DAFTAR PUSTAKA

Ali, N., Ali, F., Khurshid, R., Ikramullah, Ali, Z., Afzal, A., Bilal, M., Iqbal, H.M.N., and Ahmad, I., 2020, TiO_2 Nanoparticles and Epoxy-TiO_2 Nanocomposites: A Review of Synthesis, Modification Strategies, and Photocatalytic Potentialities, *J. Inorg. Organomet. Polym. Mater.*, 30(3), 1-18.

Alves, D.C.D., de Farias, B.S., Breslin, C., Pinto, L.A.D., and Junior, T.R.S.C., 2022, Carbon nanotube-based materials for environmental remediation processes, *Advance Materials for Sustainable Environmental Remediation*, 475-513.

Alosfur, F.K.M., Ouda, A.A., Ridha, N.J., and Abud, A.H., 2019, Structure and Optical Properties of TiO_2 Nanorods Prepared Using Polyol Solvothermal Method., *The 7thInternational Conference on Applieid Science and Technology (ICAST)*, October 25th, Bali.

Andita, K.R., Kurniawan, R., and Syoufian, A., 2019, Synthesis and Characterization of Cu-doped Zirconium Titanate as a Potential Visible-Light Responsive Photoctalyst, *Indones. J. Chem.*, 19, 761-766.

Asahi, R., Morikawa, T., Irie, H., And Ohwaka, T., 2014, Nitrogen-Doped Titanium Dioxide as Visible-Light-Sensitive Photocatalyst: Designs, Developments, and Prospects, *Chem.Rev*, 114 (19), 9824-9852.

Asahi, R., Morikawa, T., Ohwaki, T., Aoki, K., And Taga, Y., 2001, Visible-Light Photocatalysis in Nitrogen-Doped Titanium Oxides, *Science*, 5528 (293), 269-271.

Badli, N.A., Ali, R., Bakar, W.A.W.A., and Yuliati, L., 2017, Role of heterojunction $TiO_2/ZrO_2/ZrTi_2O_6/TiO_2$ photocatalyst towards the degrdation of paraquat dichloride and optimization study by Box-Behnken design, *Arab. J. Chem.*, 7(10), 935-943.

Brinker, C.J., Scherer, G.W., 2013, *Sol-Gel Science: The Physics and Chemistry of Sol-Gel Processing*, Academic Press, New York.

Bunaciu, A.A., Udristioiu, E.G., and Aboul-Enein, H.Y., 2015, X-Ray Diffraction: Instrumentation and Applications, *Crit. Rev. Anal. Chem.*, 45(4), 289-299.

Carp, O., Huisman, C.L., and Reller, A., 2004, Photoinduced Reactivity of Titanium Dioxide, *Prog. Solid. State. Ch.*, 32, 33-177.

Chakraborty, A.K., Gnaguli, S., and Sabur, M.A., 2023, Nitrogen doped Titanium Dioxide (N-TiO_2): Electronic Band Structure, Visible Light Harvesting, and Photocatalytic Applications, *J. Water. Process. Eng.*, 55, 1-17.

Chauhan, R., Kumar, A., and Chaudhary, R.P., 2012, Structural and Photocatalytic Studies of Mn *doped* TiO_2 Nanoparticles, *Spectrochimica. Acta.*, 98, 256-264.

Chithambararaj, A., Sanjini, N.S., Bose, A.C., and Velmathi, S., 2013, Flower-Like Hierarchical h-MoO_3: New Findings of Efficient Visible Light Driven Nano Photocatalyst for Methylene Blue Degradation, *Catal. Sci. Technol*, 3, 1405-1414.

Choi, J., Park, H., and Hoffmann, M.R., 2010, Effects of single metal ion-*doping* on the visible-light photoreactivity of TiO_2, *J.Phys.Chem. C*, 114, 783-792.

Chougala, L.S., Yatnatti, M.S., Linganagoudar, R.K., Kamble, R.R., and Kadadevarmath, J.S., 2017, a Simple Approach on Synthesis of TiO_2 Nanoparticles and its Application in Dye Sensitized Solar Cells, *J. Nano-Electron.*, 4(9), 1-6.

Chung, K.T., Fulk, G.E., and Andrews, W., 1981, Mutagenicity Testing of Some Commonly Used Dyes, *Appl. Environ. Microbiol.*, 4(42), 641-646.

