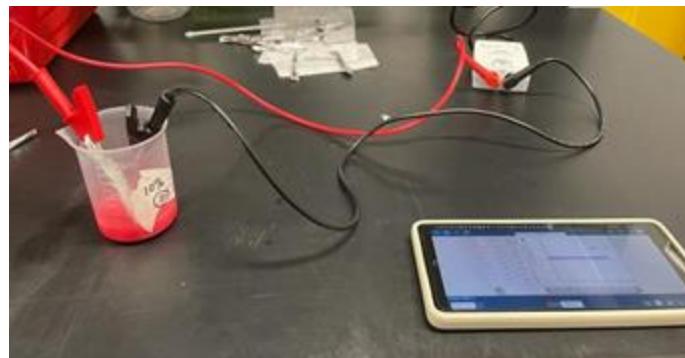




Simultaneous Bioremediation of Wastewater and Generation of Electricity using Laccase enzyme from *Trametes versicolor*

Our Technology Story

Phenols, which are toxic, can be found in textile effluents in wastewater, and when released, can cause harm to aquatic organisms. Laccase, an oxidoreductase enzyme, can catalyse oxidation of phenols and reduction of water to detoxify dye effluents in wastewater, as well as simultaneously generate electricity due to the movement of electrons. Our project investigated the optimum concentration of dye effluents, and pH at which the reaction occurs at the highest rate.



Collection of data from experimental setup



Laccase-alginate beads



Fabric dye solution

Technology Features

- Immobilised laccase-alginate beads suspended in a solution of fabric dye and water
- Carbon electrodes suspended in mixture to record voltage generated within the system

Potential Applications

Singapore is an energy-scarce City in a Garden with precious few water resources. Textile factories can use our findings to optimise the bioremediation process, protecting our water bodies and biodiversity, while simultaneously generating electricity to boost the sustainability of our energy resources.

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