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**EDUCATION AND ACADEMIC TRAINING**

* Post-doctoral Research Associate, Department of Civil, Construction and Environmental Engineering**, Iowa State University**, Ames, IA; Mar 2002- Feb 2004.

Research focus: Bioenergy and Biobased Products, and Waste-to-Bioenergy

* Doctor of Philosophy, **The Hong Kong University of Science and Technology**, Hong Kong; Feb 1998 - Feb 2002.

Major: Civil Engineering (Environmental Engineering)

* Master of Engineering (M.S.), **Asian Institute of Technology**, Bangkok, Thailand; Jan 1996-Aug 1997.

Major: Environmental Engineering (Water/Wastewater Eng.) Ranking: top 5%

* Bachelor of Engineering *(First class with honors)*, **Malaviya National Institute of Technology** (formerly, Malaviya Regional Engineering College), Jaipur, India; Sep 1988 - Jan 1993.

Major: Civil Engineering Ranking: top 5%

* Proficiency Certificate Level (*First class with distinction in physics, chemistry and mathematics*), **Tribhuvan University**, Kathmandu, Nepal; Jun 1985 - Aug 1987.

Major: Science Ranking: top 5%

# PUBLICATIONS

## Books

* Anaerobic Digestion Series - Advances in Bioenergy Vol. 5. (eds. Yebo Li and Samir Kumar Khanal). Elsevier Inc. USA (Jun 2020; 344 pp).
* Current Developments in Biotechnology and Bioengineering: Sustainable Bioresources for Emerging Bioeconomy. (eds. Rupam Kataki, Ashok Pandey, Samir Kumar Khanal and Deepak Pant). Elsevier Inc. USA. (Jul 2020; 536 pp).
* Current Developments in Biotechnology and Bioengineering: Resource Recovery from Wastes. (eds. Sunita Varjani, Ashok Pandey, Edgard Gnansounou, Samir Kumar Khanal, Sindhu Raveendran). Elsevier Inc. USA Jan 2020; 481 pp).
* Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Biofuels (2nd Edition). (eds. Ashok Pandey, Christian Larroche, Claude-Gilles Dussap, Edgard Gnansounou, Samir Kumar Khanal, and Steven Ricke). Elsevier Inc. USA (Mar 2019; 867 pp).
* Waste Biorefinery: Potential and Perspectives. (eds. Ashok Pandey, Thallada Bhaskar, Ventaka Mohan, D.-J. Lee and Samir Kumar Khanal). Elsevier Inc. USA (Mar 2018; 816 pp).<https://www.elsevier.com/books/waste-biorefinery/pandey/978-0-444-63992-9>
* Bioenergy: Principles and Applications. (Yebo Li and Samir Kumar Khanal). John-Wiley & Sons, (Oct 2017; 600 pp) (Textbook). (Equal contribution) [http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118568311,subjectCd-AG90.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118568311%2CsubjectCd-AG90.html) (29-chapter textbook, SKK contributed 11 chapters and compiled solution manual)
* Fungal Biorefineries. (eds. Sachin Kumar, Pratibha Dheeran, Mohammad Taherzadeh and Samir Kumar Khanal). Springer (May 2018; 246 pp). <https://www.springer.com/us/book/9783319903781>​​
* Proceedings of the first international conference on “Recent Advances in Bioenergy Research” (eds. Sachin Kumar, Samir Kumar Khanal and Yogender Kumar Yadav). Springer (Spring 2016). <http://www.springer.com/us/book/9788132227717>
* Anaerobic Biotechnology for Bioenergy Production: Principles and Applications. (1st edition, Bestseller, Wiley-Blackwell Publishing) (Oct 2008; 320 pp). <http://www.wiley.com/WileyCDA/WileyTitle/productCd-0813823463.html>
* Bioenergy and Biofuel from Biowastes and Biomass. (Bestseller, American Society of Civil Engineers) (Apr 2010; 505 pp); Lead Editor and Contributor. <http://www.asce.org/Product.aspx?id=2147487587>

