

- I. Plot the graphics of I_m , T_m , FWHM and integrated TL peak signal for the case of $Al_2O_3:C$, a material with strong thermal quenching.
- II. Material has 5 traps with activation energies 0.66 eV, 0.85 eV, 1.25 eV, 1.88 eV and 2.8 eV. For this material indicate which of the following is true or false.
 - II1. Blue OSL ($E_{blue}=2.38$ eV) stimulates energy from all 5 traps.
 - II2. IRSL ($E_{IR}=1.41$ eV) stimulates only the first three traps.
 - II3. The TL glow curve of the materials up to 500 °C yields 5 TL peaks.
 - II4. The number of TL peaks in the TL glow curve depends strongly on the heating rate of the material.
 - II5. The TL peak with activation energy 0.66 eV is the most stable.
 - II6. The TL peak with activation energy 0.66 eV corresponds to the lowest T_{max} among all other TL peaks.
 - II7. The lifetime of the TL peak with 1.25 eV is higher than of the peak with $E=1.88$ eV but lower than the peak with 0.85 eV.
 - II8. The trap with activation energy of 2.8 eV is the deepest trap of the material.
 - II9. OSL, IRSL and TL fail to stimulate electrons from very deep traps.
 - II10. Only the first two peaks can be used effectively for dosimetry purposes (0.66 eV, 0.85 eV).
- III. In the case of isothermal TL, as the measurement temperature increases, so does the slope of the measurement at a semi-log axis.
- IV. Describe in short how we can calculate the activation energy from isothermal TL measurements.
- V. In the deconvolution procedure, the n_0 and the s are normal fitting parameters.