



## DAFTAR PUSTAKA

- Abu, S. and Ribeiro, C., 2016, Chemical A Comparative Run for Visible-Light-Driven Photocatalytic Activity of Anionic and Cationic S-Doped TiO<sub>2</sub> Photocatalysts a Case Study of Possible Sulfur Doping Through Chemical Protocol, *Journal Mol. Catal. A, Chem.*, 421, 1–15.
- Ani, I.J., Akpan, U.G., Olutoye, M.A., and 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.
- Ansari, S.A., Khan, M.M., Ansari, M.O., and Cho, M.H., 2016, Nitrogen-doped Titanium Dioxide (N-doped TiO<sub>2</sub>) for Visible Light Photocatalysis, *New. J. Chem.*, 40, 3000–3009.
- Asadi, A., Akbarzadeh, R., Eslami, A., Jen, T.C., and Oviroh, P.O., 2019, Effect of Synthesis Method on NS-TiO<sub>2</sub> Photocatalytic Performance, *Energy Procedia.*, 158, 4542–4547.
- Azhdarpoor, A., Hoseini, R., and Dehghani, M., 2015, Leaching Zn, Cd, Pb, and Cu from Wastewater Sludge Using Fenton Process, *J. Health. Sci. Surveill. Sys.*, 3, 163–169.
- Chen, X., Kuo, D., and Lu, D., 2017, Visible Light Response and Superior Dispersed S-Doped TiO<sub>2</sub> Nanoparticles Synthesized Via Ionic Liquid, *Adv. Powder Technol.*, 2017, 1–8.
- Chen, Z., Ma, J., Yang, K., Feng, S., Tan, W., and Tao, Y., 2017, Preparation of S-Doped TiO<sub>2</sub> Three Dimensional Graphene Aerogels as a Highly Efficient Photocatalyst, *Synthetic Metals.*, 231, 51–57.
- Devi, L.G. and Kavitha, R., 2014, Enhanced Photocatalytic Activity of Sulfur Doped TiO<sub>2</sub> for The Decomposition of Phenol : a New Insight Into the Bulk and Surface Modification, *Mater. Chem. Phys.*, 143, 1300–1308.
- Ding, Z., Chen, S., Liu, Z., Jiang, C., and Chu, W., 2015, Mesoporous Sulfur-Doped TiO<sub>2</sub> Microspheres for Catalytic Degradation of Methylene Blue under Visible Light, *Adv. Materials Research.*, 2015, 242–250.
- Diao, Z.H., Dong, F. X., Guo, S., Wang, H., Li, X., and Wu, Z., 2021, A New Insight on Enhanced Pb(II) Removal by Sludge Biochar Catalyst Coupling with Ultrasound Irradiation and its Synergism with Phenol Removal, *J. Chemosphere.*, 263, 128287.
- Dwiyanna, R., Roto, R., Suwondo, K.P., and Wahyuni, E.T., 2021, Enhanced Photocatalytic Degradation of Remazol Black under Visible Light Illumination Through S Doped TiO<sub>2</sub> (S-TiO<sub>2</sub>) Nanoparticles: Operational Factors and Kinetic Study, *Glob. Nest J.*, 23, 323–332
- Eren, E., Afsin, B., and Onal, Y., 2009, Removal of Lead Ions by Acid Activated



