

CURRICULUM VITAE

PERSONAL DETAILS

Name: Fida Hussain, PhD

Designation: Lecturer

Address: Faculty of Natural Science, Department of Botany, Islamia College Peshawar, KP, Pakistan (25000)

Date of Birth: Feb 27, 1986

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ACADEMIC QUALIFICATION

Post-Doc (Microalgal Biotechnology: 2016- 2017)

Parent Institute: Nanchang University, Honggutan New District, Nanchang, Jiangxi, P.R. China

Research Institute: School of Resources, Environmental & Chemical Engineering, Nanchang University

PhD (Botany-2014)

Parent Institute: Department of Botany, Islamia College Peshawar KP, Pakistan

Research Title: Bioprospecting of Promising Microalgal Strains and Their Application in CO₂ Biomitigation

Research Institute: Department of Botany, Islamia College Peshawar KP, Pakistan/ University of Minnesota, USA

M. Phil(Botany-2010)

Parent Institute: Department of Botany, Hazara University, KP, Pakistan

Research Title: Studies on Unicellular Green Algae of District Peshawar

Research Institute: Department of Botany, Hazara University, KP, Pakistan

MSc (Botany-2008)

Parent Institute: Department of Botany, Islamia College Peshawar KP, Pakistan

Thesis Topic: Mutation Breeding in Sunflower (*Helianthus annuus*) L.

Research Institute: Department of Botany, Islamia College Peshawar KP, Pakistan

BSc(Biological Sciences-2005)

Parent Institute: Government Degree College, Thana District Malakand, Pakistan

RESEARCH INTREST

My algal research is highly diverse, ranging from ecosystem studies to molecular techniques. The aims of my research are to study algal molecular biology and physiological processes in the laboratory and apply the insights gained to (i) understanding ecological processes in the field and (ii) developing biotechnological applications of algae including biofuels and bioremediation. My research is highly interdisciplinary, with approaches including aquatic ecology, molecular biology and sequencing, genetic manipulation, and industrial applications of microalgae, and relates particularly to the effects of stress on microalgae, and the study of stressful environments.

ADDITINAL EXPERIENCE

PROJECTS:

Establishment of Phycology lab during stay at the Department of Botany, The agriculture University Peshawar, Pakistan

Key role in establishment of Department of Botany, in Qurtuba University Peshawar, Pakistan

Establishment of Phycology lab during stay at the Department of Botany, Qurtuba University Peshawar, Pakistan

Establishment of Herbarium during stay in Department of Botany, Qurtuba University Peshawar, Pakistan

Establishment of Botanical Garden during stay in Department of Botany, Qurtuba University Peshawar, Pakistan

SEMINARS AND WORKSHOPS ATTENDED

1. International seminar on “Algae Promise and Problems---A Bio-energy Resource Needing Development” Green Hall, UMN, USA, November 11, 2013
2. International seminar on “Microalgae research at the Norwegian University of Life Sciences” 1390 Eckles Ave, St Paul, MN 55108, UMN, USA, December 11 2013
3. International seminar on “The Possibility and Difficulties of Replacement of Fossil Fuel with Bio-fuel” 1390 Eckles Ave, St Paul, MN 55108, UMN, USA, November 14, 2013.
4. International seminar on “The Race to Understand a Changing Planet” the North Star Ballroom, UMN, USA, October 17, 2013.
5. International seminar on “Crossing Institutional Silos for Sustainable Solutions” 325 Learning and Environmental Sciences Building, 1954 Buford Avenue, Saint Paul, MN 55108 September 18, 2013.
6. The 3rd International Symposium on Processing of Foods, Vegetables and Fruits (ISPFVF), University of Nottingham, Malaysia Campus: Aug 11-13, 2014.
7. Teachers training workshop on Collection, preservation and identification of plant Diversity Pakistan Museum of Natural History (PMNH) Islamabad May 21st 2012

TEACHING EXPERIENCE

Working as Lecturer at the Department of Botany, Islamia College Peshawar since January 2021.

worked as Assistant Professor in Botany, QUSIT, Peshawar KP Pakistan (November 2014 December 2020)

Worked as lecturer in Botany at The University of Agriculture Peshawar for 2 years.

