

CURRICULUM VITAE

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RESEARCH EXPERIENCES

◆ *September 2023* – Present, **Assistant Professor**,

Pak Austria Fachhochschule, Institute of Applied Science and Technology,

Projects: *Molecular mechanisms of plant biomass degradation in microbes.*

◆ *August 2022*, **Postdoctoral Fellow**, University of Minnesota, Twin Cities.

Projects: *Fungal-bacterial interactions facilitating lignin mineralization.*

Advisor: Jiwei Zhang; Funded by U.S. DOE, Biological and Environmental Research program

◆ *August 2018 – November 2020*, **Research Associate**, Qingdao Institute of Bioenergy and

Bioprocess Technology, Chinese Academy of Sciences. Project: *Bio-natural gases production*

from various feedstocks.

Advisor: Fuli Li; Funded by CAS president's International Fellowship Initiative (PIFI)

◆ *September 2016 – July 2018*, **Postdoctoral Fellow**, Tsinghua University of China. Projects: *Bacterial*

association in methane generation pathways of an anaerobic digesting sludge via metagenomic.

Advisor: Kaijun Wang; Funded by Major Science and Technology Program China (2017ZX07102-004)

EDUCATION

◆ *September 2012 – December 2015*, **Ph.D. in Biochemistry and Molecular Biology**, State Key

Laboratory of Bioenergy Research; Xiamen University, Xiamen 361100, People's Republic of China

Dissertation: *Study on Cellulose Degradation Enzymes and Gene Expression of Aspergillus niger BE-2.*

Advisor: Minnan Long; Funded by NSF of China, National Basic Research Program of China

◆ *January 2010 – July 2012*, **M.S. in Biotechnology**, Agricultural University Peshawar, Pakistan.

Thesis: *Antimicrobial activity of different solvent-extracted samples from the flowers of medicinally important Plumeria obtusa*

Advisor: Jehan Bakht and Dawood Ahmad

◆ *September 2005 – November 2009*, **B.S. in Biotechnology**, University of Malakand, Pakistan.

Thesis: *Cytogenetic biomonitoring in petrol station attendants: A micronucleus study*

Advisor: Dawood Ahmad and Ashfaq Khan

RESEARCH INTERESTS

◆ System biology of plant biomass-degrading microbes.

◆ Genetic mechanisms of plant biomass decomposition by fungi and Yeast.

◆ Traditional and high throughput genetic tools in *Pichia pastoris GS115*.

◆ Application of genetic engineering for biomass conversion and bioremediation.

◆ Biotransformation of food waste into value-added products.

PUBLICATIONS (*corresponding author)

