

MQ Photonics Research Centre Seminar



MACQUARIE
University

Guest speaker: Prof. Philip Hemmer from the Electrical & Computer Engineering, Texas A&M University.

Title: Engineering diamond color centers for quantum information and bio-sensing.

Abstract: The performance of diamond color centers for quantum information and bio-sensing depends strongly on the quality of the material. Specifically, ultra-pure, low-strain diamond is preferred. However, in order to create color centers, non-carbon atoms must be incorporated into the lattice either by rapid growth or implantation. To overcome these problems, we show a molecule-seeded growth technique that decouples the doping and growth processes. The result is creation of specific color centers in chemically pure, low-strain diamond. Future application to other color centers like silicon, germanium, and tin vacancies will be discussed. Also the possibility of direct growth of more complex quantum registers.



When: Friday 31st January 2020

Time: 1-2pm

Where: 7 WW 149, Level 1 (Ground floor entry)