6 years visiting teaching experience at the Department of Botany, Islamia College Peshawar

Worked as visiting scholar in Department of Biosystems and Bioproducts Engineering, UMN, USA

RESEARCH PUBLICATIONS

1. **Hussain, F.**, Shah S.Z., Zhou, W., Iqbal, M. 2017. Microalgae screening under CO₂ stress: Growth and micro-nutrients removal efficiency. *Journal of Photochemistry and Photobiology B: Biology*. 170: 91-98.
2. **Hussain, F.**, Shah, S. Z., Ahmad, H., Abubshait, S. A., Abubshait, H. A., Laref, A., ... & Iqbal, M. (2021). Microalgae an ecofriendly and sustainable wastewater treatment option: Biomass application in biofuel and bio-fertilizer production. A review. *Renewable and Sustainable Energy Reviews*, 137, 110603.
3. Xie, Q., Borges, F. C., Cheng, Y., Wan, Y., Li, Y., Lin, X., Liu, Y., **Hussain, F.**, Chen, P., Ruan, R., 2014. Fast microwave-assisted catalytic gasification of biomass for syngas production and tar removal. *Bioresource Technology*. 156: 291–296.
4. Zhou, W., Chen, P., Min, M., Ma, X., Wang, J., Griffith, R., **Hussain, F.**, Peng, P., Xie, Q., Li, Y., Shi, J., Meng, J., Ruan, R. 2014. Environment-enhancing algal biofuel production using wastewaters, *Renewable and Sustainable Energy Reviews*, 36: 256–269,
5. Min, M., Hu, B., Mohr, M. J., Shi, A., Ding, J., Sun, Y., Jiang, Y., Fu, Z., Griffith, R., **Hussain, F.**, Mu, D., Nie, Y., Chen, P., Zhou, W., Ruan, R. 2014. Swine manure-based pilot-scale algal biomass production system for fuel production and wastewater treatment--a case study. *Applied Biochemistry and Biotechnology*. 172(3):1390-406.

6. Noreen, S., Bhatti, H. N., Iqbal, M., **Hussain, F.**, & Sarim, F. M. (2020). Chitosan, starch, polyaniline and polypyrrole biocomposite with sugarcane bagasse for the efficient removal of Acid Black dye. *International journal of biological macromolecules*, 147, 439-452.
7. Abbas, Mazhar, Tariq Hussain, Muhammad Arshad, Abdur Rahman Ansari, Asma Irshad, Jan Nisar, **Fida Hussain**, Nasir Masood, Arif Nazir, and Munawar Iqbal. "Wound healing potential of curcumin cross-linked chitosan/polyvinyl alcohol." *International journal of biological macromolecules* 140 (2019): 871-876.
8. Lu, Qian, Paul Chen, Min Addy, Renchuan Zhang, Xiangyuan Deng, Yiwei Ma, Yanling Cheng , **Fida Hussain**. "Carbon-dependent alleviation of ammonia toxicity for algae cultivation and associated mechanisms exploration." *Bioresource technology* 249 (2018): 99-107.
9. Naeem, I., Munir, I., Durrett, T. P., Iqbal, A., Aulakh, K. S., Ahmad, M. A., ... & **Hussain, F.** (2020). Feasible regeneration and agro bacterium-mediated transformation of Brassica juncea with *Euonymus alatus* diacylglycerol acetyltransferase (EaDAcT) gene. *Saudi journal of biological sciences*, 27(5), 1324-1332.
10. Ali, Kashif, Muhammad Shuaib, Tamoor Malik, Syed Sadaqat Shah, Sajjad Ali, Naseer Ali Shah, **Fida Hussain**, Ikramullah Khan, Naveed Akhtar, and Zhijian Li. "Urban Sprawl and its Impact on Soil and Plant Species in Peshawar, Pakistan." *Polish Journal of Environmental Studies* 28, no. 4 (2019).
11. Iqbal, M., Ali, Z., Qamar, M. A., Ali, A., **Hussain, F.**, Abbas, M., & Nisar, J. (2017). Nickel adsorption onto polyurethane ethylene and vinyl acetate sorbents. *Water Science and Technology*, 76(1), 219-235.
12. **Hussain, F.**, Lu, B., Lan, X., Lyu, J., Huang, H., Zhou, W., ... & Shuaib, M. (2019). Determining Indigenous Microalgae Species in Malakand Water Bodies for Potential Use as a Biofuel Production Source. *Polish Journal of Environmental Studies*, 28(2).

