

**DEVELOPMENT AND APPLICATION OF A METHOD FOR
DETERMINATION OF RADON IN WATER SAMPLE**

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ABSTRACT

DEVELOPMENT AND APPLICATION OF A METHOD FOR DETERMINATION OF RADON IN WATER SAMPLE

Radon's presence in environment is mainly related with trace amounts of uranium in rocks and soil. Since radon is water soluble, it may dissolve into water if the pores in rock and soil under the water table are saturated with water. The emission of energetic alpha particle from radon disintegration process will bring health risk to human if it is inhaled or ingested. Therefore, it is important to measure radon concentration in order to ensure that we are not exposed to the risk of it. Measuring radon in water required different technique. This study has developed a simple technique for determining radon in water. The water sample is located together with radon-in-air monitor within a sealed container. By purging air through sample, radon is emanated from the water and will be measured by the monitor. The results shows that radon concentration are within the range of 0.53 – 8.48 Bq/L for all types of water covered within this study. The highest radon concentration is obtained from mineral water (8.48 Bq/L), and the lowest is obtained from sample at Tasik Shah Alam Seksyen 7 (0.53 Bq/L). The values are compared with the studies from other places that are used as standard reference. A further research is advisable to improve this method. This is important so that radon concentration in water can be measured effectively later.

CHAPTER 1

INTRODUCTION

1.1 Background and Problem Statement

Radon is a radioactive gas. It is odorless, colorless, and water soluble. Radon existed naturally in soil, rocks and water. The emission of high energetic alpha particle from radon disintegration process will bring health risk to human if it is inhaled or ingested. The damage done to our internal tissue once it enters our body may cause cancers to human organ, particularly in the lungs.

Most Malaysians are not aware of the presence of radon in their daily life since they were not being exposed much about radon. Some of Malaysian did not even know about the existence of radon. While other countries already have their own guideline about controlling the radon level, we in Malaysia are still in query about it. This is due to the less number of studies that have been done about radon in Malaysia.

Comparing to the radon gas measurement in air, detecting and measuring radon in water reacquires a different technique. There have been a few studies done regarding radon level in air but there is still very little study conducted about radon in water in Malaysia.