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Abstract:If we credit the integrated circuit with one thing, it should be the taming of the electromagnetic spectrum. If you want to create or capture visible photons, there are plenty of compact devices to choose from, incorporating everything from miniature photodiodes and lasers to LEDs and slim charge-coupled devices. And if you want to pick up or send a radio signal, there are a staggering number of receivers, transmitters, and antennas to suit your needs. But the IC hasn't conquered every bit of the spectrum, and one region stands out: the terahertz frontier, a range that extends from the highest frequency radio waves to the lowest frequency infrared light. Over the decades, engineers have made many attempts to create compact, solidstate devices that can harness it, but terahertz radiation has proven particularly tricky to use.