

## DAFTAR PUSTAKA

- Anonim, 2019, *British Petroleum Statistical Review of World Energy* London, 6<sup>th</sup> Ed., British Petroleum Co., London.
- Arenas, B. E. S., Strini, A., Schiavi, L., Bassi, A. L., Russo, V., Curto, B. D., Diamanti, M. V., and Peddeferri, M., 2018, Photocatalytic Activity of Nanotubular TiO<sub>2</sub> Films Obtained by Anodic Oxidation: A Comparison in Gas and Liquid Phase, *Materials.*, 11(4), 488-490.
- Banisharif, A., Elahi, S.H., Firooz, A.A., Khodadadi, A. A., and Mortazavi, Y., 2013, TiO<sub>2</sub>/Fe<sub>3</sub>O<sub>4</sub> Nanocomposite Photocatalysts for Enhanced Photo-Decolorization of Congo Red Dye, *Int. J. Nanosci. Nanotechnol.*, 9, 4, 193-202.
- Barnola, J.M., Pimienta, P., Raynaud, D. and Korotkevich, Y.S., 1991, CO<sub>2</sub>-Climate Relationship as Deduce from The Vostok Ice Core: A Re-Examination Base on A New Measurement and On A Re-Evaluation of The Air Dating, *Tellus*, 43B, 2, 83-90.
- Bepari, R.A, Bharali, P., and Das, B.K., 2017, Controlled Synthesis of  $\alpha$ - and  $\gamma$ - Fe<sub>2</sub>O<sub>3</sub> Nanoparticles Via Thermolysis of PVA Gels and Studies on  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> Catalyzed Styrene Epoxidation, *J. Saudi. Chem. Soc.*, 21, S170-S178
- Beydoun, D., Amal, R., Low, G., and McEvoy, S., 2003, Novel Photocatalyst: Titania-Coated Magnetite. Activity and Photodissolution, *J. Phys. Chem. B.*, 18(104), 4387–4396.
- Binas, V., Veneieri, D., Kotzias, D., and Kiriakidis, G., 2017, Modified TiO<sub>2</sub> Based Photocatalysts for Improved Air and Health Quality, *J. Materiomics.*, 3(1), 3-16.
- Blaney, L., 2007, Magnetite: Properties, Synthesis and Applications, *Lehigh Review*, 15(5), 33-81.
- Centi, G., and van Santen, R. A., 2008, *Catalysis for renewables*, Wiley, Weinheim.
- Cheng, J. P., Ma, R., Li, M., Wu, J.S., Liu, F., and Zhang, X.B., 2012, Anatase Nanocrystals Coating on Silica-Coated Magnetite: Role of Polyacrylic acid treatment and its photocatalytic properties, *J. Chem. Eng*, 210, 80-86.
- Cheraghipour, E., Javadpour, S., and Mehdizadeh, A. R., 2012, Citrate Capped Superparamagnetic Iron Oxide Nanoparticles Used for Hyperthermia Therapy, *J. Biomed. Sci. Eng.*, 5(12), 715-719.