Colovic, B., Kisic, D., Jokanovic, B., Rakocevic, B., Nasov, I., Petkoska, A.T., and Jokanovic, V., 2019, Wetting Properties of Titanium Oxides, Oxynitrides and Nitrides Obtained by DC and Pulsed Magnetron Sputtering and Cathodic Arc Evaporation, *Mater. Sci-Poland.*, 37(2), 1-9.

Deng, Q.R., Xia, X.H., Guo, M.L., Gao, TY., and Shao, G., 2011, Mn-doped TiO_2 nanopowders with remarkable visible light photocatalytic activity, *Mater. Lett.*, 65 (13), 2051-2054.

El-Sherbiny, S., Morsy, F., Samir, M., and Fouad, O.A., 2013, Synthesis, Characterization and Application of TiO_2 Nanopowders as Special Paper Coating Pigment, *Appl. Nanosci.*, 4(3), 305-313.

Elma, M., 2018, *Proses Sol Gel: Analisi, Fundamental, dan Aplikasi*., Lambung Mangkurat University Press, Banjarmasin.

Fu, X., Clark, L.A., Yang, Q., and Anderson, M.A., 1996, Enhanced Photocatalytic Performance of Titania-Based Binary Metal Oxides: TiO_2/SiO_2 and TiO_2/ZrO_2, *Environ. Sci. Technol*, 30, 647-653.

Gao, Y., Zhang, J., Jia, X., Wang, J., Chen, Z., and Xu, Y., 2017, Reactant Effect on Visible-Light Driven Photocatalytic Performance of Sol-Gel Derived Tetragonal ZrO_2 Nanoparticles, *J. Materresbull*, 93, 264-269.

Gasmi, A., Boudard, M., Zemni, S., Hippert, F., and Oumezzine, M., 2009, Influence of non-magnetic Ti^{4+} ion *doping* at Mn site on structural and magnetic properties of $La_{0.67}Ba_{0.33}MnO_3$, *J.Phys. D: Appl.Phys*, 42, 1-7.

Grumezescu, A.M., 2016, *Nanobiomaterial in Antimicrobial Therapy: Applications of Nanobiomaterials*, William Andrew Publishers, Oxford.

Guettai, N., and Ait Ammar, H., 2005, Photocatalytic Oidation of Methyl Orange in Presence of Titanium Dioxide in Aqueous Suspension Part I: Parametric Study, *Desalination*, 185, 427-437.

Hassan, N.S., Jalil, A.A., and Sawal, M.H., 2021, Effect of Calcination Temperature on Structure of Silica Doped on Zirconia for Photodegradation of 2-Chlorophenol, *Malay. J. Catal.*, 5, 19-24.

Hermawan, P., 2015, Sintesis Fe (II), Co (II), Dan Ni (II) Doped TiO_2 dengan Metode Sol-Gel serta Uji Fotoaktivitasnya pada Degradasi Metilen biru, *Disertasi*, Program Studi S3 Ilmu Kimia FMIPA UGM, Yogyakarta.

Horti, N.C., Kamatagi, M.D., Nataraj, S.K., Wari, M.N., and Inamdar, S.R., 2020, Structural and Optical Properties of Zirconium Oide (ZrO_2) Nanoparticles: Effect of Calcination Temperature, *Nano Ex*, 1(1), 1-10.

Islam, M.M., and Bredow, T., 2015, Rutile Band-Gap States Induced by *Doping* with Various Oxidation States, *J. Phys. Chem. C.*, 119, 5534-5541.

Jitan, S.A., Palmisano, G., and Garlisi, C., 2020, Synthesis and Surface Modification of TiO_2-Based Photocatalysts for the Conversion of CO_2, *Catalysts*, 10(2), 1-30.

Keerthana, S., Yuvakkumar, R., Ravi, G., Al-Sehemi, A.G., and Velauthapillai, D., 2022, Investigation of Optimum Mn Dopant Level on TiO_2 for Dye Degradation, *Chemosphere*, 306, 1-9.

Khajuria, P., Mahajan, R., and Prakash, R., 2021, Synthesis and Luminescent Properties of ZrO_2 and Dy^{3+}- Activated ZrO_2 Powders, *J. Mater Sci: Mater Electron*, 32, 27441-27448.

Khan, I., Saeed, K., Zekker, I., Zhang, B., Hendi, A.H., Ahmad, A., Ahmad, S., Zada, N., Ahmad, H., Shah, L.A., Shah, T., and Khan, I., 2022, Review on Methylene Blue: Its Properties, Uses, Toxicity and Photodegradation, *Water*, 14.

