future Techniques: A Critical Review, *Water Res.*, 147, 60–72.
- Prada-Vásquez, M.A., Estrada-Flórez, S.E., Serna-Galvis, E.A., and Torres-Palma, R.A., 2021, Developments in The Intensification of Photo-Fenton and Ozonation-Based Processes for The Removal of Contaminants of Emerging Concern in Ibero-American Countries, *Sci. Total Environ.*, 765, 142699.
- Pratiwi, I.N.A.A., Nadine, C.A., and Wahyudi, B., 2021, Kinetika Reaksi Pembuatan Asam Oksalat dari Kulit Buah Kapuk dengan Oksidator Hidrogen Peroksida, *ChemPro*, 2, 18–22.
- Raheb, I. and Manlla, M.S., 2021, Kinetic and Thermodynamic Studies of The Degradation of Methylene Blue by Photo-Fenton Reaction, *Heliyon*, 7, 07427.
- Ramcharan, T. and Bissessur, A., 2016, Analysis of Linear Alkylbenzene Sulfonate in Laundry Wastewater by HPLC-UV and UV-Vis Spectrophotometry, *J. Surfactants Deterg.*, 19, 209–218.
- Ranji, H., Babajanzadeh, B., and Sherizadeh, S., 2019, Detergents and Surfactants: A Brief Review, *Open Access J. Sci.*, 3, 94–99.
- Ratri, M.C., 2017, Pencemaran Sodium Dodecylbenzene Sulfonate (SDBS) pada Ikan Air Tawar: Penentuan Akumulasi dan Monitoring Pencemaran, *J. Farm. Sains dan Komunitas*, 14, 43–54.



Rebello, S., Asok, A.K., Mundayoor, S., and Jisha, M.S., 2013, Surfactants: Chemistry, Toxicity and Remediation, In, Pollutant Diseases, Remediation and Recycling., pp, 277-320.

Renaud, F., Warnau, M., Oberhänsli, F., Teyssié, J.L., Temara, A., Rouleau, C., and Metian, M., 2014, Bioconcentration of The Anionic Surfactant Linear Alkylbenzene Sulfonate (LAS) in The Marine Shrimp Palaemonetes Varians: A Radiotracer Study, *Mar. Pollut. Bull.*, 85, 244–247.

Riella, L.V., Golla, S., Dogaru, G., Rennke, H.G., and Christopher, K., 2009, Renal Cortical Necrosis Complicating Laundry Detergent Ingestion, *NDT Plus*, 2, 40–42.

Ruiz-Delgado, A., Roccamante, M.A., Oller, I., Agüera, A., and Malato, S., 2019, Natural Chelating Agents from Olive Mill Wastewater to Enable Photo-Fenton-Like Reactions at Natural pH, *Catal. Today*, 328, 281–285.

Sabrina, A., 2021, Pengaruh Penambahan Garam Dinatrium Etilen Diamin Tetra Asetat (Na_2EDTA) terhadap Kinerja Proses Fenton pada pH 7 dalam Penghilangan Linier Alkilbenzena Sulfonat Dari Air Limbah Laundry, Skripsi, Jurusan Kimia FMIPA, UGM, Yogyakarta.

Sebayang, F., 2006, Pengujian Stabilitas Enzim Bromelin yang Diisolasi dari Bonggol Nanas serta Imobilisasi Menggunakan Kappa Karagenan, *J. Sains Kim.*, 10, 20–26.

Serna-Galvis, E.A., Vélez-Peña, E., Osorio-Vargas, P., Jiménez, J.N., Salazar-Ospina, L., Guaca-González, Y.M., and Torres-Palma, R.A., 2019, Inactivation of Carbapenem-Resistant *Klebsiella pneumoniae* by Photo-Fenton: Residual Effect, Gene Evolution and Modifications with Citric Acid and Persulfate, *Water Res.*, 161, 354–363.

Shukla, A., Bhat, S.D., and Pillai, V.K., 2016, Simultaneous Unzipping and Sulfonation of Multi-Walled Carbon Nanotubes to sulfonated Graphene Nanoribbons for Nanocomposite Membranes in Polymer Electrolyte Fuel Cells, *J. Memb. Sci.*, 520, 657–670.

Song, Y., Lee, H., Ko, J., Ryu, J., Kim, M., and Sohn, D., 2014, Preparation and Characterization of surfactant-Exfoliated Graphene, *Bull. Korean Chem. Soc.*, 35, 2009–2012.

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.



Tang, J. and Wang, J., 2018, Metal Organic Framework with Coordinatively Unsaturated Sites as Efficient Fenton-like Catalyst for Enhanced Degradation of Sulfamethazine, *Environ. Sci. Technol.*, 52, 5367–5377.

