

RAD2017 
CENTRAL EUROPEAN INITIATIVE

**FIFTH INTERNATIONAL CONFERENCE
ON RADIATION AND APPLICATIONS IN VARIOUS FIELDS OF RESEARCH**

12. 06. - 16. 06. 2017 | Budva | Montenegro | rad-conference.org

BOOK OF ABSTRACTS



THE EFFECTS OF ANNEALING ON THE THERMOLUMINESCENCE GLOW PEAKS OF THE NATURAL MUSCOVITE MINERAL

**Sibel Akça¹, Ziyafer Gizem Portakal¹, Sümeyra Balcı Yegen¹,
Mehmet Yüksel¹, Tamer Doğan², Osman Parlak³, Mustafa Topaksu¹**

¹ Çukurova University, Art and Science Faculty, Physics Department, Adana, Turkey

² Çukurova University, Vocational School of Imamoglu, Department of Computer Technologies, Adana, Turkey

³ Çukurova University, Faculty of Engineering and Architecture, Department of Geology Engineering, Adana, Turkey

The annealing effect on thermoluminescence (TL) glow peaks of natural white muscovite mineral has been investigated. Muscovite is a rock-forming silicate mineral within the mica group and there is a growing interest in the study of the TL characteristics of it due to its dosimetric potential. In this study, the muscovite mineral was annealed at the temperatures ranging from 100 °C to 600 °C with an increment of 100 °C for 30 min., 1 h and 2 h for TL measurements. All annealing treatments were performed with a specially designed microprocessor-controlled electrical oven, which is able to control the temperature within ± 1 °C. The irradiations at room temperature (RT) were carried out with the β -rays from a calibrated ^{90}Sr - ^{90}Y source (≈ 0.115 Gy/s) after each annealing process. The muscovite samples exposed to a beta dose of 207 Gy were readout with a linear heating rate of 2 °C/s from RT to 400 °C in N_2 atmosphere by using the Lexsyg smart luminescence measuring system. With the comparison of the TL glow peaks of both un-annealed and annealed samples irradiated with the same beta dose, the effects of annealing temperature and time on TL response were observed.

Acknowledgment: This work was supported by Research Fund of the Çukurova University (Project Number: FBA-2016-4610). All authors would like to thank Research Fund of the Çukurova University for the financial support.

PUBLISHER: RAD Association

Bulevar Nikole Tesle 17/12, 18000 Niš, Serbia

www.rad-association.org

FOR THE PUBLISHER: Prof. Dr Goran Ristić

EDITOR: Prof. Dr Goran Ristić

COVER DESIGN: Vladan Nikolić, PhD

TECHNICAL EDITING: Vladan Nikolić, PhD and Sasa Trenčić, MA

PROOF-READING: Saša Trenčić, MA and Mila Aleksov, MA

The Fifth International Conference on Radiation and Applications

in Various Fields of Research (RAD 2017) was financially supported by:

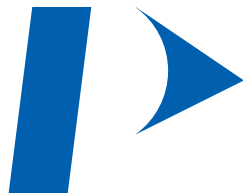
- Central European Initiative (CEI)

ISBN:



rad-conference.org

Silver sponsor



PerkinElmer[®]
For the Better