

# Binary Oscillator Computing

## Abstract

The talk will focus on mathematical models of neurons, binary oscillator threshold logic and two of five possible avenues of research. Binary oscillator technology can be applied to the design of Arithmetic Logic Units (ALU)s, memory and other basic computing components. It has the potential to provide revolutionary computational speed-up, energy saving and novel applications and may be applicable to a variety of technological paradigms including CMOS, neurons, memristors, superconducting materials and optical fibres.

The research has the potential for Manchester Metropolitan University and industrial partners to develop super-fast, super-cooled, low-power computers and may provide an assay for neuronal degradation for brain malfunctions such as epilepsy, Alzheimer's and Parkinson's disease. The work is the subject of UK, International and Taiwanese patents.

## Event details

**Date:** Wednesday 30 September

**Time:** 14:30-15:30

**Venue:** B53 4025A/B

**Admission:** All staff & students welcome



Dr Stephen Lynch FIMA  
Manchester Metropolitan University

Stephen Lynch is a Fellow of the Institute of Mathematics and its Applications (FIMA), a STEM Ambassador and a Speaker for Schools. In the 1980's, he studied Pure Mathematics and stayed on to do a PhD at UCW Aberystwyth. In 1988, he started his lecturing career with a temporary lectureship in Mathematics at the University of Southampton and he is currently a Senior Lecturer at Manchester Metropolitan University. His research area is Dynamical Systems and he has written Maple™, MATLAB® and Mathematica® books. Stephen is the co-inventor of Binary Oscillator Computing, which is protected by International, UK and Taiwanese patents. One avenue of research yet to be explored is binary oscillator computing with optical fibres.