ANTI-FERROELECTRIC WEBERITE-TYPE MATERIALS

Tech ID: 34357 / UC Case 2026-062-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

A novel class of materials comprising an antiferroelectric compound and its alloys offers significant performance improvements for advanced electronic components. Developed by UC Berkeley researchers, the specialized material displays enhanced polarization capabilities and an elevated breakdown field while demonstrating a remarkably reduced volume change when exposed to an external electric field. These stable structural and electronic characteristics make the material class highly desirable for advanced energy storage and digital systems, facilitating the development of high-efficiency capacitors and robust memory storage devices that maintain their integrity under continuous operational stress.

SUGGESTED USES

- Development of high-efficiency capacitors for advanced electronic and energy storage systems
- Manufacturing of non-volatile memory storage devices with high structural stability
- Integration into electronic components requiring minimal volume distortion under external fields
- Utilization in high-voltage electronic systems that leverage an elevated breakdown field
- Design of advanced solid-state actuators and transducers based on antiferroelectric properties

ADVANTAGES

- Provides enhanced polarization performance to increase the total energy density of storage devices
- Delivers an elevated breakdown field that improves operational safety and reliability under high voltage
- Exhibits significantly reduced volume change upon exposure to external fields to prevent mechanical fatigue
- Offers excellent design flexibility through the utilization of various metal combinations in its alloy forms

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Materials & Chemicals**
  - Ceramics

RELATED CASES

2026-062-0

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Ensures long-term structural integrity in memory devices by minimizing internal mechanical stress

RELATED MATERIALS

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