

## DAFTAR PUSTAKA

- Abdullah, J. Al, Al Lafi, A.G., Amin, Y., dan Alnama, T., 2018, A Styrofoam-Nano Manganese Oxide Based Composite: Preparation and Application for the Treatment of Wastewater, *Appl. Radiat. Isot.*, 136, 73–81.
- Adeleye, A.O., Nkereuwem, M.E., Omokhudu, G.I., Amoo, A.O., Shiaka, G.P., dan Yerima, M.B., 2018, Effect of Microorganisms in the Bioremediation of Spent Engine Oil and Petroleum Related Environmental Pollution, *J. Appl. Sci. Environ. Manag.*, 22, 157.
- Aguado, J., van Grieken, R., López-Muñoz, M.J., dan Marugán, J., 2006, A Comprehensive Study of the Synthesis, Characterization and Activity of TiO<sub>2</sub> and Mixed TiO<sub>2</sub>/SiO<sub>2</sub> Photocatalysts, *Appl. Catal. A Gen.*, 312, 202–212.
- Agyei-Tuffour, B., Gbogbo, S., Dodoo-Arhin, D., Damoah, L.N.W., Efavi, J.K., Yaya, A., dan Nyankson, E., 2020, Photocatalytic Degradation of Fractionated Crude Oil: Potential Application in Oil Spill Remediation, *Cogent Eng.*, 7, 1744944.
- Akpan, U.G. dan Hameed, B.H., 2009, Parameters Affecting the Photocatalytic Degradation of Dyes Using TiO<sub>2</sub>-Based Photocatalysts: A Review, *J. Hazard. Mater.*, 170, 520–529.
- Al-Majed, A.A., Adebayo, A.R., dan Hossain, M.E., 2012, A Sustainable Approach to Controlling Oil Spills, *J. Environ. Manage.*, 113, 213–227.
- Alhaji, M.H., Khan, K.S.A., dan Muhammad, A.H.A., 2017, Recent Developments in Immobilizing Titanium Dioxide on Supports for Degradation of Organic Pollutants in Wastewater- A Review, *Int. J. Environ. Sci. Technol.*, 14, 2039–2052.
- Aliakbari, A., Seifi, M., Mirzaee, S., dan Hekmatara, H., 2015, Influence of Different Synthesis Conditions on Properties of Oleic Acid-Coated-Fe<sub>3</sub>O<sub>4</sub> Nanoparticles, *Mater. Sci. Pol.*, 33, 100–106.
- Alzahrani, E., 2017, Photodegradation of Binary Azo Dyes Using Core-Shell Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>/TiO<sub>2</sub> Nanospheres, *American Journal of Analytical Chemistry*, 8, 95-115
- Ani, I.J., Akpan, U.G., Olutoye, M.A., dan Hameed, B.H., 2018, Photocatalytic Degradation of Pollutants in Petroleum Refinery Wastewater by TiO<sub>2</sub>- and ZnO-Based Photocatalysts: Recent Development, *J. Clean. Prod.*, 205, 930–954.
- Anjum, H., Johari, K., Appusamy, A., Gnanasundaram, N., dan Thanabalan, M., 2019, Surface Modification and Characterization of Carbonaceous Adsorbents for the Efficient Removal of Oil Pollutants, *J. Hazard. Mater.*, 379, 120673.

- Arévalo, P., Isasi, J., Caballero, A.C., Marco, J.F., dan Martín-Hernández, F., 2017, Magnetic and Structural Studies of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles Synthesized via Coprecipitation and Dispersed in Different Surfactants, *Ceram. Int.*, 43, 10333–10340.
- Atalay, S. dan Ersöz, G., 2016, *Review on Catalysis in Advanced Oxidation Processes*, Sharma, S.K. (ed) Springer International Publishing, Switzerland.
- Awofiranye, O.S., Modise, S.J., dan Naidoo, E.B., 2020, Overview of Polymer–TiO<sub>2</sub> Catalyst for Aqueous Degradation of Pharmaceuticals in Heterogeneous Photocatalytic Process, *J. Nanoparticle Res.*, 22, 168.
- Azmiyawati, C., Pratiwi, P.I., dan Darmawan, A., 2018, New Silica Magnetite Sorbent : The Influence of Variations of Sodium Silicate Concentrations on Silica Magnetite Character, *IOP Conf. Ser. Mater. Sci. Eng.*, 349, 012012.
- Baig, N., Alghunaimi, F.I., dan Saleh, T.A., 2019, Hydrophobic and Oleophilic Carbon Nanofiber Impregnated Styrofoam for Oil and Water Separation: A Green Technology, *Chem. Eng. J.*, 360, 1613–1622.
