

标题: Frequency Selective Surface Based Bandpass Filter for THz Communication System
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摘要: In this work, a band pass filter based on frequency selective surface (FSS) is presented. The resonance of the FSS is achieved by perforating slot type ring structure on an Aluminum layer. To ensure adequate mechanical strength, this structure is again supported by a dielectric layer. The physical dimensions of the FSS, i.e. ring radius, slot width, cell dimension and width of the layers all are responsible for the resonance behavior. In its electrical equivalent circuit, these dimensions act as inductor and capacitor. The center frequency of the designed filter is at 0.16 THz with a -3 dB bandwidth of 18 GHz. This filter can be utilized as a part of any THz communication system to achieve application specific frequency discrimination. The simulation has been carried by using commercial software-CST Microwave Studio. The performance of the fabricated FSS is evaluated by Microwave Vector Network Analyzer.
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