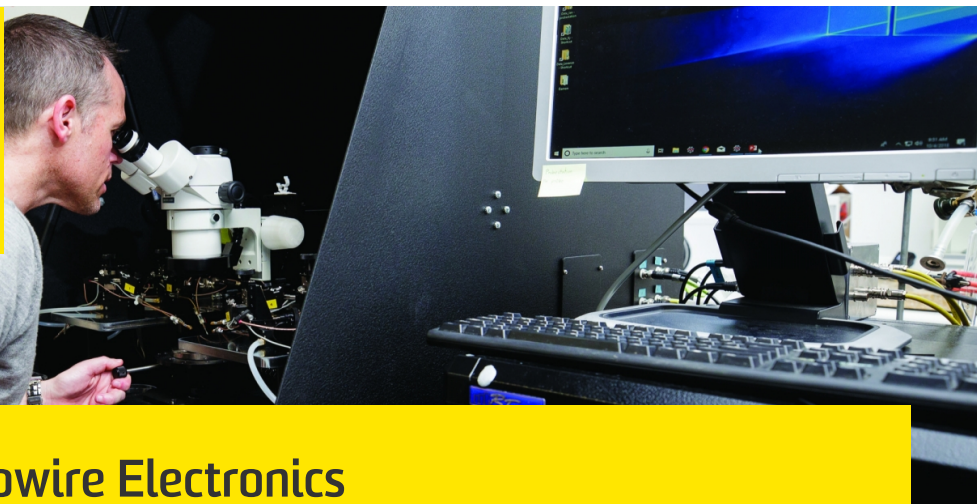




UNSW
SYDNEY



Semiconductor Nanowire Electronics

The fabrication of nanoscale devices featuring inorganic semiconductor nanowires and organic electronic and bioelectronic materials enables novel electronic applications such as bio-compatible devices.

Competitive advantage

- Electron-beam lithography of polymer electrolytes and ionomers for electronics applications
- Deposition and nanoscale patterning of ultra-thin (< 50nm) parylene films for nanoscale device applications
- Fabrication of semiconductor nanowire devices
- Electrical characterisation of semiconductor nanowire devices

Impact

- Harnessing the advantages offered by nanoscale structures including power to size ratio and enhanced functionality and durability

Successful applications

- Development of nanowire transistors with gate-all-around structures with multiple independent gates and polymer insulators
- Nanoscale patterning of ion-conducting polymers for use as gate structures for nanowire transistors
- Nanoscale devices for ion-to-electron signal transduction
- High-performance p-GaAs MESFETs for nanowire CMOS
- Ultra-thin parylene films as patterned insulators in nanoscale devices
- Nanowire devices for bioelectronics applications

Capabilities and facilities

- Equipment for electrical measurements down to 1 Kelvin and magnetic fields up to 9 Tesla (with full-sphere rotation)
- Custom-built parylene deposition system for ultra-thin film deposition
- Electrical characterisation of devices under controlled atmosphere

Our partners

- Collaborations with numerous internationally respected teams

More Information

Associate Professor Adam Micolich

School of Physics

T: +61 (0) 2 9385 6132

E: adam.micolich@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008