- Chien, W.-C., Yu, Y.-Y., Chen, P.-K., and Yu, H.-H., 2011, Microwave-Assisted Synthesis and Characterization of Poly(acrylic)/SiO<sub>2</sub>–TiO<sub>2</sub> Core–Shell Nanoparticle Hybrid Thin Films, *Thin Solid Films.*, 519, 5274-5279.
- Corbiere, T. C., Ressnig, D., Giordano, C., and Antonietti, M., 2013, Focused radiation heating for Controlled High Temperature Chemistry, Exemplified with The Preparation of Vanadium Nitride Nanoparticles, *RSC Adv.*, 3, 15337–15343.
- Corma, A., and Garcia, H., 2013, Photocatalytic Reduction of CO<sub>2</sub> for Fuel Production: Possibilities and Challenges, *J. Catal.*, 308, 168-175.
- Cotton, F., and Wilkinson, G., 1999, *Advanced Inorganic Chemistry*, 6<sup>th</sup> Ed., Jhon Wiley and Sons, New York.
- Das, S. and Daud, W. M. A. W., 2014, A Review on Advances in Photocatalysts Towards CO<sub>2</sub> Conversion, *RSC Adv.*, 4, 20856-20893.
- de Lasa, H., Serrano, B., and Salaiques, M., 2005, *Photocatalytic Reaction Engineering*, Springer, USA.
- Diebold, U., 2003, The Surface Science of Titanium Dioxide, *Surf. Sci. Rep.*, 48, 53-229.
- Dimitrijevic, N.M., Vijayan, B.K., Poluektov, O.G., Rajh, T., Gray, K.A., He, H. and Zapol, P., 2011, Role of Water and Carbonates in Photocatalytic Transformation of CO<sub>2</sub> to CH<sub>4</sub> on Titania, *J. Am. Chem. Soc.*, 133, 3964-3971.
- Dimitrijevic, N.M., Vijayan, B.K., Poluektov, O.G., Rajh, T., Gray, K.A., He, H. and Zapol, P., 2011, Role of Water and Carbonates in Photocatalytic Transformation of CO<sub>2</sub> to CH<sub>4</sub> on Titania, *J. Am. Chem. Soc.*, 133, 3964-3971.
- Dutta, S., 2012, Catalytic materials that improve selectivity of biomass conversions, *RSC Adv.*, 2(33), 12575–12593.
- Fletcher, C., Jiang, Y., Amal, R., 2015, Production of Formic Acid from CO<sub>2</sub> Reduction by Means of Potassium Borohydride at Ambient Conditions, *Chem. Eng. Sci.*, 137, 301-307.
- Fu, R., Jin, X., Liang, J., Zheng, W., Zhuang, J., and Yang, W., 2011, Preparation of Nearly Monodispersed Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub> Composite Particles from Aggregates of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles, *J. Mater. Chem.*, 21, 15352-15356.

- Ghasemzadeh, M. A., Ghomi, J. S., and Molaei, H., 2012, Fe<sub>3</sub>O<sub>4</sub> nanoparticles: As an efficient, green and magnetically reusable catalyst for the one-pot synthesis of 1,8-dioxo-decahydroacridine derivatives under solvent-free conditions, *C. R. Chim.*, 15(11-12), 969-974.
- Gomes, C.D.N., Jacquet, O., Villiers, C., Thuery, P., Ephritikhine, M. and Cantat, T., 2012, A Diagonal Approach to Chemical Recycling of Carbondioxide: Organocatalytic Transformation for The Reductive Fuctionalization of CO<sub>2</sub>, *Angew. Chem. Int. Ed.*, 51, 187-190.
- Guan, X., Zhou, G., Xue, W., Quan, Z. -Y., Xu, X., 2016, The Investigation of Giant Magnetic Moment in Ultrathin Fe<sub>3</sub>O<sub>4</sub> Films, *APL Mater.*, 4(3), 36104(1-6).
- Habisreutinger, S.N., Schimdt-Mende, L., and Stolarczyk, J.K., 2013, Photocatalytic Reduction of CO<sub>2</sub> on TiO<sub>2</sub> and Other Semiconductors, *Angew. Chem. Int. Ed.*, 52(29), 7372-7408.
- Hirayama, J., Kondo, H., Miura, Y., Abe, R. and Kamiya, Y., 2012, Highly Effective Photocatalytic System Comprising Semiconductor Photocatalyst and Supported Bimetallic Non-Photocatalyst for Selective Reduction of Nitrate to Nitrogen in Water, *Catal. Commun.*, 20, 99-102.
- Hoffmann, M.R., Martin, S.T., Choi, W. and Bahnemann, D.W., 1995, Environmental Applications of Semiconductor Photocatalysis, *Chem. Rev.*, 95, 69-96.
- Hsu, Y.-K., Yu, C.-H., Chen, Y.-C., and Lin, Y.-G., 2012, Hierarchical Cu<sub>2</sub>O Photocathodes with Nano/Microspheres for Solar Hydrogen Generation, *RSC Adv.*, 2012, 2, 12455–12459.
- Indermuhle, A., Monnin, E., Stauffer, B. and Stocker, T.F., 2000, Atmospheric CO<sub>2</sub> Concentration from 60 to 20 kyr BP from The Taylor Dome ice core, Antarctica, *Geophys. Res. Lett.*, 27, 5, 735-738.
- Jaeglé, L., Steinberger, L., Martin, R. V., and Chance, K., 2005, Global Partitioning of NO<sub>x</sub> Sources Using Satellite Observations: Relative Roles of Fossil Fuel Combustion, Biomass Burning and Soil Emissions, *Faraday Discuss.*, 130, 407–423.
- Jamel M., Rahman, A. A., and Shamsuddin, A., 2013, Advances In The Integration Of Solar Thermal Energy With Conventional And Non-Conventional Power Plants, *Renewable Sustainable Energy Rev.*, 20, 71–81.

