Contribution ID: **89** Type: **Poster Presentation**

Thermoluminescence (TL) study of β-stimulated BaAl₂O₄:Eu²⁺,Dy<sup>3+</s phosphor

Abstract content
   (Max 300 words)
Formatting &
Special chars

Thermoluminescence (TL) properties of beta irradiated Eu²⁺ doped and Dy³⁺ co-doped barium aluminate BaAl₂O₄:Eu²⁺,Dy³⁺ have been studied. The BaAl₂O₄:Eu²⁺,Dy³⁺ phosphors were prepared using solution - combustion synthesis method at initiating temperature of 500^oC technique using urea (CH₄N₂O) as a reducing agent and Ba(NO₃)₂, Al(NO₃)₃.9H₂O, Eu(NO₃)₃.5H₂O and Dy(NO₃)₃ as raw materials. The electron-trapping properties in terms of TL glow curves are reported. The TL intensity was recorded for different beta (β) doses at different heating rates and was observed to increase with increasing β dose. The influence of repeated measurements on the same sample on peak temperature and TL intensity was also investigated so as to ascertain its repeatability and stability. Different kinetic parameters like activation energy (E), frequency factor (S) and geometrical factor were calculated by different methods including initial rise, variable heating rate and peak shape methods.

Apply to be
 considered for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

PhD

Main supervisor (name and email)
and his / her institution

Dejene B. F
dejenebf@qwa.ufs.ac.za
University of the Free State

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

Please indicate whether
this abstract may be
published online
(Yes / No)

Yes

Primary author: Mr WAKO, ALI HALAKE (University of the Freestate)

Co-authors: Prof. DEJENE, Francis (University of the Free State); Prof. SWART, Hendrik (University of the Free State); Ms KIPROTICH, Sharon (University of the Free State)

Presenter: Mr WAKO, ALI HALAKE (University of the Freestate)

Track Classification: Track F - Applied Physics