

ABSORPTION OF QUINAZOLINONE BY WHITE  
CELLULOSE FIBRILS AND CELLULOSE TISSUE

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**ABSORPTION OF GAMMA RADIATION  
BY WHITE CEMENT SAMPLES  
AS AN ARTIFICIAL TISSUE**

**By  
Nur Kamal Hidayah Binti Kamarulzaman**

**A project report in partial fulfillment of  
the requirements for the award of the degree of  
Bachelor of Applied Science (Physics Electronic and Instrumentation)**

**Department of Physical Sciences  
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**JABATAN SAINS FIZIK  
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**PENGAKUAN DAN PENGESAHAN LAPORAN PITA I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: *Absorption of... Gamma radiation by white cement samples as an artificial tissue..*

oleh *Nur Kamal Hidayah bt. Kamaruzaman*, no. matrik: *4K12555*

telah diperiksa dan semua pembedaan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Fizik sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah *Sarjana Muda sains gunaan (Fizik Elektronik & Instrumentasi)* Fakulti Sains dan Teknologi, UMT.

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## DECLARATION

I hereby declare that this thesis entitled Absorption of Gamma radiation by white cement samples as an artificial tissue is the result of my own research excepts as cited in the references.

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## ABSTRACT

There are many bad effects when we are expose by gamma ray. Due to that cause, this project has been run in order to investigate which materials are most efficient for gamma absorption. In this research, the material being used is white cement as the sample being test and the experiments have been carried out in three conditions which are wets, half dry and dry cement. From the research, wet cements show the most efficiency in rate of absorption and it almost equal to the rate of absorption of flexi glass. This results prove that molecule of water are influence the rate of absorption. So that, sample which the highest rate of absorption is wet sample with the rate of absorption is 0.27. In future, in order to produce better obstruction of gamma ray, white cement can be added with aluminium because the absorption rate of aluminium and white cement is good.

## ABSTRAK

Ada pelbagai kesan buruk akibat daripada terkena sinar gamma. Oleh itu tujuan bahan kajian ini dijalankan adalah untuk mengkaji bahan yang mempunyai kadar serapan gamma yang terbaik. Di dalam kajian ini saya telah menggunakan simen putih sebagai sampel yang diuji dalam tiga keadaan iaitu keadaan basah, separa basah dan kering. Melalui kajian ini, bahan simen dalam keadaan basah adalah yang terbaik kadar penyerapannya dan menyamai kadar serapan yang terdapat pada flexiglas. Ini telah membuktikan yang molekul air mempengaruhi kadar penyerapan. Oleh itu, sampel yang mempunyai kadar serapan yang tinggi ialah dalam keadaan basah yang mana mempunyai kadar serapan sebanyak 0.27. Pada masa akan datang bagi menghasilkan perisai yang lebih baik simen putih ini boleh dicampur dengan aluminium kerana kadar serapan kedua bahan ini adalah baik.