Ulya, R.N., Yusuf, B., and Panggabean, A.S., 2016, Optimasi Kinerja Analitik pada Penentuan Surfaktan Anionik dalam Sampel Air Alam menggunakan Metode MBAS (Methyl Blue Active Substance), *J. At.*, 36–41.

Villegas-Guzman, P., Giannakis, S., Torres-Palma, R.A., and Pulgarin, C., 2017, Remarkable Enhancement of Bacterial Inactivation in Wastewater Through Promotion of Solar Photo-Fenton at Near-Neutral pH by Natural Organic Acids, *Appl. Catal. B Environ.*, 205, 219–227.

Vionita, A.C., 2016, Pengaruh Waktu Penyinaran dan pH Pada Proses Foto-Fenton Terhadap Penurunan Nilai COD Limbah Laundry, Skripsi, Jurusan Kimia FMIPA, UGM, Yogyakarta.

Wahyuni, E.T., Nurhikmatillah, A., Kurniasari, H., and Siswanta, D., 2021, Detoxification of As(III) in Aqueous Media by Using Photo-Fenton Method, *Glob. Nest J.*, 23, 550–555.

Wahyuni, E.T., Roto, R., Sabrina, M., Anggraini, V., Leswana, N., and Vionita, A., 2016, Photodegradation of Detergent Anionic Surfactant in Wastewater Using UV/TiO₂/H₂O₂ and UV/Fe²⁺/H₂O₂ Processes, *Am. J. Appl. Chem.*, 4, 174.

Xiao, C., Li, S., Yi, F., Zhang, B., Chen, D., Zhang, Y., Chen, H., and Huang, Y., 2020, Enhancement of Photo-Fenton Catalytic Activity with The Assistance of Oxalic Acid on The Kaolin-Feooh System for The Degradation of Organic Dyes, *RSC Adv.*, 10, 18704–18714.

Yargic, A.S. and Ozbay, N., 2016, Fenton and Photo-Fenton Degradation of Reaktoset Brilliant Orange/P-2R and Telon Turquoise/M-GGL Dyes: Effect of Operating Parameters and Kinetic Study, *Int. J. Adv. Res. Chem. Sci.*, 3, 2, 38–45.

Ye, Z., Sirés, I., Zhang, H., and Huang, Y.H., 2019, Mineralization of Pentachlorophenol by Ferrioxalate-Assisted Solar Photo-Fenton Process at Mild pH, *Chemosphere*, 217, 475–482.

Zeng, B., Zhang, P., Zheng, M., Xiao, N., Han, J., Wang, C., Wang, Z., and Zhao, Z., 2019, Detection and Identification of The Oxidizing Species Generated from The Physiologically Important Fenton-Like Reaction of Iron(II)-Citrate with Hydrogen Peroxide, *Arch. Biochem. Biophys.*, 668, 39–45.



UNIVERSITAS
GADJAH MADA

PENINGKATAN EFEKTIVITAS METODE FENTON DENGAN PENAMBAHAN ASAM OKSALAT
DARI HATI NANAS UNTUK

DEGRADASI DBS DALAM AIR LIMBAH LAUNDRY

Nisma Seren Ramadhasya, Prof. Dr. Endang Tri Wahyuni, M.S. ; Suherman, S.Si., M.Sc., Ph.D.

Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Zhang, G., Wang, Q., Zhang, W., Li, T., Yuan, Y., and Wang, P., 2016, Effects of Organic Acids and Initial Solution pH on Photocatalytic Degradation of Bisphenol A (BPA) in A Photo-Fenton-Like Process Using Goethite (α -FeOOH), *Photochem. Photobiol. Sci.*, 15, 1046–1053.

Zhang, H., Choi, H.J., and Huang, C.P., 2006, Treatment of Landfill Leachate by Fenton's Reagent in A Continuous Stirred Tank Reactor, *J. Hazard. Mater.*, 136, 618–623.

Zhang, M. hui, Dong, H., Zhao, L., Wang, D. xi, and Meng, D., 2019, A Review on Fenton Process for Organic Wastewater Treatment Based on Optimization Perspective, *Sci. Total Environ.*, 670, 110–121.

Zhang, Y., Han, C., Zhang, G., Dionysiou, D.D., and Nadagouda, M.N., 2015, PEG-Assisted Synthesis of Crystal TiO₂ Nanowires with High Specific Surface Area for Enhanced Photocatalytic Degradation of Atrazine, *Chem. Eng. J.*, 268, 170–179.

Zhang, Y. and 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.