



Contribution ID: 245

Type: **Oral Presentation**

## **Erbium point defects and complexes in GaN: A G0W0 and hybrid functional study**

*Wednesday, 11 July 2012 11:15 (20 minutes)*

### **Abstract content <br> &nbsp; (Max 300 words)**

We have investigated erbium (Er<sup>3+</sup>) point defects and defect complexes in GaN a wide band gap semiconductor using; generalized gradient approximation (PBE-GGA), G0W0 quasi-particle approximation and hybrid functional (HSE06). We have paid particular attention to the structure, energetics, and electronic properties of the defects. We found the most stable site for Er<sup>3+</sup> to be when the Er<sup>3+</sup> is located at a Ga substitutional site but none of the defects possess deep energy levels..

### **Apply to be<br> consider for a student <br> &nbsp; award (Yes / No)?**

Yes

### **Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD)?**

PhD

### **Main supervisor (name and email)<br>and his / her institution**

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### **Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?**

Yes

**Primary author:** Mr OUMA, Cecil (Student)**Presenter:** Mr OUMA, Cecil (Student)**Session Classification:** DCMPM2**Track Classification:** Track A - Division for Condensed Matter Physics and Materials