



Contribution ID: 69

Type: Poster Presentation

Blue-yellow luminescence of Eu-doped CaSnO_3 nanopowders synthesized by the sol-gel autocombustion process

Tuesday, 5 July 2016 16:10 (1h 50m)

Abstract content (Max 300 words) http://events.saip.org.za/getFile.py/?target=_blank **Formatting & Special chars**

Undoped and Eu-doped CaSnO_3 nanopowders were prepared by a facile sol-gel autocombustion method calcined at 800 °C for 1h. The crystal structure of the nanopowders is identified by the X-ray diffraction (XRD) technique, and it is found that all samples showed pure orthorhombic CaSnO_3 structure. Photoluminescence measurements indicated that the undoped sample exhibits a broad blue emission at about 420–440 nm, which can be attributed to the recombination of self-trapped excitons. Additional sharp emission lines at 465, 592 nm were obtained in the Eu-doped CaSnO_3 sample and these emission lines were assigned to the f-f transition of $5D_1 \rightarrow 5D_0$, $5D_0 \rightarrow 7F_1$ in Eu^{3+} ions. The mixture of this blue and yellow luminescence gives white color in Eu-doped CaSnO_3 sample under UV excitation.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD, N/A)?

Posdc

Main supervisor (name and email) and his / her institution

F.B. Dejene, DejeneBF@ufs.ac.za, UFS

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

Please indicate whether this abstract may be published online (Yes / No)

No

Primary author: Dr YIHUNIE, Moges Tsega (University of the Free State (qwaqwa campus))

Co-author: Prof. DEJENE, F. Birhanu (UFS)

Presenters: Prof. DEJENE, F. Birhanu (UFS); Dr YIHUNIE, Moges Tsega (University of the Free State (qwaqwa campus))

Session Classification: Poster Session (1)

Track Classification: Track A - Division for Physics of Condensed Matter and Materials