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IOP Conference Series: Materials Science and Engineering

Volume 200, Issue 1, 7 November 2017, Article number 012016

6th International Conference on Mechatronics 2017, ICOM 2017; International Islamic University Malaysia (IIUM) Gombak Campus Kuala Lumpur, Malaysia; 8 August 2017 through 9 August 2017; Code 131673

Design and analysis of planar spiral resonator bandstop filter for microwave frequency (Conference Paper)

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Abstract

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In microwave frequency, a spiral resonator can act as either frequency reject or acceptor circuits. A planar logarithmic spiral resonator bandstop filter has been developed based on this property. This project focuses on the rejection property of the spiral resonator. The performance analysis of the exhibited filter circuit has been performed by using scattering parameters (S-parameters) technique in the ultra-wideband microwave frequency. The proposed filter is built, simulated and S-parameters analysis have been accomplished by using electromagnetic simulation software CST microwave studio. The commercial microwave substrate Taconic TLX-8 has been used to build this filter. Experimental results showed that the -10 dB rejection bandwidth of the filter is 2.32 GHz and central frequency is 5.72 GHz which is suitable for ultra-wideband applications. The proposed design has been full of good compliance with the simulated and experimental results here. © Published under licence by IOP Publishing Ltd.

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[CST microwave studio](#)
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Engineering main heading:

[Microwave filters](#)

Funding details

Funding number	Funding sponsor	Acronym
SF14-010-0060	Ministry of Science and Technology	MOST

Funding text

This research has been supported by the Malaysian Ministry of Science and Technology through the eScienceFund under the project ID: SF14-010-0060.

ISSN: 17578981

Source Type: Conference Proceeding

Original language: English

DOI: 10.1088/1757-899X/260/1/012016

Document Type: Conference Paper

Volume Editors: Rashid M.M., Hamid S.B.A., Akmalawati R.

Sponsors: Kuliyah of Engineering, International Islamic University Malaysia

Publisher: Institute of Physics Publishing

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