

Biomass derived mesoporous carbon materials for treatment of dyehouse effluents



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Award of Degree

DOCTOR OF PHILOSOPHY

By

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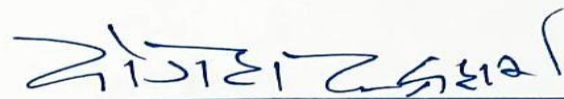
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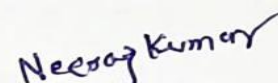
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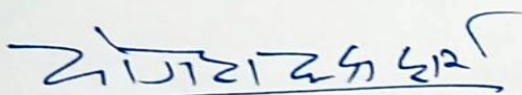
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ABBREVIATIONS

- ❖ **MAC:** Mesoporous Activated Carbon
- ❖ **MAC@Al:** Gamma Alumina Decorated Mesoporous Activated Carbon
- ❖ **CHMAC:** Corn Husk-Based Mesoporous Carbon
- ❖ **FTIR:** Fourier Transform Infra-Red Spectroscopy
- ❖ **XRD:** X-Ray Diffraction
- ❖ **HR-TEM:** High-Resolution Transmission Electron Microscope
- ❖ **SEM:** Scanning Electron Microscope
- ❖ **UV-Vis:** Ultraviolet-Visible Spectroscopy
- ❖ **EDS:** Energy Dispersive Spectroscopy
- ❖ **COD:** Chemical Oxygen Demand
- ❖ **BOD:** Biological Oxygen Demand
- ❖ **RhB:** Rhodamine B
- ❖ **OG:** Orange G
- ❖ **CV:** Crystal Violet
- ❖ **nm:** Nanometer
- ❖ **BET:** Brauner-Emmett-Teller
- ❖ **BJH:** Barret-Joyner-Halenda
- ❖ **TCI:** Tokyo Chemical Industry
- ❖ **w/w:** weight by weight
- ❖ **XPS:** X-Ray Photoelectron Spectroscopy

-
- ❖ **JCPDS:** Joint Committee on Powder Diffraction Standards
 - ❖ **IUPAC:** International Union of Pure and Applied Chemistry
 - ❖ **Imp.:** Impregnated
 - ❖ **θ :** Angle (degree)
 - ❖ **a.u.** atomic unit
 - ❖ **BE:** Binding energy
 - ❖ **eV:** Electron volt
 - ❖ **mM:** Millimolar
 - ❖ **s:** Second
 - ❖ **λ :** Wavelength
 - ❖ **k_2 :** Pseudo-second order rate constant
 - ❖ **k_1 :** Pseudo-first order rate constant
 - ❖ **mg/L:** Milligram per liter
 - ❖ **M:** Molar
 - ❖ **q_e :** Amount of adsorbed adsorbate on adsorbent in mg/g at equilibrium
 - ❖ **q_m :** Langmuir monolayer adsorption capacity
 - ❖ **R^2 :** Coefficient of determination
 - ❖ **ΔG° :** Change in standard free energy
 - ❖ **ΔH° :** Change in standard enthalpy
 - ❖ **ΔS° :** Change in standard entropy

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