- and Manganese Oxide-Coated Bentonite, *J. Hazard. Mater.*, 161, 677–685.
- Eslami, A., Amini, M.M., Yazdanbakhsh, A.R., Safari, A., and Asadi, A., 2015, N, S Co-Doped TiO<sub>2</sub> Nanoparticles and Nanosheets in Simulated Solar Light for Photocatalytic Degradation of Non-Steroidal Anti-Inflammatory Drugs in Water : a Comparative Study, *J. Chem. tech. Biotechnol.*, 2015, 1-12.
- Etacheri, V., Valentin, C., Schneider, J., Bahnemann, D., and Pillai, S.C., 2015, Visible-Light Activation of TiO<sub>2</sub> Photocatalysts: Advances in Theory and Experiments, *J. Photochem. Photobiol. C Photochem.*, 25, 1–29
- Fatehizadeh, A., Rahimi, S., Ahmadian, M., Barati, R., Yousefi, N., Moussavi, S., Rahimi, K., Reshadat, S., Ghasemi, S., and Gilan, N., 2014, Photocatalytic Removal of Cadmium (II) and Lead (II) from Simulated Wastewater at Continuous and Batch System, *Int. J. Environ. Health Eng.*, 3, 1-6.
- Ghosh, S., Das, A.P., and Square, K., 2015, Modified Titanium Oxide (TiO<sub>2</sub>) Nanocomposite and its Array of Application, *Toxicological. Environ. Chem.*, 2015, 37–41.
- Grivé, M., Domènech, C., Montoya, V., García, D., and Duro, L., 2010, R-10-50 Determination and Assessment of the Concentration Limits to be Used in SR-Can Supplement to TR-06-32, No. SKB-R-10-50. Swedish Nuclear Fuel and Waste Management Co., 2010.
- Gültekin, A., 2014, Effect of Au Nanoparticles Doping on the Properties of TiO<sub>2</sub> Thin Films, *Materials Sains.*, 20, 10–14.
- Han, C., Pelaez, M., Likodimos, V., Kontos, A.G., Falaras, P., O'Shea, K., and Dionysiou, D.D., 2011, Innovative Visible Light-Activated Sulfur Doped TiO<sub>2</sub> Films for Water Treatment, *Appl. Catal. B Environ.*, 107, 77–87.
- Hanaor, D.A.H. and Sorrell, C.C., 2011, Review of the Anatase to Rutile Phase Transformation, *J. Mater. Sci.*, 46, 855–874.
- Hoffmann, M.R., Martin, S.T., Choi, W., and Bahnemann, D.W., 1995, Environmental Applications of Semiconductor Photocatalysis, *Chem. Rev.*, 95, 69–96.
- Hosseini, F. and Mohebbi, S., 2020, High Efficient Photocatalytic Reduction of Aqueous Zn<sup>2+</sup>, Pb<sup>2+</sup> and Cu<sup>2+</sup> Ions using Modified Titanium Dioxide Nanoparticles with Amino Acids, *J. Ind. Eng. Chem.*, 85, 190–195.
- Huang, L., Fu, W., Fu, X., Zong, B., Liu, H., Bala, H., Wang, X., Sun, G., Cao, J., and Zhang, Z., 2017, Facile and Large-Scale Preparation of N Doped TiO<sub>2</sub> Photocatalyst with High Visible Light Photocatalytic Activity, *Mater. Lett.*, 209, 585–588.
- Humayun, M., Qu, Y., Raziq, F., Yan, R., Li, Z., Zhang, X., and Jing, L., 2016, Exceptional Visible-Light Activities of TiO<sub>2</sub>-coupled N-doped Porous Perovskite LaFeO<sub>3</sub> for 2,4-dichlorophenol Decomposition and CO<sub>2</sub> Conversion, *Environ. Sci. Technol.*, 50, 13600–13610.



