

Non-Confidential Technical Summary

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OVERVIEW

Pinfold Technologies has developed a paradigm-shifting ultrasound sensing platform (US Patent 11371879). It works by exploiting three emerging technologies: 5G wireless communications, metasurfaces, and machine learning. In conjunction with industrial partners, we're solving outstanding problems in ultrasonics which require:

- True 2D spatial multiplexing (ie, full capture of an ultrasound field in real-time over a 2D plane, preserving both temporal and spatial information in a single capture);
- Low-profile and compact sensors which can be incorporated into car panels, domestic appliances, and consumer electronics;
- Real-time, on-line self-calibration (e.g., correction for sensor damage due to sustained exposure to high-intensity ultrasound);
- RoHS-compliant parts, absence of ferromagnetic materials (ie, for MRI compatibility). Can be manufactured and recycled by standard processes used in consumer electronics;
- Elimination of RF interference within ultrasound frequency range;
- Approx. 10x lower cost than comparable duplexed discrete-element solutions (for instance, PZT linear array).

APPLICATION AREAS

1. Military and civilian SONAR
2. 4D Ultra-Fast Passive Acoustic Mapping (PAM):
 - a. Focused Ultrasound Therapy (FUS) monitoring for capture and localisation of fast, non-linear events such as cavitation.
 - b. Doppler monitoring of fluid flow for industrial applications (ie, air flow monitoring for additive manufacturing).
3. 3D Ultrasound Imaging
4. Automotive sensors
5. Consumer electronics: ultrasound for biometric security and healthcare

CONTACT

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