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(54) **NON-UNIFORM EXCITATION FIELD-BASED METHOD AND SYSTEM FOR PERFORMING MAGNETIC NANOPARTICLE IMAGING**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

The present disclosure belongs to a field of biomedical imaging technology, and in particular to a non-uniform excitation field-based method and system for performing a magnetic nanoparticle imaging. The present disclosure includes: separating the non-uniform excitation field into independent space and current time functions by a spatiotemporal separation method; calculating a normalized signal peak through the current time function; constructing a reconstruction mathematical model based on the normalized signal peak and an imaging subunit volume; and quantitatively reconstructing a spatial distribution of a nanoparticle by combining the normalized signal peak, a non-uniform spatial function of the excitation field and the reconstruction mathematical model, so as to achieve the magnetic nanoparticle imaging of a to-be-reconstructed object.

10 Claims, 2 Drawing Sheets

