Cardiac tissue ablation is a technique used for the treatment of cardiac arrhythmias. Although approximately eighty percent of patients respond positively to ablation, poor visualization of the ablation catheter limits greater effectiveness. For example, inaccurate placement of the ablation radiofrequencies can cause unintended scars and recurrence of arrhythmia symptoms.

A novel monitoring system for magnetic resonance imaging-guided catheter ablation has been developed to enhance visualization. The system monitors catheter tip position relative to cardiac wall and tissue structures while ensuring contact between the ablation source and the target. Additionally, the imaging system better evaluates the quality of the ablation from the electrogram with electrogram-recording electrodes.