

Removal of Methylene blue from aqueous solution by bioadsorption onto *Ricinus communis* epicarp Activated Carbon

T. Santhi, S. Manonmani

Abstract

Carbon prepared from the epicarp of *Ricinus communis* was used to remove a textile dye (methylene blue (MB)) from an aqueous solution by adsorption technique under varying conditions of agitation time, dye concentration, adsorbent dose and pH. Adsorption depended on solution pH, dye concentration, carbon concentration and contact time. Adsorption followed both Langmuir and Freundlich isotherm models. The adsorption capacity was found to be 62.5mg/g at a neutral pH of 7 for the particle size of 125-250 μm at room temperature ($32 \pm 2^\circ\text{C}$). The kinetics of adsorption of MB obeys Pseudo-first order. The results in this study indicated that activated carbon from *Ricinus communis* was an attractive candidate for removing cationic dyes from the dye wastewater.

Keywords: Epicarp, *Ricinus communis*, Adsorption, Methylene blue, Kinetics

DOI = 10.3329/ceerb.v13i1.2518

Chemical Engineering Research Bulletin 13 (2009) 1-5

References

Full Text: [PDF](#)

Chemical Engineering Research Bulletin ISSN Print:0379-7678 Online: 2072-9510

Indexed by Chemical Abstract Service (CAS), CEABA-VtB, Google Scholar and DOAJ

BanglaJOL is supported by [INASP](#)

USER

Username

Password

Remember me

JOURNAL CONTENT

Search

All

Browse

- [By Issue](#)
- [By Author](#)
- [By Title](#)
- [Other Journals](#)

FONT SIZE

INFORMATION

- [For Readers](#)
- [For Authors](#)
- [For Librarians](#)

ABOUT THE
AUTHORS

T. Santhi
Department of
Chemistry,
Karpagam
University
India

Reader

Department of
Chemistry

karpagam
University

Coimbatore-
641021, India

Phone: 04222401661,
Fax: 04222611146

S. Manonmani
Department of
Chemistry, PSG
College of Arts and
Science
India

Department of
Chemistry

PSG College of Arts
and Science

Coimbatore-
641014

India

RELATED ITEMS



[Author's
work](#)

[Related
studies](#)

[Book
searches](#)

[Databases](#)

[Relevant
portals](#)

[Pay-per-
view](#)

[Online
forums](#)

[Teaching
files](#)

[Government
policy](#)

[Media
reports](#)

[Web search](#)

ARTICLE TOOLS



[Print this
article](#)



[Indexing
metadata](#)



[How to cite
item](#)



[Finding
References](#)



[Review policy](#)



[Email this
article](#) (Login required)



[Email the
author](#) (Login required)