- Bakhteeva, I.A., Medvedeva, I. V, Uimin, M.A., Byzov, I. V, Zhakov, S. V, Yermakov, A.E., dan Shchegoleva, N.N., 2016, Magnetic Sedimentation and Aggregation of Fe<sub>3</sub>O<sub>4</sub> @ SiO<sub>2</sub> Nanoparticles in Water Medium, *Sep. Purif. Technol.*, 159, 35–42.
- Bekri-Abbes, I., Bayoudh, S., dan Baklouti, M., 2006, Converting Waste Polystyrene Into Adsorbent: Potential Use in the Removal of Lead and Cadmium Ions from Aqueous Solution, *J. Polym. Environ.*, 14, 249–256.
- Beydoun, D., Amal, R., Low, G.K.C., dan McEvoy, S., 2000, Novel Photocatalyst: Titania-Coated Magnetite. Activity and Photodissolution, *J. Phys. Chem. B*, 104, 4387–4396.
- Boczkaj, G., Fernandes, A., dan Makoś, P., 2017, Study of Different Advanced Oxidation Processes for Wastewater Treatment from Petroleum Bitumen Production at Basic pH, *Ind. Eng. Chem. Res.*, 56, 8806–8814.
- Bui, T.Q., Ton, S.N.C., Duong, A.T., dan Tran, H.T., 2018, Size-Dependent Magnetic Responsiveness of Magnetite Nanoparticles Synthesised by Coprecipitation and Solvothermal Methods, *J. Sci. Adv. Mater. Devices*, 3, 107–112.
- Butler, I.B., Schoonen, M.A.A., dan Rickard, D.T., 1994, Removal of Dissolved Oxygen from Water: A Comparison of Four Common Techniques, *Talanta*, 41, 211–215.
- Carmody, O., Frost, R., Xi, Y., dan Kokot, S., 2007, Adsorption of Hydrocarbons on Organo-Clays—Implications for Oil Spill Remediation, *J. Colloid Interface Sci.*, 305, 17–24.

- Cervantes-Avilés, P., Camarillo Piñas, N., Ida, J., dan Cuevas-Rodríguez, G., 2017, Influence of Wastewater Type on the Impact Generated by TiO<sub>2</sub> Nanoparticles on the Oxygen Uptake Rate in Activated Sludge Process, *J. Environ. Manage.*, 190, 35–44.
- Chalastara, K., Guo, F., Elouatik, S., dan Demopoulos, G.P., 2020, Tunable Composition Aqueous-Synthesized Mixed-Phase TiO<sub>2</sub> Nanocrystals for Photo-Assisted Water Decontamination: Comparison of Anatase, Brookite and Rutile Photocatalysts, *Catalyst*, 10, 407.
- Chaukura, N., Gwenzi, W., Bunhu, T., Ruziwa, D.T., dan Pumure, I., 2016, Potential Uses and Value-Added Products Derived from Waste Polystyrene in Developing Countries: A Review, *Resour. Conserv. Recycl.*, 107, 157–165.
- Chen, C., Ma, W., dan Zhao, J., 2010, Semiconductor-Mediated Photodegradation of Pollutants under Visible-Light Irradiation, *Chem. Soc. Rev.*, 39, 4206–4219.
- Chen, D., Cheng, Y., Zhou, N., Chen, P., Wang, Y., Li, K., dkk., 2020, Photocatalytic degradation of organic pollutants using TiO<sub>2</sub>-based photocatalysts : A review, *J. Clean. Prod.*, 268, 121725.
- Chen, S., Ai, J., Chen, J., Lin, J., dan Chen, Q., 2019, TiO<sub>2</sub>-PDVB Janus Particles Enhanced Compatibility of Titanium Dioxide and Recycled Waste Styrofoam, *J. Appl. Polym. Sci.*, 48691.
- Chen, Y.F., Lee, C.Y., Yeng, M.Y., dan Chiu, H.T., 2003, The Effect of Calcination Temperature on the Crystallinity of TiO<sub>2</sub> Nanopowders, *J. Cryst. Growth*, 247, 363–370.
- Cheng, S., Tsai, S.J., dan Lee, Y.F., 1995, Photocatalytic Decomposition of Phenol Over Titanium Oxide of Various Structures, *Catal. Today*, 26, 87–96.
- Da, I., Canoira, L., Llamas, J.F., Garcı, M.J., Alca, R., García-Martínez, M.J., dkk., 2006, Photodegradation of Polycyclic Aromatic Hydrocarbons in Fossil Fuels Catalysed by Supported TiO<sub>2</sub>, *Appl. Catal. B Environ.*, 67, 279–289.