- Kaltenhauser, V., Rath, T., Edler, M., Reichmann, A., Trimmel, G., 2013, Exploring Polymer/Nanoparticle Hybrid Solar Cells in Tandem Architecture, *RSC Adv.*, 3, 18643–18650.
- Kenarsari, S. D., Yang, D., Jiang, G., Zhang, S., Wang, J., Russell, A. G., Wei, Q., and Fan, M., 2013, Review of Recent Advances in Carbon Dioxide Separation and Capture, *RSC Adv.*, 3(45), 22739–22773.
- Kunarti E.S., Wahyuni, E.T. dan Hapsari, I.A, 2011, Inkorporasi Titania pada Matriks Silika dan Pengaruhnya terhadap Aktivitas Fotokatalitik Titania pada Degradasi Metil Oranye, *Jurnal Manusia dan Lingkungan*, 18 (1), 1-8.
- 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(4), 1933-1940.
- Kwon, S. Fan, M., Cooper, A.T., and Yang, H., 2008, Photocatalytic Applications of Micro- and Nano-TiO<sub>2</sub> in Environmental Engineering, *Crit. Rev. Env. Sci. Tec*, 8(3), 197–226.
- Lacis, A. A., Schmidt, G. A., Rind, D., and Ruedy, R. A., 2010, Atmospheric CO<sub>2</sub>: Principal Control Knob Governing Earth's Temperature, *Science*, 330(6002), 356–359.
- Lakhmanan, B. R., 1957, Infrared Absorption Spectrum of Sodium Citrate, *J. Indian Inst. Sci.*, 39(1), 1-3.
- Lazar, M. A., Varghese, S., and Nair, S. S., 2012, Photocatalytic Water Treatment by Titanium Dioxide:Recent Updates, *Catalysts*, 2, 572-601.
- Lee, J., Back, H., Kong, J., Kang, H., Suhee, S., Hongsuk, S., Kang, S.-O., and Lee, K., 2013, Seamless Polymer Solar Cell Module Architecture Built Upon Self-Aligned Alternating Interfacial Layers, *Energy Environ. Sci.*, 6(4), 1152–1157.
- Li, H., Dai Y., Köhler M., Wang R., 2013, Simulation and Parameter Analysis of A Two-Stage Desiccant Cooling/Heating System Driven by Solar Air Collectors, *Energy Convers. Manage.*, 67, 309–317.
- Lin ,Y., Geng, Z., Cai, H., Ma, L., Chen, J., Zeng, J., Pan, N., and Wang, X., 2012, Ternary Graphene–TiO<sub>2</sub>–Fe<sub>3</sub>O<sub>4</sub> Nanocomposite as A Recollectable Photocatalyst with Enhanced Durability, *Eur. J. Inorg. Chem*, 2012 (28) , 4439–4444.

