(Dr. Gyanendra Tripathi)

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PROFILE

Researcher in environmental biotechnology and bioenergy, with expertise in microalgal biofuels, biomass valorization, and sustainable bioprocess development. Research focuses on enhancing microalgal biomass productivity, biofuel potential, and wastewater remediation through innovative cultivation strategies and microbial consortia. Have published research articles and book chapters with leading international publishers and holds national patents related to sustainable bioenergy technologies. Serving as Associate Fellow of the Society of Energy, Materials & Sustainability (SEMS).

RESEARCH INTEREST:

- Microalgal biotechnology for biofuel and bioenergy production
- Biomass valorization and biorefinery approaches
- Algal–bacterial and algal–fungal consortia
- Sustainable wastewater treatment and bioremediation
- Photobioreactor design and process optimization
- Bioflocculation and biomass harvesting strategies
- Environmental biotechnology and circular bioeconomy
- Microbial fuel cells and renewable energy systems

SUMMARY OF RESEARCH ACCOMPLISHMENT:

- Researcher with expertise in microalgal biofuels, biomass valorization, environmental biotechnology, and sustainable bioprocess development. Research work focuses on improving

microalgal biomass productivity**,** biofuel potential, and wastewater remediation through innovative cultivation strategies, microbial consortia, and bioprocess optimization.

- Doctoral research resulted in the development of two-stage microalgal cultivation strategies for enhanced biomass and bioenergy applications, leading to a published Indian patent. Additional research contributions include work on microbial fuel cell–based energy systems, resulting in **a** granted national patent**.**
- Authored and co-authored peer-reviewed research and review articles in reputed international journals such as *Green Chemistry Letters and Reviews*, *Current Research in Microbial Sciences*, *Bioremediation Journal*, *Bioresource Technology Reports*, and *Trends in Food Science & Technology*. Contributed multiple book chapters with leading international publishers, including Springer Nature, Elsevier, CRC Press, Academic Press, and IGI Global**.**
- Actively presented research at national and international conferences, receiving best oral and poster presentation awards. Research work has international exposure through invited talks and collaborative activities in India and abroad.
- Serves as a peer reviewer for Scientific Reports (Springer Nature) and as a reviewer board member of Environmental Science Archives. Recognized for research contributions through the Associate Fellowship of the Society of Energy, Materials & Sustainability (SEMS) and nomination for the John C. Warner Early Career Researcher Prize**.**

PROFESSIONAL MEMBERSHIP:

- **Associate Fellow**, *Society of Energy, Materials & Sustainability (SEMS) (Professional recognition awarded for research contributions in energy, materials, and sustainability)*

COURSE TAUGHT:

- Genetic Engineering, Biochemistry, Molecular Biology, Immunology, Medical Biotechnology, and Bioinformatics

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILTY

- Departmental entrepreneur coordinator at Integral Startup Foundation, Centre for Incubation and Entrepreneurship Development, Integral University Lucknow.
- Member of NAAC CRITERIA 3 at the central level.
- Member of NAAC CRITERIA 5 at the departmental level.
- Member of admission outreach programs at the Central and department levels of the University.
- Member of the Program coordination committee for various activities at the Department and central level.
- Actively contributed to departmental academic and administrative activities, supporting teaching, research, and student-related functions.

- Assisted in the coordination of laboratory activities, including scheduling, maintenance, and adherence to safety protocols.
- Involved in curriculum support and academic planning, including preparation of course materials and laboratory manuals.
- Participated in organization of seminars, workshops, and academic events at the departmental level.
- Provided mentorship and academic guidance to undergraduate and postgraduate students during laboratory work and research projects.
- Supported internal documentation, reporting, and accreditation-related activities as required by the department.
- Member, Research & Development (R&D) Representation, Global-Bio Expo, New Delhi, 2024.
- Member, Research & Development (R&D) Representation, U.P. International Trade Show, Noida, 2024.
- Represented Research & Development (R&D) activities of the University at the U.P. International Trade Show, Noida, 2023.

STUDENTS SUPERVISION

- Guided students of B.Tech, M.Tech, B.Sc and M.Sc students with their dissertations and internships.

