

STUDY ON THE EPR/DOSIMETRIC PROPERTIES ON DL-TRYPTOPHAN

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ABSTRACT

Polycrystalline DL-tryptophan is promising material for EPR dosimetry, because it has a large yield of stable radicals due to gamma radiation. The free radical concentrations in DL-tryptophan proportional to the absorbed dose. The EPR spectra of DL-tryptophan have a spectroscopic splitting factor of $g = 2.00922 \pm 0.02107$ and hyperfine constant $A = 3.875 \pm 0.787$ mT. DL-tryptophan have specified EPR signal developed under irradiation in the dose range from 0.5-200 kGy. The obtained number of free radicals per 100 eV (G value) was found to be 0.063 ± 0.01 . The pre and post- irradiation stability was found to be satisfactory.

KEYWORDS: EPR – Radiation Dosimetry – DL-Tryptophan