UNIVERSITI TEKNOLOGI MARA
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TITLE:

COMPARISON OF NATURAL PLANT WASTE DYE FROM ACALYPHA LEAVES USING SOLVENTS FOR PHOTODEGRADATION PROCESS FOR DSSC APPLICATIONS

SUPERVISOR:

DR. NORAINI BINTI RAZALI
DR. NURUL HUDA KAMRULZAMAN

SCHOOL OF CHEMICAL ENGINEERING
COLLEGE OF ENGINEERING

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AUTHOR'S DECLARATION

" I hereby declare that this report is the resof my own work except for quotations and summaries which have been duly acknowledged."

Name of Student	:	Samihah Binti Hasbullah
Student I.D. No.	:	2022840822
Programme	:	Diploma in Chemical Engineering
College/School	:	College of Engineering/School of Chemical Engineering
Signature of Student	:	.....
Date	:	12 February 2025

ABSTRACT

The dye synthetic solar cell (DSSC) is now significant research to address this problem due to low-cost, promising efficient solar energy conversion, and ease of production. The natural dye is one of the main components that influence the cell's performance. The natural dye extracted from natural plant waste such as Acalypha Wilkesiana leaves have been used as sensitizer can lower the cost, easy extraction process and environmentally friendly. The main objectives of this research are to extract the dye from acalypha leaves by using water and methanol as solvents for 1 day, 3 days and 5 days, to analysis the colour degradation after the photodegradation process and to observe the conductivity of extracted natural dye from plant waste before and after photodegradation. The method use is extraction of natural dye from plant waste which is fresh acalypha leaves using water and methanol as solvents. The physical observation for colour of the dye and conductivity value was measured. The conductivity reading show that extraction for 5 days with 4.56mS/cm for water and 1174μS/cm for methanol is the highest while the lowest conductivity value is extracted for 1 day with 4.53mS/cm for water and 997μS/cm for methanol. From this result, it can be concluded that the extracted natural dye for 5 days is the darkest colour compare to others due to longer time of extracted natural dye and have the highest of conductivity value due to well absorption ability of sunlight.

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