

Dr. NAZIM HUSSAIN

**Botanist and Phycologist Assistant
Professor**

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Biography: Dr. Nazim Hussain is a botanist and phycologist currently serving as Assistant Professor at Baba Guru Nanak University, Nankana Sahib. He holds a PhD in Phycology from GC University Lahore, specializing in algal biotechnology and biodiesel production. His research focuses on microalgae culturing, phycoremediation, and renewable energy from algal biomass. He has contributed to multiple research publications and possesses strong expertise in phytochemistry, environmental analysis, and biofuel optimization.

Research Expertise

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- Preparation and analysis of recipes of algal media for efficient growth of microalgae.
 - Perform micrometry techniques to assess the best growth conditions and identified improvements.
 - Utilize PROMTHEE GIAI software and many other tools to manage and identify the best productive algae with minimum input.
 - Assessment of the phytochemistry of all samples in detail to weigh out the best algal species in terms of triacylglycerides.
 - Handle esterification processing, ensuring accurate conversion of fatty acids into FAMES with optimum catalyst.
 - Green Nanotechnology
 - Perform Anaerobic digestion of microalgae for methane conversion necessary Supplies of flammable gas as energy source.

Research Interests

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- Phytochemistry and extraction techniques
 - Biodiesel production and its characterization
 - Anaerobic digestion of algal biomass for gas production
 - Phyto-nanotechnology

Teaching Interest

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- Diversity of Plants
 - Taxonomy of plants
 - Genetics and Evolution
 - Anatomy and ecology
 - Phycology
 - Bryology

Educational Background

- **Doctorate in Philosophy” (Phycology) 2012-2018**
Department of Botany, GC University Lahore, Pakistan.
Research Topic: EXTRACTION AND EVALUATION OF LIPIDS FROM ALGAL FLORA OF LAHORE AND THEIR CONVERSION INTO BIODIESEL.
Parts of project; *Algae Culturing, Oil Extraction, Esterification Process, Biodiesel production*
- **MS Botany 2008-2011**
Thesis research: Palynological Characterization of Tredian Formation, Khatkiara Member, Nammal Gorge, Western Salt Range, Pakistan.
Department of Botany, University of Punjab Lahore, Pakistan.
- **Graduation in Botany 2004-2008**
Department of Botany, University of the Punjab, Lahore, Pakistan.
- **Special Paper:** Cultivation of Mushroom, Waste Water Treatment and Plant Tissue culture of potatoes

Work Experience:

2011-2013 CTI Lecturer of Biology in Govt. College for Boys Sharaqpur

2014-2019 Lecture of Biology/Botany in Punjab Group of Colleges Sharaqpur

2020-2025 Lecture of Biology/Botany in Punjab Group of Colleges Sheikhpura

2025-Till Date Assistant Professor of Botany in Baba Guru Nanak University Nankana Sahib

Workshops/Conferences attended and organized

- **Key note Speaker** One week workshop on Algal ecology and Biotechnology on 21 Nov 2022 to 25 Nov 2022 organized by Institute of Botany University of the Punjab Lahore.
- Two days workshops on the “algal collection and recent taxonomy of chlorophyta” on 25th -26th September 2012 organized by Department of Botany, GC University Lahore.
- One day workshop on “phycoremediation of heavy metals contamination in Lahore” on 27th March 2013 organized by the Phycology Lab, Department of Botany, GC University Lahore.
- Two days workshop on “Algal Collection and Culturing Techniques” on 19th – 20th February 2014 organized by Phycology Lab, Department of Botany, GC University Lahore.
- International Conference of Plant Sciences on 22-24 September 2014, Department of Botany, GC University Lahore.
- Two days workshop on “ALGAL COLLECTION & BIO-FUEL PRODUCTION" 12th -13th April 2016 at Department of Botany, GC University, Lahore.

Posters/ Publications

- Dr. Sajida Begum; Dr. Safdar Ali Mirza; Dr. Nazim Hussain, Antioxidant Activity and Cytotoxic Potential of In Vitro Tissues and Callus Culture Extracts of *Cichorium intybus* L. *Competes Rundus de I Academie Bulgare des science* (Accepted, Apr 2023)
- **Nazim Hussain**, Ghazala Yasmeen Butt and Hassan Younas, sustainable production

of high quality of biodiesel using hydrothermal liquefaction technique from a novel unicellular freshwater microalga: *Euglena gracilis*, Competes Rundus de I Academie Bulgare des science, Tome 73, No 12, 2020.

- **Hussain, N.**, B. Ghazala and M.S.Z Ahmad. Methodical Analysis of Substantial and Synthetic Equities of Lipids and Biodiesel Extricated From Grown *Euglena Polymorpha*. *Transylvanian Review*: Vol XXVI, No. 27, April 2018.
- **Hussain, N.**, B. Ghazala, M. A. Rana and E.E. Valeem. 2013. Phycoremediation of waste water containing mercury using filamentous algae from GC University Lahore. *Int. J. Phycol. Phycochem.* 9(1): 83-86.
- S. Basharat, G. Butt, M. Ajaib, A. Usman & **N. Hussain**. 2016. Evaluation of Antibacterial Competence of *Cladophora glomerata* and *Lyngbya diguetii*. *Biologia.* 62(1):169-172.
- Ghazala, B., Ch. Shafaq and **N. Hussain**. 2018. Production of bioethanol from two monocultured species *Cladophora fracta* (Dillw.) Kützing and *Euglena polymorpha* Dangeard. *Ecolo. Pollu. Environ. Sci* 1(4): 103-110.
- Poster “DIVERSIFICATION OF PALYNOMORPHS AT THE BASE OF KHATKIARA MEMBER (1-5M), TREDIAN FORMATION, NAMMAL GORGE, WESTERN SALT RANGE, PAKISTAN” In International Conference of Plant Sciences on 22-24 September 2014, Department of Botany, GC University Lahore.