same ways film is presently used.

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ULTRAVIOLET AND LASER RADIATION DOSIMETRY USING PHOTOSTIMULATED THERMOLUMINESCENCE IN $CaSO_4$:Dy

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The photostimulated thermoluminescence (PSTL) technique was developed through the study of light effects in thermoluminescent materials. In its applications are included the possibility of making high dose dosimetry, dose reevaluation, ultraviolet (UV) and laser radiation dosimetry. The objective of this work is to study the PSTL in $CaSO_4$:Dy in several UV wavelengths of interest and laser radiation. $CaSO_4$:Dy is an extremely sensitive thermoluminescent material that has a dosimetric peak in 220°C and is successfully used in gamma radiation dosimetry. The $CaSO_4$:Dy used in this study was that produced at IPEN in Teflon pellets form. The Teflon pellets were annealed at 300°C for 15 minutes before irradiation and exposure to UV light. A 15.0 TBq ^{60}Co gamma source was used for sample irradiation. A system consisting of a high pressure Hg lamp (Bausch & Lomb SP-200) and a Kratos GM-200 monochromator were used for UV exposure. For the thermoluminescence measurement we used a Harshaw model 2000 AB TL reader with a temperature range from 200 to 360°C and a heating rate of 10°C/s. The PSTL response was observed for gamma irradiation from 2.58×10^{-1} C/kg (10^3 R) to 2.58 C/kg (10^4 R). The dependence of the PSTL response on light wavelength was studied from 230 to 570 nm. The time of exposure and the wavelength was determined in order to obtain better resolution. The obtained results show that $CaSO_4$:Dy Teflon pellets show a good performance to PSTL and can be used in UV and laser dosimetry.