- Liu, B.-J., Torimoto, T., and Yoneyama, H., 1998, Photocatalytic Reduction of Carbon Dioxide in The Presence of Nitrate Using TiO<sub>2</sub> Nanocrystal Photocatalyst Embedded in SiO<sub>2</sub> Matrices, *J. Photochem. Photobiol., A*, 115, 227–230.
- Liu, C., Dasgupta, N. P., Yang, P., 2014, Semiconductor Nanowires for Artificial Photosynthesis, *Chem. Mater.*, 26, 415–422.
- Liu, H., Jia, Z., Ji, S., Zheng, Y., Li, M., and Yang, H., 2011, Synthesis of TiO<sub>2</sub>/SiO<sub>2</sub>@Fe<sub>3</sub>O<sub>4</sub> Magnetic Microspheres and Their Properties of Photocatalytic Degradation Dye stuff, *Catal. Today*, 175, 293-298.
- Liu, Q., Zhou, Y., Tian, Z., Chen, X., Gao, J., and Zou, Z., 2012, Zn<sub>2</sub>GeO<sub>4</sub> Crystal Splitting Toward Sheaf-like, Hyperbranched Nanostructures and Photocatalytic Reduction of CO<sub>2</sub> into CH<sub>4</sub> Under Visible Light after Nitridation, *J. Mater. Chem.*, 22(5), 2033–2038.
- Liu, S., Zhang, H., Xu, Z., Zhong, H. and Jin, H., 2012, Nitrogen-Doped Carbon Xerogel as High Active Oxygen Reduction Catalyst for Direct Methanol Alkaline Fuel Cell, *Int. J. Hydrogen Energy*, 37, 19065-19072.
- Loh, K. S., Lee, Y. H., Musa, A., Salmah, A. A., and Zamri, I., 2008, Use of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles for Enhancement of Biosensor Response to the Herbicide 2,4-Dichlorophenoxyacetic Acid, *Sensors*, 8(9), 5775–5791.
- Ma, S.S.K., Maeda, K, Abe, R. and Domen, K., 2012, Visible-Light-Driven Nonsacrificial Water Oxidation over Tungsten Trioxide Powder Modified with Two Different Cocatalyst, *Energy Environ. Sci.*, 5, 8390-8397.
- Mahdavi, M., Ahmad, M., Haron, M., and Namwar, F., 2013, Synthesis, Surface Modification and Characterisation of Biocompatible Magnetic Iron Oxide Nanoparticles for Biomedical Applications, *J. Mol.*, 18, 7533-7548.
- Malgahaes, P., Andrade, L., Nunes, O. C., and Mendes, A., 2017, Titanium Dioxide Photocatalysis: Fundamentals and Application on Photoinactivation, *Rev. Adv. Mater. Sci.*, 51, 91-129.
- Mansouri, N. Y., Crookes, R. J., Korakianitis, T., 2013, A Projection of Energy Consumption and Carbon Dioxide Emissions in The Electricity Sector for Saudi Arabia: The Case for Carbon Capture and Storage and Solar Photovoltaics, *Energy Policy*, 63, 681–695.
- McCann, D.M., Lesthaeghe, D., Kletnieks, P.W., Guenther, D.R., Hayman, M.J., Speybroeck, V.V., Waroquier, M. and Haw, J.F., 2008, A Complete Catalytic

Cycle for Supramolecular Methanol-to-Olefins Conversion by Linking Theory with Experiment, *Angew. Chem. Int. Ed.*, 120, 5257-5260.

Mekhilef, S., Siga, S., Saidur, R., 2011, A review on palm oil biodiesel as a source of renewable fuel, *Renewable Sustainable Energy Rev.*, 15(4), 1937–1949.

Melian-Cabrera, I., Granados, M. L., and Fierro, J. L. G., 2002, Reverse Topotactic Transformation of a Cu–Zn–Al Catalyst during Wet Pd Impregnation: Relevance for the Performance in Methanol Synthesis from CO<sub>2</sub>/H<sub>2</sub> Mixtures, *J. Catal.*, 210(2), 273-284.

Miyoshi, H. and Yoneyama, H., 1989, Photochemical of Iron Oxide Incorporated in Clay Interlayers, *J. Chem. Soc., Faraday Trans.*, 1, 85(7), 1873-1880.

Mohanraj. K., and Sivakumar. G., (2017), Synthesis of γ-Fe<sub>2</sub>O<sub>3</sub>, Fe<sub>3</sub>O<sub>4</sub> and Copper Doped Fe<sub>3</sub>O<sub>4</sub> Nanoparticles by Sonochemical Method, *Sains Malays.*, 46(10), 1935–1942.

Mori, K., Yamashita, H., and Anpo, M., 2012, Photocatalytic Reduction of CO<sub>2</sub> with H<sub>2</sub>O on Various Titanium Oxide Photocatalysts, *RSC Adv.*, 2, 3165-3172.

