

## References

- [1] S. Chaiprapat, P. Preechalertmit, P. Boonsawang, and S. Karnchanawong, "Sulfidogenesis in Pretreatment of High sulfate Acidic wastewater using Anaerobic Sequencing Batch reactor and upflow anaerobic sludge blanket reactor," *Environ. Eng. Sci.*, vol. 28, 2011, pp. 594–604.
- [2] N. B. Nguyen, "Research and selection of technologies for treatment natural rubber latex wastewater, Vietnam," PhD thesis, Institute for Environment and Resource, Vietnam, 2003.
- [3] S. Chaiprapat, P. Preechalertmit, P. Boonsawang, and S. Karnchanawong, "Sulfidogenesis in Pretreatment of High sulfate Acidic wastewater using Anaerobic Sequencing Batch reactor and upflow anaerobic sludge blanket reactor," *Environ. Eng. Sci.*, vol. 28, 2011.
- [4] L. M. K. Tillekeratne, A. Nugawela, and W. M. G. Seneviratne, *Hand Book of Rubber, Processing Technoogy*, vol. 2. Rubber research Institute of Sri Lanka, 2003.
- [5] T. V. Nguyen, "Sustainable treatment of rubber latex processing wastewater: the UASB-system combined with aerobic post-treatment.," PhD thesis, Wageningen University, Netherland, 1999.
- [6] L. W. H. Pol, P. N. L. Lens, A. J. M. Stams, and G. Lettinga, "Anaerobic treatment of sulphate-rich wastewaters," *Biodegradation*, vol. 9, no. 3–4, May 1998, pp. 213–224.
- [7] B. Lui *et al.*, "Effect of Ethanol/Sulfate ratio and pH on mesophilic sulfate reduction in UASB reactors," *Afr. J. Microbiol.*, vol. 4(21), Nov. 2010, pp. 2215–2222.
- [8] C. J. N. Buisman, B. G. Geraats, P. Ljspeert, and G. Lettinga, "Optimization of sulfur production in a biotechnological sulphide-removing reactor," *Biotechnol. Bioeng.*, vol. 35, 1990, pp. 50–56.
- [9] P. Lens and L. Hulshoff, *Environmental technologies to treat sulfur pollution : principles and engineering*. Alliance House, 12 Caxton street, London, UK: IWA, 2004.
- [10] F. Omil, R. Méndez, and J. M. Lema, "Anaerobic Treatment of Saline Wastewaters under High Sulfide and Ammonia Content," *Bioresour. Technol.*, vol. 54, 1996, pp. 269–278.
- [11] R. Rajagopal, D. I. Massé, and G. Singh, "A critical review on inhibition of anaerobic digestion process by excess ammonia," *Bioresour. Technol.*, vol. 143, 2013, pp. 632–641.
- [12] A. Sarti, R. S. Cortes, J. S. Hirasawa, E. C. Pires, and E. Foresti, "Post-treatment of effluents from the sulfate reduction process by anaerobic sequencing batch biofilm reactors," *Desalination*, vol. 237, 2009, pp. 243–253.
- [13] B. Krishnakumar, S. Majumdar, V. B. Manilal, and A. Haridas, "Treatment of sulfide containing wastewater with sulphur recovery in a novel reverse fluidized bed loop reactor (RFLR)," *Water Res.*, vol. 39, 2005, pp. 639–647.
- [14] L. B. Celis-García, G. González-Blanco, and M. Meraz, "Removal of sulfur inorganic compounds by a biofilm of sulfate reducing and sulfide oxidizing bacteria in a down-flow fluidized bed reactor," *Chem. Technol. Bio Technol.*, vol. 83, 2008, pp. 260–263.

- [15] L. Krayzelova, J. Bartacek, N. Kolesarova, and J. Pavel, "Microaeration for hydrogen sulfide removal in UASB reactor," *Bioresour. Technol.*, vol. 172, 2014, pp. 297–302.
- [16] G. Nielsen, L. Coudert, A. Janin, J. F. Blais, and G. Mercier, "Influence of Organic Carbon Sources on Metal Removal from Mine Impacted Water Using Sulfate-Reducing Bacteria Bioreactors in Cold Climate," *Mine Water Environ.*, vol. 7, no. 2018, Dec. 2018, pp. 1–15.
