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Type: **Poster Presentation**

The energy transfer between Gadolinium (Gd³⁺) ion and Cerium (Ce³⁺) ion

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The series of Ca₃(PO₄)₂ powder with Gd³⁺ ion were synthesized using combustion method. The powder phosphor has two sets which are as prepared (at 600±250C) and annealed (1000±50C). The concentration of the Gd³⁺ ion was varied from 0.0 to 7.0 mol %. The characterization techniques used are X-ray diffraction (XRD), photoluminescence (PL), Ultra-violet visible spectroscopy (UV-Vis), X-ray photoelectron spectroscopy (XPS), Scanning electron microscopy and Energy X-ray Dispersive Spectroscopy(SEM-EDS). XRD was used to confirm Ca₃(PO₄)₂ is rhombohedral structure. PL shows when Ca_{3-x}(PO₄)₂: xGd³⁺ excited 274 nm and it emit at 313nm (narrow band for phototherapy use). The EDS confirm the present of elements in the samples. The particle morphologies of the series of Ca₃(PO₄)₂ phosphors were investigated by using the SEM. The possible application will be mercury free lamp for phototherapy.

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

YES

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

MSc

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

Martin Ntwaeaborwa
ntwaeab@gmail.com
University of the Witwatersrand

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

N

Primary author: Mr NKOSI, Thabang Johannes (University of Johannesburg)

Presenter: Mr NKOSI, Thabang Johannes (University of Johannesburg)

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