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SYDNEY



High-Strain Piezoelectric Ceramics for Sonar Applications

Electric-field-induced phase-change ceramics offer large strain actuation in sonar applications, allowing for the design of more efficient, accurate and compact sonar systems.

Competitive advantage

- Conventional piezoelectric ceramics for sonar applications operate by microstructural mechanisms, limiting their strain magnitudes
- Structural knowledge of phase change processes in an electric field opens the possibility of achieving larger strains
- Performance metrics of these materials can be superior for specific sonar applications
- Fabrication costs are in-line with conventional functional ceramic processing

Impact

- More efficient, accurate and compact sonar systems

Capabilities and facilities

- Ceramic fabrication facilities for small batch testing. Aqueous and nonaqueous processing
- Range of milling equipment from regular ball milling to high-energy planetary milling
- Furnace facilities for sintering under various atmospheres
- Electro-mechanical characterisation equipment for measurement of local and bulk properties
- In situ structural characterisation capabilities for observing grain-scale response of electro-ceramics during actuation

More Information

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