Editor-in-Chief: Scanning the Issue

Dear members and readers,

The Microwave Review journal (Vol. 30, No. 1), the July issue, presents the results of twelve research papers by authors from different Universities and countries.

The first paper authors Ramesh Chandra Ahmedabad, Sravan Kumar Sagi, and Milind B Mahajan come from India with different institutions: Advanced Antenna Technology Division, Space Applications Centre, Satellite & Navigation Antenna Group, and Antenna Systems Area. Their paper is entitled ***Tailoring RF Performance by Optimization of Reflector Boundary for Spacecraft Antenna***. The paper presents a novel technique, augmented compared to the conventional methods, for achieving tailored RF performance of a Satellite Reflector Antenna by optimizing the reflector boundary.

The second paper focuses on a conformal Hilbert curve antenna, which is integrated into the payload structure of an RX-450-sounding rocket. The paper includes the antenna design, fabrication, and characteristics measurement in an anechoic chamber. The paper entitled ***Design of 2.4 GHz Circular Polarization Conformal Antenna for RX-450 Sounding Rockets*** is written by authors Fitri Yuli Zulkifli who is with the Faculty of Engineering, University Indonesia, and Kandi Rahardiyanti with Research Center for Rocket Technology, National Research and Innovation Agency, Indonesia. This antenna is more desirable than the previous blade antenna because of its easy manufacturing, lightweight design, and conformal shape that ensures aerodynamic movement.

The third paper by Sanyatjeet Pawde and Nisha Gupta with Birla Institute of Technology, Mesra, is ***Microwave Sensors for Metal Conductivity Measurement***. This paper relates to the microwave sensor design to work at 5.2 GHz Wi-Fi frequency to detect the material's conductivity based on the interaction of the EM wave with the material of different conductivity, which results in a change of the reflection coefficient owing to different penetration depth at a particular frequency. The sensor consists of a planar complementary circular ring structure etched on the top of the single-sided copper-clad substrate material and a shallow groove machined at the bottom surface coinciding with the ring structure where the conducting material under test is placed.

The authors of the fourth paper entitled ***Design of X/Ku and K Band Flexible Cloud-Fractal Wideband Antenna with Bandwidth Estimation Using CMA*** are Bashar Bahaa Qas Elias, Mushtaq Ahmed Alqaisy, Ping Jack Soh from Iraq and Finland. This paper proposes a new cloud-shaped fractal patch antenna with compact dimensions of 15 mm × 15 mm for various applications including satellite communication and military use in the X, Ku, and K bands. The antenna was fabricated and measured for verification showing a satisfactory agreement of the experimental results with the simulation performed by FEKO simulator software.

The fifth paper title is ***Button Shaped Wearable Dielectric Resonator Antenna for IoT Applications*** by authors Anish Kiran and Gajendra Kant Mishra with the Department of Electronics & Communication Engineering at Birla Institute of Technology from India. This paper explains the theory, design, fabrication, and measurements of a new button-shaped Dielectric resonator antenna that can be stitched on clothes by the traditional sewing method resulting in very low SAR since there is no direct contact with the human body. As the results of the analysis of the antenna performances for different positions on the phantoms of different genders and ages, it is suggested that the antenna is stitched as the first button on the clothes. The simulated results are in good agreement with the measurement results.

The authors of the sixth paper - ***Design of a Compact Antenna using Particle Swarm Optimization for the Entire Milli-meter Wave Range*** are Sneha Tiwari and Srikanta Pal with the Department of Electronics & Communications Engineering, BIT Mesra, India. This paper analyzes an asymmetric dual-step antipodal petunia-shaped antenna capable of operating across the entire mm-wave frequency range from 30 GHz to 300 GHz

exhibiting an exceptionally low level of side lobes and excellent cross-polar discrimination. The potential applications of this antenna span various fields, including military and imaging systems, automotive radar, telecommunications, remote sensing, security screening, and energy harvesting technology

The seventh paper in Microwave Review covers a comprehensive investigation into the design, analysis, and performance evaluation of frequency reconfigurable antennas titled ***Adaptive Antennas for the Wireless Future: Design, Analysis, and Performance Evaluation of Frequency Reconfigurable*** by authors Prem Nath Suman and Gajendra Kant Mishra with Birla Institute of Technology, Mesra, India. The proposed antenna design was validated by the measured and simulated results. It enables efficient wireless communication systems for several applications, such as cellular networks, WLANs, satellite communication systems, and cognitive radio networks by including the reconfigurable element for operation across multiple frequency bands, avoiding the requirement for separate antennas and simplifying system integration.