- [17] P. Lens and L. Hulshoff, *Environmental technologies to treat sulfur pollution : principles and engineering*. Alliance House, 12 Caxton street, London, UK: IWA, 2004.
- [18] X. J. Xu *et al.*, "Enhanced Elementary sulfur recovery in integrated sulfate-reducing, sulfur-producing reactor under micro-aerobic condition," *Bioresour. Technol.*, vol. 116, 2012, pp. 517–521.
- [19] A. J. H. Janssen, R. Sleyster, C. Van der Kaa, and A. Jochemsen, "Biological sulfide oxidation in a fed-batch reactor," *Biotechnol. Bioeng.*, vol. 47, 1995, pp. 327–333.
- [20] J. T. de Sousa, J. de Freitas Lima, V. C. da Silva, V. D. Leite, and W. S. Lopes, "Recovery of elemental sulfur from anaerobic effluents through the biological oxidation of sulfides," *Environ. Technol.*, 2016, pp. 1–9.
- [21] R. Steudel, "Mechanism for the Formation of Elemental Sulfur from Aqueous Sulfide in Chemical and Microbiological Desulfurization Processes," *Ind. Eng. Chem. Res.*, vol. 35, no. 4, Jan. 1996, pp. 1417–1423.
- [22] C. Polizzi, F. Alatrisme-Mondragon, and G. Munz, "The role of organic load and ammonia inhibition in anaerobic digestion of tannery fleshing," *Water Resour. Ind.*, vol. 19, 2018, pp. 25–34.
- [23] R. Rajagopal, D. I. Massé, and G. Singh, "A critical review on inhibition of anaerobic digestion process by excess ammonia," *Bioresour. Technol.*, vol. 143, 2013, pp. 632–641.
- [24] F. Straka, P. Jenicek, J. Zabranska, M. Dohanyos, and M. Kuncarova, "Anaerobic fermentation of biomass and waste with respect to sulfur and nitrogen contents in treated materials," in *Sardinia 2007*, Environmental Sanitary Engineering Centre, Italy, 2007.
- [25] S. Luostarinen, S. Luste, L. Valentin, and J. Rintala, "Nitrogen removal from on-site treated anaerobic effluents using intermittently aerated moving bed biofilm reactor at low temperatures," *Water Res.*, vol. 40, 2006, pp. 1607–1615.
- [26] B. Rusten, J. G. Siljudalen, and B. Nordeidet, "Upgrading to nitrogen removal with the KMT moving bed biofilm process," *Water Sci. Technol.*, vol. 29(12), pp. 185–195.
- [27] S. Cho, N. Fujii, T. Lee, and S. Okabe, "Development of a simultaneous partial nitrification and anaerobic ammonia oxidation process in a single reactor," *Bioresour. Technol.*, vol. 102, 2011, pp. 652–659.
- [28] Z. Zheng *et al.*, "Enhanced nitrogen removal of the simultaneous partial nitrification, anammox and denitrification (SNAD) biofilm reactor for treating mainstream wastewater under low dissolved oxygen (DO) concentration," *Bioresour. Technol.*, vol. 3, no. 2019, 2019, pp. 213–220.

- [29] L. Krayzelova, J. Bartacek, I. Diaz, D. Jeison, E. I. P. Volcke, and P. Jenicek, "Microaeration for hydrogen sulfide removal during anaerobic treatment: a review," *Environ. Sci. Biotechnol.*, vol. 14, no. 2015, pp. 703–725.
- [30] P. Jenicek, C. A. Celis, L. Krayzelova, N. Anferova, and D. Pokorna, "Improving products of anaerobic sludge digestion by microaeration," *Water Sci. Technol.*, vol. 68(4), 2014, pp. 803–809.
- [31] I. Ramos and M. Fdz-Polanco, "Microaerobic control of biogas sulphide content during sewage sludge digestion by using biogas production and hydrogen sulphide concentration.," *Chem. Eng.*, vol. 250, 2014, pp. 303–311.
- [32] P. R. Camiloti, G. H. D. Oliveira, and M. Zaiat, "Sulfur recovery from wastewater using a micro-aerobic external silicone membrane reactor (ESMR)," *Water. Air. Soil Pollut.*, vol. 227, no. 31, 2016, pp. 1–10.