## Book Chapters

* Wongkiew, S., Hu, Z., Hua, N. T., and Khanal, S.K. 2020. Aquaponics for resource recovery and organic food productions. In Current Developments in Biotechnology and Bioengineering:  Sustainable Bioresources for Emerging Bioeconomy. (eds. Rupam Kataki, Ashok Pandey, Samir Kumar Khanal and Deepak Pant). Elsevier Inc., USA. Pp 475-494.​​
* Khanal, S.K., Nindhia, T.G.T., and Nitayavardhana, S., Biogas from wastes: processes and applications. 2019. In Sustainable Resource Recovery and Zero Wastes Approaches. (eds. Mohammad Taherzedah, Kim Bolton, Jonathan Wong and Ashok Pandey). Elsevier Inc., USA. Pp 165-174.​​
* Yasin, M., Chab, M., Chang, I.S., Atiyeh, H., Munasinghe, P.C., and Khanal, S.K. 2019. Syngas fermentation into biofuels and biochemicals. In Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Biofuels (2nd Edition). (eds. Ashok Pandey, Christian Larroche, Claude-Gilles Dussap, Edgard Gnansounou, Samir Kumar Khanal, and Steven Ricke). Elsevier Inc., USA. Pp 301-327.
* Nguyen, D., Saoharit Nitayavardhana, Chayanon Sawatdeenarunat, K.C. Surendra and Khanal, S.K. Biogas production by anaerobic digestion: Current status and perspectives. In Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Biofuels (2nd Edition). (eds. Ashok Pandey, Christian Larroche, Claude-Gilles Dussap, Edgard Gnansounou, Samir Kumar Khanal, and Steven Ricke). Elsevier Inc., USA. Pp 763-778.
* Sawatdeenarunat, C., Wangnai, C., Songkasiri, W., Panichnumsin, P., Saritpongteeraka, K., Boonsawang, P., Khanal, S.K., Chaiprapat, S. Biogas production from industrial effluents. In Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Biofuels (2nd Edition). (eds. Ashok Pandey, Christian Larroche, Claude-Gilles Dussap, Edgard Gnansounou, Samir Kumar Khanal, and Steven Ricke). Elsevier Inc., USA. Pp 301-327. Pp 779-816.
* Rajendran, K., Surendra, K.C., Tomberlin, J.K., and Khanal, S.K. 2018. Insect-based biorefinery for bioenergy and biobased products: A critical review. In Waste Biorefinery: Potential and Perspectives. (eds. Ashok Pandey, Thallada Bhaskar, Ventaka Mohan, D.-J. Lee and Samir Kumar Khanal). Elsevier Inc., USA. Pp 657-669.
* Khanal, S.K. Giri, B., Nitayavardhana, S., and Gadhamshetty, V. 2017. Anaerobic reactor/digester: Design and development. In Current Developments in Biotechnology and Bioengineering. (eds. D.-J. Lee, J. Jegatheesan, P. Hallenbeck, H. H. Ngo, and A. Pandey). Elsevier Inc., USA. pp 261-279.
* Takara, D., and Khanal, S.K. 2012. Biomass pretreatment for biofuel production. In Sustainable Bioenergy and Bioproducts. (eds. K. Gopalakrishnan, H. van Leeuwen, and R. Brown). Springer-Verlag Inc., London, UK. pp 59-70.
* Shrestha, P., Pometto III. A.L., Khanal, S.K., and Van Leeuwen, J.  2012. Second-generation biofuel production from corn-ethanol industry residues. In Sustainable Bioenergy and Bioproducts. (eds. K. Gopalakrishnan, H. van Leeuwen, and R. Brown). Springer-Verlag Inc., London, UK. pp 71-87.
* Khanal, S.K., and Munasinghe, P. 2011.Biomass-derived syngas fermentation into biofuels. In Biofuels: Alternative Feedstocks and Conversion Processes. (eds. A. Pandey, C. Larroche, S.C. Ricke, C.G. Dussap and E. Gnansounou). Elsevier Inc., USA. pp 79-98.
* Khanal, S.K., and Lamsal, B.P. 2010. Biofuel and bioenergy production: some perspectives. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 1-22.
* Takara, D., Shrestha, P., and Khanal, S.K. 2010. Lignocellulosic biomass pretreatment. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 158-171.
* Shrestha, P., Lamsal, B.P., and Khanal, S.K. 2010. Preprocessing of lignocellulosic biomass for biofuel production. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 172-200.
* Lamsal, B.P., Shrestha, P., and Khanal, S.K. 2010. Enzymatic hydrolysis of lignocellulosic biomass for biofuel production. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 201-224.
* Gadhamshetty, V., Nirmalakhandan, N., Khanal, S.K., and Johnson, G.R. 2010. Bioreactor systems for biofuel/bioelectricity production. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 275-312.
* Shrestha, P., Rasmussen, M.R., Nitayavardhana, S., Khanal, S.K., and Van Leeuwen. J. 2010.  Bioreactor systems for biofuel/bioelectricity production. In Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 389-410.