Khlyustova, A., Sirotkin, N., Kusova, T., Kraev, A., Titov, V., and Agafonov, A., 2020, Doped TiO_2: The Effect of *Doping* Element on Photocatalytic Activity, *Mater, Adv.*, 1(5), 1193-1201.

Kim, J.Y., Kim, C.S., Chang, H.K., and Kim, T.O., 2011, Synthesis and Characterization of N-*doped* TiO_2/ZrO_2 Visible Light Photocatalysts, *Adv. Powder Technol.*, 22, 443-338.

Kingery, W.D., Bowen, H.K., and Uhlmann, D.R., 1976, *Introduction to Ceramics*, Wiley and Sons, New York.

Koe, W.S., Lee, J.W., Chong, W.C., Pang, Y.L., and Sim, C.L., 2020, An overview of photocatalytic degradation: photocatalysts, mechanisms, and development of photocatalytic membrane, *Enviro Sci Pollut Res*, 27, 2522-2565.

Kumar, S., Bhunia, S., dan Ojha, A.K., 2015, Effect of calcination temperature on phase transformation, structural, and optical properties of sol-gel derived ZrO_2 nanostructure, *Physica E.*, 66, 74-80.

Lal, M., Sharma, P., and Ram, C., 2021, Calcination Temperature Effect on Titanium Oxide (TiO_2) Nanoparticles Synthesis, *Optik*, 241, 1-14.

Lau, W., Ismail, A.F., Isloor, A., And Al-Ahmed, A., 2019, *Advanced Nanomaterials for Membrance Synthesis and Its Applications*, Elsevier, Amsterdam.

Li, D., Chen, Y., Yin, F., Zhu, L., Li, J., and Ma, X., 2018, Facile syntesis of Mn/N-doped TiO_2 on wood-based activated carbon fiber as an efficient visible-light-driven photocatalyst, *J. Mater. Sci.*, 53, 11671-11683.

Li, W., Yun-yun, Z., and Cun-yi, S., 2013, Manganese Oxides Supported on Zirconium-Doped Titania for Low Temperature Selective Catalytic Reduction of NO, *J. Univ. Sci. Technol. B.*, 7(35), 922-928.

Mahy, J.G., Lejeune, L., Haynes, T., Lambert, S.D., Marcilli, R.H.M., Fustin, C., and Hermans, S., 2021, Eco-Friendly Colloidal Aqueous Sol-Gel Process for TiO_2 Synthesis: The Peptization Method to Obtain Crystalline and Photoactive Materials at Low Temperature, *Catalysts*, 11 (7), 1-29.

Mahmood, Q., Afzal, A., Siddiqi, H.M., and Habib, A., 2013, Sol-Gel Sybthesis of Tetragonal ZrO_2 Nanoparticles Stabilized by Crystallite Size and Oxygen Vacancy, *J. Solgel. Sci. Technol.*, 67, 670-674.

Moellmann, J., Ehrlich, S., Tonner, R., And Grimme, S., 2012, A DFT-D Study of Structural and Energetic Properties Of TiO_2 Modifications, *J. Phys. Condens. Matter.*, 24, 1-8.

Mohapatra, A.K., and Nayak, J., 2018, Anatase TiO_2 Powder: Synthesis, Characterization, and Application for Photocatalytic Degradation of 3,4-Dihydroxy Benzoic Acid, *Optik*, 156, 268-278.

Molinari, R., Argurio, P., Belladirta, M., and Palmisano, L., 2015, Photocatalytic Membrance Reactors for Wastetreatment, *Comprehensive Membrane Science and Engineering*, 3, 102-138.

Mylarappa, M., Lakshmi, V.V., Mahesh, K.R.V., Nagaswarupa, H.P., and Raghavendra, N., 2016, a Facile Hydrothermal Recovery of Nano Sealed MnO_2 Particle from Waste Batteries: An Advanced Material for

Electrochemical and Environmental Applications, *J. Mater. Sci. Eng.*, 149, 1-9.

Naffeti, M., Zaibi, M.A., Nefzi, C., Arias, A.V.G., Chtourou, R., and Postigo, P.A., 2023, Highly efficient photodegradation of methylene blue by a composite photocatalyst of bismuth nanoparticles on silicon nanowires, *Environ. Technol. and Inno.*, 103133.

