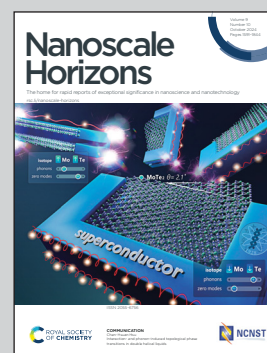


Showcasing research from Professor Grundler's laboratory, Institute of Materials, EPFL, the Swiss Federal Institute of Technology in Lausanne, Switzerland.

Reversing the magnetization of 50-nm-wide ferromagnets by ultrashort magnons in thin-film yttrium iron garnet

We report non-volatile storage of nanoscale magnons excited in yttrium iron garnet (YIG) thin film. The magnons propagate over a distance of 25 μm and reverse the magnetization of $\text{Ni}_{81}\text{Fe}_{19}$ nanostructures with widths down to 50 nm which are arranged in both periodic and aperiodic arrays on the YIG film. We report that 100-nm-wide nanostructures reverse *via* magnetization curling. The study offers a promising step to realize spin wave-based memory and unconventional computing devices.

As featured in:



See Dirk Grundler *et al.*,
Nanoscale Horiz., 2024, **9**, 1740.