13. Waris, T. S., Khan, M. R., Shah, N. A., Shuaib, M., Hussain, F., Ishaq, M., ... & Hussain, F. (2018). Heptoprotective Role of *Artemisia scoparia* Waldst. and Kit Against CCl₄-induced Toxicity in Rats. *Polish Journal of Environmental Studies*, 27(3).
14. Nouren, S., Bhatti, H. N., Iqbal, M., Bibi, I., Nazar, N., Iqbal, D. N., ... & Hussain, F. (2017). Redox Mediators Assisted-degradation of Direct Yellow 4. *Polish Journal of Environmental Studies*, 26(6).
15. **Hussain, F.**, Shah, S. Z., Khan, M. S., Muhammad, W., Ali, S., Zhou, W., Ruan, R. 2014. Influence of ammonia-nitrogen on the diversity of microalgae in clean and highly concentrated waste-water, *Journal of Biodiversity and Environmental Sciences*, 4(4): 418-421,
16. **Hussain, F.**, Shah, S. Z. 2014. Direct effects of phosphates concentration on the microalgal growth of Malakand Pakistan, *Pakistan Journal of Weed science Research*. 20(2): 199-206
17. **Hussain, F.**, Leghari, M. K., Ahmad, H., Rehman, K., Iqbal, A., Khan, M. S., Laghari, M. Y. 2011. Taxonomic study of the order chlorococcales (volvocophyta) from Peshawar valley. *International Journal of Phycology and Phycochemistry*, 6(1): 64-69
18. **Hussain, F.**, Leghari, M. K., Ahmad, H., Khan, M. S., Laghari, M. Y. 2011. Qualitative and quantitative diversity of unicellular green algal species from various localities of Peshawar valley, *International Journal of Phycology and Phycochemistry*. 6(2): 81-889.
19. **Hussain, F.**, Leghari, M. K., Khan, M. S., Shah, S. Z., Laghari, M. Y. 2011. Taxonomic study of freshwater unicellular green algal species from Peshawar valley. *International Journal of Phycology and Phycochemistry*, 7(1): 9-22

