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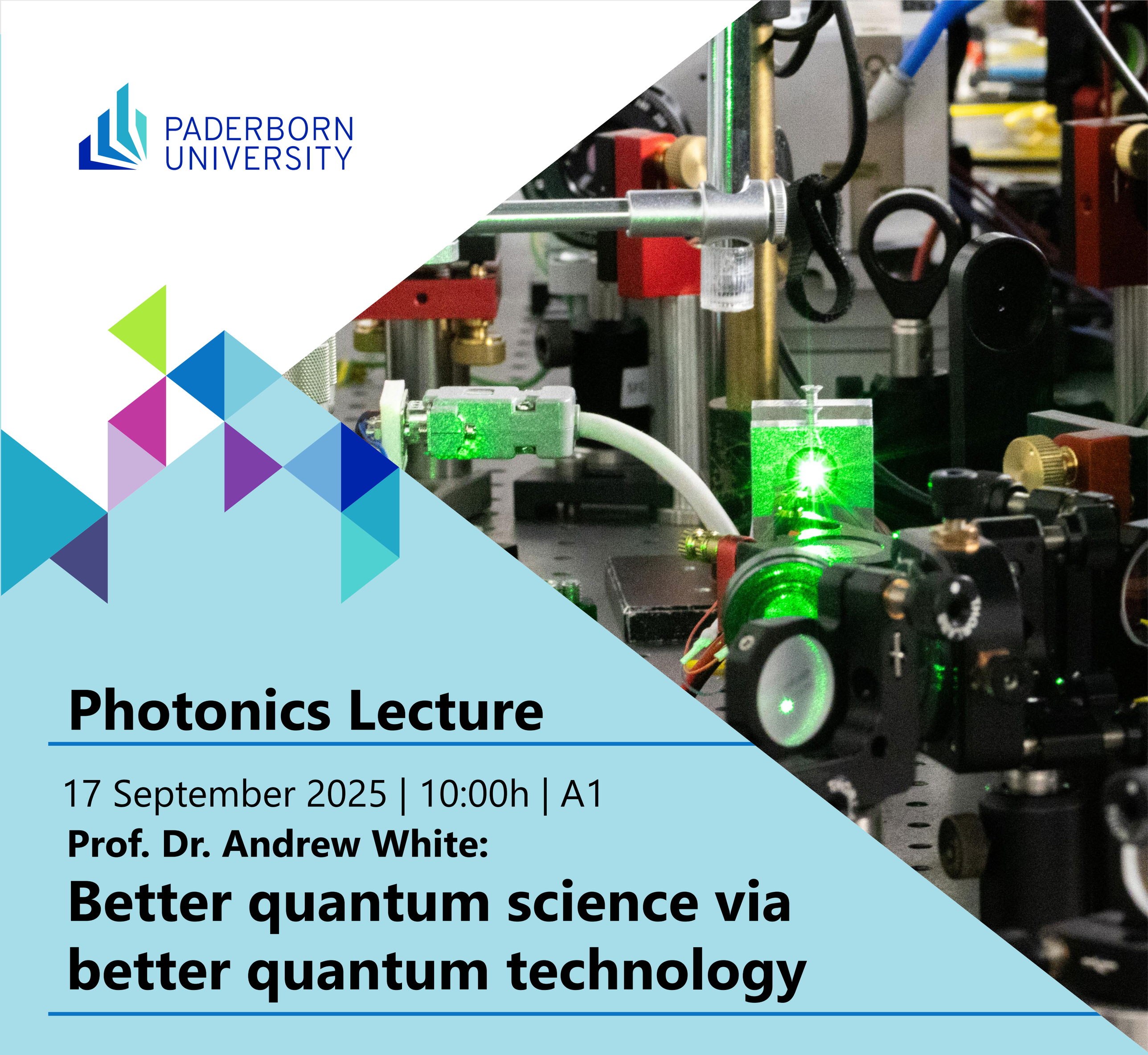

Photonics Lecture

17 September 2025 | 10:00h | A1

Prof. Dr. Andrew White:

Better quantum science via better quantum technology

Prof. Dr. Andrew White; Quantum Technology Laboratory, University of Queensland, AUS

The new generation of quantum technologies allow exploration and performance not possible with the traditional quantum optics platform. Here we discuss a range of experiments—from quantum foundations, through quantum optics, to quantum algorithms—using programmable photonic-integrated-circuits, semiconductor quantum-dot single-photon sources, and nanowire photon detectors.

These include: a deterministic version of Grover's algorithm—considerably more robust against device imperfections than the original—that achieves an average success probability of 99.75±0.05%; demonstration of asymmetric quantum interference; measurements on the reality of the wavefunction; and quantum reservoir computing.

CeOPP Center for Optoelectronics and Photonics Paderborn

PhoQS INSTITUTE FOR PHOTONIC QUANTUM SYSTEMS

Collaborative Research Center TRR 142

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