



University
of Basel

Swiss Nanoscience Institute



Swiss Nanoscience Institute
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Search for 2D ferromagnetism at room temperature

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We propose to perform a detailed investigation of the magnetic properties of some new two-dimensional (2D) materials to identify novel 2D ferromagnetic materials with enhanced transition temperature. The discovery of room temperature ferromagnetic 2D materials can open the route for novel spintronic applications and future nanoscale developments. The project focuses on the discovery of novel ferromagnetic 2D van der Waals materials with enhanced transition temperature. During this research, the work will be split into several stages, as it follows: synthesis and crystal growth of these materials, analysis of the physical properties of the bulk crystals, study of these compounds using neutron diffraction and spectroscopy to clarify the origin of the ferromagnetic phases in these compounds, and the study of the atomically thin 2D crystals using state-of-the-art synchrotron techniques to understand the ferromagnetic properties towards the 2D limit.