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MQ Photonics Research Centre Seminar

Wednesday, 6 October 2021, 2:00 pm (Sydney time)
(Online via the zoom link below)

**Fluorescent nanodiamonds: fabrication,
characterisation, and applications in biology**

Dr Philipp Reineck
RMIT University, Australia



Abstract:

Fluorescent nanodiamonds have unique physical, chemical, and optical properties that make them highly attractive for applications from nanocomposites to quantum sensing in biology. Many different types of fluorescent nanodiamonds exist from high-pressure high-temperature (HPHT) nanodiamonds containing engineered fluorescent defects to detonation nanodiamonds that exhibit various forms of fluorescence depending on their processing. This presentation will focus on our recent progress in areas including the creation and characterization of nitrogen, silicon and nickel-based fluorescent defects in macroscopic and nanoscale HPHT diamond, the effect of surface chemistry on nanodiamond fluorescence and the use of fluorescent nanodiamonds in composite materials and biological imaging and sensing applications. Current challenges and opportunities regarding the application of nanodiamonds in several technologies will be critically discussed.

Speaker biography:

Dr Philipp Reineck is an ARC DECRA Research Fellow at RMIT University and an associate investigator in the ARC Centre of Excellence for Nanoscale BioPhotonics. Philipp graduated in Physics from LMU Munich and received his PhD in Materials Engineering from Monash University in 2014. His research interests span many areas including fluorescent nanomaterials, plasmonics, nanoparticle chemistry and self-assembly, nano-photonics and bioimaging and sensing. His current focus is on the development of fluorescent nanomaterials - particularly nanodiamonds - for imaging and sensing applications.

URL to join: <https://macquarie.zoom.us/j/85829287435>
Dial-in phone line: +61 2 8015 2088, Meeting ID: 858 2928 7435