Nasrullah, A., Khan, H., Khan, A.S., Man, Z., Muhammad, N., Khan, M.I., and El-Salem, M.A., 2015, Potential Biosorbent Derived from Calligonum polygonoides for Removal or Methylene Blue Dye Aqueous Solution, *TSWJ*, 1-11.

Neppolian, B., Wang, Q., Yamashita, H., and Choi, H., 2007, Synthesis and Characterization of ZrO_2-TiO_2 Binary Oxide Semiconductor Nanoparticles: Application and Interparticles Electron Transfer Process, *Appl. Catal. A: General*, 333, 364-271.

Ohtani, B., Prieto-Mahaney, O., Li, D., and Abe, R., 2010, What is Degussa (Evonik) P25? Crystalline Composition Analysis, Reconstruction from isolated Pure Particles and Photocatalytic Activity Test, *J. Photoch. Photobio, A.*, 216, 179-182.

Ohtani, B., 2011, Photocatalysis by Inorganic Solid Materials, *Adv. Inorg. Chem.*, 63, 395 – 430.

Oi, L.E., Yee Choo, M., Lee, H.V., Ong, H.C., Hamid, S.B.A., and Juan, J.C., 2016, Recent Advances of Titanium Dioide (TiO_2) for Green Organic Synthesis, *RSC Adv*, 108741-108754.

Oladoye, P.E., Ajiboye, T.O., Omotola, E.O., and Oyewola, O.J., 2022, Methylene blue dye: Toxicity and potential elimination technology from wastewater, *Results. Eng.*, (16), 1-17.

Pedanekar, R.S., Shaikh, S.K., and Rajpure, K.Y., 2020, Thin film photocatalysis for Environmental Remediation: A status review, *Curr. Appl. Phys.*, 20 (8), 931-952.

Pham, V.L., Kim, D., Ko, S., 2020, Mechanisms of Methylene Blue Degradation by Nano-Sized β-MnO_2 Particles, *Environ.*, 24, 1385-1394.

Pierre, A.C., 2013, *Introduction to Sol-Gel Processing Vol. 1.*, Springer Science and Business Media, Germany.

Pirzada, B.M., Mir, N.A., Qutub, N., Mehraj, O., Sabir, S., and Muneer, M., 2015, Synthesis, Characterization and Optimization of Photocatalytic Activity of TiO_2/ZrO_2 Nanocomposite Heterostructures, *J. MSEB*, 193, 137-145.

Praveen, P., Viruthagiri, G., Mugundan, S., and Shanmugam, N., 2014, Structural, Optical, and Morphological Analyses of Pristine Titanium Dioxide Nanoparticles Synthesized via Sol-Gel Route, *Spectrochimica Acta*., 117, 622-629.

Quan, F., Hu, Y., Zhang, X., And Wei, C., 2014, Simple Preparation of Mn-N-Codoped TiO_2 Photocatalyst and The Enhanced Photocatalytic Activity Under Visible Light Irradiation, *Appl. Surf. Sci.*, (320), 120 – 127.

Quanbo, F., Fuchi, W., Huiling, Z., and Feng, Z., 2008, Study of ZrO_2 phase structure and electronic properties, *Mol. Simulat.*, 34, 1099-1103.

Ramli, Z.A.C., Asim, N., Isahak, W.N.R.W., Emdadi, Z., Ahmad-Ludin, N., Yarmo, M.A., and Sopian, K., 2014, Photocatalytic Degradation of Methylene Blue under UV Light Irradiation on Prepared Carbonaceous TiO_2, *Transfus. Apher. Sci.*,1-8.

Rajamannan, B., Mugundan, S., Viruthagiri, G., Shanmugam, N., Gobi, R., And Praveen, P., 2014, Preparation, Structural, And Morphological Studies of Ni Doped Titania Particles, *Spectrochim. Acta A.*, 128, 218-224.

Rajendran, S., Khan, M.M., Gracia, F., Qin, J., Gupta, V.K., and Arumainathan, S., 2016, Ce^{3+} Ion Induces Visible-Light Photocatalytic Degradation and Electrochemical Activity of ZnO/CeO_2 Nanocomposite, *Sci.Rep*, 6, 1-11.

Rajesh, G., Alkilandeswari, S., Govindarajan, D., and Thirumahai, K., 2020, Enhancement of photocatalytic activity of ZrO_2 nanoparticles by *doping* with Mg for UV light photocatalytic degradation of methyl violet and methyl blue dyes, *J. Mater Sci: Mater Electron*, 31, 4058-4072.

