

# Acid Treated Tea Waste for Dye Removal

Mei Lian Yuena\* and Nur Najwa Abdull Razak Siti

Department of Industrial Chemistry, Faculty of Industrial Sciences & Technology, Universiti  
Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Kuantan, Pahang Darul  
Makmur, Malaysia

\*Email: [yuenm@ump.edu.my](mailto:yuenm@ump.edu.my)

## **Abstract:**

Adsorption is an easy operating method to remove pollutants from aqueous solution. Acid treated tea waste (*Camellia sinensis*) was evaluated to adsorb methyl orange from aqueous solution. After the chemical modification with acid, the sorption capacity of modified tea waste towards methyl orange was greatly enhanced. The adsorption process was examined by various experimental parameters, including pH solution, contact time and initial dye concentration, adsorbent dosage and temperature. Low pH was preferable for the methyl orange uptake. The dye molecules adsorption reached equilibrium around 30 minutes at 50 ppm. Maximum adsorbent dosage of 0.2 g treated tea waste recorded the greatest methyl orange uptake. Therefore, treated tea wastes could be the best option for application in industrial wastewater treatment.

**Keywords:** Dye Removal; Experimental Parameters; Including Ph Solution

## **Acknowledgements**

The authors gratefully acknowledge the financial support from the grant of Universiti Malaysia Pahang (No. RDU1703179).