Docket #: S23-305

Ring Ultrasound Mammogram Device

Stanford researchers at the Ferrara Lab have designed an ultra-fast standing device for breast ultrasound which is more comfortable than current designs and has higher resolution. This design is based on a large half-ring array to significantly improve the resolution and contrast of images. It is capable of elevational (outward from the torso) motorized scanning for 3D acquisition. The design is similar to current mammogram set-ups but instead of a flat plate, this device has an arc without painful compression, providing a more comfortable posture for the patient.

The ultrasound images generated will be at current mammogram gold standards but with enhanced resolution due to the shape. Additionally, the system is capable of imaging modes commonly found on clinical ultrasound machine such as Doppler, contrast or elastography. In addition to higher resolution, image acquisition will be faster; it will take within 3 seconds for the entire breast.

Stage of Development

- Early Stage Design

Figure

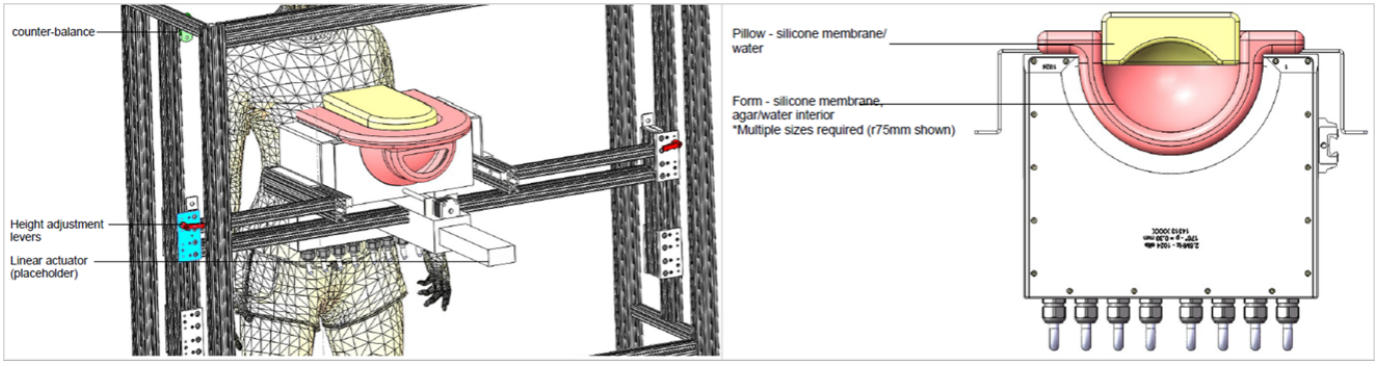


Figure description - Schematic of the breast scanner (*Image credit – Provisional Patent Application*)

Applications

- Breast Ultrasound Diagnostics

Advantages

- Faster - can image the entire breast within 3 seconds.
- No radiation
- Improved resolution and contrast of images
- Can track both functional and anatomical changes

Patents

- Published Application: WO2025019821

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