- [33] W. Mulbry, K. Selmer, and S. Lansing, "Effect of liquid surface area on hydrogen sulfide oxidation during micro-aeration in dairy manure digesters," *PLOS ONE*, vol. 12(10), 2017, pp. 1–12.
- [34] W. Jawjit, P. Pavasant, and C. Kroeze, "Evaluating environmental performance of concentrated latex production in Thailand," *J. Clean. Prod.*, pp. 1–8, 2013.
- [35] B. Witkowski *et al.*, "Analysis of latex protein content by liquid chromatography coupled with tandem mass spectrometry (HPLC/MS/MS)," *Anal. Methods*, vol. 7, 2015, pp. 10376–10384.
- [36] S. Maulina, N. M. N. Sulaiman, and N. Z. Mahmood, "Enhancement of Eco-Efficiency through Life Cycle Assessment in Crumb Rubber Processing," *Procedia-Soc. Behav. Sci.*, vol. 195, 2015, pp. 2475–2484.
- [37] M. Mohammadi, H. C. Man, M. A. Hassan, and P. L. Yee, "Treatment of wastewater from rubber industry in Malaysia," *Afr. J. Biotechnol.*, vol. 9, 2010, pp. 6233–6243.
- [38] J. White and S. K. De, *Rubber Technologist's Handbook*, vol. 1. Shawbury, UK: Smithers International Ltd., 2001.
- [39] S. Chaiprapat, S. Wongchana, S. Loykulnant, C. Kongkaew, and B. Charnnok, "Evaluating sulfuric acid reduction, substitution, and recovery to improve environmental performance and biogas productivity in rubber latex industry," *Process Saf. Environ. Prot.*, vol. 94, 2015, pp. 420–429.
- [40] D. Botheju, "Oxygen Effects in Anaerobic Digestion – A Review," *Open Waste Manag. J.*, vol. 4, no. 1, Apr. 2011, pp. 1–19.
- [41] P. L. McCarty, "The development of anaerobic treatment and its future," *Water Sci. Technol.*, vol. 44, no. 8, 2001, pp. 149–156.
- [42] Y. Chen, J. J. Cheng, and K. S. Creamer, "Inhibition of anaerobic digestion process: A review," *Bioresour. Technol.*, vol. 99, no. 10, Jul. 2008, pp. 4044–4064.
- [43] A. J. Ward, P. J. Hobbs, P. J. Holliman, and D. L. Jones, "Optimisation of the anaerobic digestion of agricultural resources," *Bioresour. Technol.*, vol. 99, 2008, pp. 7928–7940.
- [44] D. J. Batstone *et al.*, "The IWA Anaerobic Digestion Model No 1 (ADM1)," *Water Sci. Technol.*, vol. 45, no. 10, 2002, pp. 65–73.
- [45] P. G. Rathnasiri, "Anaerobic digestion process using membrane integrated micro aeration," 2010.

- [46] J. L. Huisman, G. Schouten, and C. Schultz, "Biologically produced sulfide for purification of process streams, effluent treatment and recovery of metals in the metal and mining industry," *Hydrometallurgy*, vol. 83, 2006, pp. 106–113.
- [47] T. Hao *et al.*, "Review of biological sulfate conversions in wastewater treatment," *Water Res.*, vol. 65, 2014, pp. 1–21.
- [48] F. T. Mackenzie, *Sediments, Diagenesis and sedimentary Rocks: Treatise on Geochemistry*. Elsevier Ltd, 2005.
- [49] E. B. A. Wieringa, J. Overmann, and H. Cypionka, "Detection of abundant sulfate reducing bacteria in marine oxic sediment layers by a combined cultivation and molecular approach," *Env. Microbiol.*, vol. 2, 2000, pp. 417–427.
- [50] Y. Chen, J. J. Cheng, and K. S. Creamer, "Inhibition of anaerobic digestion process: A review," *Bioresour. Technol.*, vol. 99, no. 10, Jul. 2008, pp. 4044–4064.
- [51] J. H. Laanbroek, H. Geerlings, and L. Sitjtsma, "Competition for sulphate and ethanol among *Desulfobacter Desulfobulbus* and *Desulfovibrio* species isolated from intertidal sediments.," *Appl Env. Microbiol.*, vol. 128, pp1984, 329–334,.
