



**UNSW**  
SYDNEY



## Multi-Optrode Arrays (MOAs)

### Development and biological assessment of optical-electrode 'optrode' transducers for recording electrical activity in the body.

#### Competitive advantage

- Multi-disciplinary team working at the interface of biology and engineering
- A patent portfolio covering industrial and biomedical aspects of technology

#### Impact

- MOAs overcome the limitation of current recording systems by using light to carry bioelectric signals. This work will lead to the next generation of brain-computer interfaces.
- It enables high-density, high channel count recording from neural and cardiac tissue
- Application for brain-machine interfacing and prostheses
- Application for cardiac diagnostic systems
- The underlying technology of MOAs can also be applied in acoustic sensing networks to have many applications including:
  - Ocean monitoring (distributed sonars)
  - Mineral prospection (geoseismic exploration)
  - Environmental protection (leak detection in water distribution networks)

#### Successful applications

- Demonstrated ability to map electrical activation in hearts in animal models
- Demonstrated ability to record peripheral nerve responses in animal models

#### Capabilities and facilities

- Biomedical microfabrication facility
- A range of electrophysiology, animal surgery, and microscopy setups for biological assessment of technology
- Access to engineers and infrastructure at the Australian National Fabrication Facility

#### Our partners

- Zedelef Ltd

### More Information

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