## Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS-fed Multiband Antenna Loaded with Staircase Radiating Strips for Wireless Communication Systems</td>
<td>26</td>
</tr>
<tr>
<td>A Newly Proposed Multi-band Rectangular Patch Antenna Using Defected Ground Structures</td>
<td>31</td>
</tr>
<tr>
<td>Study about Ionospheric Effects Induced by Irregularities on MEOSAR Range Imaging Quality</td>
<td>37</td>
</tr>
<tr>
<td>Compact Transparent Conductive Oxide Based Dual Band Antenna for Wireless Applications</td>
<td>41</td>
</tr>
<tr>
<td>Evidence-theory-based Collaborative Spectrum Sensing with Efficient Creditability Evaluation in Cognitive Radio Networks</td>
<td>46</td>
</tr>
<tr>
<td>Dual-band Microstrip Patch Antenna Array for 5G Mobile Communications</td>
<td>55</td>
</tr>
<tr>
<td>A Low Cost Tri-band Microstrip Patch Antenna for GPS Application</td>
<td>60</td>
</tr>
<tr>
<td>CW Interference Effects on the Performance of GPS Receivers</td>
<td>66</td>
</tr>
<tr>
<td>A Pencil Drawing Algorithm Based on Wavelet Transform Multiscale</td>
<td>73</td>
</tr>
<tr>
<td>A Novel Method for Weak Target Detection under Strong Jamming</td>
<td>80</td>
</tr>
<tr>
<td>An Equivalent Circuit Model for a Compact OLRR Based Notch Filter</td>
<td>88</td>
</tr>
<tr>
<td>A CSEB Subspace-based Optimization Method for Reconstruction of Uniaxial Anisotropic Objects</td>
<td>93</td>
</tr>
<tr>
<td>A 2.45 GHz Transparent Antenna for Wearable Smart Glasses</td>
<td>99</td>
</tr>
<tr>
<td>Fluorescent Study of Human Health and Septic Albumin Doped with Ag Nanoparticles</td>
<td>103</td>
</tr>
<tr>
<td>Ytterbium Nanoparticles Fabricated by fs-laser Ablation Raman Spectroscopy Study</td>
<td>106</td>
</tr>
<tr>
<td>Magnetic Properties of Nanoparticles Prepared from α-Fe Target by Laser Ablation in Liquids</td>
<td>109</td>
</tr>
<tr>
<td>An Analysis of MSF-OFDM Based Waveform Design for MIMO Imaging Radar</td>
<td>114</td>
</tr>
<tr>
<td>A High Gain Patch Antenna Using Negative Permeability Metamaterial Structures</td>
<td>119</td>
</tr>
<tr>
<td>A Fork-like Dual-band Antenna with an Inverted U-shaped Parasitic Element for WLAN and WIMAX Applications</td>
<td>124</td>
</tr>
<tr>
<td>Compact Two Pole Metamaterial Bandpass Filter Using Inverted IDC, Meander Line and Rectangular Stub for WiMAX Application</td>
<td>128</td>
</tr>
<tr>
<td>Compact Folded Patch Antenna for UHF RFID</td>
<td>132</td>
</tr>
<tr>
<td>A Novel Accessional Phase Compensation Method for InISAR Imaging under Squint Mode</td>
<td>135</td>
</tr>
<tr>
<td>An Omni-directional Elliptical Ring Dielectric Resonator Antenna Excited with C-shaped Feed for Wideband Applications</td>
<td>141</td>
</tr>
<tr>
<td>Three-element Homogeneous Layer of Cylindrical Dielectric Resonator Antenna for Wideband Applications</td>
<td>146</td>
</tr>
<tr>
<td>Low-temperature Sintered SrCo$<em>{1.5}$Ti$</em>{1.5}$Fe$<em>9$O$</em>{19}$ Ferrite for High-frequency Antenna Application</td>
<td>151</td>
</tr>
<tr>
<td>Electromagnetic Properties of La-Co Substituted Zn$_9$Y Type Hexagonal Ferrite for Microwave Device Applications</td>
<td>157</td>
</tr>
<tr>
<td>Improved Compressive Sensing of Microwave Induced Thermo-acoustic Tomography for Breast Tumor Detection</td>
<td>164</td>
</tr>
<tr>
<td>Imaging under Irregular Surface Using Microwave Holography</td>
<td>172</td>
</tr>
</tbody>
</table>
Measurement and Compensation of Frequency-dependent Antenna Phase Center Position for Microwave Holography Applications ................................................................. 178
Frequency Content of Carrier Oscillations along B-DNA Polymers ........................................ 186
Macroscopic Characterization of Materials Using Microwave Measurement Methods — A Survey 194
Dielectric Spectroscopy Technique for Carbohydrate Characterization of Fragrant Rice, Brown Rice and White Rice ............................................................. 205
Phase Interference Dependent Single PhC Based Logic Gate Structure with T-shaped Waveguide as XOR, NOT and OR Logic Gates ......................................................... 210
Broadband Metamaterial Microwave Absorber for X-Ku band Using Planar Split Ring-slot Structures 215
Resonances and Different Recording Times on Electromagnetic Scalar and Vector Potentials 229
Comparison of Discrete and Distributed In-line Raman Amplifiers in a 16 Channel DWDM Transmission System .................................................................................. 236
Equivalent Circuit Model Perspective on Coupled Inverted-L Antenna Design 242
Harmonic and Intermodulation Performance of a Radio-frequency Plasma Capacitor 252
Design of Closely Spaced Dipole Array Based on Characteristic Modes 258
Isolation Enhancement of a Two-element MIMO Antenna Array Using Rotated E-shaped Resonators 262
Sparse-aware Least Sum of Exponentials Algorithms for Sparse System Identification 266
A Study on Leaf Area Index and SAR Image of Oil Palm with Entropy Decomposition and Deep Learning Classification ................................................................. 271
A Low Mutual Coupling MIMO Antenna Array with Periodic Crossing Electromagnetic Band Gap 279
A Mixing Matrix Estimation Algorithm for Frequency Hopping Signals under the UBSS Model 284
Vehicles Detection Experiments with Ka-band FMCW ISAR ..................................................... 291
Performance Verification and Testing for Micro Deformation Detection Radar 295
Numerical Method for Electromagnetic Wave Propagation Problem in a Cylindrical Anisotropic Inhomogeneous Waveguide with Longitudinal Magnetization 299
A Compact Bandpass Substrate Integrated Waveguide (SIW) Filter with Compact Microstrip Resonant Cell (CMRC) Resonators .................................................. 306
Beam Wander of Multi-Gaussian Schell-model Hermite-Gaussian Beam in Atmospheric Turbulence 311
Scintillation Effects of HF Electromagnetic Waves and New Type MHD Waves in F Region of the Ionosphere ............................................................ 317
Wide-stopband Compact Pseudo-interdigital over Coupled Bandpass Filter with SIR and Open-stub Structure .......................................................................... 324
Optical Encoding System Using Sparse Pinhole Arrays for Optical Information Processing 330
A Novel Compact Two Element MIMO Antenna with Pie Shaped Slot Structure for Dual Band Applications ................................................................................. 336
Hybrid Multi-corridor Path-loss Model for Locating Radio Sources under Rubble 342
Modified Direction-of-arrival Estimation Approach of Virtual Antenna Array Based on Fourth Order Statistics ................................................................. 346
RS232 Interface in the Process of Electromagnetic Infiltration .................................................... 350
Classification of the Electromagnetic Effects of Information Devices during High Power Microwave Exposing ........................................................................ 357
Analysis of Methods for Determining Distinctive Features for PC Hardware Interfaces Based on Radiated Emissions ............................................................ 364
Analysis of Electromagnetic Compatibility during the Liberation of Car Airbag ........................................... 371
A New Functional Model for Wireless Communication Class-AB Solid-state Bipolar Power Amplifiers and Its Applications: Part II Predistorion Circuit ................................................................. 376