Nakata, K., and Fujishima, A., 2012, TiO<sub>2</sub> Photocatalysis: Design and applications, *J. Photochem. Photobiol., C*, 13(3), 169-189.

Nakazawa, T., Machida, T., Esumi, K., Tanaka, M., Fujii, Y., Aoki, S. and Watanabe, O., 1993, Measurements of CO<sub>2</sub> and CH<sub>4</sub> Concentrations in Air in A Polar Ice Core, *J. Glaciol.*, 39, 132, 209-215.

Nigam, S., Barick, K. C., and Bahadur, D., 2011, Development of Citrate-Stabilized Fe<sub>3</sub>O<sub>4</sub> Nanoparticles: Conjugation and Release of Doxorubicin for Therapeutic Applications, *J. Magn. Magn. Mater.*, 323, 237–243.

Olah, G.A., 2005, Beyond Oil and Gas: The Methanol Economy, *Angew. Chem. Int. Ed.*, 44, 2636-2639.

Ong, W., Gui, M. M., Chai, S., and Mohamed, A. R., 2013, Direct growth of Carbon Nanotubes on Ni/TiO<sub>2</sub> As Next Generation Catalysts for Photoreduction of CO<sub>2</sub> to Methane by Water Under Visible Light Irradiation, *RSC Adv.*, 3(14), 4505-4509.

Pang, S. C., Kho, S.Y., and Chin, S.F., 2012, Fabrication of Magnetite/Silica/Titania Core-Shell Nanoparticles, *J. Nanomater.*, 2012, 1-6.

- Panwar, N., Kaushik, S., Kothari, S., 2011, Role of renewable energy sources in environmental protection: A review, *Renewable Sustainable Energy Rev.*, 15(3), 1513–1524.
- Pastrana-Martinez, L. M., Silva, A. M. T., Fonseca, N. N. C., Vaz, J. R., Figueiredo, J. L., and Faria, J. L., 2016, Photocatalytic Reduction of CO<sub>2</sub> with Water into Methanol and Ethanol Using Graphene Derivative–TiO<sub>2</sub> Composites: Effect of pH and Copper(I) Oxide, *Top. Catal.*, 59(15-16), 1279-1291.
- Pellizetti, E., Pramauro, E., Minero, C., and Serpone, N., 1990, Sunlight Photocatalytic Degradation of Organic Pollutants in Aquatic Systems, *J. Waste Manag.*, 10, 1, 65-71.
- Peterson, A. A., and Nørskov, J. K., 2012, Activity Descriptors for CO<sub>2</sub> Electroreduction to Methane on Transition-Metal Catalysts, *J. Phys. Chem. Lett.*, 3, 251–258.
- Putri, A., 2012, Aktivitas Fotokatalis TiO<sub>2</sub>-lignin pada Detoksi Ion Hg(II) dengan Metode Fotoreduksi: Pengaruh Massa Fotokatalis dan pH Larutan, *Skripsi*, FMIPA UGM, Yogyakarta.
- Rahimi, R., Rabbani, M., and Kareh, G., 2015, *Comparative Study of Photocatalytic Activity for Three Type Fe<sub>3</sub>O<sub>4</sub> Prepared in Presence of Different Hydrolysis Agent*, 1-30 November 2015, Basel.
- Rajeshwar, K., dan Ibanez, J.G., 1997, *Environmental Electrochemistry: Fundamentals and Applications in Pollution Abatement*, Academic Press, San Diego.
- Rakopoulos, C.D. and Kyritsis, D.C., 2001, Comparative Second-Law Analysis of Internal Combustion Engine Operation for Methane, Methanol, and Dodecane Fuels, *Energy*, 26, 705-722.
- Ramadhan, M., Pradipta, A. R., and Kunarti, E. S., 2017, Synthesis of Fe<sub>3</sub>O<sub>4</sub>/TiO<sub>2</sub>-Co Nanocomposite as Model of Photocatalyst with Magnetic Properties, *Mater. Sci. Forum*, 901, 14-19.
- Ramanda, Y., 2017, Synthesis of Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>/TiO<sub>2</sub> Nanocomposite as Photocatalyst in CO<sub>2</sub> Indirect Reduction to Produce Methanol Fuel, *Skripsi*, FMIPA UGM, Yogyakarta.
- Sakakura, T., Choi, J. C., and Yasuda, H., 2007, Transformation of Carbon Dioxide. *Chem. Rev.*, 107, 2365- 2387.



