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(54) **APPARATUS FOR MAGNETICALLY DEPLOYABLE CATHETER WITH MOSFET SENSOR AND METHOD FOR MAPPING AND ABLATION**

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(57) **ABSTRACT**

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A mapping and ablation catheter is described. In one embodiment, the catheter includes a MOSFET sensor array that provides better fidelity of the signal measurements as well as data collection and reduces the error generated by spatial distribution of the isotropic and anisotropic wavefronts. In one embodiment, the system maps the change in potential in the vicinity of an activation wavefront. In one embodiment, the mapping system tracks the spread of excitation in the heart, with properties such as propagation velocity changes. In one embodiment, during measurement, the manifold carrying the sensor array expands from a closed position state to a deployable open state. Spatial variation of the electrical potential is captured by the system's ability to occupy the same three-dimensional coordinate set for repeated measurements of the desired site. In one embodiment, an interpolation algorithm tracks the electrogram data points to produce a map relative to the electrocardiogram data.

