

Figure 1| Domain wall motion in a wire with constant width. Inset shows the magneto-optic Kerr microscope image of magnetic domains in the wire.

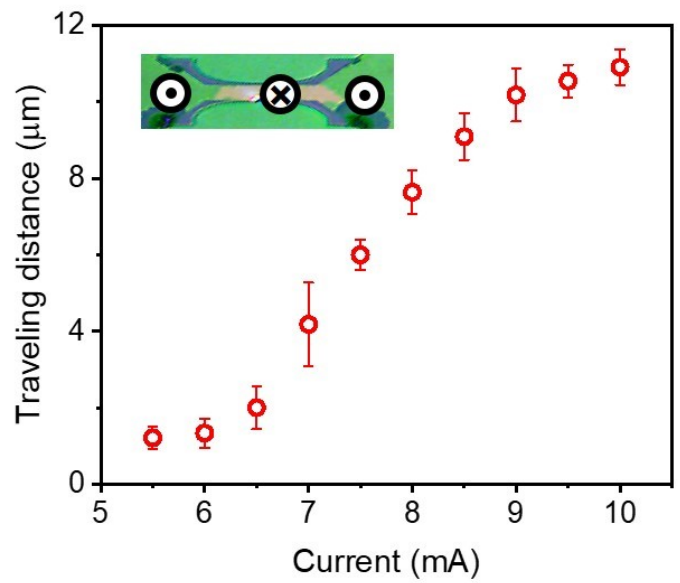


Figure 2| Domain wall motion in a wire with variable width. Inset shows the magneto-optic Kerr microscope image of magnetic domains in the wire.

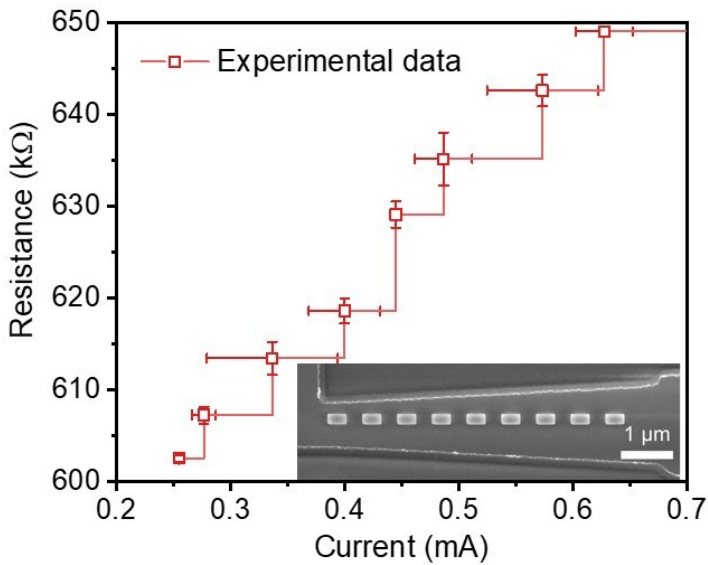


Figure 3| Switching of the parallelly connected MTJs with a bias field of -480 Oe. The eight steps correspond to the switching of seven MTJs with $t_{\text{pulse}} = 8$ ns. Inset shows the scanning electron microscope images of nine $200 \text{ nm} \times 400 \text{ nm}$ MTJs before fabricating electrical contacts. The tunnel junctions are connected in parallel to each other in the final device.

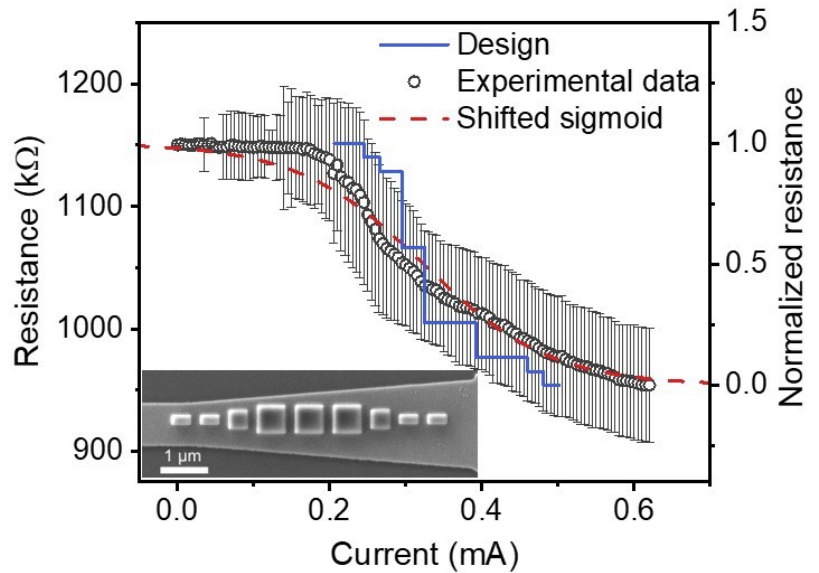


Figure 4| Switching of in-parallel magnetic tunnel junctions in b with a bias field of 200 Oe. Inset shows the scanning electron microscope images of nine magnetic tunnel junctions. The width of the free layer is varying linearly along its length. To implement the nonlinearity, areas of the MTJs are varied along the length of the free layer since the resistance modulation is proportional to the size of the MTJs.