- [52] H. Min and S. H. Zinder, "Isolation and characterization of a thermophilic sulfate-reducing bacterium *Desulfotomaculum thermoacetoxidans* sp. nov.," *Arch. Microbiol.*, vol. 153, no. 4, Mar. 1990, pp. 399–404.
- [53] F. P. Parkin, A. N. Lynch, W. C. Kuo, E. L. V. Keuren, and S. K. Bhattacharya, "Interaction between sulfate reducers and methanogens fed acetate and propionate," *Water Environ. Fed.*, vol. 62, Oct. 1990, pp. 780–788.
- [54] H. Kroiss and F. Plahl-Wabnegg, "Sulfide toxicity with anaerobic waste water treatment," presented at the Anaerobic waste water treatment. European symposium, 1983, pp. 72–85.
- [55] T. V. Fernandes, K. J. Keesman, G. Zeeman, and J. B. V. Lier, "Effect of ammonia on the anaerobic hydrolysis of cellulose an dtributyryn," *Biomass Bioenergy*, vol. 47, 2012, pp. 316–323.
- [56] S. D. Hafner and J. J. Bisogni Jr., "Modelling Of ammonia speciation in anaerobic digester," *Water Res.*, vol. 43, 2009, pp. 4105–4114.
- [57] J. A. Siles, J. Brekelmans, M. A. Martín, A. F. Chica, and A. Matín, "Impact of Ammonia and Sulfate concentration on thermophilic anaerobic digestion," *Bioresour. Technol.*, vol. 101, pp. 9040–9048.
- [58] P. Shanmugam and N. J. Horan, "Optimisation of biogas production from leather fleshing waste by co-digestion with MSW.," *Bioresour. Technol.*, vol. 100, 2009, pp. 4117–4120.
- [59] Y. Yuan *et al.*, "Fine tuning key parameters of an integrated reactor simultaneous removal of COD, sulfate and ammonium and elemental reclamation," *J. Hazard. Mater.*, vol. 269, 2014, pp. 56–67.
- [60] C. Chen *et al.*, "Integrated simultaneous desulfurization and denitrification (ISDD) process at various COD/sulfate ratios," *Bioresour. Technol.*, vol. 155, 2014, pp. 161–169.
- [61] F. P. van der Zee, S. Villaverde, P. A. García, and F. Fdz.-Polanco, "Sulfide removal by moderate oxygenation of anaerobic sludge environments," *Bioresour. Technol.*, vol. 98, no. 3, Feb. 2007, pp. 518–524.
- [62] I. Diaz, S. I. Perez, E. M. Ferrero, and M. F.- Polanco, "Effect of oxygen dosing point and mixing on the microaerobic removal of hydrogen sulphidein sludge digester," *Bioresour. Technol.*, vol. 102, pp. 3768–3775, 2011.

- [63] Y. Tang, T. Shigematsu, Ikbal, S. Morimura, and K. Kida, "The effects of micro-aeration on the phylogenetic diversity of microorganisms in a thermophilic anaerobic municipal solid-waste digester," *Water Res.*, vol. 38(10), no. 2537–2550.
- [64] P. Kongjan, R. Jariyaboon, and S. O-Thong, "Anaerobic treatment of skim latex serum (SLS) for hydrogen and methane production using a twostage process in a series of upflow anaerobic sludge blanket reactor.," *Int. J. Hydrog. Energy*, vol. 39, 2014, pp. 19343–19348
- [65] M. T. Kato, J. A. Field, and G. Lettinga, "Anaerobe Tolerance to Oxygen and the Potentials of Anaerobic and Aerobic Cocultures for Wastewater Treatment," *Braz. J. Chem. Eng.*, vol. 14, no. 4, Dec. 1997.
- [66] C. F. Shen and S. R. Guiot, "Long-term impact of dissolved O<sub>2</sub> on the activity of anaerobic granules," *Biotechnol. Bioeng.*, vol. 49, no. 6, Mar. 1996, pp. 611–620.
- [67] M. Takahashi and S. Kyosai, "Pilot Plant Study on Microaerobic Self-Granulated Sludge Process (Multi-Stage Reversing Flow Bioreactor: MRB)," 09-Mar-2011.
- [68] D. Botheju, "Oxygen Effects in Anaerobic Digestion – A Review," *Open Waste Manag. J.*, vol. 4, no. 1, Apr. 2011, pp. 1–19.
