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Dr. Vinayak Vandan Pathak

Designation: Assistant Professor

Qualifications: B.Sc., M.Sc. (Envir. Sc.) from BBAU, PhD (Environmental Sc.) from G.K.V. Haridwar

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Experience: 04 Years

[Google Scholar Profile:](#)

<https://scholar.google.com/citations?user=LkV7F7IAAAAJ&hl=en>



Research Interest: Wastewater treatment technologies, Algal based waste water treatment, Biomass based energy generation

+ Journal Publication Details:

1. Dutta V., Srivastava RK., Yunus M., Ahmad S., Pathak VV, Rai A., Prasad N. (2011) **“Restoration plan of Gomti river with designated best use classification of surface water quality based on river expedition, monitoring and quality assessment”**, Earth Science India, 4: 80-104, online ISSN: : 0974 – 8350
2. Kothari R., Pathak V.V., Kumar V., Singh D.P. (2012) **“Experimental study for growth potential of unicellular alga Chlorella pyrenoidosa on dairy wastewater: an integrated approach for treatment and biodiesel production”**, Bioresource Technology, 116:466-470, DOI: doi.org/10.1016/j.biortech.2012.03.121
3. Pathak V.V., Sing D.P., Kothari R., Chopra A.K. (2014) **“Phycoremediation of textile wastewater by unicellular microalgal Chlorella pyrenoidosa”** Cell and molecular biology, 60:35-40.
4. Pathak V.V., Kothari R., Chopra A.K., Singh D.P. (2015) **“Experimental and kinetic study for phycoremediation and dye removal by chlorella pyrenoidosa from textile wastewater”**, Journal of Environmental Management, 163:270-277 DOI: doi.org/10.1016/j.jenvman.2015.08.041
5. Kothari R., Pathak VV., Chopra AK., Ahmad S, Allen T., Yadav BC. (2015) **“Developments in bioenergy and sustainable agriculture sectors for climate change mitigation in Indian context: a state of art”**, Climate change and environmental sustainability, 3:93-103. DOI: doi.org/10.1016/j.eti.2020.101078
6. Kumar V., Kothari R., Pathak VV., Tyagi S. K. (2016) **“Optimization of simple sugar and process pH for effective biohydrogen production using Enterobacter aerogenes: An experimental study”**, Journal of Scientific and Industrial Research, 75:626-631.
7. Pathak VV., Ahmad S., Pandey A., Tyagi VV., Vuddhi D., Kothari R. (2016) **“Deployment of fermentative biohydrogen production for sustainable economy in Indian scenario: practical and policy barriers with recent progress”**, Current Renewable/sustainable Energy report, 3:101-107, DOI: doi.org/10.1007/s40518-016-0052-2
8. Malik DS., Jain CK., Yadav A., Kothari R., Pathak VV. (2016) **“Determination of adsorption**

