

**Speaker:** Peter Newton

**Title:** The Magnetisation Reversal Characteristics of Composite Element Barcodes

**Abstract:**

The challenges of performing water quality analysis on bodies of water in remote areas demands the development of new technologies, particularly to reduce their cost and increase their accessibility. In this talk we will introduce one such platform – the composite element magnetic barcode – a versatile, nonvolatile magnetic memory that exploits the shape anisotropy of, and dipolar interactions between, narrow magnetic strips to allow a binary code to be written under the application of an appropriate global magnetic field, and thus act as a label for a chemical test. By analysing MOKE and XMCD-PEEM measurements, the magnetic properties of these devices can be obtained. In this talk, we will explore the design and manufacture of these memories, as well as discussing recent results from experiment and micromagnetic simulation.