In their work, they present a local light beam source, composed of an electric probe array. Their design includes a broadband feeding network to ensure the performance of the angular momentum of the light beams. For their systematic experiments, they established a near-field scanning platform to measure the unidirectional transmission directly. Based on their observations of three edge states—spoof surface plasmon polaritons, line waves, and valley topological insulators—they assess the advantages and disadvantages of each.

Overall, this research advances the field of chiral photonics science and promotes applications of chiral-sorting technology, particularly for microwave metadevices. According to corresponding author Tie Jun Cui of the State Key Laboratory of Millimeter Waves at Southeast University in Nanjing, "Developing the freedom of microwave angular momentum in the waveguides is meaningful to increase the channel capacity and to design robust and flexible devices. Based on..."
various metamaterial interface waveguides, novel metadevices such as filters, splitters, antennas, and multiplexers can be widely utilized in radar and communication systems."


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