- [69] D. H. Zitomer and J. D. Shrouf, "High-Sulfate, High-Chemical Oxygen Demand Wastewater Treatment Using Aerated Methanogenic Fluidized Beds," *Water Environ. Res.*, vol. 72, no. 1, Jan. 2000pp. 90–97.
- [70] M. Fdz.-Polanco, I. Díaz, S. I. Pérez, A. C. Lopes, and F. Fdz.-Polanco, "Hydrogen sulphide removal in the anaerobic digestion of sludge by micro-aerobic processes: pilot plant experience," *Water Sci. Technol.*, vol. 60, no. 12, Dec. 2009, p. 3045..
- [71] P. N. L. Lens and L. Hulshoff Pol, *Environmental technologies to treat sulfur pollution : principles and engineering*. Alliance House,12 Caxton street, London, UK: IWA, 2004.
- [72] S. Alcantara, A. Velasco, and A. Munoz, "Hydrogen Sulfide Oxidation by a Microbial Consortium in a Recirculation Reactor System: Sulfur Formation under Oxygen Limitation and Removal of Phenols," vol. 38, no. 3, Mar. 2004,pp. 918–923.
- [73] J. A. Siles, J. Brekelmans, M. A. Martín, A. F. Chica, and A. Matín, "Impact of Ammonia and Sulfate concentration on thermophilic anaerobic digestion," *Bioresour. Technol.*, vol. 101, 2010, pp. 9040–9048.
- [74] P. N. L. Lens, A. Visser, A. J. H. Jassen, L. W. Hulshoff Pol, and G. Lettinga, "Biotechnological treatment of sulfate-rich wastewater.," *Crit. Rev. Environ. Sci. Technol.*, vol. 28, 1998, p. 41.
- [75] J. T. de Sousa, J. F. Lima, V. C. da Silva, V. D. Leite, and W. S. Lopes, "Recovery of elemental sulphur from anaerobic effluents through the biological oxidation of sulphides," *Environ. Technol.*, vol. 1479–487X, 2016, pp. 1–9.
- [76] R. Jariyaboon, S. O-Thong, and P. Kongjan, "Bio-hydrogen and bio methane potentials of skim latex serum in batch thermophilic two stage anaerobic digestion," *Bioresour. Technol.*, vol. 198, 2015, pp. 198–206.

- [77] A. Visser, Y. Gao, and G. Lettinga, "Effect of short-term temperature increases on the mesophilic anaerobic breakdown of sulfate containing synthetic wastewater," *Water Res.*, vol. 27, no. 4, pp. 541–550, Apr. 1993.
- [78] A. Visser, Y. Gao, and G. Lettinga, "Anaerobic treatment of Synthetic Sulfate Containing Wastewater under Thermophilic Condition," *Water Sci & Tech.*, vol. 2, no. 7, Apr. 1992, pp. 193–202.
- [79] G. C. Stefess, R. A. M. Torremans, R. de Schrijver, L. A. Robertson, and J. G. Kuenen, "Quantitative measurement of sulphur formation by steady-state and transient state continuous cultures of autotrophic Thiobacillus species," *Appl Microbiol Biotechnol*, vol. 45, pp. 169–175, 1996.
- [80] A. Pake, C. Cheewasedtham, and W. Cheewasedtham, "Treatment of natural rubber latex serum waste by co-digestion with macroalgae, *Chaetomorpha* sp. and *Ulva intestinalis*, for sustainable production of biogas," vol. 69(3), pp. 416–424, 2015.
- [81] T. P. H. van den Brand, K. Roest, G. H. Chen, D. Brdjanovic, and M. C. M. van Loosdrecht, "Effects of Chemical Oxygen Demand, Nutrients and Salinity on Sulfate-Reducing Bacteria," *Environ. Eng. Sci.*, vol. 32, pp. 858–864, 2015.
- [82] T. P. H. van den Brand, K. Roest and M. C. M. van Loosdrecht, "Occurrence of sulfate reducing bacteria in aerobic activated sludge systems," *Micro. Bio. and bio Tech.*, vol. 32, no. 10, 2015, pp. 858–864.
- [83] H. N. Nguyen and T. T. Luong, "Situation of wastewater treatment of natural rubber latex processing in the Southeastern region, Vietnam," *J. Vietnam. Environ.*, vol. 2, no. 2, Jul. 2012, pp. 58–64.
