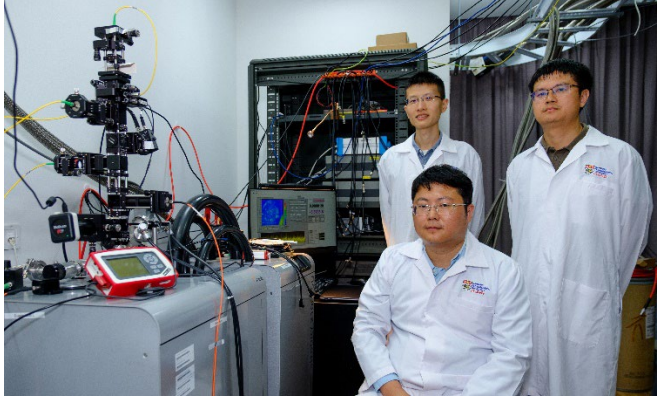




13 March 2026

Light Harnessed to Control Electric Currents



Using light to control magnetic fields, a team of researchers led by NTU scientists has solved a long-standing challenge to precisely direct electric currents produced by quantum materials.

When the beam of light flips the orientation of the magnetic field, the movement of electrons moving along the edges of the quantum material reverses direction instantly.

Such optical control of electric currents is attractive because it enables electricity to be directed without the need for physical wires. The method is also precise and fast, without requiring bulky external equipment.

Published in *Nature*, their findings unlock new avenues for controlling the flow of electricity through such materials and could pave the way for energy-efficient quantum computing devices.

<https://www.ntu.edu.sg/news/detail/scientists-control-'free-flowing'-electric-currents-with-light>