

**INDOOR AND OUTDOOR RADON CONCENTRATION AND RADON
EMANATION FROM SOIL IN PUCHONG AREA**

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**Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Industrial Physics
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

APRIL 2010

ACKNOWLEDGMENTS

ALHAMDULILLAH, thanks to Allah who gave me opportunity to finish this final year project by smoothly.

Thanks to my supervisor who supported and gave brilliant knowledge to me until this final year project complete. My supervisor, Assoc. Prof. Dr. Ahmad bin Saat is very patience man in face various type of problems that come from this final year project and me.

Unforgettable to my partner project Masturah Binti Muhammad for helping and supported me whenever in difficult situation. For others friends who gave moral advice without compare my capability. Thanks for their encouragement and share knowledge with me. Finally, to my parents, huge thanks for both of yours who gave me the best life without get bored and never less their love.

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ABSTRACT

INDOOR AND OUTDOOR RADON CONCENTRATION AND RADON EMANATION FROM SOIL IN PUCHONG AREA

The Radon (^{222}Rn) is non-metal and progeny of radium, ^{226}Ra in the decay series of uranium, ^{238}U and achieved stable state at plumbum, ^{206}Pb . It is a radioactive decay by emitting an energetic alpha particle and forming polonium, ^{218}Po followed by others daughter product. The odorless and colorless properties of radon cause the public not have strong knowledge about the radon hazard that can cause lung cancer. Therefore, in this study indoor-outdoor concentration of radon and emanation rate has been measured by using Solid State Nuclear Track Detector. The measurement was taken from November 2009 until February 2010 at Kampung Tengah, Kampung Kenangan and Taman Puchong Perdana. The average of outdoor radon concentration for the three locations has being studied is the ranges 5.86 Bq. m^{-3} to 6.78 Bq. m^{-3} . The emanation rate of radon from the soil at one location is almost the same and for the three locations, the average of emanation rate of radon from the soil is the ranges $46.00 \text{ Bq. m}^{-2} \cdot \text{s}^{-1}$ to $185.00 \text{ Bq. m}^{-2} \cdot \text{s}^{-1}$. For all location, the outdoor radon concentration is shows low reading and under USEPA action limit. Thus, the three locations has been approved safe from the radon hazard.

CHAPTER 1

INTRODUCTION

1.1 Background and Problem Statement

Radon located in the atomic number 86 with symbol Rn. Radon is an inert gas and colorless. In addition, we are cannot smell it. Therefore, we are very light to know the existence and the hazardous of Radon towards human. The Radon is non-metal and progeny of radium, ^{226}Ra in the decay series of uranium, ^{238}U and achieved stable state at plumbum, ^{206}Pb . It is a radioactive decay by emitting an energetic alpha particle and forming polonium, ^{218}Po followed by others daughter product. As we know, the radioactive decay is very dangerous towards our body. The emitted alpha particles that brought nuclear charged attached to the any particles in the air. Then, in our inhalation, the contaminated air enters our body. As a result, the alpha particles that deposited on our cells will damage our internal tissues and create a disease that causes possibility human to die. Actually, the radiation can form naturally or by man-made. Naturally, the physical of radon as an inert gas cause it easily escaped from the soil into the air.

Therefore, this proposal as title Indoor and Outdoor Radon Concentration and Radon Emanation from soil in Puchong area is to do some research on existence of radon at