PUBLISHED/GRANT PATENTS

- **Title:** Two-Stage Cultivation of Microalga for Sustainable Biofuel Production. Application no. 202311072046 (Inventors: **Gyanendra Tripathi**, Alvina Farooqui, Vishal Mishra, Priyanka Dubey) Date of filing 21st October 2023. **Published**
- **Title:** Street lamp. Design no. 397010-001 (Inventors: Dr. Arbab Husain, Dr. Afreen Khanam, Mr. Ziaul Hasan, Prof. Alvina Farooqui, Er. Suhail Ahmad, **Dr. Gyanendra Tripathi**, Mr. Shirjeel Ahmad Siddiqui, Er. Ghayyum Husain. Date of Filing 7th October 2023. **Granted**

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

1. **Tripathi, G.,** Dubey, P., Osama, K., Ahmad, S., Irum, Singh, V., Vamanu, E., Mishra, V., and Farooqui, A., 2025. Two-Stage Cultivation of Microalgae for Sustainable Biofuel Production. Green chemistry reviews and letters. **I.F: 5.1**
2. **Tripathi, G.,** Dubey, P., Irum, Ahmad, S., Mishra, V. and Farooqui, A., 2024. Bioremediation of Cr (VI) by a novel microalgal strain. *Bioremediation Journal*, pp.1-14. **I.F: 1.9**

3. **Tripathi, G.,** Pandey, V.K., Ahmad, S., Khujamshukurov, N.A., Farooqui, A. and Mishra, V., 2024. Utilizing novel Aspergillus species for bio-flocculation: A cost-effective approach to harvest Scenedesmus microalgae for biofuel production. *Current Research in Microbial Sciences*, p.100272. **I.F: 4.8**
4. Shamim, A*., **Tripathi, G***., Ansari, J.A., Mahfooz, S., Mahdi, A.A., Khan, A.R., Farooqui, A. and Mishra, V., 2022. Effect of pH on aluminum uptake and differential aluminum tolerance in cyanobacterial strains: A bioresource for agricultural and environmental sustainability. *Bioresource Technology Reports*, *18*, p.100999. **I.F: 4.3** (*Equal Authorship)
5. **Tripathi, G.,** Dubey, P., Shamim, A., Farooqui, A. and Mishra, V., 2024. Bio-flocculation: A cost effective and energy efficient harvesting technique for algal biofuel production and wastewater treatment. *Bioresource Technology Reports*, *28*, p.101969. **I.F: 4.3**
6. **Tripathi, G.,** Dubey, P., Ahmad, S., Farooqui, A. and Mishra, V., 2024. Current scenario and global perspective of Sustainable algal Biofuel production. *Recent Patents on Biotechnology*. **C.S: 2.9**
7. **Tripathi, G.,** Dubey, P., Ahmad, S., Farooqui, A. and Mishra, V., 2024. Role of Algal-derived Bioactive Compounds in Human Health. *Recent Patents on Biotechnology*, *18*(3), pp.190-209. **C.S: 2.9.**
8. Dubey, P., **Tripathi, G**. and Yousuf, O., 2023. Current scenario and global perspectives of citrus fruit waste as a valuable resource for the development of food packaging film. *Trends in Food Science & Technology*, p.104190. **I.F: 15.1**
9. Mishra, P*., **Tripathi, G*.,** Mishra, V., Ilyas, T., Firdaus, S., Ahmad, S., Farooqui, A., Yadav, N., Rustagi, S., Shreaz, S. and Negi, R., 2025. Antibiotic contamination in wastewater treatment plant effluents: Current research and future perspectives. *Environmental Nanotechnology, Monitoring & Management*, p.101047. **C.S: 16** (*Equal Authorship)

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

- **Gyanendra Tripathi**, Alvina Farooqui, Vishal Mishra, 2023. Phyco-remediation of Cr (VI) from wastewater and fungal assisted bio-flocculation of microalga from sustainable biofuel production. In "International Forum on Women in STEM", held on 10th -14th, 2023 at Tashkent Institute of Chemical Technology, Uzbekistan.
- Suhail Ahmad, **Gyanendra Tripathi,** Poonam Sharma, and Alvina Farooqui, 2023. Development of *Arthospira Platensis* (*Spirulina Plantensis*) based cookies: a Super Food To

overcome Malnutrition. In "International Forum on Women in STEM", held on 10th -14th, 2023 at Tashkent Institute of Chemical Technology, Uzbekistan.

