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Synthesis and Characterization of nanocomposites for environmental remediation

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Nethaji S

Department of Chemical Engineering

Manipal Institute of Technology

Manipal, Karnataka, India-576 104

Mobile: (+91) 9486199547

Email: nethajis6587@gmail.com ; nethaji.s@manipal.edu

Grants and Awards

2011-2014 CSIR - Senior Research Fellowship, CSIR, New Delhi

2009-2011 CSIR - Junior Research Fellowship, CSIR, New Delhi

Research Profile

Aggregate Impact Factor	: 89 (Clarivate Analytics, 2022)
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Publications in Peer-Reviewed International Journals

1. S. Nethaji, A. Sivasamy, G. Thennarasu, S. Saravanan, Adsorption of Malachite Green dye onto activated carbon derived from *Borassus aethiopum* flower biomass, **Journal of Hazardous Materials**, 181(1-3) (2010) 271–280.
2. S. Nethaji, A. Sivasamy, Adsorptive removal of an acid dye by lignocellulosic waste biomass activated carbon: Equilibrium and kinetic studies, **Chemosphere**. 82(10) (2011) 1367–1372.
3. A. Sivasamy, S. Nethaji, Biosorption of an azo dye by *Aspergillus niger* and *Trichoderma sp.* fungal biomasses, **Current Microbiology**. 62(2) (2011) 351-357.
4. A. Sivasamy, S. Nethaji, L. L. Josmin Lalli Nisha, Equilibrium, kinetic and thermodynamic studies on the biosorption of reactive acid dye on *Enteromorpha flexuosa* and *Gracilaria corticata*, **Environmental Science and Pollution Research**. 19(5) (2012) 1687-1695.
5. S. Nethaji, A. Sivasamy, R. Vimal Kumar, A. B. Mandal, Preparation of char from lotus seed biomass and the exploration of its dye removal capacity through batch and column adsorption studies, **Environmental Science and Pollution Research**. 20(6) (2013) 3670-3678.
6. S. Nethaji, A. Sivasamy, A. B. Mandal, Preparation and characterization of corn cob activated carbon coated with nano-sized magnetite particles for the removal of Cr(VI). **Bioresource Technology**, 134 (2013) 94-100.
7. S. Nethaji, A. Sivasamy, A. B. Mandal, Adsorption isotherms, kinetics and mechanism for the adsorption of cationic and anionic dyes onto carbonaceous particles prepared from *Juglans regia* shell biomass. **International Journal of Environmental Science and Technology**. 10(2) (2013) 231-242.

8. S. Nethaji, A. Sivasamy, Removal of hexavalent chromium from aqueous solution using activated carbon prepared from walnut shell biomass through alkali impregnation processes. **Clean Technology and Environmental Policy**, 16(2) (2014) 361-368.
 9. S. Nethaji, A. Sivasamy, Graphene oxide coated with porous iron oxide ribbons for 2,4-Dichlorophenoxyacetic acid (2,4-D) removal. **Ecotoxicology and Environmental Safety**, 138 (2017) 292-297.
 10. S. Nethaji, G. Tamilarasan, P. Neehar, A. Sivasamy, Visible light Photocatalytic activities of BiOBr-Activated carbon (derived from waste Polyurethane) composites by Hydrothermal Process, **Journal of Environmental Chemical Engineering**, 6 (2018) 3735-3744.
 11. P. Shivaprasad, S. Kaushik, A. Sivasamy, S. Nethaji, Superparamagnetic nanocomposites derived from waste polyurethane foam for the removal of Rhodamine B: Batch and Continuous Column studies, **Separation Science and Technology**, 55(16) (2020) 2879-2889.
 12. A. Nayak, S. Viegas, H. Dasari, S. Nethaji, Cu-BDC and Cu₂O derived from Cu-BDC for the removal and oxidation of asphaltenes: a comparative study, **ACS Omega**, 7 (2022) 34966-34973.
 13. A.K Sharma, P. K. Ghodke, N. Goyal, S. Nethaji, W. Chen, Machine learning technology in biohydrogen production from agriculture waste: Recent advances and future perspectives, **Bioresource Technology**, 374 (2022), 128076
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Publications in Book Chapters

1. S. Nethaji, P. Vairavel, G. A. Suganya Josephine, P. K. Ghodke, A. Sivasamy, Thermochemical conversion of biomass into value-added materials for effluent treatment applications, Thermochemical and catalytic conversion technologies for future biorefineries, Volume 1, Chapter 5 (2022) 125-156, Springer Nature Singapore Pte Ltd. <https://doi.org/10.1007/978-981-19-4312-6>
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Presentations in Conference Proceedings

- 1) S. Nethaji, A. Sivasamy, Adsorption of amido black dye by chemically activated carbon materials derived from *Borassus aethiopum* flower biomass, National conference on materials: nano to macro dimensionality and their varied applications, Manonmaniam Sundaranar University, Tirunelveli, Jan-2010
- 2) S. Nethaji, A. Sivasamy, Preparation and characterization of activated carbon coated with magnetite nanoparticles and its environmental remedial application, National Seminar on Electron Microscopy in Nanotechnology, Madras Veterinary College, Chennai, Jul-2012
- 3) S. Nethaji, A. Sivasamy, Application of activated carbon/nano magnetite composites for the purification of waste water containing hexavalent chromium, First international conference on emerging technologies for clean water, IIT Madras, Chennai, Sep-2012
- 4) S. Nethaji, A. Sivasamy, Equilibrium, Kinetic and Thermodynamic Studies on the Biosorption of Reactive Acid dye on *Ulva fasciata* and *Sargassum wightii*, CHEMCON 2012, NIT Jalandhar, Jalandhar, Dec-2012

- 5) S. Nethaji, A. Sivasamy, Removal of herbicide (2,4-Dichlorophenolxy acetic acid) in aqueous solution using magnetite activated carbon derived from waste biomass, 2nd International conference on sustainable innovative technique in civil and environmental engineering, Jawaharlal Nehru University, New Delhi, Jan-2014
 - 6) S. Nethaji, A. Sivasamy, Application of magnetite nanoparticles coated active carbon derived from lignocellulosic waste biomass for wastewater remediation, Indo-German Conference on Sustainability, IIT Madras, Chennai, Feb-2016
 - 7) S. Nethaji, G. Tamilarasan, P. Neehar, A. Sivasamy, Visible light Photocatalytic activities of BiOBr-Activated carbon (derived from waste Polyurethane) composites by Hydrothermal Process, Fourth International Conference on Advanced Oxidation Process 2016, BITS Pilani, Goa, Dec-2016
 - 8) S. Nethaji, A. Sivasamy, Batch and continuous column studies for the removal of hexavalent chromium by Biopolymer-Clay composites: Optimization with response surface methodology, CHEMCON 2016, Anna University, Chennai, Dec-2016
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Other Details

Scopus ID	: 36169522200
Orcid ID	: 0000-0002-7346-7838
AICTE ID	: 1-2468090584
MAHE ID	: MAHE0012937
