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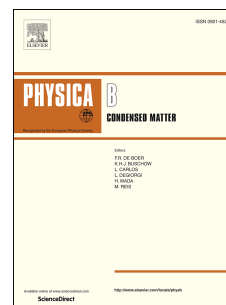
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Radioluminescence and thermally-stimulated luminescence properties of Pr:CaSiO₃ crystals

Daisuke Nakauchi^{1,*}, Go Okada¹, Masanori Koshimizu², Noriaki Kawaguchi¹, Takayuki Yanagida¹

¹Graduate School of Materials Science, Nara Institute of Science and Technology (NAIST)

8916-5 Takayama, Ikoma, Nara 630-0192, Japan

²Department of Applied Chemistry, Graduate School of Engineering, Tohoku University

6-6-07 Aoba, Aramaki, Aoba, Sendai, Ibaraki 980-8579, Japan

*corresponding author: nakauchi.daisuke.mv7@ms.naist.jp

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Abstract

We investigated the photoluminescence (PL), radioluminescence (RL) and thermally-stimulated luminescence (TSL) properties of Pr:CaSiO₃ crystals grown by the floating zone method. In both the PL and RL spectra, a broad emission band are observed around 300 nm due to the 5d-4f transitions of Pr³⁺, whose decay time constants are 16-20 ns and 140-260 ns. In TSL, multiple glow peaks are observed over 50-250 °C, and the response intensity increases linearly proportional to the X-ray dose.

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