- [84] Y. Chen, J. J. Cheng, and K. S. Creamer, "Inhibition of anaerobic digestion process: A review," *Bioresour. Technol.*, vol. 99, no. 10, Jul. 2008, pp. 4044–4064.
- [85] V. O'Flaherty, P. Lens, B. Leahy, and E. Colleran, "Long-Term Competition Between Sulphate- Reducing and Methane-Producing Bacteria During Full-Scale Anaerobic Treatment of Citric Acid Production Wastewater," *Water Res.*, vol. 32, 1998, pp. 815–825.
- [86] V. O'Flaherty, S. Colohan, D. Mulkerrins, and E. Colleran, "Effect of sulphate addition on volatile fatty acid and ethanol degradation in an anaerobic hybrid reactor. II: microbial interactions and toxic effects," *Bioresour. Technol.*, vol. 68, no. 2, May 1999, pp. 109–120.
- [87] A. Visser, *The anaerobic treatment of sulfate containing wastewater*. Landbouwniversiteit te Wageningen, 1995.
- [88] S. Chairapat, S. Wongchana, S. Loykulant, C. Kongkaew, and B. Charnnok, "Evaluating sulfuric acid reduction, substitution, and recovery to improve environmental performance and biogas productivity in rubber latex industry," *Process Saf. Environ. Prot.*, vol. 94, 2015, pp. 420–429.
- [89] R. Jariyaboon, S. O-Thong, and P. Kongjan, "Bio-hydrogen and bio methane potentials of skim latex serum in batch thermophilic two stage anaerobic digestion," *Bioresour. Technol.*, vol. 198, 2015, pp. 198–206.
- [90] L. B. Celis-García, E. Razo-Flores, and O. Monroy, "Celis-García, L.B., Razo-Flores, E., and Monroy, O. (2007). Performance of a down-flow fluidized-bed reactor under sulfate reduction conditions using volatile fatty acids as electron donors. *Biotechnol. Bioeng.* 97, 771.," *Biotechnol. Bioeng.*, vol. 97, 2007, p. 771.

- [91] D. M. McCartney and J. A. Oleszkiewicz, "Competition between Methanogens and Sulfate Reducers: Effect of COD:Sulfate Ratio and Acclimation," *Water Environ. Res.*, vol. 65, 1993, pp. 655–664.
- [92] M. V. G. Vallero, R. H. M. Trevino, P. L. Paulo, G. Lettinga, and P. N. L. Lens, "Effect of sulfate on methanol degradation in thermophilic methanogenic UASB reactor," *Enzyme Microb. Technol.*, vol. 32, 2003, p. 676.
- [93] A. Smul, L. Goethals, and W. Verstraete, "Effect of COD to sulphate ratio and temperature in expanded-granularsludge- blanket reactors for sulphate reduction," *Process Biochem.*, vol. 34, no. 407, 1998.
- [94] T. Imai, M. Ukita, M. Sekine, H. Nakanishi, and M. Fukagawa, "Treatment Characteristics of high strength fermentation wastewater consisting of high sulfate and Ammonia by UAHB process," *Water Sci. Technol.*, vol. 38, 1998, pp. 377–384.
- [95] N. Krakat, B. Demirel, R. Anjum, and D. Dietz, "Methods of Ammonia removal in anaerobic digestio: a review," *Water Sci. Technol.*, vol. 76(7–8), no. 2017, 2017, pp. 1925–1938.
- [96] P. N. L. Lens, A. Visser, A. J. H. Jassen, L. W. Hulshoff Pol, and G. Lettinga, "Biotechnological treatment of sulfate-rich wastewater.," *Crit. Rev. Environ. Sci. Technol.*, vol. 28, 1998, p. 41.
- [97] Y. Hu *et al.*, "Effect of influent COD/SO<sub>4</sub><sup>2-</sup> ratios on UASB treatment of a synthetic sulfate-containing wastewater," *Chemosphere*, vol. 130, 2015, pp. 24–33.
- [98] S. I. C. Lopes, M. I. Capela, P. N. L. Lens, and C. Dreissen, "Comparison of CSTR and UASB reactor configuration for the treatment of sulfate rich wastewaters under acidifying conditions," *Enzyme Microb. Technol.*, vol. 43, 2008, p. 471.