- Dagher, S., Soliman, A., Ziout, A., Tit, N., Hilal-Alnaqbi, A., Khashan, S., dkk., 2018, Photocatalytic Removal of Methylene Blue Using Titania- and Silica-Coated Magnetic Nanoparticles, *Materials Research Express*, 5, 065518.
- Dewi, S.H., Sutanto, Fisli, A., dan Wardiyati, S., 2016, Synthesis and Characterization of Magnetized Photocatalyst Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>/TiO<sub>2</sub> by Heteroagglomeration Method, *Journal of Physics: Conference Series*, 739, 012113
- Diebold, U., 2003, The Surface Science of Titanium Dioxide, *Surf. Sci. Rep.*, 48, 53–229.
- Ding, B., Kim, H., Kim, C., Khil, M., dan Park, S., 2003, Morphology and Crystalline Phase Study of Electrospun TiO<sub>2</sub>-SiO<sub>2</sub> Nanofibres, *Nanotechnology*, 14, 532–537.

- Dong, H., Zeng, G., Tang, L., Fan, C., Zhang, C., He, X., dan He, Y., 2015, An Overview on Limitations of TiO<sub>2</sub>-based Particles for Photocatalytic Degradation of Organic Pollutants and the Corresponding Countermeasures, *Water Res.*, 79, 128–146.
- Ebrahimi, F., Farazi, R., Karimi, E.Z., dan Beygi, H., 2017, Dichlorodimethylsilane Mediated One-Step Synthesis of Hydrophilic and Hydrophobic Silica Nanoparticles, *Adv. Powder Technol.*, 28, 932–937.
- Emam, E.A. dan Aboul-Gheit, N.A.K., 2014, Photocatalytic Degradation of Oil-Emulsion in Water/Seawater Using Titanium Dioxide, *Energy Sources, Part A Recover. Util. Environ. Eff.*, 36, 1123–1133.
- Esfandiari, N., Kashefi, M., Afsharnezhad, S., dan Mirjalili, M., 2020, Insight Into Enhanced Visible Light Photocatalytic Activity of Fe<sub>3</sub>O<sub>4</sub>–SiO<sub>2</sub>–TiO<sub>2</sub> Core-Multishell Nanoparticles on the Elimination of *Escherichia coli*, *Mater. Chem. Phys.*, 244, 122633.
- Etacheri, V., Di Valentin, C., Schneider, J., Bahnemann, D., dan Pillai, S.C., 2015, Visible-Light Activation of TiO<sub>2</sub> Photocatalysts: Advances in Theory and Experiments, *J. Photochem. Photobiol. C Photochem. Rev.*, 25, 1–29.
- Feng, C., Aldrich, C., Eksteen, J.J., dan Arrigan, D.W.M., 2017, Removal of Arsenic from Alkaline Process Waters of Gold Cyanidation by Use of Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>@TiO<sub>2</sub> Nanosorbents, *Miner. Eng.*, 110, 40–46.
- Gad-Allah, T.A., Kato, S., Satokawa, S., dan Kojima, T., 2007, Role of Core Diameter and Silica Content in Photocatalytic Activity of TiO<sub>2</sub>/SiO<sub>2</sub>/Fe<sub>3</sub>O<sub>4</sub> Composite, *Solid State Sci.*, 9, 737–743.
- García, M.T., Gracia, I., Duque, G., Lucas, A. De, dan Rodríguez, J.F., 2009, Study of the Solubility and Stability of Polystyrene Wastes in A Dissolution Recycling Process, *Waste Manag.*, 29, 1814–1818.
- Gausepohl, H. dan Nießner, N., 2001, Polystyrene and Styrene Copolymers, *Encyclopedia of Materials: Science and Technology*. Pergamon Press, Oxford, pp. 7735–7741.
- Ghosh, S. dan Das, A.P., 2015, Modified Titanium Oxide (TiO<sub>2</sub>) Nanocomposites and Its Array of Applications: A Review, *Toxicol. Environ. Chem.*, 97, 491–514.
- Gu, H., Zhou, X., Lyu, S., Pan, D., Dong, M., Wu, S., dkk., 2020, Magnetic Nanocellulose-Magnetite Aerogel for Easy Oil Adsorption, *J. Colloid Interface Sci.*, 560, 849–856.
- Gunatilake, U.B. dan Bandara, J., 2017, Efficient Removal of Oil from Oil Contaminated Water by Superhydrophilic and Underwater Superoleophobic Nano/Micro Structured TiO<sub>2</sub> nanofibers Coated Mesh, *Chemosphere*, 171, 134–141.
- Hanaor, D.A.H. dan Sorrell, C.C., 2011, Review of the Anatase to Rutile Phase Transformation, *J. Mater. Sci.*, 46, 855–874.