Solving Magnetohydrodynamic Free Convection Problems in Complex-shaped Cavities by the R-functions Method ................................................................. 381
A 2D Visualization Algorithm for a Single-element Doppler Blood Flow Velocity Sensor Data ...................... 386
The Statistical Properties of a Hermite-Gaussian Correlated Schell-model Beam in a Gradient-index Fiber ................................................................................................................................. 391
Hermite-Gaussian Correlated Schell-model Pulsed Beam ........................................................................... 397
A Non-axisymmetric Structure Multistage Depressed Collector for Sheet Beam VEDs ........................................ 403
PolSAR Image Classification Using Generalized Scattering Models ......................................................... 408
An Improved Underdetermined Blind Source Separation of Frequency Hopping Signals Based on Subspace Projection ................................................................................................................ 413
Parameter Estimation of Polynomial-phase Signal Using the Hybrid LvHAF ........................................................ 417
Research on Scheduling Strategy of Non-Binary LDPC Codes Decoding .................................................. 422
Shielding Effectiveness Required for IT Equipment Enclosures ............................................................... 427
Measurement Uncertainty of Shielding Effectiveness .................................................................................. 432
RF Circuits Commutator for EMC Laboratories ..................................................................................... 438
Car Microstrip GPS Antenna ......................................................................................................................... 444
Analytical Performance Evaluation of Massive MIMO Systems with 1-bit DACs ......................................... 449
Experimental Generation of Dark Solitons in an All Normal Dispersion Ytterbium Doped Fiber Laser .......... 455
Design and Analysis of Slotted Antenna Array for 5G Application ............................................................. 459
Eliminating Errors Due to Position Uncertainty in Coaxial Airline Based Measurement of Material Parameters ......................................................................................................................... 464
Design and Analysis of Checkerboard Surface for RCS Reduction in X-band ........................................... 468
Effect of Resistivity of ITO Thin Film When Used in Transparent Checkerboard Surfaces for RCS Reduction ........................................................................................................................................ 473
A 0.1–6 GHz Digital Controlled Variable Gain Low Noise MMIC Amplifier ..................................................... 477
Interference Alignment Based on Rank Constraint for MIMO Cognitive Interference Channel .............. 482
A 50–62 GHz Compact Subharmonic Passive Mixer MMIC with Low Conversion Loss ............................ 490
An Improved Point Cloud Registration Three-Stage (3S) Method Using RGB-D Camera ......................... 496
Imaging of Maritime Rotation Targets in Spaceborne SAR Image ............................................................ 503
A Low Noise S-band Image Rejection Mixer Based on Enhancement Mode pHEMT ................................. 508
A Broadband Third-order Antenna-filter-antenna Based Frequency Selective Surface at High Oblique Angle of Incidence ........................................................................................................... 513
Geometrical Characteristics Based Building Height Extraction from VHR SAR Imagery ..................... 519
Characterization and Modeling of Curvature Sensor for Microwave Measurements .............................. 524
Cognitive Cooperative-jamming Decision Method Based on Bee Colony Algorithm ............................. 531
Study of a Water-immersed Ultra-wide Band Microstrip Patch Antenna ................................................ 538
Multiresonator-based Chipless RFID System for Low-cost Application .................................................... 543
A D-band SiGe Differential Amplifier with 20dB Power Gain and 30GHz Bandwidth .............................. 548
Wave Propagation Coefficients in Non-Maxwellian Plasma ................................................................... 553
Formation of Phase Vortices by Means of Holograms with Asymmetric Pattern ...................................... 559
The High Gain Frequency- and Radiation Pattern-reconfigurable Antenna Based on Meta-surface .......................... 565
Maximum-sensitivity Method for Minimizing Uncertainty in the Measurements of Permittivity of a Cylindrical Dielectric Sample in a Rectangular Waveguide ................................................. 570
Design of Propagation Testnode for LoRa Based Wireless Underground Sensor Networks .......... 579
Optimization of Magnetic Actuators Using Competition Over Resources Algorithm .................. 584
A Wideband Conformal Slot Antenna for GPS Application ..................................................... 589
Performance Analysis of $2 \times 2$ MIMO Antenna with Meta-material for Ultra-wideband Applications .................................................... 593
Influence of Dispersion Slope Compensation on 40 Gbit/s WDM-PON Transmission System Performance with G.652 and G.655 Optical Fibers ................................................................. 598
Analysis of Orbital Angular Momentum Electromagnetic Wave Propagation Based on Circular Antenna Array ........................................................................................................ 605
Doppler Spectrum for Composite Scattering of Time-evolved Ship-generated Waves ............. 610
A Modified Robust Algorithm against Large Look Direction Error Based on Interference-plus-noise Covariance Matrix Reconstruction and Steering Vector Double Estimation ........................................ 615
Real-valued Root-MUSIC Algorithm with Forward/Backward Averaging .............................. 621
An Improved Cluster Labeling Algorithm Based on Vector Similarity in Radar Signal Sorting ................................................................. 625
Terahertz Integrated Waveguide Sensor Based on a Metal Rod Array for Phase Sensitive Fluid Detection ............................................................................................................. 630
Classification of Drones Based on Micro-doppler Signatures with Dual-band Radar Sensors .......... 638
Image Reconstruction Using Single-pixel Color Ghost Imaging ................................................. 644
Realization of High-precision Phase Generated Carrier Demodulation Algorithm with Ellipse Fitting Algorithm Based on FPGA ............................................................................. 649
Superpixel-based Segmentation for Multi-temporal PoSAR Images ........................................... 654
Research on RF Signal Reconstruction and Parameter Estimation Algorithm Based on Compressed Sensing ........................................................................................................... 659
Precession Period Estimation Using Sinusoidal Frequency Modulated Fourier-Bessel Series Expansion ................................................................. 664
