

**Docket #:** S08-094

# **MRI - Hyperpolarized $^{13}\text{C}$ Dynamic Chemical Shift Imaging with Tailored Multiband Excitation Pulses**

A method for performing magnetic resonance spectroscopy is described. The method generally includes applying a tailored multiband spectral-spatial radio frequency excitation pulse to a sample including a first species and at least a second species having a different resonant frequency than the first species. The multiband excitation pulse excites the first species according to a first amplitude and excites the second species according to a second amplitude that is substantially greater than the first amplitude. Data is acquired from the sample. The acquired data is then utilized to generate a spectroscopic output. By way of example, the spectroscopic output is a spectroscopic image. In particular embodiments, the data for the first and second species is acquired dynamically over an observation window of time.

## **Patents**

- Published Application: [20100085046](#)
- Issued: [7,795,868 \(USA\)](#)

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