- [99] D. Mara and N. Horan, *Handbook of Water and Wastewater Microbiology. Great Britain: An Imprint of Elsevier*. Great Britain: Elsevier, 2003.
- [100] V. O'Flaherty, P. Lens, B. Leahy, and E. Colleran, "Long-Term Competition Between Sulphate- Reducing and Methane-Producing Bacteria During Full-Scale Anaerobic Treatment Of Citric Acid Production Wastewater," *Water Res.*, vol. 32, 1998, pp. 815–825.
- [101] D. Mara and N. Horan, *Handbook of Water and Wastewater Microbiology. Great Britain: An Imprint of Elsevier*. Great Britain: Elsevier, 2003.
- [102] A. Gupta, M. Gupta, J. R. V. Flora, G. D. Sayles, and M. T. Suidan, "Methanogenesis and sulfate reduction in chemostats-I. kinetic studies and experiments," vol. Wat. Res. 22, 1994, pp. 1075–1083.
- [103] M. H. Gerardi, "ORP Management in wastewater as an Indicator of Process Efficiency," *news letter of New England Interstate Water Pollution Control Commission*, Interstate Water Report, 2007.
- [104] I. Diaz, A. C. Lopes, S. I. Perez, and M. F.- Polanco, "Performance evaluation of oxygen, air and nitrate for the microaerobic removal of hydrogen sulphide in biogas from sludge digestion," *Bioresour. Technol.*, vol. 101, 2010, pp. 7724–7730.
- [105] D. M. McCartney and J. A. Oleszkiewicz, "Competition between Methanogens and Sulfate Reducers: Effect of COD:Sulfate Ratio and Acclimation," *Water Environ. Res.*, vol. 65, 1993, pp. 655–664.

- [106] C. Gil-Garcia, L. A. G. De Godoi, L. T. Fuess, and M. H. R. Z. Damianovic, "Performance improvement of a thermophilic sulfate-reducing bioreactor under acidogenic conditions: Effects of diversified operating strategies," *J. Environ. Manage.*, vol. 207, 2018, pp. 303–312.
- [107] Y. Hu *et al.*, "Effect of influent COD/SO<sub>4</sub><sup>2-</sup> ratios on UASB treatment of a synthetic sulfate-containing wastewater," *Chemosphere*, vol. 130, 2015, pp. 24–33.
- [108] A. Jassen *et al.*, "Application of bacteria involved in the biological sulfur cycle for paper mill effluent purification," *Sci. Total Environ.*, vol. 407, 2009, pp. 1333–1343.
- [109] Z. Jing, Y. Hu, Q. Niu, Y. Y. Li, and X. C. Wang, "UASB performance and electron competition between methane producing archaea and sulfate reducing bacteria in treating sulfare rich wastewater containing ethanol and acetate.," *Bioresour. Technol.*, vol. 137, 2013pp. 349–357.
- [110] M. V. G. Vallero, G. Lettinga, and P. N. L. Lens, "High rate sulfate reduction in a submerged anaerobic membrane bioreactor (SAMBaR) at high salinity," *J. Membr. Sci.*, vol. 253, 2005, pp. 217–232.
- [111] C. O'Reilly and E. Collieran, "Effect of influent COD/SO<sub>4</sub><sup>2-</sup> ratios on mesophilic anaerobic reactor biomass populations: physico-chemical and microbiological properties.," *FEMS Microbiol. Ecol.*, vol. 56, 2006, pp. 141–153.
- [112] C. J. N. Buisman, P. IJspeert, A. Hof, A. J. H. Janssen, R. Hagen, and G. Lettinga, "kinetic parameters of a mixed culture oxidizing sulfide and sulfur with oxygen," *Biotechnol. Bioeng.*, vol. 38, 1991, pp. 813–820.
- [113] X. Xu *et al.*, "Sulfate reduction, Sulfide oxidation and elemental sulfur bioreduction process: Modeling and experimental validation," *Bioresour. Technol.*, 2013.
- [114] S. Okabe, T. Ito, K. Sugita, and H. Satoh, "Succession of Internal Sulfur Cycles and Sulfur-Oxidizing Bacterial Communities in Microaerophilic Wastewater Biofilms," *Appl. Environ. Microbiol.*, vol. 71, No 5, 2014, pp. 2520–2529.