3-D Band-stop FSS for X-band and Ku-band ........................................................................... 671
Low-frequency Breakdown of the Potential Integral Equations and Its Remedy ...................... 676
Spurious Radiation Suppression in Slotted Hexagonal Antenna Using Complementary Split Ring Resonators ............................................................................................................ 683
Principle Investigation of Thermal Tunable Hg-metalamaterial .................................................. 689
The Parameter Design for High-performance Digital PGC Demodulation Technique .............. 693
Classification of Chinese GaoFen-3 Fully-polarimetric SAR Images: Initial Results ............... 700
A 2.1 ps RMS Jitter MEMS-based Temperature Stable Timing Device with Single Point Calibration Temperature Sensor ........................................................................................................ 706
Combing Single Shot MultiBox Detector with Transfer Learning for Ship Detection Using Chinese GaoFen-3 Images ............................................................................................ 712
Numerical Dispersion Analysis of Radial Point Interpolation Meshless Method ........................ 717
Effects of Losses and Phase Mismatch on Transient Processes in Optical Parametric Amplification through Three-wave Mixing of Ordinary and Backward Electromagnetic Waves .................................................. 720
A Novel Rhombus Shaped ACS Fed Multi Band Antenna Loaded with Meander Branches for Advanced Communication Applications ............................................. 724
Conjugate Gradient Method Applied to Inverse Scattering with No Prior Information on Incident Field ....................................................................................................................... 731
A Novel Compact Unequal Wideband Wilkinson Power Divider for UWB and EW Applications .......................................................................................................................... 737
Passive RFID Tag with Multiple Resonators for Object Tracking ............................................. 742
Compact Monopole Antenna with Metamaterial Ground Plane ................................................. 747
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissivity-area Product and Temperature Estimation Based on Infrared Signature Model of Exo-atmosphere Objects</td>
<td>751</td>
</tr>
<tr>
<td>Compact Band Pass Filter Using Triangular Open Loop Resonator</td>
<td>757</td>
</tr>
<tr>
<td>CubeSat Mission for Ionosphere Mapping and Weather Forecasting Using Chip-scale Atomic Clock</td>
<td>761</td>
</tr>
<tr>
<td>Effect of Phase Modulator on the Performance in a Delayed Modified Heterodyne Lock Loop</td>
<td>767</td>
</tr>
<tr>
<td>A 1.2 GHz Bandwidth Digital Backend for Pulsar Observation</td>
<td>772</td>
</tr>
<tr>
<td>Tunable Microstrip Bandpass Filter Based on Cascade Quadruplet Topology</td>
<td>777</td>
</tr>
<tr>
<td>A Quad-band Antenna with Easily Controlled Bands for Wireless Locations/WLAN/WM/X/SATCOM Applications</td>
<td>780</td>
</tr>
<tr>
<td>A Directional, Low-profile Zero-Phase-Shift-Line (ZPSL) Loop Antenna for UHF Near-field RFID Applications</td>
<td>786</td>
</tr>
<tr>
<td>Reputation-based Beta Reputation System against SSDF Attack in Cognitive Radio Networks</td>
<td>792</td>
</tr>
<tr>
<td>Wideband, Stub-loaded Cross-dipole Reflectarray Elements for Ku Band</td>
<td>800</td>
</tr>
<tr>
<td>3D-printed FSS Using Printing Filaments with Enclosed Metal Particles</td>
<td>808</td>
</tr>
<tr>
<td>Comparison of E-textile Dipole and Folded Dipole Antennas for Wearable Passive UHF RFID Tags</td>
<td>812</td>
</tr>
<tr>
<td>Embroidered Passive UHF RFID Tag on Flexible 3D Printed Substrate</td>
<td>818</td>
</tr>
<tr>
<td>A Photonics-assisted Instantaneous Frequency Measurement Receiver</td>
<td>823</td>
</tr>
<tr>
<td>Washing Reliability of Painted, Embroidered, and Electro-textile Wearable RFID Tags</td>
<td>828</td>
</tr>
<tr>
<td>Travelling Salesman Problem for UAV Path Planning with Two Parallel Optimization Algorithms</td>
<td>832</td>
</tr>
<tr>
<td>Anti-spoofing Algorithm Based on Adaptive Kalman Filter for High Dynamic Positioning</td>
<td>838</td>
</tr>
<tr>
<td>Long-range Mobile Communication over Sea Utilizing Evaporation Duct</td>
<td>846</td>
</tr>
<tr>
<td>Study on Response Characteristics of Multi-conductor Transmission Lines in Noisy Environment</td>
<td>851</td>
</tr>
<tr>
<td>Estimation of the Direction-of-Arrival of Incoming EM Wavefronts through a Neural Network Approach</td>
<td>858</td>
</tr>
<tr>
<td>Microstrip Diplexer and Triplexer Using Mixed Directed-feed and Coupled-feed Line Coupled-resonator Filters</td>
<td>861</td>
</tr>
<tr>
<td>Design of Electromagnetic Wave Absorbers Using Frequency Selective Surfaces</td>
<td>866</td>
</tr>
<tr>
<td>Investigation of Electromagnetic Compatibility between DVB-T/T2 and LTE 700 for Co-channel Case</td>
<td>875</td>
</tr>
<tr>
<td>Efficient ECC Scalar Multiplication Algorithm Based on Symmetric Ternary in Wireless Sensor Networks</td>
<td>879</td>
</tr>
<tr>
<td>System for Metered Wireless Power Transfer for Low Voltage Application</td>
<td>886</td>
</tr>
<tr>
<td>Radar Target Identification Using a DTV-based Passive Radar in South Korea</td>
<td>892</td>
</tr>
<tr>
<td>The Effect of Fabric Conductors on the Microstrip Antennas with Textile Patches</td>
<td>896</td>
</tr>
<tr>
<td>Broadband and High Gain Multiband Patch Antenna Designs Using Corrugated Split Ring Resonators</td>
<td>902</td>
</tr>
<tr>
<td>A Novel Ship Detection Method Based on Shannon Entropy in Chinese Gaofen-3 Fully Polarimetric SAR Images</td>
<td>909</td>
</tr>
<tr>
<td>Improved Bandwidth Four Branch Microstrip Coupler Using Lumped and Distributed Elements</td>
<td>917</td>
</tr>
<tr>
<td>Study of a Compact Dual-band Ultrathin Polarization Independent Metamaterial Absorber for C- and X-band Applications</td>
<td>924</td>
</tr>
<tr>
<td>Absorbing Boundary Conditions in Leapfrog ADI-FDTD Method</td>
<td>929</td>
</tr>
<tr>
<td>Gaofen-3 Sea Ice Detection Based on Deep Learning</td>
<td>933</td>
</tr>
<tr>
<td>Micro-motion Feature Extraction Based on Bayesian Inference</td>
<td>940</td>
</tr>
<tr>
<td>Study on One Stage Angular Log-periodic Meander Line Traveling-wave Tube</td>
<td>947</td>
</tr>
<tr>
<td>Analysing the Spectral Response of Resonant Structures at THz Frequencies</td>
<td>951</td>
</tr>
<tr>
<td>Using a Multiscale Toroidal Element to Model a Hydrogen Atom</td>
<td>956</td>
</tr>
</tbody>
</table>
A Numerical Model of the Spiral Gradient Magnetic Field in Selected Water Samples .......................... 961
An Experiment to Assess the Response of the Human Organism to Changes in Low-level Magnetic Fields .............................................................................................................................. 966
The Electromagnetic Properties of a Resonant Structure Formed from Inorganic or Organic Elements .......................... 970
Analysis of HPM Pulse with Use of Data Base ........................................................................................................ 975
Jamming Resource Allocation Aimed to Data Link Based on Simulant Annealing Algorithm .......................... 981
Analysing the Responses of Layered Materials with Varied Parameters ................................................................. 988
Numerical Study on Complex Resistivity Measurement of Porous Media Containing Gas Hydrate .................. 993