- isotherms and kinetic parameters for biosorption of Cu (II) on raw pine needles: An experimental study”, International Journal of Innovative Research in Science Engineering and Technology, 5: 17755-17763, DOI: DOI:10.15680/IJIRSET.2016.0510037
9. Kothari R., Pandey A., Ahmad S., Kumar A., Pathak V.V., Tyagi V.V. (2017) “**Microalgae cultivation for value added products**”, 3 Biotech, 7, 243, DOI: doi.org/10.1007/s13205-017-0812-8
 10. Kothari R., Pathak V.V., Pandey A., Ahmad S., Srivastava C., Tyagi V.V. (2017) “**A novel method to harvest chlorella sp via low cost bioflocculant: influence of temperature with kinetic and thermodynamic function**”, Bioresource technology, 225:84-89, DOI: doi.org/10.1016/j.biortech.2016.11.050
 11. Kothari R., Kumar V., Pathak V.V., Ahmad S., Aoyi O., Tyagi V.V. (2017) “**A critical review on factor influencing the fermentative hydrogen production**”. *Frontiers in Biosciences*”, 22:1195-1220, DOI: DOI: [10.2741/4542](https://doi.org/10.2741/4542)
 12. Rawat MS., Yadav A., Pathak VV. (2018) “**Production and characterization of biodiesel from chicken feather**”, Global Journal of Bio-science and biotechnology, 7:486-489, ISSN:2278-9103.
 13. Pandey A., Pathak V.V., Kothari, R., Black P.N., Tyagi V.V. (2019) “**Experimental studies on zeta potential of flocculants for harvesting of algae**” Journal of Environmental Management, 231:562-569, doi.org/10.1016/j.jenvman.2018.09.096
 14. Kothari R., Kumar V., Pathak V.V., Tyagi V.V. (2017) “**Sequential hydrogen and methane production with simultaneous treatment of dairy industry water: bioenergy profit approach**”, Journal of hydrogen energy, 42:4870-4879, DOI: doi.org/10.1016/j.ijhydene.2016.11.163
 15. Ahmad S., Pathak V.V., Kothari R, Singh R.P. (2018) “**Prospects for pretreatment methods of lignocellulosic waste biomass for biogas enhancement: opportunities and challenges**”, Biofuel, 9:575-594, DOI: doi.org/10.1080/17597269.2017.1378991
 16. Kothari R., Ahmad S., Pathak VV., Pandey A., Singh S., Kumar K., Tyagi VV. (2017) “**Experimental based thermodynamic feasibility with co-digestion of nutrient rich bio-waste for biogas production**”, 3 Biotech, 8:34, DOI: doi.org/10.1007/s13205-017-1023-z
 17. Ahmad S., Kothari R., Pathak VV., Pandey M.K. (2018) “**Fuel Quality Index: A Novel Experimental Evaluation Tool for Biodiesel Prepared from Waste Cooking Oil**”, Waste and Biomass valorization, 10:2237-2247, DOI: doi.org/10.1007/s12649-018-0250-9
 18. Ahmad S., Pathak V.V., Kothari R., Kumar A., Krishna SBN (2018) “**Optimization of nutrient stress using C. pyrenoidosa for lipid and biodiesel production in integration with remediation in dairy industry wastewater using response surface methodology**”, 3 Biotech, 8:326, DOI: doi.org/10.1007/s13205-018-1342-8
 19. Kumar V., Singh J., Pathak V.V., Ahmad S., Kothari R. (2017) “**Experimental and kinetics study for phytoremediation of sugar mill effluent using water lettuce (Pistia stratiotes L.) and its end use for biogas production**”, 3 Biotech, 7:330, DOI: doi.org/10.1007/s13205-017-0963-7
 20. Kothari R., Ahmad S., Pathak VV., Pandey A., KumarA., Shankarayan R. (2019) “**Algal based biofuel generation through flue gas and wastewater utilization: a sustainable prospective**

approach", Biomass conversion and bio refinery, 413, DOI: doi.org/10.1007/s13399-019-00533-y

21. Kumar V., Singh ., Nadeem M., Kumar P., Pathak VV. (2020) "**Experimental and Kinetics Studies for Biogas Production Using Water Hyacinth (*Eichhornia crassipes* [Mart.] Solms) and Sugar Mill Effluent**", Waste and biomass valorization, 11:109-119, DOI: doi.org/10.1007/s12649-018-0412-9
22. Ahmad S., Chaudhary S., Pathak VV., Kothari R., Tyagi VV. (2020) "**Optimization of direct transesterification of chlorella pyrenoidosa catalyzed by egg shell based heterogeneous nano catalyst**", Renewable Energy, 160:86-97, DOI: doi.org/10.1016/j.renene.2020.06.010
23. Kothari R., Vashishtha A., Singh HM., Pathak VV., Tyagi VV., Yadav BC. (2020) "**Assessment of Indian bioenergy policy for sustainable environment and its impact for rural India: strategic implementation and challenges**", Environmental Technology and Innovation, 20:101078, DOI: doi.org/10.1016/j.eti.2020.101078
24. Bhoiya AA., Joshi S., Upadhyay S.K., Srivastava AK., Pathak VV., Pandey VC., Jain D. (2021) "**Screening and optimization of Zn removal potential in pseudomonas aeruginosa-HMR1 and its plant growth promoting attributes**", Bulletin of Environmental contamination and Toxicology, 50:2 DOI: doi.org/10.1007/s00128-021-03232-5

+ Conference Publications:

1. Kothari R., Pathak VV., Singh DP. (2013) "**Biodiesel production from algal species grown on dairy wastewater**". In: Recent advances in bioenergy research, vol 1, pp 221 , SSS-NIBE, India.
2. Pathak VV., Kothari R., Chopra AK. (2014) "**Assessment of solid waste management and energy recovery from from waste materials in Lucknow Zoo: A case study**". In: Recent Advances in Bioenergy research, Vol 3, pp 1-13, SSS-NIBE India.
3. Pathak VV., Kothari R., Chopra AK., Ahmad S., Pandey AK., Rahim NA. (2016) "**Effects of soil extraction method on oil yield and its parametric feasibility with chlorella pyrenoidosa**". In: 4th IET Clean Energy and technology Conference, Malaysia, DOI: [10.1049/cp.2016.1344](https://doi.org/10.1049/cp.2016.1344) Online ISBN: 978-1-78561-238-1
4. Kothari R., Ahmad S., Pathak VV., Pandey AK., Saidur R. (2018). "**Fuel quality index for transesterified and non transesterified oil samples of mustard and rice bran oil**", In:5th IET International conference on Clean Energy and Technology, Malaysia, DOI: [10.1049/cp.2018.1333](https://doi.org/10.1049/cp.2018.1333), ISBN: 978-1-83953-003-6

