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Experimental Test on the Effect of Taheri Consciousness Fields on Thermoluminescence Phenomenon

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Abstract

In this paper, the combined effects of T-Consciousness Fields (TCFs) 1, 2, and 3 on the thermoluminescence phenomenon have been investigated. For this purpose, commercial thermoluminescent dosimeter chips GR-200 (LiF:Mg,Cu,P) were selected due to their high sensitivity to radiation. To assess the effects of TCFs on these chips, one GR-200 chip was discharged three consecutive times and radiated with beta radiation from a ^{90}Sr source at an equivalent dose of 67.0 mSv (30 cycles in beta irradiator). Subsequently, its response (electric charge) and glow curve were measured. Then, the same chip was discharged three more consecutive times and irradiated under the same conditions, but in this case, TCFs were applied after discharge and simultaneously during irradiation. The results showed that the response of a single chip to TCFs decreased from 8.3% to 7.11% after the first to the third exposure. The observed results indicate a reduction in the response of GR-200 chip due to TCFs, thus experimentally confirming the effect of these fields on the thermoluminescence phenomenon.

Keywords: T-Consciousness Fields, Thermoluminescence, GR-200

Introduction

Obtaining an accurate image of the effectiveness of T-Consciousness Fields (TCFs) at the atomic level requires a highly precise method and specialized treatment [1]. One of the areas where it is believed that the effects of TCFs at microscopic levels can be observed is nuclear science and technology. In this field, interactions of ionizing radiations of atomic and nuclear origins with different materials are taken into consideration in order to apply these radiations in a variety of fields such as industry, medicine, and agriculture. The interaction of ionizing radiations with matter takes place depending on the type and energy of radiation with atoms and/or components within the matter (electrons and nuclei) [2]. As a result of these interactions, physical or chemical changes occur in the matter. These changes are used for the detection of ionizing radiations and determination of their effects on materials, especially living cells and tissues [3].

Nuclear detectors and dosimeters have been designed and built in this regard. While the basis of both instruments is similar, detectors are often used to identify the type and energy of the radiation field [1], and dosimeters are used to determine the biological effects of radiation on the human body [2]. Generally, a detector (or dosimeter) consists of a specific volume of material for recording radiation interactions; the sensitive matter can be solid, liquid, or gas [4].

Although TCFs do not have matter and energy natures, they can have recordable effects on various subjects. Therefore, these fields can be applied to living and non-living entities. Prior to this study, the effect of TCFs on the magnetic and mechanical properties of some metals has been reported [5, 6]. The aim of this study is to investigate the effect of three types of TCFs on the thermoluminescence phenomenon.

Method: It has been done according to Section 2.2 in the general consideration.

Results and Discussion

The measured response values of a GR-200 chip are presented in Table 1. Figure 1 also shows the trend of changes in the data for TCFs-treated and control groups. As observed, before the application of TCFs, the maximum difference obtained between these values and the average value is 1.3%. This difference is mainly due to the random nature of electron trapping and intrinsic uncertainty in thermoluminescence light emission. It can be said that before the application of these fields, the total charge values of the examined chips were approximately the same.

Table 1 - Readout data of a GR-200 chip before (control) and after the application of T-Consciousness Fields (treated) during radiation with beta radiation at an equivalent dose of 67.0 mSv.

Group	No.	Q (μC)	Difference with Average of Control (%)
Control	Control a	1.378	1.30
	Control b	1.349	-0.81
	Control c	1.354	-0.49
Treated	TCFs a	1.310	-3.82
	TCFs b	1.203	-11.67
	TCFs c	1.218	-10.57

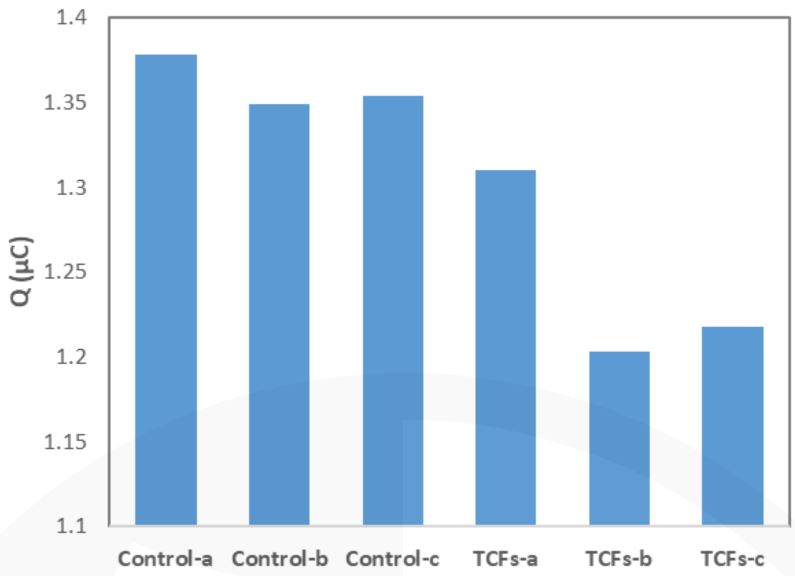

Figure 1. Total Electric Charge Values of a Single Dosimeter in Each Repetition for the Sample and Control Group.

However, after the application of T-Consciousness fields, the response value obtained is less than the average before the application of TCFs, to the extent that after three consecutive applications of TCFs, the difference between the electric charges and the control average (values before the application of T-Consciousness fields) has reached a maximum of 7.11%.