1. **Ali N***, Giwa AS., Cellulose degradation enzymes in filamentous fungi, A bioprocessing approach towards biorefinery. *Molecular Biotechnology* (IF: 3.3), 2023. Doi: 10.1007/s12033-023-00900-1
2. **Ali N***, Giwa AS., An extensive approach towards engineering design of sewage plants in China. *Process* (IF: 3.7). 2023. doi: 10.3390/pr11103010.
3. **Ali N.**, Nandini S., Jiwei Z., Lignin-converting microbes from forest ecosystem, an approach towards kraft lignin degradation. *ISME Journal* (IF: 11), (In Review), 2023.
4. **Ali N.**, Jiwei Z., The disintegration of organosolv lignin by a cocktail force from northern wood. *Science of the Total Environment* (IF: 11), (In Review), 2023.
5. Giwa A.S., **Ali N***, Ahmad I., Asif M., Guo R.B., Li F.L., Lu M., Prospects of China's Biogas, fundamentals, challenges, and considerations, *Energy Reports* (IF: 5.595), Doi: 10.1016/j.egyr.2020.10.027, Nov. 2020.
6. Giwa A.S., **Ali N.***, Swine manure valorization in fabrication of nutrition and energy, *Applied Microbiology Biotechnology* (IF: 5.530), 10.1007/s00253-020-10963-8, Oct. 2020.
7. **Ali N.**, Hamouda H.I., Feng J., Su H., Liu Z.Y., Lu M., Li F.L., A two-stage anaerobic bioconversion of corn stover: Impact of pure bacterial pretreatment on methane production, *Environmental Technology & Innovations* (IF: 7.756), 10.1016/j.eti.2020.101141, Sep. 2020.
8. Hamed H., **Ali N**, Hang S., Lu M., Li F.L., Exploration of two pectate lyases from *Caldicellulosiruptor bescii* reveals a crucial role of CBM66 module in pectic biomass degradation, *Applied and Environmental Microbiology* (IF: 6.960), 10.1128/AEM.00787-20, Aug. 2020.
9. Giwa A.S., **Ali N***, Athar M.A., Wang K.J., Dissecting microbial community structure in sewage treatment plant for pathogens detection using metagenomic sequencing technology. *Archives of Microbiology* (IF: 2.884), 10.1007/s00203-019-01793-y, May 2020.
10. **Ali N.**, Hamouda H.I., Su H., Li F.L., Lu M., Combinations of alkaline hydrogen peroxide and lithium chloride/N,N-dimethylacetamide pretreatments of corn stalk for improved bio-methanation. *Environmental Research* (IF: 8.715), 10.1016/j.envres.2020.109563, Apr. 2020.
11. Giwa A.S., **Ali N***, Chang F., Wu J.J., Wang K.J., Opportunities for holistic waste streams valorization from the food waste treatment facility, *Reviews in Chemical Engineering*, (IF: 8.742) 10.1515/revce-2019-0064, Mar. 2020.
12. **Ali N.**, Zhang Q., Liu Z.-Y., Li F.-L., Lu M., Fang X.-C., Emerging technologies for the pretreatment of lignocellulosic materials for fermentation bio-based products, *Applied Microbiology Biotechnology*, (IF:5.53) 10.1007/s00253-019-10158-w, Nov. 2019.
13. **Ali N.**, Hui G., Giwa A.S., Wang K.J., Evaluation of bacterial association in methane generation pathways of an anaerobic digesting sludge via metagenomic sequencing, *Archives of Microbiology* (IF: 2.884), 10.1007/s00203-019-01716-x, Aug. 2019.
14. **Ali N.**, Hui G., Giwa A.S., Yuan Q., Wang K.J., Metagenomic analysis and characterization of acidogenic microbiome and effect of pH on organic acids production, *Archives of Microbiology* (IF: 2.884), 10.1007/s00203-019-01676-2, Jun. 2019.
15. **Ali N.**, Giwa A.S., Abdalla M., Liu X., Alkaline hydrogen peroxide pretreatment of Bamboo culm for improved enzymatic release of reducing sugars, *Cellulose* (IF: 6.210), 10.1007/s10570-019-02829-8, Apr. 2019.
16. **Ali N.***, Liu J., Construction of novel *Trichoderma orientalis* EU7-22, strain with improved β -glucosidase Activity by cellobiohydrolase I promotor optimization from *Trichoderma reesei*, *Biocatalysis and Agricultural Biotechnology*, (IF: 6.2) 10.1016/j.bcab.2019.101223, Jul. 2019.
17. **Ali N.**, Xue Y., Gan L.H., Liu J., Long M.N., Purification, Characterization, Gene Cloning and Sequencing of a new β -glucosidase from *Aspergillus niger* BE-2, *Applied Biochemistry and Microbiology*, (IF: 1.171) 10.1134/S0003683816050045, Sep. 2016.
18. **Ali N.**, Ting Z, Li H.L., Xue Y, Gan L.H, Liu J, Long M.N. Heterogeneous Expression and Functional Characterization of Cellulose-Degrading Enzymes from *Aspergillus niger* for Enzymatic Hydrolysis of Alkali Pretreated Bamboo Biomass, *Molecular Biotechnology* (IF: 2.862), 10.1007/s12033-015-9878-x, Jul. 2015.
19. **Ali N.**, Ahmad D., Bakht J., Antimicrobial activity of different solvent extracted samples from the flowers of medicinally important *Plumeria obtusa*, *Pakistan Journal of Pharmaceutical Science*, (IF: 1.12), 28, 195–200. Jan. 2015.
20. **Ali N.**, Ting Z, Khan YH, Athar MA, Long M., Enzymatic hydrolysis of cellulosic biomass for the production of biofuels, A Review, *International Journal of Engineering and Technical Research*, (IF: 0.71), 2 (12), 89–96. Dec. 2014.
21. **Ali N.***, Athar M.A., Khan Y.H., Idrees M., Ahmad D., Regulation and improvement of cellulase production: Recent advances, *Natural Resources*, (IF: 2.81), 10.4236/nr.2014.514073, Nov. 2014.
22. **Ali N.***, Athar M.A., Khan Y.H., Idrees M., Ahmad D., Making biofuels from microalgae, A review of Technologies, *Global Journal of Food Science and Technology*, (IF: 2.7), 1(2), 7–14, Nov. 2014.
23. **Ali N.**, Ahmad D., Bakht J., Antimicrobial activity of leaves extracted samples from medicinally important *Plumeria obtusa*, *Journal of Medicinal Plants Research*, (2.13), 10.5897/JMPR12.223, May 2013.
24. **Ali N.**, Giwa AS., A comprehensive approach toward sewage treatment plants development in China. *Environment, development and sustainability* (IF: 5.7). 2023.
25. **Ali N.**, Giwa AS., Lignin into intracellular metabolites, An approach towards clean environment. *Process* (IF:3.7).
26. **Giwa A.S, Ali N***. 2020. Perspectives of nervonic acid production by *Yarrowia lipolytica*.

