Progress
In
Electromagnetics
Research M
Progress
In
Electromagnetics
Research M

Chief Editors: Weng Cho Chew and Sailing He

EMW Publishing
Cambridge, Massachusetts, USA
CONTENTS

A Multidirectional Triple-Band Rectenna for Outdoor RF Energy Harvesting from GSM900/GSM1800/UMTS2100 toward Self-Powered IoT Devices
Minh Thuy Le, Quang Chung Tran, Anh Tuan Le, Dinh Minh, and Dinh Minh ................................. 1

Analysis of Novel Eddy Current Damper for Multi-Ring Permanent Magnet Thrust Bearing
Dhruv Deshwal, Siddappa I. Bekinal, and Mrityunjay Doddamani ................................. 13

Fast Backfire Double Annealing Particle Swarm Optimization Algorithm for Parameter Identification of Permanent Magnet Synchronous Motor
Dingdou Wen, Chuandong Shi, Kaixian Liao, Jianhua Liu, and Yang Zhang ................................. 23

Characterization of Dielectric Properties of Non-Magnetic Materials Using Superstrate-Loaded Antennas
Saininad Naik, Maria Pour, and Curtis Hill ................................................................. 39

Electromagnetic Property Analysis of a Bearingless Induction Motor Using Amorphous Alloy Material
Ting Xu, Zebin Yang, Xiaodong Sun, and Jingjing Jia ................................................................. 49

Design and Implementation of an Integrated Switched-Oscillator Impulse Generator
Samira Mohammadzamani and Behzad Kordi ................................................................. 61

A Rapid Microwave Imaging Approach for the Diagnosis of Traumatic Brain Injury
Bin Li, Heng Liu, Zekun Zhang, and Xiang Gao ................................................................. 71

Electromagnetic Properties of a Babinet-Type Metasurface Composed of Coaxial-Sector Apertures
Alexandr V. Gribovsky, Yuliia V. Antonenko, Yevhenii O. Antonenko, and Victor A. Katrich ... 81

The Application of Artificial Magnetic Conductors in the Broadband Radar Cross Section Reduction of the Microstrip Antenna Array
Ping Yang, Jinbo Liu, and Zengrui Li ................................................................. 91

Compact Tri-Band Dual-Polarized Shared Aperture Array
Jiachen Xu, Chenjiang Guo, and Jun Ding ................................................................. 101

Torque Ripple Online Optimization of Switched Reluctance Motor Based on Torque Slope Characteristics
Hanbing Yang, Aide Xu, Jianping Cheng, and Jinghao Sun ................................................................. 111

A Multi-Band Cylindrical Conformal Antenna with Low Specific Absorption Rate for Wireless Medical Capsule Endoscopy
Zhong Yu, Bingwen He, Xinguo Wu, and Xudong An ................................................................. 123
Characteristic Research on Double Rotor Permanent Magnet Motor with Irregular Halbach Array
Yonglin Pan and Libing Jing ................................................................. 133

Wave Propagation in Electric Periodic Structure in Space with Modulation in Time (2D + 1)
J. J. Salazar-Arrieta and P. Halevi .................................................. 145

Aircraft Classification Method Based on EEMD and Multifractal Correlation
Junyong Hu, Qiusheng Li, Qianli Zhang, and Jingran Su ......................... 159

Time-Harmonic Electromagnetic Fields with $E \parallel B$ Represented by Superposing Two Counter-Propagating Beltrami Fields
Ryo Mochizuki, Naoki Shinohara, and Atsushi Sanada ........................... 171

Focalized Brain Transcranial Magnetic Stimulation with the Utilization of a Field Shaper and a Crescent Ferromagnetic Core
Xiao Fang, Wei Liu, Yaoyao Luo, Chang Liu, and Zhou He ..................... 185

A Novel Mirror Kirchhoff Approximation Method for Predicting the Shadowing Effect by a Metal Cuboid
Xin Du, Kentaro Saito, Jun-ichi Takada, and Panawit Hanpinitak ................ 199

Design and Analysis of Polarization-Insensitive Broadband Microwave Absorber for Perfect Absorption
Sudha Malik, Mondeep Saikia, Aditi Sharma, Gaganpreet Singh, Janakraj Ramkumar
Puneet Kumar Mishra and Kumar Vaibhav Srivastava ............................. 213

Simulation Research on Forward Problem of Magnetoacoustic Concentration Tomography of Magnetic Nanoparticles with Magnetic Induction Based on Multi-Coils
Xiaoheng Yan, Peng Gao, Mingchen Cai, and Zhengxing Li .................... 223