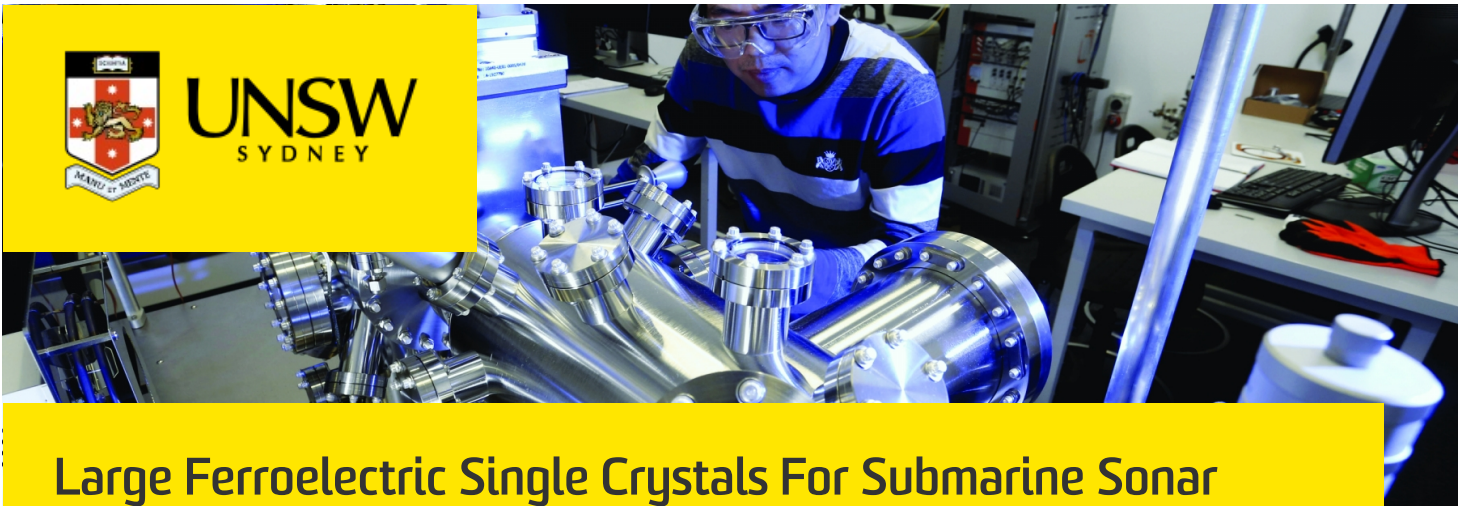




**UNSW**  
SYDNEY



## Large Ferroelectric Single Crystals For Submarine Sonar Acoustic Technology

**Mirror furnace systems are used to produce very uniform high-quality single crystals of ferroelectric materials for use in sensors including those used in submarine sonar systems.**

### Competitive advantage

Expertise in using the optical floating zone method to produce very uniform, high-quality single crystals of ferroelectric materials. Single crystals are a key technology of the future for submarine sonar systems. Owing to their lower impurity levels and absence of grain boundaries, single crystals transmitters have less loss than conventional ceramic transmitters, while sensors using single crystals have significantly higher sensitivity than ceramic types.

### Impact

More sensitive, efficient and compact sonar systems

### Successful applications

Magnetolectric sensor project, Office of Naval Research (ONR)

### Capabilities and facilities

- Magneto-optical facility for the search of novel multifunctional materials
- Facility for electric and magnetic probes of materials at extreme conditions

### More Information

Professor Jan Seidel

School of Materials Science and Engineering

T: +61 (0) 2 9385 4442

E: [jan.seidel@unsw.edu.au](mailto:jan.seidel@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