- Hansen, A.M., Kraus, T.E.C., Pellerin, B.A., Fleck, J.A., Downing, B.D., dan Bergamaschi, B.A., 2016, Optical Properties of Dissolved Organic Matter (DOM): Effects of Biological and Photolytic Degradation, *Limnol. Oceanogr.*, 61, 1015–1032.
- Herrera-Sandoval, G.M., Baez-Anggarita, D.B., Correa-Torres, S.N., Primera-Pedrozo, O.M., Hernández-Rivera, S.P., Baez-Angarita, D.B., dkk., 2013, Novel EPS/TiO<sub>2</sub> Nanocomposite Prepared from Recycled Polystyrene, *Mater. Sci. Appl.*, 04, 179–185.
- Hoffmann, M.R., Martin, S.T., Choi, W., dan Bahnemannt, D.W., 1995, Environmental Applications of Semiconductor Photocatalysis, *Chem. Rev.*, 95, 69–96.
- Hsu, Y.Y., Hsiung, T.L., Paul Wang, H., Fukushima, Y., Wei, Y.L., dan Chang, J.E., 2008, Photocatalytic Degradation of Spill Oils on TiO<sub>2</sub> Nanotube Thin Films, *Mar. Pollut. Bull.*, 57, 873–876.
- Hu, J., Wang, H., Dong, F., dan Wu, Z., 2017, A New Strategy for Utilization of NIR from Solar Energy—Promotion Effect Generated from Photothermal Effect of Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub> for Photocatalytic Oxidation of NO, *Appl. Catal. B Environ.*, 204, 584–592.
- Huang, X., Wang, W., Liu, Y., Wang, H., Zhang, Z., Fan, W., dan Li, L., 2015, Treatment of Oily Waste Water by PVP Grafted PVDF Ultrafiltration Membranes, *Chemical Engineering Journal*, 273, 421–429.
- Huesemann, M.H. dan Moore, K.O., 1993, Compositional Changes During Landfarming of Weathered Michigan Crude Oil-Contaminated Soil, *J. Soil Contam.*, 2, 245–264.
- Huiying, Z., 2009, Determination of Oil Content in Wastewater by Ultraviolet Spectrophotometry, *Chemical Journal on Internet*, 11, 41.
- Humaish, H., Hafudh, W., dan Ismaael, B., 2020, Gravimetric Analysis of Oil pollution of Tigris River, *IOP Conference Series: Materials Science and Engineering*, 888, 012057
- Iwasaki, T., Mizutani, N., Watano, S., Yanagida, T., dan Kawai, T., 2010, Size Control of Magnetite Nanoparticles by Organic Solvent-Free Chemical Coprecipitation At Room Temperature, *Journal of Experimental Nanoscience*, 5, 251–262.
- Khammar, S., Bahramifar, N., dan Younesi, H., 2020, Preparation and Surface Engineering of CM-B-CD Functionalized Fe<sub>3</sub>O<sub>4</sub>@TiO<sub>2</sub> Nanoparticles for Photocatalytic Degradation of Polychlorinated Biphenyls (PCBs) from Transformer Oil, *J. Hazard. Mater.*, 394, 122422.
- Khashan, S., Dagher, S., Tit, N., Alazzam, A., dan Obaidat, I., 2017, Novel Method for Synthesis of Fe<sub>3</sub>O<sub>4</sub>@TiO<sub>2</sub> Core/Shell Nanoparticles, *Surf. Coatings Technol.*, 322, 92–98.

- Kiziltaş, H., Tekin, T., dan Tekin, D., 2020, Preparation and Characterization of Recyclable Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>@TiO<sub>2</sub> Composite Photocatalyst, and Investigation of the Photocatalytic Activity, *Chemical Engineering Communications*, 208:7, 1041-1053.
- Konstantinou, I.K. dan Albanis, T.A., 2004, TiO<sub>2</sub>-assisted Photocatalytic Degradation of Azo Dyes in Aqueous Solution: Kinetic and Mechanistic Investigations: A Review, *Appl. Catal. B Environ.*, 49, 1–14.
- Krstić, A., Stanković, H., Rubežić, M., Vasić, M., dan Zarubica, A., 2018, Chemical Modifications of Nanostructured Titania-based Materials in Photocatalytic Decomposition/Conversion of Various Organic Pollutants: A Short Review, *Adv. Technol.*, 7, 78–84.
- Kunarti, E.S., Roto, R., Pradipta, A.R., and Budi, I.S., 2017, Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>/TiO<sub>2</sub> Core-Shell Nanoparticles as Catalyst for Ag(I) Ions, *Orient. J. Chem.*, 33, 1933-1940
- Li, Z.D., Wang, H.L., Wei, X.N., Liu, X.Y., Yang, Y.F., dan Jiang, W.F., 2016, Preparation and Photocatalytic Performance of Magnetic Fe<sub>3</sub>O<sub>4</sub>@TiO<sub>2</sub> Core-Shell Microspheres Supported by Silica Aerogels from Industrial Fly Ash, *J. Alloys Compd.*, 659, 240–247.