- Ismail, A.A. and Bahnemann, D.W., 2014, Photochemical Splitting of Water for Hydrogen Production by Photocatalysis: a Review, *Sol. Energy Mater. Sol. Cells.*, 128, 85–101.
- Jafari, T., Khakpash, N., and Simchi, A., 2012, Adsorption and solar Light Activity of Transition-Metal Doped TiO<sub>2</sub> Nanoparticles as Semiconductor Photocatalyst, *J. Mater Sci.*, 23, 659–667.
- Jaycock, M. J., and Parfit, G. O., 1981, *Chemistry of Interface*, Ellis Horwood Limited Publisher, Chichester.
- Kaur, N., Singh, M., Moumen, A., Duina, G., and Comini, E., 2020, 1D Titanium Dioxide: Achievements in Chemical Sensing, *Materials Basel.*, 13, 1–21.
- Khan, H., Swati, I.K., Younas, M., and Ullah, A., 2017, Chelated Nitrogen Sulphur Codoped TiO<sub>2</sub>: Synthesis, Characterization, Mechanistic, and UV/Visible Photocatalytic Studies, *Int. J. Photoenergy.*, 2017, 1–18.
- Kim, T.H., Jeong, S.-J., Lim, H.-R., Cho, H.-B., Lee, C.-G., and Choa, Y.-H., 2018, Bulk-Direct Synthesis of TiO<sub>2</sub> Nanoparticles by Plasma Assisted Electrolysis with Enhanced Photocatalytic Performance, *J. Electrochem. Soc.*, 165, 64–69.
- Krstić, A., Stanković, H., Rubežić, M., and Vasić, M., 2018, Chemical Modifications of Nanostructured Titania-Based Materials in Photocatalytic Decomposition/Conversion of Various Organik Pollutants, *Adv. Technologies.*, 7, 78–84.
- Kumar, K.M., Godavarthi, S., Karthik, T.V.K., Mahendhiran, M., Hernandez-Eligio, A., Hernandez-Como, N., Agarwal, V., and Gomez, L.M., 2016, Green Synthesis of S-Doped Rod Shaped Anatase TiO<sub>2</sub> Microstructures, *Mater. Lett.*, 183, 211–214.
- Li, H., Hao, Y., Lu, H., Liang, L., Wang, Yuanyang, Qiu, J., Shi, X., Wang, Ying, and Yao, J., 2015, A Systematic Study on Visible-Light N-Doped TiO<sub>2</sub> Photocatalyst Obtained from Ethylenediamine by Sol-Gel Method, *Appl. Surf. Sci.*, 344, 112–118.
- Lin, Y., Hsueh, H., Chang, C., nd Chu, H., 2016, The Visible Light-Driven Photodegradation of Dimethyl Sulfide on S-Doped TiO<sub>2</sub>: Characterization, Kinetics, *Applied Catal. B, Environ.*, 196, 1-10.
- Lin, Y.C., Chien, T.E., Lai, P.C., Chiang, Y.H., Li, K.L., And Lin, J.L., 2015, TiS<sub>2</sub> Transformation into S-Doped and N-Doped TiO<sub>2</sub> with Visible-Light Catalytic Activity, *Appl. Surf. Sci.*, 359, 1–6.
- Liu, H., Kuznetsov, A.M., Masliy, A.N., Ferguson, J.F., and Korshin, G. V, 2012, Formation of Pb(II) Intermediates in the Electrochemically Controlled Pb(II)/PbO<sub>2</sub> System, *Environ. Sci. Technol.*, 46, 1430-1438.
- Matos, J., Miralles-Cuevas, S., Ruíz-Delgado, A., Oller, I., and Malato, S., 2017, Development of TiO<sub>2</sub>-C Photocatalysts for Solar Treatment of Polluted Water, *Carbon.*, 122, 361-373.



- Mcmanamon, C., Connell, J.O., Delaney, P., Rasappa, S., Holmes, J.D., and Morris, M.A., 2015, Chemical a Facile Route to Synthesis of S-Doped TiO<sub>2</sub> Nanoparticles for Photocatalytic Activity, *Journal Mol. Catal. a Chem.*, 406, 51–57.
- Mehrdadi, N., Ebraheim, G., Karbassi, R., 2022, Employing Speciation of Metals to Assess Photo Assisted Electrochemical Efficiency for Improving Rainwater Quality in Tehran, *Int. J. Environ. Sci. Technol.*, 19, 261–280.
- Olowoyo, J.O., Kumar, M., Jain, S.L., Shen, S., Zhou, Z., Mao, S.S., Vorontsov, A. V, and Kumar, U., 2018, Reinforced Photocatalytic Reduction of CO<sub>2</sub> to Fuel by Efficient S-TiO<sub>2</sub> : Significance of Sulfur Doping, *Int. J. Hydrogen Energy*., 43, 1–14.
- Pan, W., Pan, C., Bae, Y., and Giamar, D., 2019, Role of Manganese in Accelerating the Oxidation of Pb(II) Carbonate Solids to Pb(IV) Oxide at Dringking Water Condition, *Environ. Sci. Technol.*, 53, 6699–6707.
- Pelaez, M., Nolan, N.T., Pillai, S.C., Seery, M.K., Falaras, P., Kontos, A.G., Dunlop, P.S.M., Hamilton, J.W.J., Byrne, J.A., Shea, K.O., Entezari, M.H., and Dionysiou, D.D., 2012, Environmental a Review on the Visible Light Active Titanium Dioxide Photocatalysts for Environmental Applications, *Applied Catal. B, Environ.*, 125, 331–349.
- Rahimi, S., Ahmadian, M., Barati, R., Yousefi, N., Moussavi, S.P., Rahimi, K., Reshadat, S., Ghasemi, S.R., Gilan, N.R., and Fatehizadeh, A., 2014, Photocatalytic Removal of Cadmium (II) and Lead (II) from Simulated Wastewater at Continuous and Batch System, *Int. J. Environ. Health Engineering.*, 3, 90–94.
- Razali, M.H., Mohamed, A.R., and Sreekantan, S., 2013, Morphological, Structural and Optical Properties Study of Transition Metal Ions Doped TiO<sub>2</sub> Nanotubes Prepared by Hydrothermal Method, *Int. J. Mater. Mech. Manuf.*, 1, 314–318.
- Ribao, P., Rivero, M.J., and Ortiz, I., 2016, TiO<sub>2</sub> Structures Doped with Noble Metals and Graphene Oxide to Improve the Photocatalytic Degradation of Dichloroacetic Acid, *Environ. Sci. Pollut. Res.*, 24, 12628–12637.
- Samsudin, E.M., Bee, S., Hamid, A., Juan, J.C., Basirun, W.J., Kandjani, A.E., and Bhargava, S.K., 2015, Controlled Nitrogen Insertion in Titanium Dioxide for Optimal Photocatalytic Degradation of Atrazine, *RSC Adv.*, 5, 44041–44052.
- Shaban, M., Abukhadra, M.R., and Ibrahim, S.S., 2017, Photocatalytic Degradation and Photo-Fenton Oxidation of Congo Red Dye Pollutants in Water using Natural Chromite Response Surface Optimization, *Appl. Water Sci.*, 7, 4743–4756.
- Tseng, L., Luo, X., Bao, N., Ding, J., Li, S., and Yi, J., 2016, Structures and Properties of Transition Metal Doped TiO<sub>2</sub> Nanorods, *Mater. Lett.*, 170, 142–146.
- Wahyuni, E., Aprilita, N., Hatimah, H., Wulandari, A., and Mudasir, M., 2015,



