PhD position in Experimental Quantum Polaritonics in Sydney

The Quantum Materials and Applications Group (https://qmapp.gitlab.io/qmapp-website/) at Macquarie University, Sydney, is offering an experimental PhD position in quantum polaritonics with fiber based open-cavity system [1]. The group has recently shown the emergence of new quantum features from strongly interacting fiber cavity polaritons [2, 3]. Further progress in this direction will open up exciting experiments for the realization of new quantum semiconductor on-chip devices, and future light-matter quantum simulation platforms using strongly correlated polaritons.

We are looking for individuals with great enthusiasm for lab work, are self-driven, and fully dedicated to carry out cutting-edge experiments at the forefront of modern quantum physics in the solid state. Our quantum photonics labs are well-funded and equipped with state-of-the-art facilities, with a complete set-up to characterize mesoscopic quantum emitters. We offer a very vibrant, lively research environment in a growing and very active team. The QMAPP group is part of the Australian Research Council Center of Excellence on Engineered Quantum Systems (EQUS) (https://equs.org/) and receives generous support through the Center. We have ongoing collaborations with several European research institutions. Macquarie University is part of the recently established Sydney Quantum Academy (SQA) (https://www.finance.nsw.gov.au/about-us/media-releases/sydney-quantum-academy-create-jobs-future).

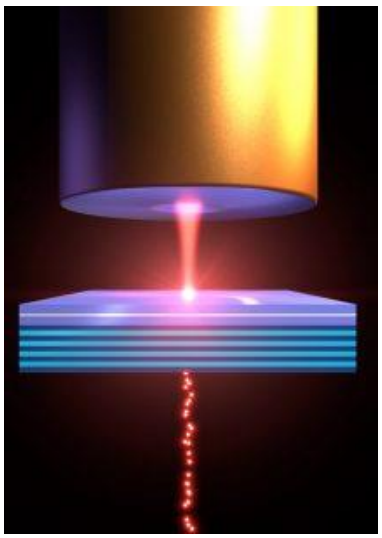
If you are interested, please send a CV and motivation letter to A/Prof Thomas Volz: thomas.volz@mq.edu.au.

References:

[1] B. Besga et al. “Polariton boxes in a tunable fiber cavity”. Phys. Rev. Appl. 3, 014008 (2015).

[2] G. Muñoz-Matutano et al. “Emergence of quantum correlations from interacting fibre-cavity polaritons” Nature Materials 18, 213 (2019).

[3] D. Gerace, F. Laussy and D. Sanvitto. “Quantum nonlinearities at the single-particle level” Nature Materials 18, 200 (2019).



Quantum-correlated photons from interacting fiber-cavity polaritons. © Andrew Wood.