Simulation of HPM DS 110 Generator Antenna Reflector Modification .............................................................. 999
Analysis of the Effect of YEE Cell Size on the Results of Calculation of Antenna Parameters and Characteristics Using FDTD Method ......................................................................................... 1005
Design of a Compact Broadband Planar Spiral Antenna Backed by an Absorbing Cavity .......................... 1009
Combining Wavelets and Mathematical Morphology to Detect Changes in Time Series .................................. 1015
An MMSE-EIC Equalization for FBMC/OQAM Systems ......................................................................................... 1021
Electromagnetic Two-dimensional Scattering Database for Verifying Inversion Algorithms .......................... 1026
A Broadband Tapered Slot Antenna for Microwave Imaging Application .......................................................... 1031
Pulsed Microwave Sensor on Heavily Doped Semiconductor Substrate ........................................................... 1037
Making and Evaluation of Breast Cancer Phantom for Microwave Mammography .................................. 1043
Human Body Exposure to Low Frequency Wireless Charging: Direct Coupling Mechanisms and Interferences with Medical Devices .................................................................................. 1048
A Revised Polarimetric Calibration Method for GF-3 SAR with Active Radar Transponder .......................... 1055
Influence of Spatial Scale Effect on High Resolution SAR Radiometric Calibration .............................................. 1059
Numerical Simulation of the Open Ring Resonators with Non-axially-symmetrical Reflecting Surfaces ............ 1064
Problem of Detecting Space Debris Objects Using Multi-position Radar System ............................................ 1069
Scattering Features of Space Debris Objects for Multi-position Radar System .................................................. 1074
An FPGA Based 1.6 GHz Cross-correlator for Synthetic Aperture Interferometric Radiometer ............... 1078
A Chromatic Aberration Correction Method for RGB LED Based on PWM .......................................................... 1086
Design of Joint Structure for Upper Limb Exoskeleton Robot System ............................................................... 1092
An Acquisition and Processing Method for the Key Parameters of Electromagnetic Relays ........................... 1096
Investigation of Uniaxial Dielectric Anisotropy of Textile Fabrics and Its Influence over the Wearable Antennas’ Behaviour ........................................................................................................ 1101
A Coordinate Transformation Algorithm for GPS Navigation and Positioning System .................................. 1109
A Hardware and Software Design for an Image Acquisition Module ................................................................. 1113
An Efficient Image Feature Extraction Approach Based on Discrete Information Coding Matrix Algorithm ........ 1118
Comparison of Power Efficiency and Signal Regeneration Impact in the SLR DWDM Transmission Systems with Different Spectral Band .................................................................................. 1122
A New Method for Helicopter Classification Based on InSAR under LFM CW Radar ...................................... 1128
Total Array Pattern Characteristics of Coplanar Vivaldi Antenna in E-plane with Different Element Width for S and C Band Application .................................................................................. 1136
A Blind Source Extraction Algorithm Based on ICA-R for Underdetermined Anechoic Mixtures .................. 1144
Dual Mode Circularly Polarised Patch Antenna Exited by Dual Mode Defected Ground Square Ring Resonator .......................................................................................................................... 1152
Reduction of Surface to Line Integrals in Matrix Elements for Arbitrarily Oriented Surface Elements: The Vector Green Function .............................................................................................. 1156
A Digital Transmitter for Contact-less In-vehicle Data Communication ........................................ 1162
Modulator Bias Optimization of a High Extinction-ratio Optical Mach-Zehnder Intensity Modulator for
Linear-cell Radar Systems ................................................................................................................ 1166
The $0$ to $R_1$ Spherical Radial Transformation Can Not Be Used to Induce Acoustic No Scattering Cloak
But Some Can for EM Invisible Cloak .................................................................................................. 1172
Design of Miniature Dielectric-loaded Trihelix Antenna for Multi-band Cellular Telephone Handsets . . 1177
A Dual-band Subharmonic Mixer with High RF-IF Isolation ................................................................. 1183
A Modified Antipodal Vivaldi Antenna (AVA) with Elliptical Slotting Edge (ESE) for Ultra-Wideband
(UWB) Applications ......................................................................................................................... 1190
Two Layered $2 \times 1$ Koch Curve Patch Array Antenna with Suspended Air Gap Effect for Wireless LAN
Applications ....................................................................................................................................... 1202
Double U-slots Stacked Patch Antenna with Copper Plate and Air Gap for Wireless LAN Applications . 1209
Optimization of TCSC with Multi Objective Firefly Algorithm for Enhancing SMIB System ................. 1215
SAR Image Change Detection Method Based on Shearlet Transform .................................................. 1223
Quality of Service Parameter Measurements Data Analysis in the Scope of Net Neutrality .................... 1230
Optical Image Encryption Using Radon Transform ............................................................................. 1235
Preparation and Microwave Characterization of Novel Polyaniline-graphene Composite for Antenna
Applications ....................................................................................................................................... 1239
Blind Quality Assessment of JPEG Compressed Images ........................................................................ 1245
Co-planar Waveguide (CPW) Slotted Bow-tie Antenna with Band-notch Using Polygon-shaped Branches
Structure ............................................................................................................................................. 1251
The $0$ to $R_1$ Cylinder Radial Coordinate Transformation Can Not Be Used to Induce Cylinder Layer EM
Invisible Cloak and Acoustic No Scattering Cloak .............................................................................. 1258
Validation of the Increased Image Resolution Obtained Using TOPSAR Sentinel-1 Data in a Bistatic
Setup .................................................................................................................................................. 1262
Low Power Microwaves Induce Changes in Gating Function of Trpv4 Ion Channel Proteins ................ 1268
Static Electric Fields Induce Conformational Changes in Alpha Conotoxin: A Molecular Dynamics
Simulation Study ................................................................................................................................. 1273