Removal of Toxic Metal Ions in Water by Photocatalytic Method, *Am. Chem. Sci. J.*, 5, 194–201.

Wahyuni, E.T., Siswanta, D., Kunarti, E.S., Supraba, D., and Budiraharjo, S., 2019, Removal of Pb(II) Ions in the Aqueous Solution by Photo-Fenton Method, *Glob. Nest J.*, 21, 180–186.

Wang, M., Han, J., Hu, Y., and Guo, R., 2017, Mesoporous C, N-codoped TiO<sub>2</sub> Hybrid Shells with Enhanced Visible Light Photocatalytic performance, *RSC. Adv.*, 7, 15513–15520.

Wang, Y., Duan, W., Liu, B., Chen, X., Yang, F., and Guo, J., 2014, The Effects of Doping Copper and Mesoporous Structure on Photocatalytic Properties of TiO<sub>2</sub>, *J. of Nanomaerial.*, 2014, 1-7.

Xu, X., Lai, L., Jiang, J., Cao, Y., Li, H., and Fan, K., 2019, Energy Conversion and Charge Transport C,N-codoped TiO<sub>2</sub> with a Nitrogen-doped Carbon Coating Derived from 2,6-diaminopyridine for Visible Light-induced Photocatalytic Hydrogen Evolution Innovation Center of Yangtze River Delta, *Appl. Catal. B Environ.*, 79, 72–80.

Yunus, N.N., Hamzah, F., Sufian, M., and Krishnan, J., 2017, Effect of S,N Co-doped TiO<sub>2</sub> Concentration on Photocatalytic Degradation of Phenol Effect of Catalyst Loading on Photocatalytic Degradation of Phenol by using S,N Co-Doped, *Materials Science and Engineering.*, 206, 010292.

Yi, C., Liao, Q., Deng, W., Huang, Y., Mao, J., Zhang, B., and Wu, G., 2019, Science of the Total Environment the Preparation of Amorphous TiO<sub>2</sub> Doped with Cationic S and Its Application to The Degradation of Dcfs Under Visible Light Irradiation, *Sci. Total Environ.*, 684, 527–536.

Yousefi, T., Mohsen, M.A., Mahmudian, H.R., Mostaedi, M.T., Moosavian, M.A., and Aghayan, H., 2018, Removal of Pb(II) by Modified Natural Adsorbent; Thermodynamics and Kinetics Studies, *J. Water. Environ. Nanotechnol.*, 3, 265-272

Zhang, X., Zhou, J., Gu, Y., and Fan, D., 2015, Visible-Light Photocatalytic Activity of N-Doped TiO<sub>2</sub> Nanotube Arrays on Acephate Degradation, *J. of Nanomaterial.*, 2015, 1-6.