



Contribution ID: 70

Type: Oral Presentation

Laser-selective excitation and polarisation studies of BaF_2 : Tm^{3+} single crystals

Friday, 11 July 2014 11:30 (20 minutes)

Abstract content (Max 300 words) **Formatting & Special chars**

Site-selective laser excitation studies of BaF_2 : Tm^{3+} single crystals performed at temperatures ranging from 10 K to 75 K are reported. There is a single dominant centre at the dopant concentrations of up to 0.1 mole% used. All the crystal-field energy levels for three multiplets ($^3\text{H}_6$, $^3\text{H}_4$ and $^3\text{F}_2$) of the centre and the fluorescence lifetime of the $^3\text{H}_4$ multiplet are presented. From polarisation ratio measurements in $\langle 111 \rangle$ -oriented crystals the dominant centre is confirmed to be of C_{3v} symmetry, with the charge-compensation interstitial F^- ion in the next nearest neighbour position to the Tm^{3+} ion. Symmetry labels (irrep labels) have been assigned to the crystal-field energy levels. Vibronic coupling is apparent.

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

No

Level for award (Hons, MSc, PhD)?

N/A

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

No

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Session Classification: DPCMM1

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