



## SILICON-GERMANIUM HETEROSTRUCTURES WITH SHEAR STRAIN AND GERMANIUM CONCENTRATION OSCILLATIONS FOR ENHANCED VALLEY SPLITTING

[View U.S. Patent Application Publication No. US-2025-0254951 in PDF format.](#)

**WARF: P230400US01**

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### Overview

Quantum dot qubits in Si/SiGe quantum wells are an attractive platform for quantum computation due to their long coherence times, fast gate operations, nuclear-spin free isotopes, and compatibility with the microelectronics industry.

### The Invention

UW-Madison researchers have designed semiconductor heterostructures having Ge-seeded, shear-strained silicon quantum wells for enhanced valley-splitting. They have also designed gate-controlled qubits based on the heterostructures and quantum computing systems based on the qubits.

### Additional Information

#### For More Information About the Inventors

- [Mark Friesen](#)
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#### Tech Fields

- [Information Technology : Hardware](#)

For current licensing status, please contact Emily Bauer at [emily@warf.org](mailto:emily@warf.org) or 608-960-9842