- Biotechnology Letters*, (IF: 2.716), Doi: <https://doi.org/10.1007/s10529-022-03231-4>.
27. Giwa A.S, Ali N. 2022. Approaches for treating domestic wastewater with food waste and recovery of potential resources. *Environmental Pollutants and Bioavailability*, (IF: 2.71), Doi: [10.1080/26395940.2022.2137061](https://doi.org/10.1080/26395940.2022.2137061).
 28. Jiarui X; Yuan Q; Wang Q; Ali N; Gong H; Wang K. 2021. Carbon-nitrogen nexus changed by improved organic carbon pre-concentration and autotrophic de-ammonification to improve wastewater treatment energy self-sufficiency. *Journal of Water Process Engineering*, (IF: 7.34), <https://doi.org/10.1016/j.jwpe.2021.102432>.
 29. Giwa A.S, Zhang XQ, Memon AG, Ali N. 2021. Co-digestion of household black water with kitchen waste for sustainable decentralized waste management: Biochemical methane potential and mixing ratios effects. *Environmental Engineering Science*, (IF: 3.81), <https://doi.org/10.1089/ees.2020.0276>.
 30. Giwa A.S, Ali N, Chang F, Jing Y, Guo X.G, Wang K.J. 2020. Evaluation of the potential beneficial pyrolyzed product yields from sewage sludge and bone waste disposal. *Environmental Technology & Innovation*, (IF: 7.781), Doi: [10.1016/j.eti.2020.100784](https://doi.org/10.1016/j.eti.2020.100784)
 31. Liu X, Chen Q, Ali N, Zhang J, Wang M, Wang Z.Y. 2019. Single and joint oxidative stress-related toxicity of sediment-associated cadmium and lead on *Bellamya aeruginosa*, *Environmental Science Pollution Research*, (IF: 5.191), Doi: [10.1007/s11356-019-05769-9](https://doi.org/10.1007/s11356-019-05769-9).
 32. Yuan Q, Hui G, Ali N, Xi H, Xu H, Jin Z.Y, Wang K.J. 2019. Strategies to improve aerobic granular sludge stability and nitrogen removal based on feeding mode and substrate, *Journal of Environmental Sciences*, (IF: 6.796), 144-154, Doi: [10.1016/j.jes.2019.04.006](https://doi.org/10.1016/j.jes.2019.04.006)
 33. Giwa A.S, Xu H, Ali N, Chang F, Wu J.J, Wang K.J. 2019. Effect of biochar on reactor performance and methane generation during the anaerobic digestion of food waste treatment at long-run operations, *Environmental Chemical Engineering*, (IF: 7.968), Doi: [10.1016/j.iece.2019.103067](https://doi.org/10.1016/j.iece.2019.103067)
 34. Wang Q, Yao R, Ali N, Yuan Q, Hui G, Xu H, Jin Z.Y, Zuo J, Wang K.J. 2018. Aerobic granules cultivated with simultaneous feeding/draw mode and low strength wastewater: Performance and bacterial community analysis, *Bioresource Technology*, (IF: 11.889), 232–239. Doi: [10.1016/j.biortech.2018.04.002](https://doi.org/10.1016/j.biortech.2018.04.002)
 35. Li H.L, Wu J.L, Ali N, Jiang F.J, Xue Y, Liu J, Gan L.H, Long M.N. 2014. Functional expression and synergistic cooperation of xylan-degrading enzymes from *Hypocrea orientalis* and *Aspergillus niger*, *Chemical Technology and Biotechnology*, (IF: 3.709), 90, 2083–2091. Doi: [10.1002/jctb.4521](https://doi.org/10.1002/jctb.4521)
 36. Zhang T, Wu J.L, Ali N, Liu J, Gan L.H, Long M.N. 2014. High Level Expression of β -Glucosidase by Recombinant *Pichia pastoris* Through the One-Phase Fermentation Based on Cheap Medium Optimized by Back-Propagation Neural Network-Genetic Algorithm, *Bioprocess Engineering and Biorefinery*, (IF: 4.42), 03, 01–07. Doi: [10.1166/jbeb.2014.1078](https://doi.org/10.1166/jbeb.2014.1078).
 37. Giwa A.S, Ali N, Bo H, Wang K.J. 2019. Pyrolysis coupled anaerobic digestion process for food waste and recalcitrant residues; Fundamentals, challenges and considerations, *Energy Science & Engineering*, (IF: 4.35), Doi: [10.1002/ese3.503](https://doi.org/10.1002/ese3.503)