Furthermore, in Figure 2, the measured glow curves for the GR-200 chip are graphed. In part (a), the curves for the untreated chip are shown. As expected, the curves almost completely overlap, consistent with the control values in Table 1. These curves have two peaks (two electron trapping sites), a small peak with a peak temperature of 210°C and a large peak at 236°C. In part (b), the glow curves for the same GR-200 chip after three consecutive applications of TCFs are plotted. It is clear that after the application of TCFs, the glow curve differs from the curves before the application of the fields. For better comparison, the glow curve after the first application, along with the curve before the application of fields, is plotted in part (c). In fact, with the application of T-Consciousness fields, the smaller peak (lower temperature) of the glow curve has decreased in size. Thus, it can be concluded that the applied TCFs had a noticeable and measurable effect on the thermoluminescence response of the GR-200 chip, reducing the response. Another point is that after the repeated applications of these fields, the smaller peak has further decreased and practically disappeared after the third application of TCFs. It appears that the effect of T-Consciousness fields remains at least until their reapplication to the GR-200 chip, and the effect of the subsequent field applications adds to the previous effect. However, after the third application, no further reduction in charge occurred. This finding itself can be the subject of future investigations regarding the persistence of the effects of TCFs over time and the effects of successive applications of these fields on a sample.

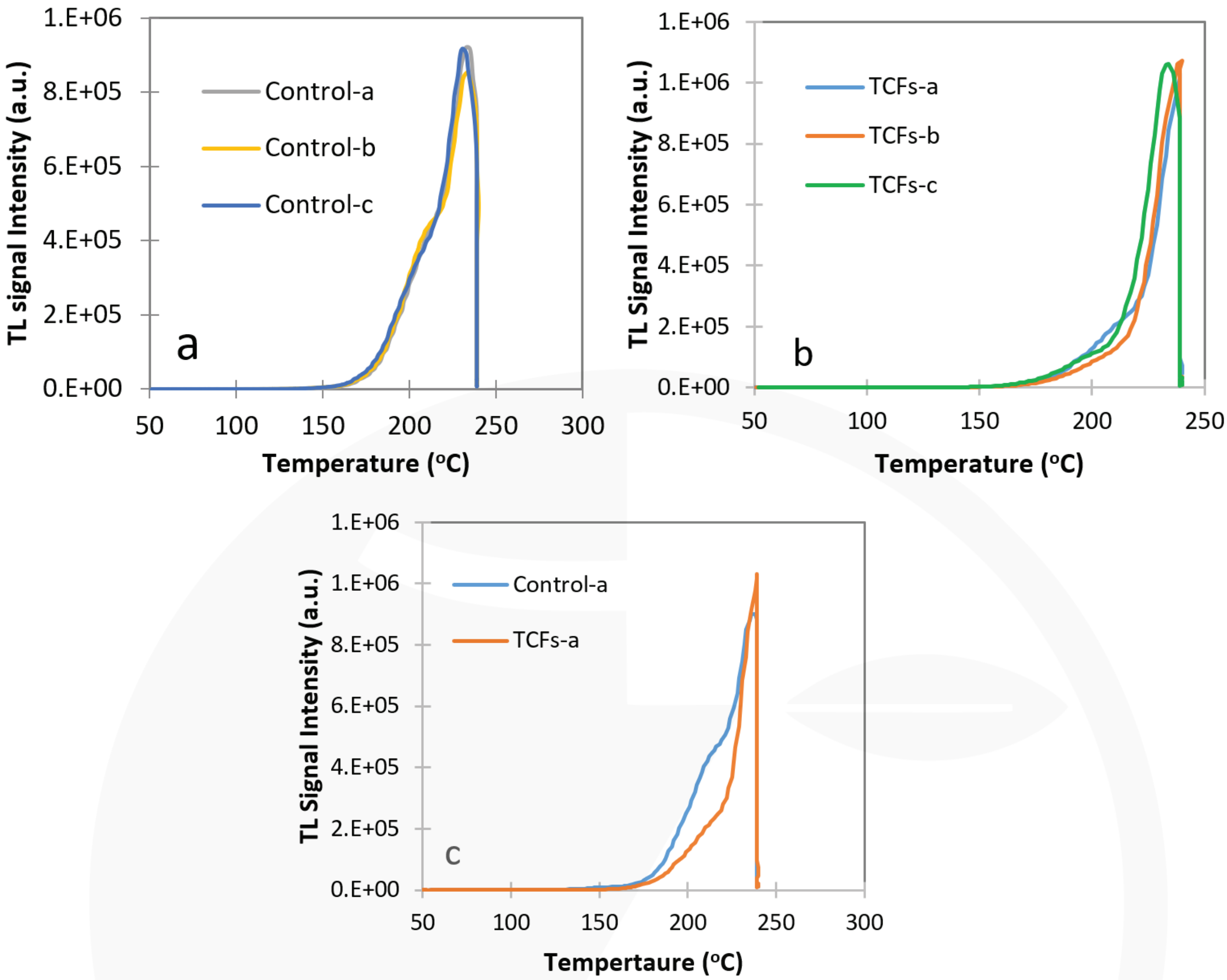

Figure 2 - Changes in the glow curve of the GR-200 Chip, (top, left) before the application of T-Consciousness Fields. (top, right) After the application of T-Consciousness Fields (bottom). Comparison between before and after the first application of T-Consciousness Fields. After the application of T-Consciousness fields, the peak with lower temperature has decreased in size.

In conclusion, the results obtained showed that after the combined application of T-Consciousness fields 1, 2, and 3 on the TLD dosimeter, the response of the GR-200 dosimeter changed from the time before the application of the fields. Additionally, noticeable changes occurred in the structure of the glow curves. Furthermore, in general, the pattern of response changes of the dosimeters can be attributed to a decrease in the number of electrons trapped in the traps created in the crystal and, consequently, the measured electric charge and, therefore, a decrease in the area under the glow curve.

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