

# Rancang Bangun Sistem Pemantauan Radiasi Lingkungan Berbasis Detektor Sintilasi CsI(Na) Terintegrasi dengan Stasiun Cuaca = Design and Development of an Environmental Radiation Monitoring System Based on CsI(Na) Scintillation Detector Integrated With a Weather Station

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## Abstrak

Penelitian ini bertujuan untuk meningkatkan pengawasan terhadap tingkat radiasi lingkungan dengan merancang bangun sistem instrumentasi detektor radionuklida berbasis kristal sintilasi CsI(Na) terintegrasi stasiun cuaca dengan uji karakteristik akuisisi detektor radionuklida terhadap sumber radiasi Eu-152, Cs-137, K-40 dan perubahan parameter cuaca. Uji karakteristik terhadap sumber radiasi menghasilkan data perbandingan hubungan perubahan laju dosis terhadap jarak sumber radiasi berdasarkan posisi penempatan detektor kristal sintilasi, dan perbandingan dengan instrumen standar gamma surveymeter. Uji karakteristik terhadap perubahan cuaca mendapatkan data perubahan laju dosis dan laju cacah terhadap perubahan parameter udara yaitu: suhu; kelembapan relatif; dan tekanan.

.....This research purposes are to increase environmental radiation monitoring by designing and developing an instrumentation system radionuclide detector CsI(Na) scintillation crystal integrated with a weather station by radionuclide detector acquisition characteristic testing with Eu-152, Cs-137, K-40 as radiation source and changes in weather parameters. Characterization test using radiation source produced data comparing the relation between changes in dose rate and distance from the radiation source based on the placement position of the scintillation crystal detector, as well as comparisons with a standard gamma survey meter instrument. The characterization test under varying weather conditions provided data on changes in dose rate and count rate in response to changes in air parameters, including temperature, relative humidity, and pressure.