



Constructed pre-pulse MRI system

Technology Summary

The present invention includes a shielding system for an ultra-low field pre-pulse magnetic resonance imaging (PMRI) system that can provide images that distinguish the brain from cerebrospinal fluid (CSF). The invention can be assembled by hand using routine materials and off-the-shelf-electronics. The shielding system includes a cylindrical shield concentric with radio frequency (RF) coils and pre-pulse coils. RF coils consist of saddles that are capable of accommodating children who have adult sized heads due to hydrocephalus. The features of the PMRI device make it sustainable, eliminates the need for specialized equipment housing, and simplifies the technical aspects of troubleshooting, operation, and repair. Therefore, the operation and maintenance of the system has far lower technical and infrastructure requirements than typical commercial imaging systems.

Application & Market Utility

Hydrocephalus is a condition in which excess cerebrospinal fluid accumulates in the brain, contributing to loss of brain function and nerve damage. It is estimated that there are as many as 300,000 new cases of hydrocephalus per year throughout sub-Saharan Africa. The present invention addresses the need in developing countries for an affordable and convenient medical device that can be used as a diagnostic tool and guide treatment decisions for infants with hydrocephalus.

Next Steps

Seeking partnering and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Licensing | Research

Keywords

- magnetic resonance imaging (MRI)
- hydrocephalus
- brain image

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