Co-planar Waveguide (CPW) Patch Antenna with Octagonal-shaped Ring for WiMAX Application . . 1278
Implementation of Threshold Crossing Algorithm for Beamforming Controller System ....................... 1284
Optimization of Fast Hadamard Deconvolution Implementation for ARM CPU Based M-sequence UWB
Radar Sensor Node ............................................................................................................................. 1288
Permittivity Imaging Method by Incorporating Range Points Migration and Ellipsometry for UWB Short
Range Radar ...................................................................................................................................... 1295
Analysis of Vessels in GF-3 Quad-polarimetric SAR Image .................................................................. 1301
Super-resolution Doppler Velocity Estimation by Gaussian-kernel Based Range-Doppler Conversion for
UWB Radar .......................................................................................................................................... 1306
A 20.2–57.1 GHz Inductor-less Divide-by-4 Divider Chain .................................................................... 1312
Angle of Arrival Estimation with Improved Accuracy Using the Mean IQ-value Method in a Rician Fading
Channel .................................................................................................................................................. 1319
Electrical Impedance Tomography with Multiplicative Regularization ................................................ 1326
A Compact SIW Based Filtering Power Divider with Improved Selectivity Using CSRR ...................... 1334
A Compact Dual-polarized Magneto-electric Dipole Antenna for 2G/3G/LTE Applications .................... 1338
Group Target Micro-doppler Feature Extraction via Bessel Basis Decomposition and Sparse Recovery 1345
Design of High Isolation System for Monostatic X-band Radar ............................................................ 1351
A 24-GHz CMOS Transmitter Front-end for Vital Signal Monitoring Radar System ................................................................. 1354
An Improved Frequency Scaling Algorithm for Airborne TOPS Mode .......................................................... 1358
Thermal Shunts for Heterogeneously Integrated III-V-on-silicon Microspiral Disk Lasers ................................................. 1364
Evaluation of the Impact of Parameters of Transmission System on the Performance of WDM-PON ................................................. 1370
Optimal Design and Simulation of Combined Reluctance-induction Electromagnetic Launcher .............................................. 1377
Heterogeneously Integrated III-V-on-silicon Microspiral Disk Lasers for Optical Interconnects ......................... 1382
Mutual Inductance of Thick Coils for Arbitrary Relative Orientation and Position ....................................................... 1388
Assisted GPS Signal Acquisition Algorithm Based on the Joint Code-frequency Search ................................................. 1396
Electrically Short Antenna with Ground-coupling Measurement for M-sequence Ground Penetrating Radar ............ 1404
High Gain Antenna Characteristics for 300GHz Band Fixed Wireless Communication Systems ............................. 1409
Electrically Small Printed Monopole Antenna for WLAN and WiMAX Applications ................................................... 1413
Study of Clear Sky Models for Singapore ........................................................................................................... 1418
GPS Derived PWV for Monitoring Cloud Evolution ......................................................................................... 1421
A Miniaturized Frequency Selective Radome with Wide Absorption Response above X-band ........................... 1424
Comparative Analysis of Different Defected Waveguide Structures towards Monopole Antenna ..................... 1428
Analysis of High-harmonic Generation in Terms of Complex Floquet Spectral Analysis ........................................ 1437
Study of Terminal Truncation on Log-spiral Antenna Characteristics at Terahertz Frequency ........................... 1445
Simulation and Theoretical Analysis of a Photoconductive Vacuum Microelectronic Device .............................. 1449
Development of THz Gyrotron with Improved Parameters in IAP RAS ................................................................. 1454
GaN Based Tunnel Field Effect Transistor for Terahertz Applications ........................................................................... 1457
Switching Characteristics of InN Tunnel Field Effect Transistor and Its Application in the Design of RF Amplifiers ........................................................................................................................................ 1461
Design of a 4 × 4 Low Profile Continuous Transverse Stub Antenna Array .................................................. 1465
Frequency-scanned Antenna Array Based on Continuous Transverse Stub ............................................................ 1470
Rotation-based Image Reconstruction by Using ART Algorithm in Microwave Imaging ................................. 1474
Inverted Suspended Circular Polarized Antenna with the Integration of Metasurface (MS) Structure Technique ........................................................................................................................................ 1479
A Compact CPW-fed Dual-band Open-ended ZOR Antenna Based on CRLH TL for Wireless Applications .......... 1494
Investigation on the Stability for the Staggered Double Vane Structure TWT in G-band with Bragg Reflector ........................................................................................................................................ 1498
Two Dimensional Microwave Imaging Using a Divide and Unite Algorithm .................................................. 1501
Two-dimensional Non-linear Microwave Imaging with Total Variation Regularization ...................................... 1509
A Wideband Circularly Polarized DRA Excited with Meandered-line Inductor for Wi-MAX/LTE2500 Applications ........................................................................................................................................ 1514
Foundry-fabricated DFB Laser with Waveguide Crossing for Self-heterodyne Terahertz Spectrometer ............... 1520
Applications of THz Band Gyrotrons at IAP RAS: Current State and Prospects ........................................... 1524
Development of Interfacing System for Ground-based SAR ...................................................................................... 1529
Study of Single Layer Radar Absorber Material (RAM) Based on Coconut Shell Activated Carbon ............ 1536
A Simulation Study of the Effect of Ionospheric Vertical Gradients on the Neutral Bending Angle Error for GNSS Radio Occultation .......................................................... 1540
Survey of Leakage Magnetic Fields from Various Induction Heating Ranges .................................................. 1546
Change Detection of Water-body Using Chinese GF-3 Polarimetric SAR Images .................................................. 1550
Design of MMIC Class-E Power Amplifier with Adaptive Bias Control and Built-in Linearizer Using 0.5 μm pHEMT Technology ................................................................. 1557
Design of Broadband Phased Array Antenna at X-band ........................................................................... 1563