- Listyarini, A., 2005, Pemanfaatan Limbah Styrofoam sebagai Flokulan dalam Proses Penjernihan Air melalui Proses Sulfonasi, *Buletin Penelitian*, 27, 14–20.
- Liu, H., Geng, B., Chen, Y., dan Wang, H., 2017, Review on the Aerogel-Type Oil Sorbents Derived from Nanocellulose, *ACS Sustain. Chem. Eng.*, 5, 49–66.
- Liu, J.F., Zhao, Z.S., dan Jiang, G. Bin, 2008, Coating Fe<sub>3</sub>O<sub>4</sub> Magnetic Nanoparticles with Humic Acid for High Efficient Removal of Heavy Metals in Water, *Environ. Sci. Technol.*, 42, 6949–6954.
- López, R. dan Gómez, R., 2012, Band-Gap Energy Estimation from Diffuse Reflectance Measurements on Sol-Gel and Commercial TiO<sub>2</sub>: A Comparative Study, *J. Sol-Gel Sci. Technol.*, 61, 1–7.
- Magalhães, F. dan Lago, R.M., 2009, Floating Photocatalysts Based on TiO<sub>2</sub> Grafted on Expanded Polystyrene Beads for the Solar Degradation of Dyes, *Sol. Energy*, 83, 1521–1526.
- Mahmoud, M.E., Abdou, A.E.H., dan Ahmed, S.B., 2016, Conversion of Waste Styrofoam into Engineered Adsorbents for Efficient Removal of Cadmium, Lead, and Mercury from Water, *ACS Sustain. Chem. Eng.*, 4, 819–827.
- Maity, D. dan Agrawal, D.C., 2007, Synthesis of Iron Oxide Nanoparticles Under Oxidizing Environment and Their Stabilization in Aqueous and Non-Aqueous Media, *Journal of Magnetism and Magnetic Materials*, 308, 46–55.
- Mascolo, M.C., Pei, Y., dan Ring, T.A., 2013, Room Temperature Co-Precipitation Synthesis of Magnetite Nanoparticles in a Large pH Window with Different Bases, *Materials (Basel)*, 6, 5549–5567.

- Matilainen, A., Gjessing, E.T., Lahtinen, T., Hed, L., Bhatnagar, A., dan Sillanpää, M., 2011, An Overview of the Methods Used in the Characterisation of Natural Organic Matter (NOM) in relation to Drinking Water Treatment, *Chemosphere*, 83, 1431–1442.
- Memon, S.Q., Bhangar, M.I., Hasany, S.M., dan Khuhawar, M.Y., 2006, Sorption Behavior of Impregnated Styrofoam for the Removal of Cd(II) Ions, *Colloids Surfaces A Physicochem. Eng. Asp.*, 279, 142–148.
- Montañez, J.P., Heredia, C.L., Sham, E.L., dan Farfán Torres, E.M., 2018, Photodegradation of Herbicide Metsulfuron-Methyl with TiO<sub>2</sub> Supported on Magnetite Particles Coated with SiO<sub>2</sub>, *J. Environ. Chem. Eng.*, 6, 7402–7410.
- Mota, A.L.N., Albuquerque, L.F., Beltrame, L.T.C., Chiavone-Filho, O., Machulek Jr, A., dan Nascimento, C.A.O., 2009, Advanced Oxidation Processes and Their Application in the Petroleum Industry: A Review, *Brazilian Journal of Petroleum and Gas*, 2, 122–142.
- Ng, M., Kho, E.T., Liu, S., Lim, M., dan Amal, R., 2014, Highly Adsorptive and Regenerative Magnetic TiO<sub>2</sub> for Natural Organic Matter (NOM) Removal in Water, *Chem. Eng. J.*, 246, 196–203.
- Ni, L., Li, Y., Zhang, C., Li, L., Zhang, W., dan Wang, D., 2016, Novel Floating Photocatalysts Based on Polyurethane Composite Foams Modified with Silver/Titanium Dioxide/Graphene Ternary Nanoparticles for the Visible-Light-Mediated Remediation of Diesel-Polluted Surface Water, *J. Appl. Polym. Sci.*, 133, 1–9.
- Ningaraju, S., Gnana Prakash, A.P., dan Ravikumar, H.B., 2018, Studies on Free Volume Controlled Electrical Properties of PVA/NiO and PVA/TiO<sub>2</sub> Polymer Nanocomposites, *Solid State Ionics*, 320, 132–147.