- Salazar, M., 2010, Development and Application of Titanium Dioxide Coated Magnetic Particles for Photocatalytic Oxidation of Aqueous Phase Organic Pollutants, *Disertation*, Technischen Universität Berlin, Berlin.
- Schneider, J., Matsuoka, M., Takeuchi, M., Zhang, J., Horiuchi, Y., Anpo, M., and Bahnemann, D. W., 2014, Understanding TiO<sub>2</sub> Photocatalysis: Mechanisms and Materials, *Chem. Rev.*, 19(114), 9919-9986.
- Scubert, U., and Husing, N., 2000, *Synthesis of Inorganic Materials*, Wiley, Weinheim.
- Shafiullah, G., Amanullah, M., Shawkat Ali, A., Jarvis, D. and Wolfs, P. 2012, Prospects of Renewable Energy—A Feasibility Study in the Australian Context, *Renewable Energy*, 39, 183–197.
- Shen, L., Li, B., and Qiao, Y., 2018, Nanoparticles in Targeted Drug/Gene Delivery Systems, *Materials*, 11(2), 324-353
- Shen, Y. F., Tang, J., Nie, Z. H., Wang, Y. D., Ren, Y., and Zhuo, L., 209, Preparation and application of magnetic Fe<sub>3</sub>O<sub>4</sub> nanoparticles for wastewater purification, *Sep. Purif. Technol.*, 68, 312-319.
- Siregar, I., 2009, Preparasi Fotokatalis TiO<sub>2</sub>-Resin dan Uji Aktivitas pada Fotoreduksi Ion Ag(I), *Skripsi*, Departemen Kimia FMIPA UGM, Yogyakarta.
- Sivula, K., 2013, Metal Oxide Photoelectrodes for Solar Fuel Production, Surface Traps, and Catalysis, *J. Phys. Chem. Lett.*, 4(10), 1624–1633.
- Steel, K. M., Alizadehhesari, K., Balucan, R. D., and Basic, B., 2013, Conversion of CO<sub>2</sub> into Mineral Carbonates Using A Regenerable Buffer to Control Solution pH, *Fuel*, 111, 40-47.
- Sumerta, I. K., Wijaya, K., dan Tahir, I., 2003, Fotodegradasi Metilen Biru Menggunakan Katalis TiO<sub>2</sub>-Montmorilonit dan Sinar UV, *Seminar Nasional Pendidikan Kimia*, 19 Oktober 2002, Yogyakarta.
- Sun, M., Fu, W., Li, Q., Yin, G., Chi, K., Ma, J., Yang, L., Mu, Y., Chen, Y., and Su, S., 2014, Embedded CdS Nanorod Arrays in PbS Absorber Layers: Enhanced Energy Conversion Efficiency in Bulk Heterojunction Solar Cells, *RSC Adv.*, 4(14), 7178–7184.
- Suraini, H., 2012, Pengaruh Suhu Kalsinasi pada Preparasi TiO<sub>2</sub>-Lignin Terhadap Karakter dan Aktivitasnya dalam Proses Fotoreduksi Ag(I), *Skripsi*, Departemen Kimia FMIPA UGM, Yogyakarta.



