

# Dr. DIVYA KOSALE

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Google Scholar:

<https://scholar.google.com/citations?user=lv0q68QAAAAJ&hl=en&oi=ao>



## 1. PROFILE

Experienced researcher specializing in the preparation of adsorbents like biochar, activated biochar and doped biochar by using biomass. Strong background in the removal of dyes and metal from aqueous solution, with a focus on optimizing material properties for targeted applications. Hands-on expertise in advanced analysis techniques, including Pyrolysis reactor, UV-analysis, and AAS analysis. Successfully led multiple research projects, delivering innovative solutions for environmental remediation and waste treatment. Highly accomplished in both independent research and collaborative work, with a robust portfolio of publications in leading scientific journals. Committed to advancing material science engineering through innovative research and practical applications.

## 2. EDUCATION DETAIL

- **PhD in Chemical Engineering**

**Dissertation Title** - Production of Biomass from Biochar and Its Application in Dye Removal

**Supervisor & Joint Supervisor**- Dr. V. K. Singh & Dr. Chandrakant Thakur

**National Institute of Technology Raipur Chhattisgarh India**

September, 2019 – January, 2025 (Thesis Submitted)

Degree Awarded – November, 2025

**Research Areas:** Synthesis of activated and doped Biochar, Adsorbent Characterization, Batch Adsorption Techniques, Dye Removal, Isotherms and Kinetics models, Thermodynamics study, Desorption, Analytical Techniques,

- **Master of Technology in Chemical Engineering**

Thesis Title: “**Adsorptive Removal of Iron from Aqueous Solution using Custard Apple Peel Powder**”

**Supervisor & Joint Supervisor-** Dr. V. K. Singh & Dr. Bidyut Mazumdar

**National Institute of Technology Raipur Chhattisgarh India**

2016– 2018

**Research Areas:** Adsorption Techniques, Adsorbent preparation. Green synthesis, heavy metals removal, Adsorbent Characterization, Isotherms and Kinetics, Thermodynamics, Analytical Techniques,

- **Bachelor of Engineering in Chemical Engineering (2011-2015)**

**Raipur Institute of Technology Raipur Chhattisgarh India**

### 3. TECHNICAL SKILL

- Synthesis of Biochar for different adsorbents
- Adsorption of dyes and heavy metals from synthetic wastewater
- Adsorption-related analysis- Pyrolysis, AAS analysis, UV analysis
- Modern testing and characterization study- TGA, SEM-FESEM, EDS, XRD, FTIR, Raman-spectroscopy, BET, Zeta-potential, etc.
- Handling of equipment- Pit-type furnace reactor, muffle-furnace, inert-gas muffle furnace, hot-air oven
- Analyzing the records and data
- Writing research paper and review paper

### 4. LIST OF PUBLICATIONS

- Divya Kosale, Chandrakant Thakur, Vinod Kumar Singh: Utilization of Jamun seed biochar for removal of fuchsin dye from aqueous solution, J. Serb. Chem. Soc., Apr. 2023 <https://doi.org/10.2298/JSC220830021K> (SCI & Scopus), impact factor: 1.1, Cite Score = 1.9.
- Divya Kosale, Vinod Kumar Singh, Chandrakant Thakur: Comparative adsorption of cationic and anionic dye by using non-activated Black Plum seed biochar for aquatic phase: Isotherm, Kinetic and Thermodynamic studies Industrial Crops & Products 215(2024)118609 <https://doi.org/10.1016/j.indcrop.2024.118609> (SCI), impact factor: 5.6, Cite Score = 9.5.

- Divya Kosale, Vinod Kumar Singh, Chandrakant Thakur: Exploring the Adsorption Potential of Non-Activated and KOH-Activated Ber Kernel Biochar for Binary Dye Removal: Isotherm, Kinetics, and Thermodynamic Analysis [Accepted publication in *Biomass Conversion and Biorefinery* (SCI-indexed, Springer Nature)].

## 5. LIST OF PAPER PRESENTED IN CONFERENCES

- Divya Kosale, V. K. Singh, B. Mazumdar “Adsorptive removal of iron from aqueous solution using custard apple peel powder” at International Conference on Desalination-2018, National Institute of technology, Trichy, TN, India
- Divya Kosale, Chandrakant Thakur, V.K. Singh, “Fe (II) Removal from Aqueous Solution by *Annona Squamosa* (Custard Apple) Peel Powder: Kinetic, Equilibrium & Thermodynamic Study”, NCNE 2020: National conference on nanotechnology & environment, 13-14<sup>th</sup> February 2020, National Institute of Technology, Raipur, CG, India.
- Divya Kosale, Chandrakant Thakur, V.K. Singh, “A Short Review on Wastewater Treatment Using Microbial Fuel Cell”, ICRE 2021: International Conference on Reaction Engineering, 7-8<sup>th</sup> May, 2021, National Institute of Technology, Raipur, CG, India.
- Divya Kosale, Chandrakant Thakur, V.K. Singh, “Utilization of Jamun seed (*Syzyum Cumini*) biochar for removal of fuchsin dye from aqueous Solution”, ACEE 2021: International Conference on Advances in Chemical and Environmental Engineering”, 16-17<sup>th</sup> December, 2021, National Institute of Technology, Raipur, CG, India.
- Divya Kosale, Chandrakant Thakur, V.K. Singh, “Synthesis and characterization of biochar prepared from black berry seed”, ICAMP 2022: International Conference on Advances in Materials Processing, 08-09<sup>th</sup> January, 2022, National Institute of Technology, Raipur, CG, India.
- Divya Kosale, Chandrakant Thakur, V.K. Singh, “A comparative adsorption study of cationic and anionic dye by using biosorbent syzygium cumini biochar for aquatic phase: Isotherm, kinetics and thermodynamics studie”, ICETTSF-2022: International Conference-Enabling Transition Towards Sustainable Future, 08-10<sup>th</sup> September, 2022, Indian Institute of Technology, Roorkee, India.

- Divya Kosale, Chandrakant Thakur, V.K. Singh, “Ber (Jujube) Kernel Char: Characterisation and Utilisation for Adsorption of Amido Black Dye from Synthetic Solution” International Conference on Environmental Sustainability and Climate Change 2023 (ICESCC 2023)”, held on 21-22/12/2023 NIT Meghalaya, Shillong.

## 6. REFERENCES

NAME	DESIGNATION	CONTACT DETAILS	INSTITUTE
Dr. V. K. Singh	Professor	Email: <a href="mailto:yksingh.che@nitrr.ac.in">yksingh.che@nitrr.ac.in</a> Phone: +91-8821001865	Dept. of Chemical Engineering National Institute of Technology Raipur Chhattisgarh India
Dr. B. Mazumdar	Professor	Email: <a href="mailto:bmazumdar.che@nitrr.ac.in">bmazumdar.che@nitrr.ac.in</a> Phone: +91-9826051120	Dept. of Chemical Engineering National Institute of Technology Raipur Chhattisgarh India
Dr. C. Thakur	Assistant Professor	Email: <a href="mailto:cthakur.che@nitrr.ac.in">cthakur.che@nitrr.ac.in</a> Phone: +91-7354951575	Dept. of Chemical Engineering National Institute of Technology Raipur Chhattisgarh India

## 8. PERSONAL DETAIL

Father 's name : Mr. Gaya Prasad Kosale  
 Mother's name : Mrs. Ramala Kosale  
 Address : Gudhiyari Raipur, (C. G.)  
 Sex & Marital status : Female, Unmarried  
 Linguistic Proficiency : English and Hindi

## 8. DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.



(DIVYA KOSALE)