- Niu, J., Ding, S., Zhang, L., Zhao, J., dan Feng, C., 2013, Chemosphere Visible-Light-Mediated Sr-Bi<sub>2</sub>O<sub>3</sub> Photocatalysis of Tetracycline: Kinetics, Mechanisms and Toxicity Assessment, *Chemosphere*, 93, 1–8.
- Nuryono, N., Rosiati, N.M., Rusdiarso, B., Sakti, S.C.W., dan Tanaka, S., 2014, Coating of Magnetite with Mercapto Modified Rice Hull Ash Silica in A One-Pot Process, *J. Korean Phys. Soc.*, 3, 1–12.
- Opier, R.D.A. dan Siswanta, D., 2020, Synthesis of polyelectrolyte complex (PEC) membrane chitosan- polystyrene sulfonate (PSS) from styrofoam waste as adsorbents of Cd (II) and Pb (II) ions, *IOP Conf. Ser. Earth Environ. Sci.*, 483, 012028.
- Patra, N., Salerno, M., Cozzoli, P.D., dan Athanassiou, A., 2013, Surfactant-Induced Thermomechanical and Morphological Changes in TiO<sub>2</sub>-Polystyrene Nanocomposites, *J. Colloid Interface Sci.*, 405, 103–108.

- Pourzad, A., Sobhi, H.R., Behbahani, M., Esrafil, A., Kalantary, R.R., dan Kermani, M., 2020, Efficient Visible Light-Induced Photocatalytic Removal of Paraquat Using N-doped TiO<sub>2</sub>@SiO<sub>2</sub>@Fe<sub>3</sub>O<sub>4</sub> Nanocomposite, *Journal of Molecular Liquids*, 299, 112167.
- Priya, D.N., Modak, J.M., dan Raichur, A.M., 2009, LbL Fabricated Poly(Styrene Sulfonate)/TiO<sub>2</sub> multilayer Thin Films for Environmental Applications, *ACS Appl. Mater. Interfaces*, 1, 2684–2693.
- Pyrz, W.D. dan Buttrey, D.J., 2008, Particle Size Determination Using TEM: A Discussion of Image Acquisition and Analysis for the Novice Microscopist, *Langmuir*, 24, 11350–11360.
- Qiao, K., Tian, W., Bai, J., Wang, L., Zhao, J., Du, Z., dan Gong, X., 2019, Application of Magnetic Adsorbents Based on Iron Oxide Nanoparticles for Oil Spill Remediation: A Review, *J. Taiwan Inst. Chem. Eng.*, 97, 227–236.
- Qiu, H., Zhang, R., Yu, Y., Shen, R., dan Gao, H., 2020, BiOI-on-SiO<sub>2</sub> Microspheres: A Floating Photocatalyst for Degradation of Diesel Oil and Dye Wastewater, *Sci. Total Environ.*, 706, 136043.
- Rajak, A., Munir, M.M., Abdullah, M., dan Khairurrijal, 2015, Photocatalytic Activities of Electrospun TiO<sub>2</sub>/Styrofoam Composite Nanofiber Membrane in Degradation of Waste Water, *Mater. Sci. Forum*, 827, 7–12.
- Rasalingam, S., Kibombo, H.S., Wu, C.M., Budhi, S., Peng, R., Baltrusaitis, J., dan Koodali, R.T., 2013, Influence of Ti-O-Si Hetero-linkages in the Photocatalytic Degradation of Rhodamine B, *Catal. Commun.*, 31, 66–70.
- Reddy, K.M., Manorama, S. V, dan Reddy, A.R., 2002, Bandgap Studies on Anatase Titanium Dioxide Nanoparticles, *Mater. Chem. Phys.*, 78, 239–245.
- Riaz, S. dan Park, S.J., 2020, An Overview of TiO<sub>2</sub>-based Photocatalytic Membrane Reactors for Water and Wastewater Treatments, *J. Ind. Eng. Chem.*, 84, 23–41.
- Ruziwa, D., Chaukura, N., Gwenzi, W., dan Pumure, I., 2015, Removal of Zn<sup>2+</sup> and Pb<sup>2+</sup> ions from Aqueous Solution Using Sulphonated Waste Polystyrene, *J. Environ. Chem. Eng.*, 3, 2528–2537.
- Sabir, S., 2015, Approach of Cost-Effective Adsorbents for Oil Removal from Oily Water, *Crit. Rev. Environ. Sci. Technol*, 45, 1916–1945.
- Salamat, S., Younesi, H., dan Bahramifar, N., 2017, Synthesis of Magnetic Core-Shell Fe<sub>3</sub>O<sub>4</sub>@TiO<sub>2</sub> Nanoparticles from Electric Arc Furnace Dust for Photocatalytic Degradation of Steel Mill Wastewater, *RSC Adv.*, 7, 19391–19405.
