

Low temperature thermoluminescence of clay minerals

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X-ray induced thermoluminescence(TL) glow-curves of clay minerals (kaolinite, dickite, sericite, montmorillonite and sepiolite) were obtained at low temperature while electron-induced TL and natural TL gave no glow-peak. Kaolinite and dickite exhibit a strong emission peak at low temperature between 70 and 80°C , and their intensity is still high at room temperature. It leads to shallow energy levels of electron trapping centers related to TL emission and short life-time of trapped electrons. TL of clay minerals depend on the thermal history in the formation and/or sedimentary environment, and also on the heat during sample preparation.