



Figure. (a) Schematic illustration of the key fabrication process for the stretchable memristor with a discrete structure (PDMS/Au/HfO₂/Al₂O₃/Ag). (b) Schematic of frequency-based direction training and a feedforward neural network implemented with stretchable memristors. (c) Evolution of frequency across different directions as a function of training epochs. (d) Evolution of frequency across different directions after 15% stretching as a function of training epochs. (e) Schematic of the final current response of the 9×9 memristor array after 100 training epochs, demonstrating the selective recognition of four different directions.