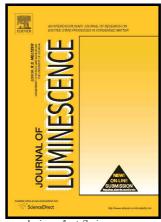
Author's Accepted Manuscript

Fluorescence Intensity lifetime Ratio and thermometry of praseodymium phosphates for temperature sensing

S. Gharouel, L. Labrador-Páez, P. Haro-González. K. Horchani-Naifer, M. Férid



www.elsevier.com/locate/ilumin

PII: S0022-2313(17)32140-3

https://doi.org/10.1016/j.jlumin.2018.04.035 DOI:

LUMIN15550 Reference:

To appear in: Journal of Luminescence

Received date: 13 December 2017 Revised date: 9 April 2018 Accepted date: 16 April 2018

Cite this article as: S. Gharouel, L. Labrador-Páez, P. Haro-González, K. Horchani-Naifer and M. Férid, Fluorescence Intensity Ratio and lifetime thermometry of praseodymium phosphates for temperature sensing, Journal of Luminescence, https://doi.org/10.1016/j.jlumin.2018.04.035

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Fluorescence Intensity Ratio and lifetime thermometry of praseodymium phosphates for temperature sensing

S. Gharouel^{a,1}, L. Labrador-Páez^b, P. Haro-González^b, K. Horchani-Naifer^a,
M. Férid^a

^aLaboratoire de Physico-Chimie des Matériaux Minéraux et leurs Applications, Centre
National des Recherches en Sciences des Matériaux, B.P.73 Soliman, 8027, Technopole Borj
Cedria, Tunisia.

^bFluorescence Imaging Group, Departamento de Física de Materiales, Universidad Autónoma de Madrid, C/Francisco Tomás y Valiente 7, Madrid 28049, Spain

saidagharouel@gmail.com

Abstract

We report on the temperature sensing properties of varied praseodymium phosphate hosts $M^{I}(Na,Li,K)Pr(PO_3)_4$ and PrP_5O_{14} . Details about fabrication, materials, and spectroscopic characterization are presented. The fluorescence properties of the praseodymium phosphates have been systematically investigated from room temperature to 363 K under selective laser excitation in the 3P_0 multiplet. The temperature sensing measurements were carried out by using fluorescence intensity ratio and fluorescence lifetime techniques. From this systematic

¹ Fax: (216) 71 43 09 34

_

Download English Version:

https://daneshyari.com/en/article/7840020

Download Persian Version:

https://daneshyari.com/article/7840020

Daneshyari.com