







**Table 1.** Comparative analysis of the proposed work with the existing work

Ref.	Dielectric material	$f_c$ (GHz)	RO (dB/G Hz)	Size ( $\lambda_g \times \lambda_g$ )	Stopband suppression
[4]	RT/Duroi d 5880	1.5	36	0.037 × 0.093	-10 dB up to 15 GHz
[5]	FR4	2.4	36	0.35 × 0.2	-20 dB up to 6 GHz
[14]	Roger RO4003	0.85	23	0.089 × 0.081	-15 dB up to 12.6 GHz
[15]	RT/Duroi d 5880	6	30	NA	-29 dB up to 60 GHz
This work	FR4	3	56	0.24 × 0.21	-15.5 dB up to 14 GHz

#### 4. CONCLUSION

In this paper, a compact, low cost lowpass filter is proposed using open stubs and stepped impedance resonators. The LPF is designed to operate in S-band with a cut-off frequency of 3 GHz. Additional poles are generated by introducing the stepped impedance resonators. The structure is fabricated using low cost material and measured for experimental validation. The stopband suppression level of -15.5 dB is achieved up to 14 GHz and the maximum insertion loss in the passband is -0.5 dB. The performance of the filter can still be improved by using low loss substrate in the future. The stopband suppression is achieved up to fourth harmonic. With this good performance, the proposed lowpass filter can be used in various applications like RADAR, WiMAX and other communication systems.

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