The Study of PCB Ground Area and Location on EMI Reduction Effectiveness ...................................... 1568
A New Kind of SAR Signal Sparse Sampling Method Based on Co-prime Array ........................................ 1572
A Highly Linear Super-source-follower-based Reconfigurable RF Filter with Wide Tuning Range for TV Receiver Applications ............................................................................................ 1576
Performance Analysis of Airborne TOPS Mode ....................................................................................... 1579
A Two-dimensional Leapfrog Node-based Radial Point Interpolation Meshless Method for Modeling Non-magnetized Plasma .............................................................. 1584
Fabrication of Large-area and Long-range Ordered Nanostructures Using Template-assisted Nanosphere Self-assembly Method ........................................................................................................ 1588
A Novel Trifilar Coupled Line Splitter-balun for Wideband Antennas ........................................................... 1594
Study on the Large-scanning-angle Airborne TOPS Mode ........................................................................ 1598
Exciting Plasmonic Modes of Metallic Nanostructures Loaded on Silicon Waveguides Surface .............. 1603
Nonlinear AGILD MagLev-Advanced Global Integral and Local Differential Modeling and Inversion for Magnetic Levitation ........................................................................................................ 1608
Velocity Estimation of Moving Target Based on Concatenated ATI and Inverse Radon Transform in Three-channel Circular SAR ................................................................................................... 1613
Calculating Magnetic Susceptibility from the Reaction Field in the Vicinity of Differently Shaped Samples ..................................................................................................................................... 1618
The EMG Effects of a Static Magnetic Field on the Behavior of Organic or Live Materials ................... 1623
A Numerical Analysis of a Periodic Resonant Structure at GHz Frequencies ........................................... 1630
Comparing Planar Periodic Resonant Structures at GHz Frequencies ...................................................... 1635
Miniaturized Tapered Meandered Dual Band Dipole Antenna for WiFi 2.4/5.8 GHz Application ................ 1640
Fixed Frequency Electronically Beam Steering Microstrip Comb Line Antenna ...................................... 1643
Automated Scaling Region of Interest (AS-ROI) in Inverse Scattering Method for Tomographic Image Reconstruction .................................................................................................................. 1648
Features of OFDM Signals Delay Tracking for Navigation and Radio Location .................................. 1654
Tunable Localized Surface Plasmon Resonance of Subwavelength Cu/SiO₂/Al Plasmonic Antenna ...... 1660
A Study on the Mechanism of Hazards of High Intensity Radiated Field to Fuel Based on Multi-physics Field ............................................................................................................................................ 1666
Comparison Analysis between SART and ART Algorithm for Microwave Imaging ................................. 1674
Target Classification and Recognition Based on Micro-doppler Radar Signatures ........................................ 1679
A Novel Diode Switchable Dual Band/Single Band Metamaterial Absorber ............................................... 1685
Low Profile Oversized Rectangular Waveguide Planar Antenna Fed with Quasi-TEM Wave in Ka Band ........................................................................................................................................... 1690
Electrical Characterization of through Glass Vias Based Inductors in 3-D Integration ............................. 1693
Ultra-Wideband Wireless Sensors for Robot Vision in Industrial Environments ........................................ 1697
A Simple Permittivity of the Wall Estimation Technique by the UWB Radar System ............................... 1703
Experimental Validation of Microwave Imaging for Wood Inspection ...................................................... 1709
Influence of the Ionosphere and the Troposphere on the Propagation of Radio Waves in the Detection of Space Debris Objects Using Multi-position Radar System ........................................... 1713
Real-time Distributed Oil/Gas Pipeline Security Pre Warning System Based on Φ-OTDR ..................... 1717
SAR Observations of Organized Large Eddies over the Somali Current ........................................1720
A PVT Insensitive Noise Canceling Balun-LNA for TV Receiver Applications .................................1726
A Stable and Fast Approach for Measuring Brillouin Frequency Shift ........................................1729
An Angularly Stable Tri-band Reflective Cross-polarization Conversion Anisotropic Metasurface ......1735
A Novel Aperture Coupled Microstrip Circular Patch Antenna for Dual Band Operation ...............1738
Numerical Modeling of Borosilicate Doped Photonic-crystal Fiber for Mid-IR Supercontinuum Generation .................................................................................................................................................1743
Planar Array Approach as Alternative Method to Characterize Radiation Pattern of 2 \times 2 Spiral Resonator (SR) Structure .........................................................................................................................1747
An Novel Ultra-thin Triple-band Polarization-insensitive Compact Metamaterial Absorber .............1751
Optimization of Electric Field Distribution in Unequal-length Slots Extended Interaction Klystron ...1756
Design and Development of FPGA-based FFT Co-processor for Synthetic Aperture Radar (SAR) ...1760
Textile Based Dual Band MIMO Quad-mode Substrate Integrated Waveguide Antenna for WiFi Application .................................................................................................................................1767
Gain Enhancement of Low Profile Cavity Backed Spiral Antenna at Low Frequencies .................1771
Design of a Small Size Biquad-UWB-patch-antenna and Signal Processing for Detecting Respiration of Trapped Victims .........................................................................................................................1774
The Radiation Characteristics of the Vivaldi Antenna Located on a Cylindrical Surface ..............1780
Design of a Compact Octagonal UWB MIMO Antenna Employing Polarization Diversity Technique .1785
Study on Shielding Effectiveness of Electronic Enclosures with Connected Accessories under Corrosive Environment for Automobile Industry .........................................................................................1790
Novel Implicit Method for Faster Modeling of Low Frequency EM Problems in the Time Domain ...1794
The Radiation Characteristics of the Vivaldi Antenna Located in the Cutout of the Metal Wedge ...1801
An Improvement on Binocular Indirect Ophthalmoscopy for Diabetic Retinopathy ......................1807
Reflection Coefficient of Inhomogeneous Anisotropic Impedance Plane ....................................1816