RESEARCH PROJECTS

“Bacterial association in methane generation pathways of an anaerobic digesting sludge via metagenomic sequencing” Kaijun wang and ALI NASIR. Tsinghua University. Funded by Major science and technology program for water pollution and control (2017ZX07102-004) 01/01/2017- 6/30/2018 (CoPI; CNY400,000)

“Study on Cellulose Degradation Enzymes and Gene Expression of *Aspergillus niger* BE-2”. Minnan Long and ALI NASIR; Funded by Research fund of Fujian Provincial Natural Science Foundation (2012J05029), (CoPI; CNY200, 000)

HONORS & AWARDS

- ◆ PIFI awardees at Qingdao Institute of Bioenergy and Bioprocess Technology.
- ◆ Postdoc awardee at Tsinghua University, ¥200,000.
- ◆ CSC scholarship award at Xiamen University ¥120,000.
- ◆ Protein engineering conference travel awards, University of Illinois, ¥10,000
- ◆ “Award For Impactful Research” of College of Engineering, Peking University.
- ◆ National Scholarship of Graduate Student, Excellent Graduate Student of Xiamen University,

¥ 10,000; top 04%

- ◆ National Youth Internship Award, National Internship Program Pakistan PKR120,000.
- ◆ Merit Award of USAID, University of Malakand, Pakistan, PKR55,000.
- ◆ Research Achievement Scholarship of Tsinghua University, ¥2,000; top 5%.
- ◆ Scholarship of Undergraduate Student, PKR80,000.

SELECTED PRESENTATIONS:

- ◆ International Symposium of Environmental Microbiology and Health, Beijing 2019.
- ◆ Cyanobacteria in Fundamental Research, Biotechnology and Synthetic Biology Wuhan.
- ◆ 14th International Conference on Waste Management and Technology, Beijing, 2019.
- ◆ 10th Asia-Pacific Conference on Algal Biotechnology, Nanchang, Jiangxi China, 2019.
- ◆ A Synthetic Biology Frontier Workshop Held at Qingdao China, 2018.
- ◆ 15th IWA World Conference on Anaerobic Digestion at Beijing, China, 2017.
- ◆ CLIB-Qingdao Biotechnology Workshop Qingdao, 2016.
- ◆ 6th Annual world congress of Bioenergy held, South Korea, 2016.
- ◆ 1st International Alginate & Marine Biomaterial Congress (IAMBC 2015) Qingdao.
- ◆ Protein Engineering, Chicago, United States. October 2015.
- ◆ 4th Annual World Congress of Bioenergy, Dalian China, 2014.
- ◆ 4th International Conference on Biorefinery towards Bioenergy, Xiamen 2013.
- ◆ RT PCR Conference Xiamen University, Xiamen China, 2012.
- ◆ International weed conference, University of Peshawar, Pakistan, 2011.

References:

- ◆ **Irshad Ul Haq** (Researcher Professor)
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University of Minnesota, USA, +1 (732)589-6340
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Institute of Biotechnology & Genetic Engineering, Agricultural University Peshawar, 25130,
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