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ABSTRACTS BOOK

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2. Uluslararası Bilimsel Çalışmalarda Yenilikçi Yaklaşımlar Sempozyumu

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Using Thermoluminescence Method in Accident Dosimetry

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Özet – The retrospective –view back– dosimetry applications are important in order to estimate the absorbed radiation doses after a nuclear accident or violent terror attack. In such cases, a number of methods such as luminescence techniques are used to calculate the radiation doses. Thermoluminescence (TL) and optically stimulated luminescence (OSL) techniques have been widely used in radiation dosimetry applications for decades. TL signals measured from quartz mineral within the soil samples can give important information about the absorbed radiation doses after an unexpected nuclear accident. In this study, after the quartz minerals were obtained from soil samples using some separation methods, linear dose response range and minimum detectable dose (MDD) of quartz grains were determined using TL method. In the light of the obtained data, the usage of the TL method in accident dosimetry was discussed to estimate doses exposed of population in contamined areas.

Keywords – Retrospective dosimetry, Nuclear accident, Thermoluminescence, Quartz