

## **Determining the Effectiveness of Radiation Shielding and Safe Time for Radiation Worker by Employing Monitoring of Accumulation Dose in the Operator Room of CT Scan**

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**Abstract :** Along with the increasing frequency of the use of CT-Scan for radiodiagnostics purposes, it is necessary to study radiation protection. This study examined aspects of radiation protection of workers. This study tried using thermoluminescent dosimeter (TLD) for evaluating radiation shielding and estimating safe time for workers during CT Scan examination. Six TLDs were placed on door, wall, and window inside and outside of the CT Scan room for 1 month. By using TLD monitoring, it could be seen how much radiation was exposed in the operator room. The results showed the effective dose at door, window, and wall was respectively 0.04 mSv, 0.05 mSv, and 0.04 mSv. With these values, it could be evaluated the effectiveness of radiation shielding on doors, glass and walls were respectively 90.6%, 95.5%, and 92.2%. By applying the dose constraint and the estimation of the accumulated dose for one month, radiation workers were still safe to perform the irradiation for 180 patients.

**Keywords :** CT scan room, TLD, radiation worker, dose constraint

**Conference Title :** ICBMP 2017 : International Conference on Biophysics and Medical Physics

**Conference Location :** Melbourne, Australia

**Conference Dates :** February 02-03, 2017