A Broadside Circularly Polarized Semi-cylindrical Dielectric Resonator Antenna Excited with Unequal Pair of Vertical Microstrip Line ........................................................................................1823
Design and Comparative Evaluation of Antenna Array Performance Using Non Blind LMS Beamforming Algorithms .........................................................................................................................................1827
Design of a MIMO Dielectric Resonator Antenna with Air Gap for X-band Applications ...........1835
A Compact Design of Switched Line Phase Shifter for a Microstrip Phased Array Antenna ...........1839
Metamaterial UHF RFID Tag with Enhanced Gain ........................................................................1845
A Wearable UHF RFID Tag Antenna with Archimedean Spiral Strips .........................................1849
Research on Calibration, Validation and Retrievals on FY-3D MWHTS .........................................1853
Brain Tumor DWIs: Comparing the Results of Manual and Computer-based Evaluation ............1857
Electromagnetic Scattering Algorithm of Dielectric Bodies Based on Müller Equations ..............1862
Planning and Processing of Measurements in a Waveguide Aimed at Determination of Permittivity of Dielectric Inclusion .........................................................................................................................1866
TSA Antennas Performance Comparison for Focal Plane Array .....................................................1872
Design and Analysis of Conformal Antenna for Smart Shoes .......................................................1878
Effect of Emitter Antenna Pattern on Angular Dispersion of Received Signals in Urban Areas ....1883
Design and Analysis of Conformal Antennas for Smart Watch .....................................................1889
Performance Enhancement of End-fire Bow-tie Antenna by Using Zero Index Metamaterial .......1895
EMC Evaluation with Consideration of Transmitting and Receiving Antenna Patterns in Multipath Propagation Environment .........................................................................................................................1901
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison of Empirical and Geometric Modeling Angular Scattering of Radio Waves under Multipath Propagation Conditionsv</td>
<td>1907</td>
</tr>
<tr>
<td>A Novel Phase Compensation Method for ISAR Imaging Based on Genetic Algorithm</td>
<td>1914</td>
</tr>
<tr>
<td>Analysis and Characterization of Electromagnetic Compatibility of the In Vitro Diagnostic Medical Device</td>
<td>1924</td>
</tr>
<tr>
<td>A Very Small Wideband Asymmetric Coplanar Strip Fed Printed Dual Band Antenna for Advanced Communication Applications</td>
<td>1928</td>
</tr>
<tr>
<td>A Miniaturized Triple Band ACS-fed Monopole Printed Antenna with Meandered and Circular Ring Shape Resonators for WLAN/WiMAX Applications</td>
<td>1933</td>
</tr>
<tr>
<td>Simulation of Meandered Uniplanar Printed Antenna for Multiband Applications</td>
<td>1938</td>
</tr>
<tr>
<td>A Novel Method of Hyperspectral Imagery Target Detection Based on Sparse Representation</td>
<td>1942</td>
</tr>
<tr>
<td>A Theory of Recursive Kernel RX Anomaly Detection Algorithm for Hyperspectral Imagery</td>
<td>1947</td>
</tr>
<tr>
<td>A Comparative Analysis of Load Frequency Control of Two-area Interconnected Hybrid Power System Using LabVIEW</td>
<td>1953</td>
</tr>
<tr>
<td>Swarm and BAT Algorithm Optimized 2DOF-FOPID Based STATCOM Controller for Transient Stability Enhancement</td>
<td>1961</td>
</tr>
<tr>
<td>Bat Algorithm Optimized SVC for Power System Stability Enhancement</td>
<td>1977</td>
</tr>
<tr>
<td>A Miniaturized Antipodal Vivaldi Antenna with Director for Ultra-wide-band Applications</td>
<td>1984</td>
</tr>
<tr>
<td>Genetic Algorithm Improved Spatial Diversity 24-GHz FMCW Radar with Multipath for Automotive Applications</td>
<td>1988</td>
</tr>
<tr>
<td>Analyzing Cloud Optical Properties Using Sky Cameras</td>
<td>1994</td>
</tr>
<tr>
<td>A Wide Dual Band Stop-band Filter with Two Different Defected Microstrip Structures</td>
<td>1997</td>
</tr>
<tr>
<td>A Low Loss High Isolation Double-pole Double-throw Traveling-wave Switch Using 0.5-µm GaAs Process</td>
<td>2001</td>
</tr>
<tr>
<td>Dual-wideband Single Open-slot Antenna for LTE/WWAN Smartphone</td>
<td>2006</td>
</tr>
<tr>
<td>Crosstalk-centric Designing Using Graphene Based Multi-line Bus Architecture</td>
<td>2009</td>
</tr>
<tr>
<td>The Novel Technique of Linear Birefringence Compensation in Optical Fiber Sensors Using Phase Retarders</td>
<td>2013</td>
</tr>
<tr>
<td>A Monopole Super Wideband Microstrip Antenna with Band-notch Rejection</td>
<td>2019</td>
</tr>
<tr>
<td>Analysis of Discharge Parameters for Applications in Plasma Devices</td>
<td>2025</td>
</tr>
<tr>
<td>BM3D Vector Approximate Message Passing for Radar Coded-aperture Imaging</td>
<td>2035</td>
</tr>
<tr>
<td>A Highly Efficient Tri Band (GSM1800, WiFi2400 and WiFi5000) Rectifier for Various Radio Frequency Harvesting Applications</td>
<td>2039</td>
</tr>
<tr>
<td>High Peak Power UWB-RFID Transmitter Tag for Long Range Applications</td>
<td>2045</td>
</tr>
<tr>
<td>Seven Element Wideband Planar Log-periodic Antenna for TVWS Base Station</td>
<td>2051</td>
</tr>
<tr>
<td>Investigation on a Ku-band Planar Luneburg Lens Using Metamaterial Resonators</td>
<td>2056</td>
</tr>
<tr>
<td>Application of Tilt Integral Derivative Filter for Load Frequency Control of Three Area Interconnected System</td>
<td>2059</td>
</tr>
<tr>
<td>Determination of Dielectric Properties of the Red Delicious Apple and Its Correlation with Quality Parameters</td>
<td>2067</td>
</tr>
<tr>
<td>Broadband Asymmetric High Isolation Directional Coupler Using Quadrature Mode Suppression</td>
<td>2073</td>
</tr>
<tr>
<td>A Novel Design of Broadband and Low-loss Left-handed Metamaterial Based on Cross Line</td>
<td>2078</td>
</tr>
</tbody>
</table>
Evolution of Plasmonic Response of a Semiconducting Particle: Transition from Surface to Bulk Phenomena ................................................................. 2083
Slot Antenna Array for Anticollision Radar with Low Sidelobe ........................... 2087
Simulation of Three-phase Motor Drive System with Bearing Discharge Process ........................................................................................................ 2091
Application Sentinel-1 SAR Data for Ocean Research and Operation ............... 2098
SAR Imaging of Oceanic and Atmospheric Gravity Waves .................................. 2102
Computationally Fast and Efficient Model-based Decomposition Method for PolSAR Data Interpretation .......................................................... 2105
Numerical Simulation and Experimental Study on Air Charging Characteristics of Train’s Air-Pipe System .................................................................. 2111
Design of Wireless Control Units for Freight Trains’ Braking Systems Based on Loop Simulations ................................................................. 2115
Design of a High-gain Strain Sensor for Monitoring Structural Health Based on Passive UHF RFID ................................................................. 2119
Design of Interconnected Mobile Application for Visualized Information System of Monitoring Risks .............................................................. 2123
Compact Dual-band Hexadecagon Circular Patch Antenna with DGS for Ku Band Applications ................................................................. 2127
Identification of High-temperature Region for Insulators Based on BP Neural Network ................................................................. 2131
