



# Non-invasive imaging of cardiac electrical activity

**A novel method for noninvasive cardiac imaging that localizes the origins of cardiac arrhythmias.**

**IP Status:** US Patents Issued; Issued Patent Nos. 9,585,579; 10,820,818; 12,064,251

## Applications

- Localizing and imaging cardiac electrical activity
- Guiding cardiac ablation treatment of arrhythmias

## Technology Overview

Cardiac arrhythmias are common and serious heart conditions that can lead to stroke or heart failure if left untreated. Current clinical mapping methods rely on invasive catheter procedures that are limited in spatial resolution and carry procedural risks. Researchers at the University of Minnesota have developed a noninvasive imaging system that reconstructs cardiac current density and identifies arrhythmia sources using body surface electrical signals and spectral analysis. These techniques enable safe, high-resolution mapping of cardiac activity, offering a powerful alternative for diagnosis and treatment planning.

## Phase of Development

**TRL: 4-5**

Pilot studies performed in human patients.

## Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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## Researchers

- [Bin He, PhD](#) Professor, Department of Biomedical Engineering

## Technology ID

20130260

## Category

Life Sciences/Diagnostics &

Imaging

Life Sciences/Human Health

Life Sciences/Medical Devices

Software & IT/Algorithms

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