



## Method and Apparatus for Magnetoacoustic Tomography

Mammography, the 'gold standard' for breast cancer detection, has high sensitivity, but low specificity. There is an urgent need for a reduction in false positives that result in unnecessary and invasive biopsy procedures.

Magnetoacoustic Tomography with Magnetic Induction (MAT-MI) is a novel imaging modality that uses a static magnetic field and a time varying magnetic field to reconstruct electrical impedance distributions of a subject. MAT-MI provides the contrast level of Electrical Impedance Tomography (EIT) with the high spatial resolution of Sonography.

Unlike competing technologies, MAT-MI is not affected by the 'shielding effect' of low-conductivity layers of tissue, such as fat tissue. MAT-MI can also be applied to accurate source imaging and localization in the brain and heart to aid surgical planning in the treatment of epilepsy or other

neurological disorders, brain tumors and guiding catheter ablation of cardiac arrhythmia.

### Features & Benefits

- High contrast level similar to Electrical Impedance Tomography (EIT)
- High spatial resolution similar to Sonography
- Not affected by 'shielding effect' of low-conductivity layers of tissue
- Compatible with an MRI setup
- Does not require painful current injection as required by other EIT modalities
- Electrical Impedance images can be co-registered with MRI or CT scans for detection and treatment of diseased tissue

### Technology Status

Early experiments on biological tissue have demonstrated a least an order of a magnitude better spatial resolution than EIT.

### IP Status

Patent Pending  
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