

Surface Acoustic Wave Addressable Solid-State Magnetic Memory

The objective of this research is to develop the basic technology and demonstrate the feasibility of a novel solid state magnetic memory in which the storage and retrieval of data is accomplished by surface acoustic waves. The approach is to use a phased array of interdigitated transducers (IDTs) to excite, steer and focus the surface acoustic waves on a contiguous magnetostrictive thin film for reading or writing data. ΔE and inverse magnetostrictive effects are exploited respectively for reading and writing.

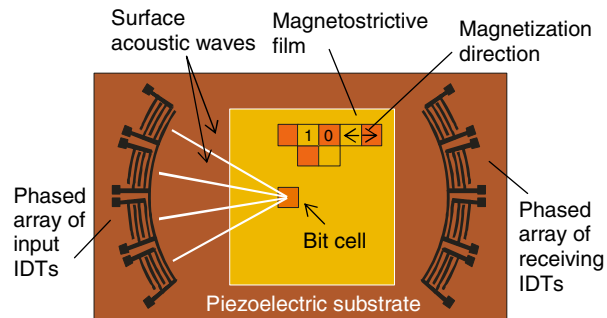


Figure 1. Schematic of the proposed solid state SAW addressable memory.

Key advantages of the proposed memory device arise from its radiation hardness, mechanical robustness (no moving components) and likely lower cost than existing solid state memory technologies.

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