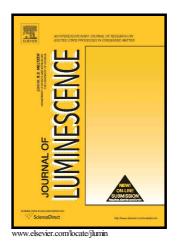
## Author's Accepted Manuscript

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## Photon conversion in Tb,Yb:Ca<sub>x</sub>Sr<sub>1-x</sub>Al<sub>2</sub>O<sub>4</sub> nanocrystals

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## Abstract

In this work the fabrication and the photoluminescence properties of  $Ca_xSr_{1-x}Al_2O_4$ nanocrystals doped with Ca, Tb and Yb are investigated. The photoluminescence quantum yield measured at 980 nm of the Yb doped  $Ca_xSr_{1-x}Al_2O_4$  nanocrystals is found to be 8% for an excitation in the ultraviolet range. However the quantum efficiency decreases with the insertion of Tb. Photoluminescence excitation experiments and time-resolved photoluminescence both conclusively demonstrate that no energy transfer between Tb and Yb occurs in this host matrix.

Keywords: photon conversion, downconversion, photovoltaics, rare earth

## **1. Introduction**

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