

RANCANG BANGUN DETEKTOR UNTUK MONITORING DAN PERHITUNGAN KADAR GAS RADON DI UDARA

by Rida Siti Nur'aini Mahmudah, S.Si, M.Si., R. Yosi Apriani Sari, M.Si., Dr. Restu Widiatmono, Azzam Zuhrofani Iman, Dhani Nur Indra S, Ahmad Faisal Harish

ABSTRACT

This research is a continuation of last year's research which is aimed to design system to monitor and measure radon gas level in ambient air, which can be conducted at laboratories, homes and open space. The research was begin in February and ended in November 2018 and was mainly conducted at Instrumentation and Signal Laboratory, and Atom and Nuclear Physics Laboratory of Physics Education Department Universitas Negeri Yogyakarta.

Building this detection system was divided into two steps, i.e. designing the system and building the detector and the last was testing the detector. The research was began by doing literature study and observation to obtain information about available home-made radon detector. Based on this observation, research was done by doing system designing and then went to the next stage of research as has been made in research roadmap.

This research has resulted in a coupled amplifier-ionization chamber-rate meter system to detect radioactive decay activity in surrounding air. The detector testing step shown that this system has functioned properly for particular radioactivity, and several tests and improvements will be made in order to get a better detection capability.

Kata Kunci: *radiation detector, radon, radioactive decay, ionization chamber*