- Suhail Ahmad, **Gyanendra Tripathi,** Arbab hussain and Alvina Farooqui. Antioxidant and Anticancer potential of C-Phycocyanin from *Plectonima boryanum*; Investigation for plausible herbal drug in International Conference on Advances in Cancer biology, prevention, and therapy on 24th and 25th May 2022 at Shri Ramswaroop Memorial University Uttar Pradesh, India.
- **Gyanendra Tripathi,** Alvina Farooqui, Vishal Mishra, 2022. "Fungal Assisted bio-flocculation of microalgae for biofuel production" in National Conference on Environmental and Industrial Biotechnology" held on 10th-12th, November at Dr. Ambedkar Institute of Technology for Handicapped Awadhpuri, Kanpur.
- Suhail Ahmad, **Gyanendra Tripathi,** Alvina Farooqui. *Spirulina* as a super food to overcome malnutrition" in International conference on Trends and Innovations in Food technology- Form farm to folk on 24th-25th November at Integral University, Lucknow.
- **Gyanendra Tripathi,** Priyanka Dubey, Suhail Ahmad, Alvina Farooqui. Multifactorial approach for the drying of *Spirulina Plantensis* and its Incorporation for the development of cookies. In International conference on Trends and Innovations in Food technology- Form farm to folk on 24th-25th November at Integral University, Lucknow.
- **Gyanendra Tripathi**, Alvina Farooqui, Vishal Mishra, 2022. Utilization of novel microalgae strain isolated from a site contaminated with construction waste for the bioremediation of Cr (VI). In "International Conference on newer trends of biochemistry in ongoing medical sciences" held on 24th -25th September 2022 at Dr. Sone Lal Patel Autonomous State Medical College, Pratapgarh.

PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPERS

- Salomova, S.S., Khujamshukurov, N.A., Isaboyev, X.N., Turabekova, D.B., Kuchkarova, D.K., Farooqui, A. and Gyanendra, T., 2025. Mass Spectrometric Analysis of Elements in Zoohumus Based on Tenebrio molitor. *Int. J. Curr. Microbiol. App. Sci*, *14*(08), pp.219-226.
- Khujamshukurov, N.A., Abutolibov, M.Z., Maksumkhodjaeva, K.S., Kuchkarova, D.K., Farooqui, A. and Gyanendra, T., 2025. System Analysis of Organic Production Principles in Sustainable Agriculture. *Int. J. Curr. Microbiol. App. Sci*, *14*(08), pp.233-242.
- Abutolibov, M.Z., Khujamshukurov, N.A., Kuchkarova, D.K., Farooqui, A., Gyanendra, T.

and Xoliqov, Z.B., 2025. Assessment of the Biotechnological Potential of Zoohumus in Dill Growing. *Int. J. Curr. Microbiol. App. Sci*, *14*(08), pp.206-218.

- Akbarova, G.V., Kuchkarova, D.K., Farooqui, A., Gyanendra, T., Ikromov, T.O. and Khujamshukurov, N.A., 2025. Macrophytes-Features, Chemical Properties and Problems of Industrial Cultivation. *Int. J. Curr. Microbiol. App. Sci*, *14*(03), pp.76-81.
- Jamoliddin, J.M., Adolat, A.U., Xurshidbek, O.A., Gyanendra, T., Farooqui, A. and Khujamshukurov, N.A., 2024. Analysis of the Composition of Wastewater in Oil and Gas Production Enterprises. *Int. J. Curr. Microbiol. App. Sci*, *13*(07), pp.54-68.

BOOK EDITED/ AUTHORED

- **Biomass to Bioenergy: Technological Approaches and Material Science of Plant-Based Fuels"**, to be published under the **CSMFL Scholarly Collection Series.**

