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Title

Dynamic Terahertz Spoof Surface Plasmon-Polariton Switch Based on Resonance and Absorption

Source

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Abstract

In this brief, a terahertz (THz) switch consisting of perfect conductor metamaterials is demonstrated both theoretically and numerically. Specifically, we build a THz logic block based on waveguide-cavity-waveguide, thus providing a strong electromagnetic field accumulation inside a small cavity. Furthermore, this brief shows that the subwavelength metallic cavity can confine light for a long time within a very small area. Therefore, an arbitrarily designed cavity with the high quality factor Q and the small effective area Aeff can be easily utilized for an efficient THz switch. These promising results can be used to provide new switch types and open up new vistas in the area of THz subwavelength optics. (18 References).