

## **Dy<sub>2</sub>ScNbO<sub>7</sub>: an unconventional spin ice?**

**Authors: Megan Rutherford, Cole Mauws, Sarah Haravifard, Casey Marjerrison, Graeme Luke, James Beare, Dave Herbert, Jamie Ritch, Chris Wiebe**

The University of Winnipeg

Using standard solid state methods, Dy<sub>2</sub>ScNbO<sub>7</sub>, a member of a new series of pyrochlore oxides was synthesized. While the A-site is occupied by the magnetic Dy<sup>3+</sup> cation, the B site is split into a mixture of disordered Sc<sup>3+</sup> and Nb<sup>5+</sup> cations. It appears that Dy<sub>2</sub>ScNbO<sub>7</sub> has low temperature spin ice state that is similar to the titanate analogue, Dy<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub>. Despite its similarities, Dy<sub>2</sub>ScNbO<sub>7</sub> exhibits much faster spin dynamics than any other dysprosium spin ice candidate. Attempts to grow single crystals of Dy<sub>2</sub>ScNbO<sub>7</sub> have been successful using the floating zone image furnace. Recent characterization results will be presented.