Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2019, 8 (3): 1426-1431

(International Peer Reviewed Journal)

A Study of Thermoluminescent Mechanism Involved in Natural Barite

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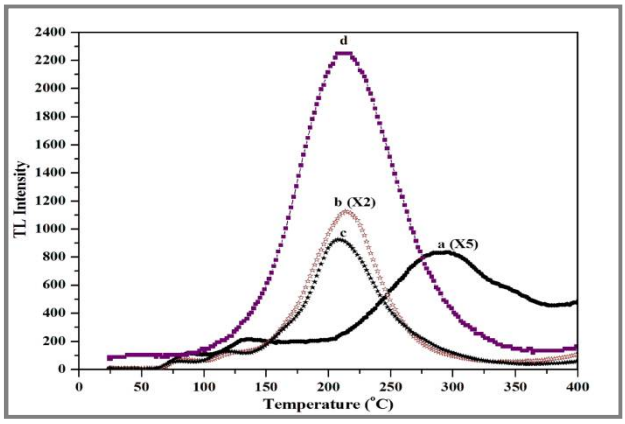
Accepted on 6th May, 2019

ABSTRACT

Thermoluminescence (TL) glow curves were recorded for barite sample collected from Mangampeta Mine, Cuddapah District, Andhra Pradesh. The sample was analyzed for impurity concentration using inductively coupled plasma mass spectroscopy. Thermoluminescence and photoluminescence (PL) emissions are centered at 370 and 385 nm, respectively. Electron spin resonance (ESR) study was carried out for radical identification. From the analysis of TL, PL and ESR studies the possible thermoluminescent mechanism involved in barite was studied.

Graphical Abstract



a) TL glow curves of natural barite samples NTL, b) TL of sample irradiated to 100 Gy, c) TL of sample annealed at 400°C with irradiation of 100 Gy, d) annealed at 800°C with 100 Gy irradiation (Heating rate=10°C/s)

Keywords: Molecular docking, Anti-cancer, Anti-depressant, Anti-bacterial, Binding affinities.