

Letters

TL & ESR TERMINOLOGY: k FACTORS

K. S. V. Nambi has written to Ancient TL regarding possible confusion in the interpretation of the use of the k factor in TL and ESR that he felt may have arisen at the Worms TL Seminar. I have chosen to precis his letter (I also include a comment (*) by one of the Reviewers of the original submission) and I hope that Dr. Nambi will consider that the basis of the point he raised has been faithfully transposed below.

The k factors for the two techniques may be defined as follows:

$$k_{TL} = (\alpha:\gamma \text{ relative trapping efficiency factor}) \times (\alpha:\gamma \text{ relative recombination efficiency factor})$$

$$k_{ESR} = \alpha:\gamma \text{ relative trapping efficiency factor giving rise to ESR signal}$$

The TL and ESR k factors will be equivalent where the relative recombination efficiency factor is equal to unity (i.e. no qualitative difference between parameters for α - and γ - TL glow curves. However, where this is not the case, and alpha irradiation gives rise to a new TL peak and/or emission band, the $\alpha:\gamma$ relative recombination factor will be greater than unity and an inequality in the two k factors arises

i.e. $k_{TL} > k_{ESR}$

Dr. Nambi therefore suggests that k_{TL} remains as presently designated, but that a new annotation be chosen for k_{ESR} to discourage the assumption that the k factors are always equivalent.

* Henry Schwarcz has suggested that an inequality of TL and ESR k factors may alternatively be connected with the opacity of samples, which would affect the evaluation of k_{TL} but not k_{ESR} , despite meeting the conditions discussed above.

We welcome further views on this subject.

PLATEAUX AND PREHEATING

G. Valladas (18th International Symposium on Archaeometry and Archaeological Prospection, Bonn, March 1978) showed that a preheat treatment was necessary to separate the 370°C peak and obtain a plateau from quartz. I am not aware of anyone before or since finding the heating necessary or using it. Does one normally get a good plateau without it (do not yield a plateau), or do people normally preheat?

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