Devin Morin

AUPAC

Magnetic Resonance Flow Research

Magnetic resonance has been used before to provide a non-invasive means of measuring flow velocities. While this has been done in the past with high field devices, the costs and hazards associated with large field magnets can be high. Because of this, there is merit in exploring the option of using low field magnets to measure flow velocity which will allow this to be both a portable and non-invasive solution. To do this, a cradle system was built for the unilateral magnet which allowed for a variable slice thickness through which liquid sample will flow. Flow velocities are measured for multiple slice thickness’ in order to view the quality of flow data, and thus the more acceptable slice thickness.

MR measurements are made with a small portable sensor, which includes the use of a constructed radio frequency coil operating at low field. At an operating frequency of 2.26MHz, there can be many challenges both associated with the construction, as well as acquiring signal with a sufficient signal to noise ratio. In this presentation, I will discuss the applications of such an MR device and how one may go about achieving an appreciable level of signal at low field.