- [115] A. Sarti, A. J. Silva, M. Zaiat, and E. Foresti, "Full scale anaerobic sequencing batch biofilm reactor for sulfate-rich wastewater treatment," *Desalination Water Treat.*, vol. 25, 2011, pp. 13–19.
- [116] E. Escobar, L. Bravo, J. Hernandez, and L. Herrera, "Hydrogen sulfide production from elemental sulfur by *Desulfovibrio desulfuricans* in an anaerobic reactor.," *Biotechnol. Bioeng.*, vol. 98, 2007, pp. 569–577.
- [117] D. Botheju and R. Bakke, "Bio-gasification under partially aerated conditions: Results from batch experiemnts.," in *Linnaeus Eco-Tech' 10*, Kalmar, Sweden, 2010, pp. 549–557.
- [118] J. Cai, P. Zheng, M. Qaisar, and J. Zhang, "Elemental sulfur recovery of biological sulfide removal process from wastewater: A review," *Crit. Rev. Environ. Sci. Technol.*, vol. 0, 2017, pp. 1–21.
- [119] A. J. Janssen, R. Ruitenber, and C. J. Buisman, "Industrial applications of new sulphur biotechnology," *Water Sci. Technol.*, vol. 45, 2001, pp. 85–90.
- [120] K. A. Rabbani, W. Charles, R. Cord-Ruwisch, and G. Ho, "Recovery of sulphur from contaminated air in wastewater treatment plants by biofiltration: a critical review," *Environ. Sci. Biotechnol.*, vol. 14, 2015, pp. 523–534.



- [121] E. Sahinkaya, H. Hasar, A. H. Kaksonen, and B. E. Rittmann, "Performance of a sulfideoxidizing, sulfur-producing membrane biofilm reactor treating sulfide-containing bioreactor effluent," *Environ. Sci. Technol.*, vol. 45, 2011, pp. 4080–4087.
- [122] T. Hao *et al.*, "Review of biological sulfate conversions in wastewater treatment," *Water Res.*, vol. 65, 2014, pp. 1–21.
- [123] C. Chen, X. Zhou, A. J. Wang, N. Q. Ren, and D. J. Lee, "Elementary sulfur in effluent from denitrifying sulfide removal process as adsorbent for zinc(II)," *Bioresour. Technol.*, vol. 232, 2012, pp. 417–422.
- [124] M. T. Kato, J. A. Field, and G. Lettinga, "Anaerobe Tolerance to Oxygen and the Potentials of Anaerobic and Aerobic Cocultures for Wastewater Treatment," *Braz. J. Chem. Eng.*, vol. 14, no. 4, Dec. 1997.
- [125] P. G. Rathnasiri, "Anaerobic digestion process using membrane integrated micro-aeration," PhD thesis, Norwegian University of Science and Technology (NTNU), 2009.
- [126] J. E. Johansen and R. Bakke, "Enhancing hydrolysis with microaeration," *Water Sci. Technol.*, vol. 53, 2006, pp. 43–50.
- [127] P. Jenicek, F. Keclik, J. Maca, and J. Bindzar, "Use of microaerobic conditions for the improvement of anaerobic digestion of solid waste," *Water Sci. Technol.*, vol. 58, 2008, pp. 1491–1496.
- [128] S. Xu, A. Selvam, and J. W. C. Wong, "Optimization of micro-aeration intensity in acidogenic reactor of a two phase anaerobic digester treating food waste.," *Waste Manag.*, vol. 34, 2014, pp. 363–369..
- [129] W. Zhou, T. Imai, M. Ukita, F. Li, and A. Yuasa, "Effect of limited aeration on the anaerobic treatment of evaporator condensate from a sulfite pulp mill," *Chemosphere*, vol. 66, pp. 924–929.
- [130] A. Conklin, R. Bucher, H. D. Stensel, and J. Ferguson, "Effects of oxygen exposure on anaerobic digeter sludge," *Water Environ. Res.*, vol. 79(4), 2007, pp. 396–405.
- [131] L. B. Chu, X. W. Zhang, and Yang F.L., "Simultaneous removal of organic substances and nitrogen using a membrane bioreactor seeded with anaerobic granular sludge under oxygen-limited conditions," *Desalination Water Treat.*, vol. 172, 2005, pp. 271–280.