

Dear Kusala,

TL. DVL +
VIT

Congratulations! The paper deserves to be published. It was presented nicely. I do agree that the TL dating part was too brief. In fact, I was not happy to be one of the authors with so little involvement in an excellent paper. The table (attached) will remove my guilt feeling.

In the TL section please add-

The TL ages are calculated from the well known 'age-equation'

$$\text{Age} = \frac{\text{Paleodose}}{\text{Dose rate}},$$

where paleodose refers to the dose that the sample received during antiquity.

The dose rate depends upon the alpha, beta and gamma components of the radioactive potassium-40, thorium and uranium as well as the cosmic ray.

In the present TL dating, quartz samples of 100-150 micron size are used. The sample is extracted from the sediments by treating it with HCL, sieving and etching with 40% HF at 25°C.

You may refer the book "M.J. Aitken, Thermoluminescence Dating, Academic Press (1985)".

Please note that you have to correct / add a few small things.

- i) My name should be R.K. Gartia (K is missing)
- ii) My affiliation should be 'Luminescence Dating Laboratory, Manipur University, Imphal - 795 003'.
- iii) In the acknowledgement, please add "The TL dating work is part of a DST, New Delhi sponsored project to Manipur University, Imphal".

Thanking you.

Sincerely yours
R.K. Gartia

1-8-2002

Table ... : Paleodose, dose rate and TL age of the samples

Sample	Dose rate(Gy/ka)	Paleodose (Gy)	Age(Yr)
DHL-S1	2.95	15.16	5138±514
DHL-S2	2.59	7.64	2948±295
DHL-S3	2.06	3.49	1695±170
V/T/S1	2.94	30.18	10265±1050
V/T/S2	2.17	2.45	1128± 113
V/T/S3	2.39	3.12	1316±132

Dholka }

Vigachol
Kachit }

⇒ Bottom sample
→ Middle sand layer
→ Top

Gartia

Delivered-To: rajen@md3.vsnl.net.in
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 From: Rajkishore Gartia <rkgartia@yahoo.co.in>
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Dear Dr Rajendra

Enclosed herewith please find the preliminary results of TL dating of samples provided by you.

Sediments:	V/T/S2	1.53 ka	<i>- agrees with C14 age.</i>
	V/T/S1	4.01 ka	
	DHL/S2	4.46 ka	
	DHL/S3	5.61 ka	
	V/T/S3	5.99 ka	
	DHL/S1	7.20 ka	
Bricks:	Vg/T4/D/3	3.58ka	
	Vg/T5/D/4	6.42ka	
	Vg/T5/D/3	6.72ka	

Please note that these are the preliminary result. We may have error ~ 15 to 20 %. Our next job is to check the error. Unfortunately, we don't have enough quartz left. Let me try my best.

Please comment on the results. Some samples are behaving in an abnormal fashion which no dating expert will touch. I have to find a way to handle those naughty ones.

I feel it is high time we go for a second expedition of trenching around 26th Jan. 2001 Bhuj earthquake which must have left number of signatures for identifying the fault zones. Of course this time we must collect plenty of samples for a world class work.

With best wishes to both of you.

Sincerely yours
 R.K.Gartia

Gartia

TL data

Nigahat

Dholka, Ahmedabad

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