The eighth paper entitled ***2.4 GHz Low Noise Amplifier: A Comprehensive Review and Pioneering Research Contributions for RF Applications*** was the research results of the researchers Reddy T.S, and Nath V with the Birla Institute of Technology, Mesra, India. This paper presents an overview of the different types of low-noise amplifiers operating at 2.4 GHz frequency and the design of a single-stage inductive degenerated common-source narrow-band low-noise amplifier.

The ninth paper titled ***Design of Low Noise, High Dynamic Range and Triple-Band MMIC Voltage Variable Attenuator Using 0.25 µm GaAs pHEMT Technology*** presents the design of 1.2-1.3 GHz, 2.5-3 GHz, and 5.4-5.8 GHz MMIC voltage variable attenuator realized using 0.25 µm GaAs pHEMT technology. The authors of this paper are Subham Banerjee, Md Sujauddin Ahmmed, and Arun Kumar Ray with the Integrated Test Range, Chandipur, India, and Subham Banerjee and Santanu Mondal with the Institute of Radio Physics & Electronics, Kolkata, India. This paper proposes a design of the attenuator that increases the dynamic range of attenuation and reduces noise figures in the RF front-end of the radar receiver.

The title of the tenth paper is ***Split Ring Resonator Loaded Conformal Loop Filter for S-Band Applications***. The authors are Chandana Muniraja, Harshini Kariyanna, Dileep Kempanna, and Varun Dwarakanath with the Faculty of Electronics and Communication Engineering, M S Ramaiah University of Applied Sciences, Bangalore, India. This paper relates to the design of an S-band conformal loop filter, which combined with split ring resonator loading enables the reduced insertion loss and improved fractional bandwidth. The operating range of the proposed filter is between 2.12 GHz to 2.24 GHz. The simulated results were confirmed by experiments performed on the realized filter.

The eleven paper is ***A Compact High FOM UWB Planar Monopole Antenna Using Four Radiating Patch*** by authors Prasan Kumar Mishra, Tapan Kumar Patnaik, Rabindra Kumar Mishra with the GIET University, India, and Bhavani Prasad Pand with the Dept. of Physics, Chikiti Mohavidlaya, India. This paper focuses on the compact size and high figure of merit of a newly printed ultra-wideband antenna operating from 2 GHz to 12 GHz. The designed antenna is applicable for mobile satellites (8.025 GHz), metrological aids (9.5 GHz), and aeronautical radio navigation (9–9.2 GHz) systems as well as for the application in WIMAX at 2.5/3.5/5.5-GHz bands and WLAN at 2.4/5.2/5.8-GHz bands. The experimental results of the designed antenna are matching with the simulated value.

This twelfth paper entitled ***A Dual-Band Second-order Planar BPF Using Aperture Coupling for C/Ku-Band Applications,*** proposes the broadband bandpass filter with enhanced stopband performance, low profile, compact size, and good selectivity for both C and Ku band applications by using an aperture coupling technique. The proposed filter was simulated, fabricated, and experimentally verified in the practical environmental tests showing that the proposed bandpass filter concepts are appropriate for broadband broadcasting communication satellites. According to the best of the authors' knowledge, the filter is smaller and more compact than those described in its previous design. The authors of this paper are Rashmita Mishra, Ajit Kumar Patro, and Kailash Chandra Raut with the Dept. of Electronic and Communication Engineering, GIET University, India.

I would like to stress the great effort and dedicated time of the Reviewers, which improved the papers' quality and the Microwave review journal.

Prof. Dr. Nataša Maleš Ilić
University of Niš, Faculty of Electronic Engineering
Aleksandra Medvedeva 14
18000 Niš
SERBIA
E-mails: natasa.males.ilic@elfak.ni.ac.rs