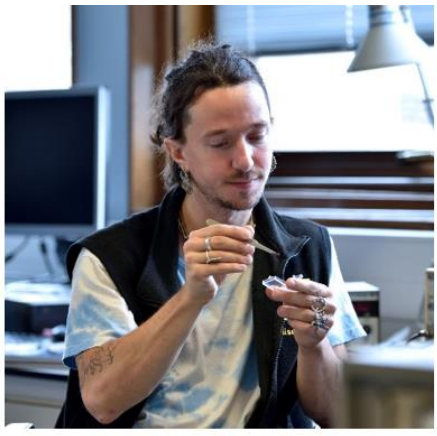
Research Seminar Series

Lecturers: Dr. Jack C. Gartside & Dr. Kilian Stenning

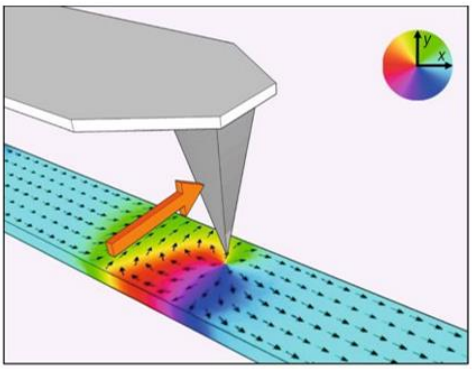
Blackett Laboratory, Imperial College London, London, UK

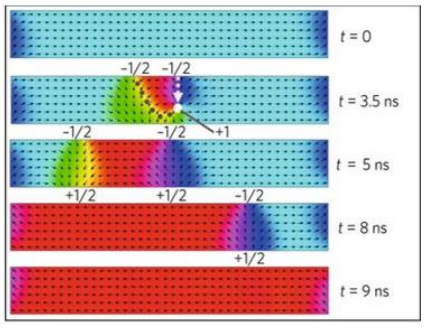
Date/Time : Sept. 27th , 2023/ PM 3:00 Place : West 1 D-315, Ito campus, Kyushu Univ.

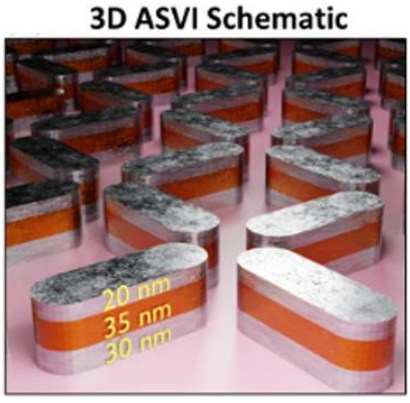
Artificial Spin Ice for Neuromorphic Computing

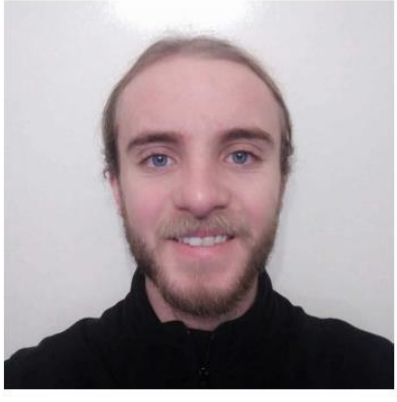


Dr Jack C. Gartside is a research fellow at Imperial College London in the group of Prof Will Branford. His expertise is in fabrication of magnetic nanostructures, (artificial spin ice) ASI in particular, and has also pioneered techniques for controlling individual microstates of magnetic elements using magnetic force microscopy tips. Recently Dr Gartside's research has focused on investigating spin-wave dynamics and how they be utilised in next generation computing technology. In his talk he will explain what ASI is, why it is good for spin waves and how it can be leveraged for magnonics and spin-wave based computing. He will also introduce the latest innovation in ASI research of stacking multiple layers to create 3D structures with interesting physics.

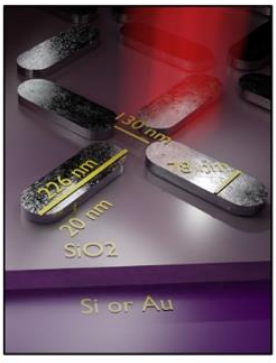


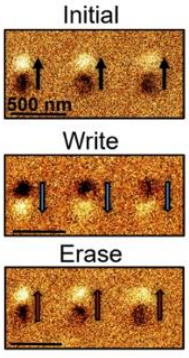


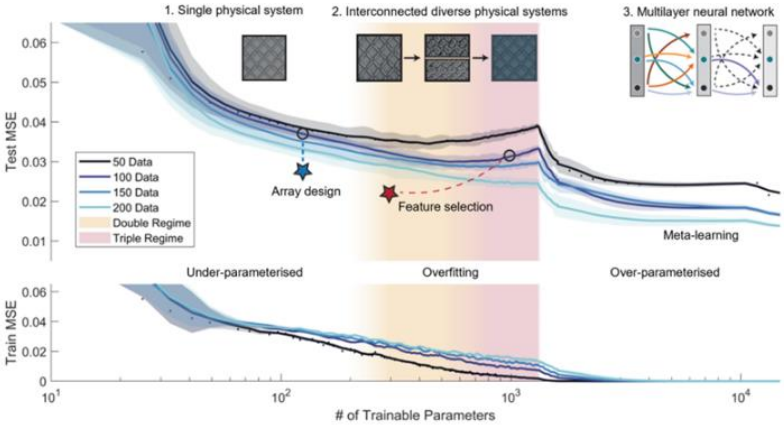




Dr Kilian Stenning is a research fellow at Imperial College London and recently at UCL with Prof Kurebayashi. His expertise is in reservoir computing using magnetic physics systems such as artificial spin ice. He recently pioneered a technique for switching elements in magnetic arrays using low power optics. In his talk he will introduce the concept of reservoir computing and why magnetic arrays of nanoislands are ideal systems for this task. He will also demonstrate how ASI can be used to make predictions about chaotic systems and further linking many magnetic systems can improve the accuracy of predictions.







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