

**OPTICAL PROPERTIES OF UNIRRADIATED AND IRRADIATED
RHIZOPHORA APICULATA DYED POLYVINYL ALCOHOL SOLUTION
DOSIMETER**

HANIFAH BINTI MD ISHAK

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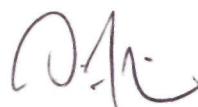
This Final Year Project Report entitled “**Optical Properties of unirradiated and irradiated *Rhizophora Apiculata* Dyed Polyvinyl Alcohol Solution Dosimeter**” was submitted by Hanifah binti Md Ishak, in partial fulfillment of the requirements for the Degree of Bachelor Science (Hons.) Chemistry, in the Faculty of Applied Sciences, and was approved by



Nurul' Ain binti Jamion
Supervisor
B. Sc. (Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan



Azlina binti Baha
Co- Supervisor
Physics Lecturer
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan



Sofian bin Ibrahim
Co- Supervisor
Research Officer
Agensi Nuklear Malaysia (Malaysian
Nuklear Agency)
Bangi, 43000 Kajang, Selangor,
Malaysia



Nurul Huda binti Abdul Halim
Project Coordinator
B. Sc. (Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan



Mazni binti Musa
Head of Programme
B. Sc. (Hons.) Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

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ABSTRACT

OPTICAL PROPERTIES OF UNIRRADIATED AND IRRADIATED *RHIZOPHORA APICULATA* DYED POLYVINYL ALCOHOL SOLUTION DOSIMETER.

Radiations have been used for centuries mainly in industrial processing. The technologies in radiation have widely used, therefore it need specific dosimeter system to act as process controller. *Rhizophora Apiculata* bark crude dye was extracted using 70% aqueous acetone and added into PVA solution. The dosimetry characteristic of *Rhizophora Apiculata* bark crude dye based PVA solution at different pH with dose of gamma irradiation up to 29 kGy were investigated. From the FTIR spectra, it is found that the intensity of C-OH and C=O stretching vibration decreased with the increased of the dose of gamma radiation. It also found that intensity of C-OH and C=O stretching vibration decreases with increases of pH. The UV-Vis absorbance were found decreased with the increase of gamma irradiation which resulting to a color bleaching of the *Rhizophora Apiculata* bark crude dye based PVA solution. The most suitable pH that can be used for radiation sensitive dosimeter is pH 12. It is because it responds to pH value changes very drastically with ± 9 .