



## Fabrication of Protein Biomaterials and Bioelectronics

**Protein scaffolds are promising templates for nanomaterials because of their inherent molecular recognition and self-assembly capabilities. Transfer of electrons through protein complexes is also central to cellular respiration. Exploiting this mechanism of charge transport in a controlled fashion has the potential to revolutionise the integration of biological and electronic systems.**

### Competitive advantage

- Expertise in fabrication and assembly of ultra-stable proteins into geometrically-defined templates of controllable size and symmetry
- Production of highly conductive metallic and semi-conductive nanowires on protein templates of specific dimensions
- Assembly of functional molecules into ordered arrays including multiple enzymes for substrate channelling and catalysis
- Engineering and fabrication of molecular chaperones for stabilisation and protection of biological systems in extreme environments

### Impact

- New generation of bioelectronic devices

### Successful applications

- Application investigation, AFOSR
- Nanowire material prototyping, AFRL

### More Information

Dr Dominic Glover

School of Biotechnology and Biomolecular Sciences

T: +61 (0) 2 9385 3382

E: [d.glover@unsw.edu.au](mailto:d.glover@unsw.edu.au)

UNSW Knowledge Exchange

[knowledge.exchange@unsw.edu.au](mailto:knowledge.exchange@unsw.edu.au)

[www.capabilities.unsw.edu.au](http://www.capabilities.unsw.edu.au)

+61 (2) 9385 5008