

# Review Paper on Luminescence Thermometry

**Oman Sadulla Shaikh**

Department of Mechanical Engineering  
Jawaharlal Darda Institute of Engineering and Technology, Yavatmal, Maharashtra  
shaikhoman21@gmail.com

**Abstract:** *The Temperature measurements of turbo shaft nozzle guide vane demonstrated on a pair of moving turbine blades mounted in the engine at rotational speeds between 25,000 and 30,000 RPM. The method involves measuring the times of laser-induced luminescence thermo graphic thermal paint are applied on the turbine blades. The effects of motion on the temperature determination are removed by using a ratio of luminescence intensities. The data exhibit the measured temperatures are within the expected range for this engine. There are new one concept on measuring temperature is on heating side. The phenomenon of luminescence they can be classified into various types of categories depending on the mode of "excitation". Luminescence is (cold light) light from other sources of energy, which can take place at normal and the lower temperatures. In this new technology they can use to my field (mechanical engg)..*

**Keywords:** Luminescence, Thermometry, Temperature measurement

## REFERENCES

- [1]. Marcus Alden | Thermo graphic phosphors for thermometry: A survey of combustion applications | 28 September 2010.
- [2]. Monica Sharma | Nano thermometry: From Microscopy to Thermal Treatments | 07 October 2015.
- [3]. S.A.Wade | Fluorescence intensity ratio technique for optical fibre point temperature sensing | 2003.
- [4]. Jan Brubach | thermo graphic phosphors: A review | 3 November 2012.
- [5]. L.Marciniak | Luminescence thermometry with transition metal ions. A review | 21 June 2022.
- [6]. A.Bednarkiewicz | Luminescence based temperature bio-imaging: Status, challenges, and perspectives | 2021.
- [7]. Jiajia Zhou | Advances and challenges for fluorescence Nano thermometry | 28 September 2020.
- [8]. Daniel Jaque | Luminescent Nano probes for thermal bio-sensing: Towards controlled photo-thermal therapies | 27 November 2015.
- [9]. Zoran Ristic | Triple-temperature readout in luminescence thermometry with  $\text{Cr}^{3+}$ -doped  $\text{Mg}_2\text{SiO}_4$  operating from cryogenic to physiologically relevant temperatures | 12 March 2021.
- [10]. K.Kinec | the influence of grain size and vanadium concentration on the spectroscopic properties of YAG:  $\text{V}^{3+}$ ,  $\text{V}^{5+}$  and YAG:  $\text{V}$ ,  $\text{Ln}^{3+}$  ( $\text{Ln}^{3+} = \text{Eu}^{3+}$ ,  $\text{Dy}^{3+}$ ,  $\text{Nd}^{3+}$ ) Nano crystalline luminescent thermometers | 20 March 2018.
- [11]. Karolina Trejgis | Highly sensitive multipara metric luminescent thermometer for biologically-relevant temperatures based on  $\text{Mn}^{4+}$ ,  $\text{Ln}^{3+}$  co-doped  $\text{SrTiO}_3$  Nano crystals | 28 April 2021.
- [12]. Daqin Chen | Dual-phase Nano-glass-ceramics for optical thermometry | 8 December 2015.
- [13]. Chua long wang | A spatial/temporal dual-mode optical thermometry platform based on synergetic luminescence of  $\text{Ti}^{4+}$ - $\text{Eu}^{3+}$  embedded flexible 3D micro-rod arrays: High-sensitive Tempe., secure anti-counterfeiting | 7 June 2019.