



# Physical Research Laboratory, Ahmedabad

## Colloquium 17-07

- Speaker:** Dr. Naveen Chauhan  
Scientist - SD, Atomic, Molecular & Optical Physics Division, PRL, Ahmedabad.
- Title:** "Luminescence Dating: Developments and Applications"
- Time:** Wednesday, 08 March 2017, 16.00 hrs.
- Venue:** K. R. Ramanathan Auditorium, PRL

### Abstract

Nowadays luminescence has gained its place in different industrial and research areas. It is finding an important place in our everyday life and knowingly or unknowingly we are using materials possessing luminescent properties. In Geo-sciences it is widely used for the paleo-climatic studies, earthquake prediction, study of meteorites, evolution of deserts, Tsunami studies and other evolutionary studies. Luminescence dating is a radiation damage based method that utilizes the trapping of radiation induced charges in lattice defects and retaining some of these for geological timescales. In this method, the trapped charge concentration in a mineral is assumed to be zero at a time  $t=0$  which later build up due to radiation exposure at a constant rate. This trapped charges can thus be probed via stimulated luminescence emission for estimating the radiation dose and hence the duration of exposure. In the present colloquium I will discuss the basics of luminescence technique, some of the issues which are being researched. I will also discuss ongoing research and instrumental development and the new program which are initiated in PRL.

### The Speaker

Dr. Naveen Chauhan obtained his MSc. in 2006 from University of Delhi, Delhi and obtained his Ph.D. from Physical research laboratory in 2011. After this he served as a Post Doctoral Fellow in PRL till February 2013 and then moved to Korea Basic Science Institute, South Korea as a Post Doctoral Fellow. He joined PRL in Oct, 2015. His research interest includes understanding basic physics of luminescence techniques and its applications in luminescence dosimetry and dating. He mainly worked on distribution of doses in sediments. During his Ph.D. he developed an instrument for spatially resolved luminescence dosimetry. The system was the only working system of this kind in the world

Tea at 15:30 hrs.

**ALL ARE WELCOME**

