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Phosphorescence of phototransferred thermoluminescence in annealed synthetic quartz

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Abstract content (Max 300 words) Formatting & Special chars

Phosphorescence measurements carried out on the phototransferred peak of single crystalline synthetic quartz samples annealed at 500°C for 10 minutes is reported. The samples were exposed to beta irradiation and illuminated by 470nm blue LED light. The glow curves, recorded with a linear heating rate of 1°C/s, show a phototransferred main peak. Kinetic parameters such as activation energy (E), frequency factor (s) and order of kinetics (b) are found using analysis of the phosphorescence signal observed. This observation indicates that the behaviour of this phototransferred peak is consistent with first-order kinetics and has activation energy of about 0.65eV with a frequency factor in the order of 10^7 Hz. The dependence of the PTTL intensity of this main peak on illumination time (time the sample is exposed to 470nm blue light) gives rise to a peak.

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Yes

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

MSc

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

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Yes

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