- Takeda, N., Torimoto, T., and Yoneyama, H., 1999, Effect of Modernite Support on Photodegradation of Gaseous Organic Compound Over TiO<sub>2</sub> Photocatalyst, *Bull. Chem. Soc., Japan*, 72, 1615-1621.
- Tomita, O., Otsubo, T., Higashi, M., Ohtani, B. and Abe, R., 2016, Partial Oxidation of Alcohols on Visible-Light-Responsive WO<sub>3</sub> Photocatalyst Loaded with Palladium Oxide Cocatalyst, *Catal.*, 6, 1134-1144.
- Utubira, Y., Wijaya, K., Triyono, dan Sugiharto, E., 2006, Preparasi dan Karakterisasi TiO<sub>2</sub>-Zeolit Serta Pengujiannya pada Degradasi Limbah Industri Tekstil secara Fotokatalitik, *Indones. J. Chem.*, 6(3), 231-237.
- Vesselli, E., Rizzi, M., de Rogatis, L., Ding, X., Baraldi, A., Cornelli, G., Savio, L., Vattuone, L., Rocca, M., Fornasiero, P., Baldereschi, A., Perissi, M., 2010, Hydrogen Assisted Transformation of CO<sub>2</sub> on Nickel; The Role of Formate and Carbon Monoxide, *J. Phys. Chem. Lett.*, 1(1), 402–416
- Wenjun, F., Ling, Z., Chuqing, G., and Jiacheng, Z., 2008, Solid-phase Photocatalytic Degradation of Plastic with TiO<sub>2</sub> as Photocatalyst, *Prog. Chem.*, 20, 1, 19-25.
- West, W., and Duncan, A. B. F., 1956, *Chemical Applications of Spectroscopy*, Interscience Publishers, New York.
- Xiao, G., Xiao, P., Lee, S., and Webley, P. A., 2012, CO<sub>2</sub> Capture at Elevated Temperatures by Cyclic Adsorption Processes, *RSC Adv.*, 2(12), 5291–5297.
- Xie, S., Wang, Y., Zhang, Q., Deng, W., and Wang, Y., 2014, MgO- and pt-Promoted TiO<sub>2</sub> as An Efficient Photocatalyst for The Preferential Reduction of Carbon Dioxide in The Presence of Water, *ACS Catal.*, 4, 3644-3653.
- Xie, S., Zhang, Q., Liu, G., and Wang, Y., 2016, Photocatalytic and Photoelectrocatalytic Reduction of CO<sub>2</sub> Using Heterogeneous Catalysts with Controlled Nanostructures, *Chem. Commun.*, 52(1), 35-59.
- Xu, Y., and Langford, C. H., 1997, Photoactivity of Titanium Dioxide Supported on MCM41, Zeolite X, and Zeolite Y, *J. Phys. Chem. B*, 101 (16), 3115–3121.
- Xuan, S., Jiang, W., Gong, X., Hu, Y. and Hen, 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(2), 553-558.

- Yao, P., Zhong, S., and Shen, Z., 2015, TiO<sub>2</sub>/Haloysite Composites Codoped with Carbon and Nitrogen from Melamine and Their Enhanced Solar-Light-Driven Photocatalytic Performance, *Int. J. Photoenergy*, 2015, 1-8
- Yuan, Q., Li, N., Geng, W., Chi, Y., and Li, X., 2012, Preparation of Magnetically Recoverable Fe<sub>3</sub>O<sub>4</sub>@SiO<sub>2</sub>@meso-TiO<sub>2</sub> Nanocomposites with Enhanced Photocatalytic Ability, *Mater. Res. Bull.*, 47, 2396–2402.
- Zheng, J., Yu, Z., Ji, G., Lin, X., Lv, H., and Du, Y., 2014, Reduction Synthesis of Fe<sub>x</sub>O<sub>y</sub>@SiO<sub>2</sub> Core–Shell Nanostructure with Enhanced Microwave-Absorption Properties, *J. Alloys Compd.*, 602, 8-15.
- Zhou, Q. F., Zhang, Q. Q., Zhang, J. X., Zhang, L. Y., and Yao, X., 1996, Preparation and Optical Properties of TiO<sub>2</sub> Nanocrystalline Particles in SiO<sub>2</sub> Nano-Composites, *Matt. Lett.*, 39-42.
- Zhu, C., Zhang, M., Qiao, Y., Xiao, G., Zhang, F., and Chen, Y., 2010, Fe<sub>3</sub>O<sub>4</sub>/TiO<sub>2</sub> Core/Shell Nanotubes: Synthesis and Magnetic and Electromagnetic Wave Absorption Characteristics, *J. Phys. Chem. C*, 114 (39), 16229–16235.