

TRR Guest Scientist Lecture / Seminar

Date/Time: 05.10.2016 / 10 am
Location: Paderborn / P8.409

Dr. Ian Farrer

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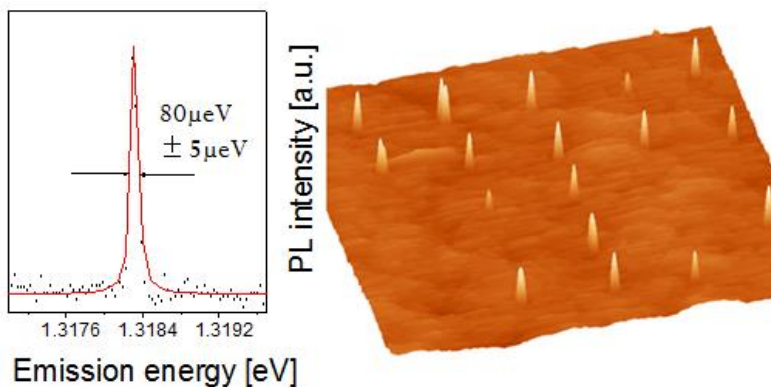


Growth of self-assembled quantum dots, approaches to site control and novel materials

Abstract:

In this talk I will describe various techniques which have been employed in order to achieve low density Indium Arsenide self-assembled quantum dots with good optical quality and low fine structure splitting. Challenges in terms of wavelength tunability, spectral purity and subsequent integration of these quantum dots into devices based on micropillars, p-i-n diode structures and photonic crystal or waveguide technologies will be discussed. The use of both “top down” and “bottom up” approaches to site control in attempt to optimise the coupling between the dot and a cavity will be presented where linewidths down to $80\mu\text{eV}$ have been achieved.ⁱ

I will also outline the capabilities within Sheffield both for III-V Epitaxy by both MBE and MOVPE as well as a new research direction in the growth of 2D Transition Metal Dichalcogenide materials.



ⁱ Joanna Skiba-Szymanska et al 2011 Nanotechnology 22 065302

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