BOOK CHAPTERS

- **Tripathi, G**., Sharma, D., Mishra, P., Mishra, V., Irum, Dubey, P., Ahmad, S., Mishra, V. and Farooqui, A., 2024. Fabrication of Activated Charcoal from Paddy Waste for Bioethanol Production. In *Paddy Straw Waste for Biorefinery Applications* (pp. 127-149). Singapore: Springer Nature Singapore.
- **Tripathi, G**., Dubey, P., Yadav, P., Salijonova, S. and Farooqui, A., 2023. Advancement in biodiesel production methodologies using different feedstock. In *Wastewater Resource Recovery and Biological Methods* (pp. 323-341). Cham: Springer International Publishing.
- **Tripathi, G**., Jamal, A., Jamal, T., Faiyaz, M. and Farooqui, A., 2022. Phyco-Nanotechnology: an emerging nanomaterial synthesis method and its applicability in biofuel production. In *Green Nano Solution for Bioenergy Production Enhancement* (pp. 169-200). Singapore: Springer Nature Singapore.
- **Tripathi, G**., Khan, F., Mahfooz, S. and Farooqui, A., 2022. Design of sustainable and environmental friendly processes for industries. In *Environmental Sustainability and Industries* (pp. 485-497). Elsevier.
- **Tripathi, G**., Husain, A., Ahmad, S., Hasan, Z. and Farooqui, A., 2021. Contamination of water resources in industrial zones. In *Contamination of Water* (pp. 85-98). Academic Press.

- **Tripathi, G**., Yadav, V.K., Singh, J. and Mishra, V., 2020. Analytical methods of water pollutants detection. In *Sensors in Water Pollutants Monitoring: Role of Material* (pp. 63-78). Springer, Singapore.
- **Tripathi, G**., Srivastava, D.K. and Mishra, V., 2021. Positive and Negative Impacts of Selenium on Human Health and Phytotoxicity. *Selenium Contamination in Water*, pp.73-90.
- **Tripathi, G**., Faiyaz, M., Hasan, Z., Khanam, A. and Husain, A., 2021. Gene Editing and Gene Therapies in Cancer Treatment. In *Handbook of Research on Advancements in Cancer Therapeutics* (pp. 205-224). IGI Global.
- **Tripathi, G**., Srivastava, D.K., Singh, J. and Mishra, V., 2020. Advancement and modification in photoreactor used for degradation processes. In *Nano-Materials as Photocatalysts for Degradation of Environmental Pollutants* (pp. 305-321). Elsevier.
- Srivastava, S., Singh, P., Pandey, V.K., Habiba, U., **Tripathi, G.** and Singh, R., 2025. Exploring the Interplay Between Industrial Food Production and Sustainable Waste Solutions. In *Solid Waste Management: A Roadmap for Sustainable Environmental Practices and Circular Economy* (pp. 23-44). Cham: Springer Nature Switzerland.
- Mishra, V., Mishra, P., Sharma, D., Yadav, P., Dubey, P., **Tripathi, G**., Mishra, V. and Farooqui, A., 2024. Advances in Nanocatalysts Mediated Biodiesel Production. In *Agricultural Biomass Nanocatalysts for Green Energy Applications* (pp. 205-235). Singapore: Springer Nature Singapore.
- Irum, Asif, M., Dubey, P., **Tripathi, G**., Khujamshukurov, N.A., Farooqui, A. and Mishra, V., 2024. Lignocellulosic Waste to Biofuel-Paddy Straw to Bioethanol: Advancement in Technology. In *Paddy Straw Waste for Biorefinery Applications* (pp. 87-107). Singapore: Springer Nature Singapore.
- Farooqui, A., **Tripathi, G**., Aara, N., Ahmad, S., Husain, A., Shamim, A. and Mahfooz, S., 2022. Advances in Biotechnology for the Bioremediation of Contaminated Ecosystem. In *Innovative Bio-Based Technologies for Environmental Remediation* (pp. 25-50). CRC Press.
- Farooqui, A., **Tripathi, G**., Aara, N., Ahmad, S., Husain, A., Shamim, A. and Mahfooz, S., 2022. Advances in Biotechnology for the Bioremediation of Contaminated Ecosystem. In *Innovative Bio-Based Technologies for Environmental Remediation* (pp. 25-50). CRC Press.
- Farooqui, A., **Tripathi, G**., Moheet, K., Dubey, P., Ahmad, S., Husain, A., Shamim, A. and Mahfooz, S., 2021. Algal Biomass: Potential Renewable Feedstock for Bioenergy Production.

In *Bioenergy Research: Integrative Solution for Existing Roadblock* (pp. 85-113). Springer, Singapore.

- Singh, V., **Tripathi, G**., and Mishra, V., 2021. Biological treatment advancements for the remediation of selenium from wastewater. *Selenium Contamination in Water*, pp.228-251.
