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Studying on effect of gamma-irradiation toward the activation energy value from the thermoluminescence glow curve

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Abstract

The chilli powder samples were irradiated by ^{60}Co gamma-source at the absorbed dose of 2, 4, 6 and 8 kGy. This study calculates the activation energy value (E) from the thermoluminescence (TL) glow curves by the initial rise method (IR). For non-irradiated samples, the E value is 0.58 eV while the irradiated samples have higher value 0.84 eV. That allows us to distinguish between irradiated and non-irradiated chilli powder and be able to identify dose assessment of gamma irradiated samples.

Keywords

Thermoluminescence, activation energy, gamma-irradiation, chilli

1 Introduction

Nowadays, there are over 55 countries in the world having accepted to use food, spices and fruits irradiated [1]. The food irradiation at a suitable dose helps prolong the lifespan

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