KRISHNA YADAV(Ph.D.)

Indian Institute of Technology
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Work Experience

2016 – 2022 **Research Scholar and Teaching Assistant**
Department of Environmental Science and Engineering, Indian Institute of Technology (ISM), India.
Dissertation: ***"Development of novel biochar composite for efficient removal of fluoride from groundwater"***

- Synthesized biochar from locally available biomass wastes such as agricultural waste, kitchen waste, temple waste, and fruit waste.
- Checked the influence of process parameters such as temperature, time and heating rate on both ***solid fuel*** and **adsorptive characteristics of biochar**.
- The process of hydrothermal carbonization was optimized to get optimum hydrochar which was taken as feed material for synthesis of hydrochar composite, used for defluoridation.
- Evaluated the quality of water sampled from different localities and integrating potential of copperpod biochar and struvite to achieve agricultural benefits by improving soil health.
- Assisted in conducting Labs, developed teaching materials, laboratory practice materials, and problem sets for undergraduate and graduate students. Mentored graduate students for their dissertation.

Education

2016- 2022 ***Ph.D.*****, Environmental Science**
Indian Institute of Technology (ISM), Dhanbad, India

2013-2015 ***Master of Science,*** **Environmental Science**
Institute of Science, Banaras Hindu University, Varanasi, India
First class with 81.4% marks

2010-2013 ***Bachelor of Science,*** **Chemistry**
Institute of Science, Banaras Hindu University, Varanasi, India
First class with 68.6% marks

Professional Skills

Domain Expertise Thermo-Chemical Conversion Processes, Biochar (Synthesis and Application), Solid-fuel characteristics of biochar, Hydrochar synthesis, hydrothermal liquification, Metal Nanoparticles (Synthesis and Application), Groundwater and Wastewater, Water Chemistry, Water Quality, Health Risk Assessment, Nutrient Recovery (Nitrate and Phosphate), Struvite synthesis, Pot trial experiments, Soil health and its characteristics.

Tools Pyrolysis reactor, Hydrothermal reactor, UV-spectrophotometer, Flame photometer, gas chromatography mass spectrophotometry (GCMS), Fluorescence microscope, Microwave Digester, Kjeldahl apparatus.

Software Design Expert (Response surface methodology), X-pert High score, XPSPEAK41, SPSS, Origin, Sigma Plot, VisualMINTEQ, PHREEQC, MATLAB, Microsoft office and excel.

Fellowships & Awards

2016-2021
- Research Fellowship Scholarship provided by the Ministry of Human Resource Development of the Government of India to pursue a Ph.D. in Science in India.

2019
- Financial grant for oral presentation in "IBI Biochar World Congress, South Korea (10-14 November, 2019)" by DST, Government of India.

2014-2015
- Qualified two times National Eligibility Test (NET) in Environmental Science conducted by Central Board of Secondary Education and University Grant Commission (CBSE-UGC) in December 2014 and June 2015.
- Qualified agricultural research services (ARS-NET) in Environmental Science conducted by Agricultural Scientists Recruitment Board in December 2015.
- Qualified National Eligibility Test (NET) in Earth, Atmospheric, Ocean and Planetary Sciences conducted by Council of Scientific and Industrial Research (CSIR) in June 2015.

Journal Papers & book chapters (Google scholar link: https://scholar.google.com/citations?user=gl3__vIAAAAJ&hl=en)

Yadav, K., & Jagadevan, S. (2021). Influence of torrefaction and pyrolysis on engineered biochar and its applicability in defluoridation: Insight into adsorption mechanism, batch adsorber design and artificial neural network modelling. Journal of Analytical and Applied Pyrolysis, 154, 105015. **(Impact factor – 5.541)**

Yadav, K., Raphi, M., & Jagadevan, S. (2021). Adsorption of copper (II) on chemically modified biochar: a single-stage batch adsorber design and predictive modeling through artificial neural network. Biomass Conversion and Biorefinery, 1-16. **(Impact factor – 4.987)**

Yadav, K., Raphi, M., & Jagadevan, S. (2021). Geochemical appraisal of fluoride contaminated groundwater in the vicinity of a coal mining region:Spatial variability and health risk assessment. Geochemistry, 81(1), 125684. **(Impact factor – 2.292)**

Yadav, K., & Jagadevan, S. (2020). Effect of Pyrolysis of Rice Husk–Derived Biochar on the Fuel Characteristics and Adsorption of Fluoride from Aqueous Solution. BioEnergy Research, 1-14. **(Impact factor – 2.814)**

•**Yadav, K.**, *Rana, A., & Jagadevan, S. (2020). A comprehensive review on green synthesis of nature-inspired metal nanoparticles: Mechanism, application and toxicity. Journal of Cleaner Production, 122880. **(• Equal contribution) (Impact factor – 9.297)**

Yadav, K., Tyagi, M., Kumari, S., & Jagadevan, S. (2019). Influence of Process Parameters on Optimization of Biochar Fuel Characteristics Derived from Rice Husk: A Promising Alternative Solid Fuel. BioEnergy Research, 12(4), 1052-1065. **(Impact factor – 2.814)**

Yadav, K., & Jagadevan, S. (2019). Influence of process parameters on synthesis of biochar by pyrolysis of biomass: an alternative source of energy. In Recent Advances in Pyrolysis. IntechOpen.

Yadav, K., & Jagadevan, S. (2021). Adsorbents for removal of fluoride from water. In Green Technologies for the Defluoridation of water. Elsevier.

Chawley, P., **Yadav, K.**, & Jagadevan, S. (2021). Nitrogenous Wastes and Its Efficient Treatment in Wastewater. Water Pollution and Management Practices, 147.

Conference Papers

Yadav, K., Jagadevan S. (2019). Oral presentation on the topic "Optimization of rice-husk derived biochar through Response Surface Methodology for removal of fluoride from groundwater" at **IBI Biochar World Congress** 2019 held from 10-14 November 2019 at **Korea University, Seoul, Korea**.

Yadav, K., Jagadevan S. (2020). Oral presentation on the topic "Effect of pyrolytic conditions on fuel ratio of rice husk derived biochar: An optimization through response surface methodology" at International conference on Water, Energy and Environmental Sustainability 2020 (WEES 2020), held from 13-15 January 2020 at **NIT, Durgapur** India, in association with **RMIT University, Melbourne, Australia**.

References

Dr. Sheeja Jagadevan
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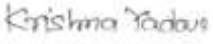
Declaration

I hereby certify that all the particulars stated above are to the best of my knowledge and believe true and fair. For any misrepresentation or omission of fact I shall be personally liable.



DATED: 0 2 /05/2022 **Krishna Yadav**