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Dual frequency RF coil for magnetic resonance imaging

A novel RF resonant coil that can operate at both X-nuclear and proton frequencies.

Technology No. 2021-070

IP Status: US Patent Issued; Patent #: 11,883,148

Applications

- High performance X-nuclear MRS imaging

Technology Overview

X-nuclear magnetic resonance spectroscopy (MRS) and imaging (MRSI) play critical roles in studying a variety of health conditions and diseases. However, clinical adoption is currently hindered by expensive, complex combination coils being able to operate at both proton and X-nuclear frequencies. Sometimes patients are even physically moved in and out of the machine to switch between coils. Researchers at the University of Minnesota have developed a novel RF resonant coil that can operate at both X-nuclear and proton frequencies. This novel coil architecture allows for simplified coil design, manufacture, and imaging operation with the patient to remain in the MRI machine.

Phase of Development

TRL: 4-5
Prototype coils have been demonstrated at 16.4T (animal) and 7T (human; 8-channel deuterium-proton dual-tuned human head array coil).

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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Researchers

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References

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