- Saleem, J., Adil Riaz, M., dan Gordon, M., 2018, Oil Sorbents from Plastic Wastes and Polymers: A Review, *J. Hazard. Mater.*, 341, 424–437.

- Sandhu, S., Krishnan, S., Karim, A. V, dan Shriwastav, A., 2020, Photocatalytic Denitrification of Water Using Polystyrene Immobilized TiO<sub>2</sub> as Floating Catalyst, *J. Environ. Chem. Eng.*, 8, 104471.
- Shahrezaei, F., Mansouri, Y., Akbar, A., Zinatizadeh, L., Akhbari, A., Zinatizadeh, A.A.L., dan Akhbari, A., 2012, Process Modeling and Kinetic Evaluation of Petroleum Refinery Wastewater Treatment in A Photocatalytic Reactor Using TiO<sub>2</sub> Nanoparticles, *Powder Technol.*, 221, 203–212.
- Shahshojaei, M., Behniafar, H., dan Shaabanzadeh, M., 2014, Preparation and Characterization of Polystyrene/TiO<sub>2</sub> Core-shell Nanospheres via Suspension Technique, *Adv. Mater. Res.*, 829, 120–125.
- Shayegan, Z., Lee, C.S., dan Haghghat, F., 2018, TiO<sub>2</sub> Photocatalyst for Removal of Volatile Organic Compounds in Gas Phase – A Review, *Chem. Eng. J.*, 334, 2408–2439.
- Shi, F., Li, Y., Wang, H., dan Zhang, Q., 2012, Formation of Core/Shell Structured Polystyrene/Anatase TiO<sub>2</sub> Photocatalyst Via Vapor Phase Hydrolysis, *Appl. Catal. B Environ.*, 123–124, 127–133.
- Sivagami, K., Anand, D., Divyapriya, G., dan Nambi, I., 2019, Treatment of Petroleum Oil Spill Sludge Using the Combined Ultrasound and Fenton Oxidation Process, *Ultrason. Sonochem.*, 51, 340–349.
- Stasinakis, A.S., 2008, Use of Selected Advanced Oxidation Processes (AOPs) for Wastewater Treatment - A Mini Review, *Glob. Nest J.*, 10, 376–385.
- Stepnowski, P., Siedlecka, E.M., Behrend, P., dan Jastorff, B., 2002, Enhanced Photo-Degradation of Contaminants in Petroleum Refinery Wastewater, *Water Res.*, 36, 2167–2172.
- Tedsree, K., Temnuch, N., Sriplai, N., and Pinitsoontorn, S., 2017, Ag Modified Fe<sub>3</sub>O<sub>4</sub>@TiO<sub>2</sub> Magnetic Core-Shell Nanocomposites for Photocatalytic Degradation of Methylene Blue, *Mater. Today Proc.*, 4, 6576–6584.
- Teixeira, A.P.C., Araujo, M.H., Oliveira, L.C.A., Amorim, C.C., dan Lago, R.M., 2012, Iron: a Versatile Element to Produce Materials for Environmental Applications, *J. Braz. Chem. Soc.*, 23, 1579–1593.
- Tony, M.A., Purcell, P.J., dan Zhao, Y., 2012, Oil Refinery Wastewater Treatment Using Physicochemical, Fenton and Photo-Fenton Oxidation Processes, *J. Environ. Sci. Heal. - Part A Toxic/Hazardous Subst. Environ. Eng.*, 47, 435–440.
- Tony, M.A., Zhao, Y.Q., Purcell, P.J., dan El-Sherbiny, M.F., 2009, Evaluating the Photo-catalytic Application of Fenton's Reagent Augmented with TiO<sub>2</sub> and ZnO for the Mineralization of An Oil-Water Emulsion, *J. Environ. Sci. Heal. Part A*, 44, 488–493.
- Viezbicke, B.D., Patel, S., Davis, B.E., dan Birnie, D.P., 2015, Evaluation of the Tauc Method for Optical Absorption Edge Determination: ZnO Thin Films as a Model System, *Phys. Status Solidi, B*, 252, 1700–1710.

- Wahyuni, E.T., Roto, R., Novarita, D., Suwondo, K.P., dan Kuswandi, B., 2019, Preparation of TiO<sub>2</sub>/AgNPs By Photodeposition Method Using Ag(I) Present in Radiophotography Wastewater and Their Antibacterial Activity in Visible Light Illumination, *J. Environ. Chem. Eng.*, 7, 103178.