Reddy, C.V., Reddy, I.N., Akkinepally, B., Harish, V.V.N., Reddu, K.r., and Jaesool, S., 2019, Mn-doped ZrO_2 Nanoparticles Prepared by a Template-Free Method for Electrochemical Energy Storage and Aatement of Dye Degradation, *Ceram.Int.*, 45, 15298-25306.

Saeed, K., and Khan, I., 2017, Efficient Photodegradation of Neutral Red Chloride Day in Aqueous Medium using Graphene/Cobalt-Manganese Oxides Nanocomposite, *Turk. J. Chem*, 41, 391-398.

Saeed, K., Khan, I., and Park, S., 2015, TiO_2/Amidoxime-Modified Polyacrylonitrile Nanofibers and its Application for The Photodegradation of Methyl Blue in Aqueous Medium, *Desalin. Water. Treat.*, 54, 3146-3151.

Saenz-Trevizo, A., Piza-Ruiz, P., Chavez-Flores, D., Ogaz-Parada, J., Amezaga-Madrid, P., Vega-Rios, A., and Miki-Yoshida, M., 2019, On the Discoloration of Methylene Blue by Visible Light, *J. Fluoresc*, 29, 15-25.

Salge, T., Goran, D., and Falke, M., 2011, Recent Advances in EDS and EBSD Technology: Revolutionizing the Chemical Analysis of Chondritic Meteorites at the Micro and Nanometer Scale, *42nd Lunar and Planetary Science Conference*, March, Berlin.

Salimi, A., and Roosta, A., 2019, Experimental Solubility and Thermodynamic Aspect of Methylene Blue in Different Solvents, *Thermochim. Acta.*, 675, 134-139.

Scarpelli, F., Mastropietro, T.F., Poerio, T., And Godbert, N., 2018, *Mesoporous* TiO_2 *Thin Films: State Of The Art*, Intechopen, London.

Schubert, U.S., and Husing, N., 2000, *Synthesis of Inorganic Materials*, Weinheim Publisher, New York.

Scoutaris, N., Vithani, K., Slipper, I., Chowdhry, B., and Douroumis, D., 2014, SEM/EDX and Confocal Raman Microscopy as Complementary Tools for The Characterization of Pharmaceutical Tablets, *Int. J. Pharmaceut.*, 470(1-2), 88-98.

Sekulic, J., Magraso, A., ten Elshof, J.E., and Blank, D.H.A., 2004, Influence of ZrO_2 addition on microstructure and liquid permeability of mesoporous TiO_2 membranes, *J. Micromeso*, 72, 49-57.

Sekhar, M.C., Reddy, B.P., Vattikuti, S.V.P., Shanmugam, G., Ahn, C., and Park, S., 2018, Structural, Magnetic, and Catalytic Properties of Mn-Doped Titania Nanoparticles Synthesized by a Sol-Gel Process, *J. Clust. Sci.*, 29(5), 1-12.

Setiabudi, A., Hardian, R., Dan Mudzakir, A., 2012, *Karakterisasi Material Prinsip Dan Aplikasinya Dalam Penelitian Kimia*, UPI Press, Bandung.

Shahabuddin, S., Sarih, N.M., Mohamad, S., and Ching, J.J., 2016, $SrTiO_3$ Nanocube-Doped Polyaniline Nanocomposites with Enhanced Photocatalytic Degradation of Methylene Blue Under Visible Light, *Polymers*, 8, 1-16.

Sharma, S.K., Verma, D.S., Khan, L.U., Kumar, S., Khan, S.B., 2018, *Handbook of Materials Characterization*, Springer International Publishing, Brazil.

Siddeeg, S.M., Tahoon, M.A., Mnif, W., and Ben Rebah, F., 2019, Iron Oxide/Chitosan Magnetic Nanocomposites Immobilized Manganese Peroxidase for Decolorization of Textile Wastewater, *Processes*, 8, 1-12.

Simonsen, M.E., and Sogaard, E.G., 2010, Sol-gel reactions of titanium alkoxides and water: influence of pH and alkoxy group on cluster formation and properties of the resulting products, *J. Solgel. Sci. Technol.*, 53, 485-497.

