

Warwick Bowen

Position Lecturer

Organisation Department of Physics, University of Otago

Professional specialisation or role in organisation

- Photonics and quantum optics

Areas of expertise

- Laser physics
- Optical microresonators
- Non-linear optics
- Biophotonics
- Quantum optics

Capabilities

- Ultra-precise optical measurements – design and implementation
- Sensing of single atoms and molecules
- Fabrication, characterisation, coupling and application of silicon chip based optical resonators
- RF and DC optical control
- Generation and application of quantum states of light

Field of application

- Biosensing and trace gas sensing
- Laser based measurements
- Optical tweezers

Recent projects

- Detection of single atoms with monolithic ultra-high Q optical resonators.
- Investigation of optimal optical beam displacement measurements.
- Production and utilisation of optical entanglement.

Facilities

- Optical microresonator reflow and characterisation.

Facility availability

- Please contact.

Recent industrial activities

- Technical consultant for Progressive Plastics Ltd.
- International advisor for QuintessenceLabs Pty Ltd, a quantum cryptography start-up company.

Publication track record

- 43 peer review publications.