



Dual frequency RF coil for magnetic resonance imaging

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

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

Please contact our office to share your business' needs and learn more.

Researchers

- [Wei Chen, PhD](#) Professor, Department of Radiology
- [Xiao-Hong Zhu, PhD](#) Professor, Department of Radiology

References

1. Guangle Zhang, Wei Zhu, Xin Li, Xiao-Hong Zhu, Wei Chen(March 20 2023) , <https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/10.1002/nbm.4930>, <https://doi.org/10.1002/nbm.4930>
2. Soo Han Soon, Matt Waks, Hannes M. Wiesner, Xin Li, Xiao-Hong Zhu, Wei Chen(2022) , <https://archive.ismrm.org/2022/1542.html>, <https://archive.ismrm.org/2022/1542.html>

Technology ID

2021-070

Category

Engineering & Physical Sciences/MRI & Spectroscopy
Life Sciences/Diagnostics & Imaging
Life Sciences/MRI & Spectroscopy
Life Sciences/Research Tools

Learn more