20. Khan, M. S., Ali, E., Ali, S., Muhammad, W., Sajjad, M. A., **Hussain, F.** 2014. Assessment of essential amino acids in wheat proteins: a case study. *Journal of Biodiversity and Environmental Science*. 4 (6):185-189
21. Khan, W. M., Shah, S. Z., Khan, M. S., Islam, Z., Ali, S., **Hussain, F.**, Irshad, M., Zahid, M. 2014. Effects of gamma radiations on some morphological and biochemical characteristics of *Brassica napus* L. (variety Altex), *International journal of biosciences*, 4(10): 36-41
22. Khan, M. S., Khan, S. A., Sajjad, M. A., Ali, F., Ali, H., Khan, W. M., Ali, S., **Hussain, F.** 2014. Phytoremediation of cadmium from effected soil using maize plant (*Zea mays* L.). *Journal of Biodiversity and Environmental Science*. 5(2): 1-8.
23. Jang, N., Shah, S. Z., Jan, S., Junaid, A., Khan, K., **Hussain, F.** 2014. Local screening for Algal diversity in relation to water quality of district Swabi: future Prospects, *Journal of Biodiversity and Environmental Science*, 5(3): 9-13
24. Sajida, Javaria, Jan, S., Rehman, K., **Hussain, F.** 2013. Eco-taxonomic study of algal flora from Kurram River, Parachinar, *International Journal of Phycology and Phycochemistry*, 9(1): 63-68
25. Ali, K., Gul, B., **Hussain, F.**, Khan, H., Ali, M., Ali, S., Ali, S., Junaid, K. 2015. The Study Of Algae: The Non-Vascular Aquatic Weeds From Various Fresh Water Bodies of Peshawar Pakistan, *Pakistan Journal of weed science research*, 21(1): 111-122
26. **Hussain, F.**, Shah, S. Z., Khan, M. S., Hayat, S. S., Khan, K. 2015. Environmental chemistry and chemical ecology of microalgae effected by pH: Malakand as a case study, *Journal of Biodiversity and Environmental Sciences*, 7(3): 201-206
27. Mouhamad, R. S., Iqbal, M., Qamar, M. A., Mutlag, L. A., Razaq, I. B., Abbas, M., **Hussain, F.** 2016. Effect of gravistimulation on amino acid

- profile of pea, rice, corn, wheat during early growth Stages, *Information Processing in Agriculture*, 3: 244–251
28. **Hussain, F.**, Shah, S. Z., Hussain, Z. 2016. Indexing the cyanobacterial communities of different ecological habitats of Malakand Pakistan. *Pakistan Journal of Weed science Research*, 22(1): 37-47,
 29. **Hussain, F.**, Iqbal, M., Shah, S. Z., Qamar, M. A., Bokhari, T. H., Abbas, M., Younus, M. 2016. Sunflower germination and growth behavior under various gamma radiation absorbed doses. *Acta Ecologica Sinica*.
 30. ul Haq, Z., Iqbal, M., Jamil, Y., Anwar, H., Younis, A., Arif, M., ... & **Hussain, F.** (2016). Magnetically treated water irrigation effect on turnip seed germination, seedling growth and enzymatic activities. *Information processing in agriculture*, 3(2), 99-106.
 31. Iqbal, M., Qamar, M. A., Bokhari, T. H., Abbas, M., **Hussain, F.**, Masood, N., ... & Nazir, A. (2017). Total phenolic, chromium contents and antioxidant activity of raw and processed sugars. *Information Processing in Agriculture*, 4(1), 83-89.
 32. Salah-Ud-Din, K., Shuaib, M., and **Hussain, F.** (2017). Documentation of microalgal species from selected regions of Peshawar valley, Khyber Pakhtunkhwa (KPK), Pakistan. *Pure Appl. Biol.*
 33. Shuaib. M, Ali. K, Zeb. U, Ahmed. S, Ali. S, Khan. I and **Hussain. F.** 2017. To assess the freshwater algal diversity in relation to water from river Panjkora, district Dir lower, Pakistan. *Pure Appl. Biol.* 2017.
 34. Muhammad Arif, Kashif Ali, Muhammad Shuaib, Umar Zeb, Tariq Aslam, Zara Urooj, Muzammil Shah, Firasat Hussain, Saddam Hussain, Sajjad Ahmed, Sadaqat Syed, Shah, Ikramullah Khan, **Fida Hussain.**, Antibacterial, Syed Sadaqat Shah: Antibacterial activity of selected medicinal plants and its economic importance of Khyber agency, Pakistan. *Pure and Applied Biology*. 2018.