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* Ahmar Siddiqui, M., Biswal, B.K., Heynderickx, P.M., Kim, J., Khanal, S.K., Chen, G., Wu, D.Dynamic anaerobic membrane bioreactor coupled with sulfate reduction (SrDMBR) for saline wastewater treatment (2022) Bioresource Technology, 346, art. no. 126447.
* Andrade Cruz, I., Chuenchart, W., Long, F., Surendra, K.C., Renata Santos Andrade, L., Bilal, M., Liu, H., Tavares Figueiredo, R., Khanal, S.K., Fernando Romanholo Ferreira, L. Application of machine learning in anaerobic digestion: Perspectives and challenges (2022) Bioresource Technology, 345, art. no. 126433.
* Wongkiew, S., Polprasert, C., Koottatep, T., Limpiyakorn, T., Surendra, K.C., Khanal, S.K. Chicken manure-based bioponics: Effects of acetic acid supplementation on nitrogen and phosphorus recoveries and microbial communities (2022) Waste Management, 137, pp. 264-274.
* He, M., Zhu, X., Dutta, S., Khanal, S.K., Lee, K.T., Masek, O., Tsang, D.C.W. Catalytic co-hydrothermal carbonization of food waste digestate and yard waste for energy application and nutrient recovery (2022) Bioresource Technology, 344, art. no. 126395.
* Zeng, Q., Zan, F., Hao, T., Khanal, S.K., Chen, G. Sewage sludge digestion beyond biogas: Electrochemical pretreatment for biochemicals (2022) Water Research, 208, art. no. 117839.
* Karki, R., Chuenchart, W., Surendra, K.C., Sung, S., Raskin, L., Khanal, S.K. Anaerobic co-digestion of various organic wastes: Kinetic modeling and synergistic impact evaluation (2022) Bioresource Technology, 343, art. no. 126063.
* Zeng, Q., Wang, Y., Zan, F., Khanal, S.K., Hao, T. Biogenic sulfide for azo dye decolorization from textile dyeing wastewater (2021) Chemosphere, 283, art. no. 131158.
* Siddiqui, M.A., Biswal, B.K., Saleem, M., Guan, D., Iqbal, A., Wu, D., Khanal, S.K., Chen, G. Anaerobic self-forming dynamic membrane bioreactors (AnSFDMBRs) for wastewater treatment – Recent advances, process optimization and perspectives (2021) Bioresource Technology, 332, art. no. 125101.
* Kim, S.-H., Kumar, G., Chen, W.-H., Khanal, S.K. Renewable hydrogen production from biomass and wastes (ReBioH2-2020) (2021) Bioresource Technology, 331, art. no. 125024.
* Karki, R., Chuenchart, W., Surendra, K.C., Shrestha, S., Raskin, L., Sung, S., Hashimoto, A., Kumar Khanal, S. Anaerobic co-digestion: Current status and perspectives (2021) Bioresource Technology, 330, art. no. 125001.
* Chuenchart, W., Karki, R., Shitanaka, T., Marcelino, K.R., Lu, H., Khanal, S.K. Nanobubble technology in anaerobic digestion: A review (2021) Bioresource Technology, 329, art. no. 124916.
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* Oberoi, A.S., Huang, H., Khanal, S.K., Sun, L., Lu, H. Electron distribution in sulfur-driven autotrophic denitrification under different electron donor and acceptor feeding schemes (2021) Chemical Engineering Journal, 404, art. no. 126486.
* Sebayuana, K., Nindhia, T.G.T., Surata, I.W., Nindhia, T.S., Shukla, S.K., Khanal, S.K. Performance of 500 liter stainless steel portable biogas anaerobic digester with agitator designed for the tropical developing country (2021) Key Engineering Materials, 877 KEM, pp. 160-165.
* Jia, Y., Khanal, S.K., Yin, L., Sun, L., Lu, H. Influence of ibuprofen and its biotransformation products on different biological sludge systems and ecosystem (2021) Environment International, 146, art. no. 106265.
* Varjani, S.J., Taherzadeh, M., Khanal, S., Pandey, A.New horizons in biotechnology: Advances in sustainable industrial and environmental bioprocesses and bioproducts (2020) Industrial Crops and Products, 158, art. no. 113000.
* Khanal, S.K., Varjani, S., Sze Ki Lin, C., Awasthi, M.K.Waste-to-resources: Opportunities and challenges (2020) Bioresource Technology, 317, art. no. 123987.
* Surendra, K.C., Tomberlin, J.K., van Huis, A., Cammack, J.A., Heckmann, L.-H.L., Khanal, S.K.Rethinking organic wastes bioconversion: Evaluating the potential of the black soldier fly (Hermetia illucens (L.)) (Diptera: Stratiomyidae) (BSF) (2020) Waste Management, 117, pp. 58-80.