Sudrajat, H., Babel, S., Ta, A.T., and Nguyen, T.K., 2020, Mn-doped TiO_2 photocatalysts: Role, Chemical Identity, and Local Structure of Dopant, *J. Phys. Chem. Solids.*, 144, 1-9.

Sutanto, H., Dan Wibowo, S., 2015, *Semikonduktor Fotokatalis Seng Oksida Dan Titania (Sintesis, Deposisi, Dan Aplikasi)*, Telescope, Semarang.

Sze, S.M., and Ng, K.K., 2007, *Physics of Semiconductor Devices*, John Wiley & Sons Publishers, New Jersey.

Tao, X., Mo, W., and Tong, W., 2019, Effects of N *doping* on the microstructures and optical properties of TiO_2, *J. Wuhan Univ. Technol.-Mat.Sci. Edit.*, 34, 55-63.

Tichapondwa, S.M., Newman, J.P., and Kubheka, O., 2020, Effect of TiO_2 phase on The Photocatalytic Degradation of Methylene Blue Dye, *Phys. Chem. Earth.*, 1-24.

Tomar, L.J., and Chakrabarty, B.S., 2013, Synthesis, Structural, and Optical Propoerties of TiO_2/ZrO_2 Nanocomposite by Hydrothermal Method, *Adv. Mat. Lett*., 4(1), 64-67.

Ullah, S., Ahmad, A., Ri, H., Khan, A.U., Khan, U.A., and Yuan, Q., 2020, Green Synthesis of Catalytic Zinc Oxide Nano-Flowers and Their Bacterial Infection Therapy, *Appl. Organomet. Chem*., 34, 1-11.

Umar, K., Nasir, M., Ibrahim, M., Ahmad, A., and Rafatullah, M., 2019, Synthesis of Mn-doped TiO_2 by Novel Route and Photocatalytic Mineralization/Intermediate Studies of Organic Pollutants, *Res. Chem. Intermediate.*, 45, 2927-2945.

Unlu, B., and Ozacar, M., 2020, Effect of Cu and Mn Amounts Doped to TiO_2 on The Performance of DSSCs, *Sol. Energy*, 196, 448-456.

Velardi, L., Scrimieri, L., Serra, A., Manno, D., and Calcagnile, L., 2020, Effect of Temperature on The Physical, Optical, and Photocatalytic Properties of TiO_2 Nanoparticles, *SN Appl. Sci.*, 2, 1-6.

Wetchakun, N., Incessungvorn, B., Wetchakun, K., and Phanichphant, S., 2012, Influence of Calcination Temperature on Anatase to Rutile Phase Transformation Nanoparticles Synthesized by The Modified Sol-Gel Method., *Mater. Lett.*, 82, 195-198.

Wolfgang, W.J., 2016, *Chemical Analysis Techniques for Failure Analysis: Part 1, Common Instrumental Methods*, Dalam Makhlouf, A.S.H., and Aliofkhazraei, M., *Handbook of Materials Failure Analysis with Case Studies from the Aerospace and Automotive Industries*, Butterworth-Heinemann Publishing, Oxford.

Yasin, S.A., Abbas, J.A., Ali, M.M., Saeed, I.A., Ahmed, I.H., 2020, Methylene Blue Photocatalytic Degradation by TiO_2 Nanoparticles Supported on PET Nanofibres, *Mater. Today.*, 20, 482-487.

Yu, Z., and Chuang, S.S.C., 2007, Probing Methylene Blue Photocatalytic Degradation by Adsorbed Ethanol within Situ IR, *J. Phys. Chem. C*., 111, 13813-13820.

Zaleska, A., 2008, Doped-TiO_2: a Review, *Recent. Pat. Eng.*, 2, 157-164.

Zhang, J., Xiao, X., And Nan, J., 2010, Hydrothermal-Hydrolysis Synthesis and Photocatalytic Properties of Nano-TiO_2 with An Adjustable Crystalline Structure, *J. Hazard.*, 176, 617-622.

Zhang, W., Li, Y., Zhu, S., and Wang, F., 2004, Copper Dopping in Titanium Oxide Catalyst Film Prepared by DC Reactive Magnetron Sputtering, *Cat. Today*, 93, 589-594.

Zhou, W., Liu, K., Fu, H., Pan, K., Zhang, L., Wang, L., and Sun, C., 2007, Multi-Modal Mesoporous TiO_2/ZrO_2 Composites with High Photocatalytic Activity and Hydrophilicity, *Nanotechnology*, 19(3), 1-7.