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Analysis of dosimetric properties of alanine/EPR system for low dose radiations used in radiotherapy

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The use of radiation beams in radiotherapy requires effective dosimetry to protect the patient from potential dangerous effects of irradiation. In vivo dosimetry allows the control and precise evaluation of attributed dose during radiotherapy treatment by using accurate dosimeter. Some previous studies have revealed that the alanine/EPR system has interesting dosimetric properties. In this study, we have analyzed the dosimetric properties of alanine irradiated by 6 MeV electron beams which is usually used for radiotherapy treatment. Irradiation doses undertaking vary from 0-20 Gy. EPR measurements show that the rate of produced free radicals is proportional to the absorbed dose, whereas the minimal detectable dose is 1 Gy. A small quantity of alanine is efficient to elaborate pellets for dosimetric purpose. Furthermore, the free radicals created after irradiations are stable during the period of storage.

Biography

A Mamadou Saidou has completed his Master's degree from Hassan I University in Morocco and he is currently enrolled in PhD program in the same university. His research field is "Medical physics particularly spectroscopy and dosimetry applied in the field of radiotherapy".

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