

RADIATION ACCIDENT DOSIMETRY ON GLASS BY TL AND EPR SPECTROMETRY

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In case of accident involving ionizing radiations, the dose absorbed by the victims has to be rapidly and accurately assessed in order to choose an appropriate medical treatment. EPR dosimetry on tooth enamel and bone biopsies was used successfully in many cases of accident. Nevertheless the measurements of these materials required invasive biopsies which limit the use of EPR dosimetry. In order to overcome this difficulty, retrospective dosimetry using fingernails by EPR ⁽¹⁾ and personal objects as telephone chip-cards by OSL ⁽²⁾ has been recently considered. In this paper, we were interested in another material present in various personal effects: glass. A preliminary study of EPR signals of watch glass carried out by Wu had suggested that it was an appropriate dosimeter ⁽³⁾ and TL dosimetric properties of glass have been studied for example by Tesch ⁽⁴⁾. We have surveyed the radiation-induced signals in a large number of watch glass and display windows of mobile phone with TL and EPR techniques to study the variability of dosimetric properties among the different types of sample. Dose response, signal stability and effects of storage conditions will be presented and the problem of TL signal erased by light considered.

References:

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