35. Muhammad Shuaib, Sajjad Ahmed, Kashif Ali, Muhammad Ilyas, Firasat Hussain, Zara Urooj, Syed Sadaqat Shah, Tanweer Kumar, Muzammil Shah, Ikramullah Khan, **Fida Hussain**: Ethnobotanical and ecological assessment of plant resources at District Dir, Tehsil Timergara, Khyber Pakhtunkhwa, Pakistan. *ActaEcologicaSinica*. DOI:10.1016/j.chnaes.2018.04.006
36. Muhammad Shuaib, Kashif Ali, Sajjad Ahmed, Firasat Hussain, Muhammad Ilyas, Nazim Hassan, Ikramullah Khan, **Fida Hussain**: Impact of rapid urbanization on the floral diversity and agriculture land of district Dir, Pakistan. *ActaEcologicaSinica* 04/2018;, DOI:10.1016/j.chnaes.2018.04.002
37. Kiran Amir, Saddam Hussain, Muhammad Shuaib, Firasat Hussain, Zara Urooj, Wisal Muhammad Khan, Umar Zeb, Kashif Ali, Muhammad AurangZeb, **Fida Hussain**: Effect of gamma irradiation on OKRA (*Abelmoschusesculentus* L.). *ActaEcologicaSinica* 03/2018;, DOI:10.1016/j.chnaes.2018.02.002\
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39. Muhammad Shuaib, Kashif Ali, Umar Zeb, Firasat Hussain, Muhammad AurangZeb, Saddam Hussain, **Fida Hussain**: Evaluation of *Pistaciaintegrrima*; an important plant. DOI:10.12692/ijb/11.5.412-420
40. Haroon Khan, Muhammad Fiaz, Sahib Khan, **Fida Hussain**, Syed Zahir Shah, Muzammil Shah, Muhammad Shuaib, Muhammad Saeed, Faisal Raza, Muhammad Khan Laghari: Taxonomic study of freshwater Green Algae in relation to water quality of Tehsil Landikotal,

Khyber Agency, Pakistan. *Pure and Applied Biology*.
DOI:10.19045/bspab.2017.600142

41. Sajjad Ahmed, Muhammad Shuaib, Kashif Ali, Sajjad Ali, **Fida Hussain**: Evaluation of different parts of *Berberis lyceum* and their biological activities: a review. *Pure and Applied Biology*. DOI:10.19045/bspab.2017.60095.
42. Ali K, Shuaib M, Ilyas M, Hussain **F**, **Hussain F**. Medicinal Uses of Chemical Extracts from *Withaniasomnifera* and Its Antimicrobial Activity: A Mini-Review. *PSM Microbiology*. 2017 Mar 30;2(1):20-3.
43. Ali K, Shuaib M, Ilyas M, Hussain F, Arif M, Ali S, Jang N, **Hussain F**. Efficacy of Various Botanical and Chemical Insecticides against Flea Beetles on Maize (*Zea maize L.*). *PSM Veterinary Research*. 2017 May 1;2(1):6-9.
44. Imtiaz, H., M. S. Afridi, Naeemulah, Sadiqullah, Z. Hussain, M. Shah, M. Shuaib and **F. Hussain**. 2018. Community assembly and ecology of microalgae of Peshawar, Khyber Pakhtunkhwa, Pakistan. *Pak. J. Weed Sci. Res.* 24 (3):295-300.
45. Begum, Naheeda, Muhammad Shuaib, Ikramullah Khan, Muzammil Shah, Aimal Khan, RukhsanaKausar, and **Fida Hussain**. "The response of *Solanum melongena L.* to different phosphorus levels and sowing dates." *Acta Ecologica Sinica*(2018).
46. Zahir Shah, Syed Zahir Shah, Muhammad Shuaib, Khan Niaz, Tahir Khan and **Fida Hussain**. Effect of water quality on algal diversity in various sites of district Charsadda, Khyber Pakhtunkhwa (KPK)-Pakistan. *Pure and Applied Biology*.2018

47. Hassan, N., Wali, H., Faiz-Ul-Hassan, Shuaib, M., Nisar, M., Din, M. U., ... & Hussain, F. (2018). Ethnobotanical study of medicinal plants used for primary health care in Shergarh, District Mardan, Pakistan. *Biointerface Research in Applied Chemistry*, 8(5), 3575-3582.

References

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