MQ Photonics
Research Centre Seminar

MACQUARIE University

Speaker: *Ms Vlada Rozova*

Title: Machine learning reveals stiffness-induced plasticity in cancer cells

Bio: I graduated from Moscow State University, Russia in 2015 with a degree in Applied Mathematics and Computer Science. I am a PhD student in the Department of Physics and Astronomy and the ARC Centre of Excellence for Nanoscale Biophotonics. I am interested in applying theoretical and practical concepts of data analysis and machine learning to understand mechanisms of cancer progression and improve current diagnostic techniques.

Abstract: Once cancer has spread to other parts of the body, the survival rates decrease dramatically. What are the mechanisms that allow cells to detach, travel and grow in organs different from the primary tumour? Why certain organ are more favourable than others? How do the physical properties of the tissue modulate cell behaviour? In my project I am trying to address these questions by analysing multi-dimensional profiles of individual cells and evaluating their response to the substrate stiffness.

Speaker: *Dr Cyril Laplane*

Title: How to read the temperature of a flying nanocrystal

Bio: I graduated from the University of Lyon in 2012 with a Master in Nanoscale Engineering. I then moved in Geneva to do a PhD in the Group of Applied Physics where I developed and studied solid-state quantum memories for light with application in quantum communication. I defended my thesis in 2016 and in 2017 I moved to Sydney to work on nanodiamond optical sorting.

Abstract: We have developed specific nanocrystals to use as a levitated quantum sensors. I will present preliminary spectroscopic characterization of these nanocrystals with a focus on extracting their temperature through their luminescence.

When: Wednesday 20 November 2019
Time: 2pm
Where: Multipurpose room, 2.300 7WW