+ Research Supervised(PhD):

Poonam Sharma on "**Optimization of experimental conditions for improvement of bio-methane production by de-polymerization of agro waste: a waste to energy approach**" Year 2017 (Ongoing).

+ Book/Chapter Publications:

1. Edited Book" **Algal Biofuel: Sustainable Solution**" published by – TERI Press, India Year:2021 authors- Kothari R., Pathak VV., Tyagi, VV.
2. Pathak A., Tyagi VV., Singh HM., Pathak VV., Kothari R. (2016) "**Membrane less microbial cell: A low cost sustainable approach for clean energy and environment**" In: Emerging energy alternative for sustainable environment, TERI Press, India, pp35-55, Online ISBN: 9788179934111
3. Pathak VV., Kothari R., Tyagi VV., Yadav BC. (2016) "**Policy reforms in Indian energy sector to achieve energy security and sustainability**". In: Energy security and sustainability, CRC Press, pp351-362, Online ISBN: 9780367574451
4. Rani R., Patnala PK., Pathak VV. (2019) "**Prospects of pesticide contamination and control measures in aquatic systems: A green approach**" In: Handbook of research on the adverse effect of pesticide pollution in aquatic ecosystem, IGI Global pp 369-396, DOI: 10.4018/978-1-5225-6111-8.ch020 online ISBN: 1522561110
5. Ahmad S., Pandey A., Kothari R., Pathak VV., Tyagi VV. (2017) "**Close photobioreactors :construction materials and influencing parameters at commercial scale**" In: Photobioreactors advancement applications and research, NOVA publications, pp 149-162, online ISBN: 978-1-53612-354-8
6. Ahmad S., Pandey A., Pathak VV., Tyagi VV., Kothari R. (2020) "**Phycoremediation: algae as eco-friendly tools for the removal of heavy metals from wastewater**". In: Bioremediation of industrial waste for environmental safety, Springer, Singapore, pp 53-76, ISBN: 978-981-13-1891-7
7. Pathak VV., Kapahi M., Rani R., Tuteja J., Banga S. (2020) "**Organic waste for biofuel production: Energy conversion pathways and application**", In: Biofuel production-sustainability and advances in microbial bioresources, Springer, Cham, pp 267-286, DOI: /doi.org/10.1007/978-3-030-53933-7_13 Online ISBN: 978-3-030-53933-7
8. Bansal M., Ahmad S., Gupta S., Pathak VV. (2020) "**Lipid induction in algal biomass for sustainable bioenergy production**" In: Algal Biofuel: Sustainable solution, TERI Press, India, pp 274-292, ISBN: 9789386530943
9. Sharma DK., Bardhan A., Pathak VV. (2020) "**Role of Meteorological Parameters on Atmospheric Aerosols Concentration and Its Control through Modern Biomass Application**" In: Algal Biofuel: Sustainable solution, TERI Press, India, pp209-235, ISBN: 9789386530943
10. Pathak VV., Kothari R. (2020) "**Crop Residues as a Potential Substrate for Bioenergy Production: An Overview**" In: Algal Biofuel: Sustainable Solution, TERI Press, India, pp 121-138, ISBN: 9789386530943.

+ Professional Affiliation:

Editorial Board Member of Journal of Applied and Natural Sciences

Editorial Board Member of Archives of Agriculture and Environmental Sciences

+ Expert Talk Delivered

Invited as resource person in "**Entrepreneurship Development Program**" to Talk on "National and International initiatives & Policy visions, success stories" on 23rd December 2017 in Shri Mata Vaishno Devi University, Katra, Jammu and Kashmir India.

+ Awards

1. Best oral presentation award at International Conference on Renewable Energy for Sustainable Environment: Challenges and Remedies (ICRESE-2017) organised by School of Energy Management, Shri Mata Vaishno Devi University, Katra, J&K on March 20– 21, 2017.
2. Best oral presentation award at 2nd National Conference on Renewable energy and Sustainable environment: Challenges and Remedies” organised by School of Energy Management, Shri Mata Vaishno Devi University, Katra, J&K on April 24 – 25, 2018.