- Wahyuni, E.T., Suherman, S., Setyawati, D., Puspita, R., dan Mudasir, M., 2020, Photocatalytic Activity of TiO<sub>2</sub>/SiO<sub>2</sub> Prepared from Silica Contained in Volcanic Ash for Ammonia Removal, *Rasayan J. Chem.*, 13, 574–584
- Wang, R., Wang, X., Xi, X., Hu, R., dan Jiang, G., 2012, Preparation and Photocatalytic Activity of Magnetic Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>/TiO<sub>2</sub> Composites, *Adv. Mater. Sci. Eng.*, 2012, 1–8
- Wang, Xin, Wang, W., Wang, Xuejiang, Zhao, J., Zhang, J., dan Song, J., 2016, Insight into Visible Light-Driven Photocatalytic Degradation of Diesel Oil by Doped TiO<sub>2</sub>-PS Floating Composites, *Environ. Sci. Pollut. Res.*, 23, 18145–18153
- Wang, Xuejiang, Wang, J., Zhang, J., Louangsouphom, B., Song, J., Wang, Xin, dan Zhao, J., 2017, Synthesis of Expanded Graphite C/C Composites (EGC) based Ni-N-TiO<sub>2</sub> Floating Photocatalysts for In Situ Adsorption Synergistic Photocatalytic Degradation of Diesel Oil, *J. Photochem. Photobiol. A Chem.*, 347, 105–115
- Wright, L. dan Reid, L., 2017, Classification of Weathered Kerosene and Diesel Fuel using Passive Headspace Concentration with Activated Charcoal Strip and Statistical Analysis Technique, *J. Forensic Res.*, 08, 1000403
- Xing, Z., Zhang, J., Cui, J., Yin, J., Zhao, T., Kuang, J., dkk., 2018, Recent Advances In Floating TiO<sub>2</sub>-Based Photocatalysts for Environmental Application, *Appl. Catal. B Environ.*, 225, 452–467.
- Xuan, S., Jiang, W., Gong, X., Hu, Y., dan Chen, Z., 2009, Magnetically Separable Fe<sub>3</sub>O<sub>4</sub>/TiO<sub>2</sub> Hollow Spheres: Fabrication and Photocatalytic Activity, *J. Phys. Chem. C*, 113, 553–558.
- Xue, C., Zhang, Q., Li, J., Chou, X., Zhang, W., Ye, H., dkk, 2013, High Photocatalytic Activity of Fe<sub>3</sub>O<sub>4</sub>-SiO<sub>2</sub>-TiO<sub>2</sub> Functional Particles with Core-Shell Structure, *J. Nanomater.*, 2013, 1–8.
- Yamakata, A. dan Vequizo, J.J.M., 2019, Curious Behaviors of Photogenerated Electrons and Holes At the Defects on Anatase, Rutile, and Brookite TiO<sub>2</sub> Powders: A Review, *J. Photochem. Photobiol. C Photochem. Rev.*, 40, 234–243.
- Yang, S.Z., Jin, H.J., Wei, Z., He, R.X., Ji, Y.J., Li, X.M., dan Yu, S.P., 2009, Bioremediation of Oil Spills in Cold Environments: A Review, *Pedosphere*, 19, 371–381.
- Yu, J., Yu, J.C., dan Zhao, X., 2002, The Effect of SiO<sub>2</sub> Addition on the Grain Size and Photocatalytic Activity of TiO<sub>2</sub> Thin Films, *J. Sol-Gel Sci. Technol.*, 24, 95–103.

- Yu, X., Liu, S., dan Yu, J., 2011, Superparamagnetic  $\Gamma$ -Fe<sub>2</sub>O<sub>3</sub>@SiO<sub>2</sub>@TiO<sub>2</sub> Composite Microspheres with Superior Photocatalytic Properties, *Appl. Catal. B Environ.*, 104, 12–20.
- Zhang, B., Matchinski, E.J., Chen, B., Ye, X., Jing, L., dan Lee, K., 2019, Marine oil spills-oil pollution, sources and effects, *World Seas: An Environmental Evaluation Volume III: Ecological Issues and Environmental Impacts*. Elsevier Ltd., pp. 391–406.
- Zhang, J., Zhou, P., Liu, J., dan Yu, J., 2014, New Understanding of the Difference of Photocatalytic Activity among Anatase, Rutile and Brookite TiO<sub>2</sub>, *Phys. Chem. Chem. Phys.*, 16, 20382
- Zhang, L., Dong, W.F., dan Sun, H.B., 2013, Multifunctional Superparamagnetic Iron Oxide Nanoparticles: Design, Synthesis and Biomedical Photonic Applications, *Nanoscale*, 5, 7664–7684
- Zheng, Y.H., Cheng, Y., Bao, F., dan Wang, Y.S., 2006, Synthesis and Magnetic Properties of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles, *Materials Research Bulletin*, 41, 525–529.