

# Expertise in the characterisation of nanomaterials using synchrotron techniques, specifically developing in-situ capabilities to probe atomic-structure under real-life operating conditions

### Competitive advantage

 Direct access to atomic-scale structural information that enables future design strategies for property enhancement for virtually any nanoscale material of defence interest

### **Impact**

- Atomic-scale structural information of defence materials under real-life operational conditions
- Structural insights enable the development of new materials with emergent and enhanced properties, irrespective of defence application

# **More Information**

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### Successful applications

- Atomic-scale structural transformations monitored to 900 °C
- · Observation of electrochemically induced atomic-structure under a large operational voltage range
- Structural changes during deposition techniques, such as chemical vapor deposition and atomic layer deposition
- Structural observations of materials under tensile strain

# Capabilities and facilities

- Regular access to worldwide synchrotron facilities
- In-house analysis and modelling capability

# Our partners

- Air Force Research Laboratory (US)
- Edgewood Chemical and Biological Center (US)
- National Renewable Energy Laboratory (US)
- The Australian Nuclear Science and Technology Organisation (ANSTO)
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)