* Khanal, S.K., Wong, J.W.C., Sánchez, A., Insam, H. Recent advances in anaerobic digestion (2020) Bioresource Technology, 316, art. no. 123955.
* Khanal, S.K.A Conversation with Samir Khanal (2020) Industrial Biotechnology, 16 (4), pp. 218-219.
* Rene, E.R., Bhaskar, T., Sang, B.-I., Khanal, S.K., Pandey, A. Innovations in environmental bioprocesses for sustainable development (2020) Environmental Science and Pollution Research, 27 (22), pp. 27169-27171.
* Oginni, O., Yakaboylu, G.A., Singh, K., Sabolsky, E.M., Unal-Tosun, G., Jaisi, D., Khanal, S., Shah, A. Phosphorus adsorption behaviors of MgO modified biochars derived from waste woody biomass resources (2020) Journal of Environmental Chemical Engineering, 8 (2), art. no. 103723.
* Oliveira, F.R., Surendra, K.C., Jaisi, D.P., Lu, H., Unal-Tosun, G., Sung, S., Khanal, S.K. Alleviating sulfide toxicity using biochar during anaerobic treatment of sulfate-laden wastewater (2020) Bioresource Technology, 301, art. no. 122711.
* Wells, J.M., Drielak, E., Surendra, K.C., Kumar Khanal, S. Hot water pretreatment of lignocellulosic biomass: Modeling the effects of temperature, enzyme and biomass loadings on sugar yield (2020) Bioresource Technology, 300, art. no. 122593.
* Zhu, W., He, Q., Gao, H., Nitayavardhana, S., Khanal, S.K., Xie, L. Bioconversion of yellow wine wastes into microbial protein via mixed yeast-fungus cultures (2020) Bioresource Technology, 299, art. no. 122565.
* Jia, Y., Yin, L., Khanal, S.K., Zhang, H., Oberoi, A.S., Lu, H. Biotransformation of ibuprofen in biological sludge systems: Investigation of performance and mechanisms (2020) Water Research, 170, art. no. 115303.
* Varjani, S., Pandey, A., Gnansounou, E., Khanal, S.K., Raveendran, S. Current developments in biotechnology and bioengineering: Resource recovery from wastes (2020) Current Developments in Biotechnology and Bioengineering: Resource Recovery from Wastes, pp. 1-490.
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* Zhang, H., Khanal, S.K., Jia, Y., Song, S., Lu, H. Fundamental insights into ciprofloxacin adsorption by sulfate-reducing bacteria sludge: Mechanisms and thermodynamics (2019) Chemical Engineering Journal, 378, art. no. 122103.
* Nguyen, D., Wu, Z., Shrestha, S., Lee, P.-H., Raskin, L., Khanal, S.K. Intermittent micro-aeration: New strategy to control volatile fatty acid accumulation in high organic loading anaerobic digestion (2019) Water Research, 166, art. no. 115080.
* Li, X., Lin, S., Hao, T., Khanal, S.K., Chen, G. Elucidating pyrolysis behaviour of activated sludge in granular and flocculent form: Reaction kinetics and mechanism (2019) Water Research, 162, pp. 409-419.
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* Qiu, L.-Q., Zhang, L., Tang, K., Chen, G., Kumar Khanal, S., Lu, H. Removal of sulfamethoxazole (SMX) in sulfate-reducing flocculent and granular sludge systems (2019) Bioresource Technology, 288, art. no. 121592.
* Oberoi, A.S., Jia, Y., Zhang, H., Khanal, S.K., Lu, H. Insights into the Fate and Removal of Antibiotics in Engineered Biological Treatment Systems: A Critical Review (2019) Environmental Science and Technology, 53 (13), pp. 7234-7264.
* Phuttaro, C., Sawatdeenarunat, C., Surendra, K.C., Boonsawang, P., Chaiprapat, S., Khanal, S.K. Anaerobic digestion of hydrothermally-pretreated lignocellulosic biomass: Influence of pretreatment temperatures, inhibitors and soluble organics on methane yield (2019) Bioresource Technology, 284, pp. 128-138.
* Khanal, S.K., Nindhia, T.G.T., Nitayavardhana, S. Biogas from wastes: Processes and applications (2019) Sustainable Resource Recovery and Zero Waste Approaches, pp. 165-174.
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* Yasin, M., Cha, M., Chang, I.S., Atiyeh, H.K., Munasinghe, P., Khanal, S.K. Syngas fermentation into biofuels and biochemicals (2019) Biomass, Biofuels, Biochemicals: Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Liquid and Gaseous Biofuels, pp. 301-327.
* Nguyen, D., Khanal, S.K. A little breath of fresh air into an anaerobic system: How microaeration facilitates anaerobic digestion process (2018) Biotechnology Advances, 36 (7), pp. 1971-1983.
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