Design of Chipless RFID Tag Based on Surface Acoustic Wave .................................. 2136
A Joint-optimization NLMS Algorithm with Linear Function Approximation Penalty for Sparse Channel Estimation .......................................................... 2140
Analysis of Propagation Delay for Bundled SWCNT and Bundled MWCNT in Global VLSI Interconnects ............................................................... 2145
Vehicular Wireless Network Access Controller Parameter Estimation ................ 2152
Radiation Pattern Synthesis with Improved High Dimension PSO ......... 2160
Correlating Satellite Cloud Cover with Sky Cameras ........................................ 2166
Numerical Analyses of Modified DS Combination Methods Based on Different Distance Functions .... 2169
Implementation of a Ramp Generator with Schmitt Trigger Circuit for PWM Modulator Applications ............................................................. 2176
Microwave Backscattering by the Sea Surface in the Transition Range of Incidence Angles (10°–20°): Theory and Experiment .......................................................... 2183
Low-rank Based FEM-MoM Method for Analyzing Electromagnetic Scattering Problems in Half-space ................................................................. 2189
A Grating-based Plasmon Index Sensor: Performance Simulation in the Presence of Noise ................................................................. 2193
On Some Identities for Integral Operators in Computational Electromagnetics ........................................................................................................ 2199
Design of 2.4-GHz Miniaturized Antenna for Wi-Fi Application Based on Meandered Technique ............................................................. 2203
Huffman Coding Method Based on Parallel Implementation of FPGA ................. 2207
A Hardware Design Method for Canonical Huffman Code ................................... 2212
New Avenues for Light-matter Interaction: Parity-time Symmetry and Non-ergodic Behaviour of Gain-loss Transducer Arrays ........................................ 2216
Characterization and Modeling of Gradient-carbon Absorber Layers Suitable for Radar Cross Section Reduction of UAVs ........................................ 2224
Photonic Microwave and RF Signal Processing Based on Optical Micro-combs ........................................................................................................ 2232
Characteristic Mode Based Impedance Bandwidth Analysis for Optimal Feed Location .................................................................................................. 2237
Design of a 0.01 GHz–70 GHz High Output Power Signal Source Module .......... 2241
A 10 GHz–40 GHz Wideband PHEMT MMIC Passive Frequency Doubler ........ 2247
Design of a Wideband Passive Planar Duplexer ................................................ 2252
Comparison among Different Feed Network Topologies for Sequential Rotated Antenna Array ............................................................. 2259
The Average of Perturbed EM-waves of the First Order, Depolarized in Propagation through Continuous Random Media ........................................ 2266
Microstrip Periodic Leaky Wave Antenna Using Defected Ground Structure .................................................. 2272
Spatial and Angular Resolution Measurement of a Tensor Light Field Display .............................................. 2278
Influence of Temperature on Transformer’s Winding Defect Analysis Using Inductive Probes ....................... 2285
Beam Synthesis and Target Detection Based on Aperture Coding Metasurface ........................................... 2290
Wave-induced Doppler Shift of Ka-band Radar Signal Backscattered from the Sea Surface ......................... 2299
Estimation of Sea Surface Short-wave Spectra from Co-polarized Radar Backscattering Cross-section .......... 2307
Compact Low-cost Arduino-based Buoy for Sea Surface Wave Measurements ............................................. 2315
A Dual-frequency Satellite Antenna Loaded with a Double-arrow Array ....................................................... 2323
A Multiband Monopole Antenna with Arrow-shaped Aperture-coupled Resonators .................................. 2329
Study on Electromagnetic Radiation of Some Kinds of Typical Partial Discharge ....................................... 2335
A CMOS D-band Low Noise Amplifier with 22.4 dB Gain and a 3 dB Bandwidth of 16 GHz for Wireless Chip to Chip Communication ................................................................. 2339
Simulation of Actively Polarimetric Calibration Source Based on Correlated Noise Signals by Simulink2344
Distributed Spectrum Monitoring System Based on RSSI Optimization Algorithm ..................................... 2350
Estimation of Human Gait Cycle Based on Cepstrum of Radar Micro-doppler Signatures ......................... 2356
Design of a Single-slab Low-profile Frequency Selective Surface ............................................................... 2360
A Fast Design Procedure for Quadrature Reflection Phase ......................................................................... 2364
Extratropical Cyclones over the North Atlantic and North Pacific: Comparison of AMSR2 — Retrieved and Era-Interim Sea Surface Wind Fields for 2 Year Period ........................................... 2367
Design of Resonator for Wireless Charging System with Expanded Charging Area .................................. 2373
Analysis of AMSR2 89 GHz Measurements over the Arctic Sea Ice in January 2015 ................................. 2376
Detectability of the Arctic Polar Lows over the Barents Sea Ice Edge Using Multi-sensor Approach ............ 2380
Coupling Dynamic Electromagnetic Finite Element Models to Circuit Simulators by Using Model Order Reduction ........................................................................................................................................................................... 2385
Wind Direction Measurements Using HF Ground Wave Radars Based on a Circular Receive Array .......... 2393
Modelling of Rain Drop Size Distribution for Microwave and Millimeter Wave in Central Africa ............. 2398
Analysis of Dispersion Splitting on Light Line by Characteristic Roots of Retarded Circuit Equation .......... 2405
Miniaturization of Microstrip Antenna ........................................................................................................ 2410
Design of 2.45 GHz Microwave Wireless Power Transfer System for Battery Charging Applications ....... 2417
Design of Shielding Enclosure to Protect Security Devices ........................................................................... 2424
On the Upper Ocean Response to Tropical Cyclones: Model Interpretation .............................................. 2430
On the Upper Ocean Response to Tropical Cyclones: Satellite Microwave Observation ......................... 2437
Composite Material to Protect Security Devices against Electromagnetic Interference ............................ 2445
An Integrated Circular Polarization Microwave Rectifying Antenna Module ............................................. 2451
Combining Time-frequency Analysis and Array Processing for Multi-interferences Mitigation in GNSS Application ........................................................................................................................................................................... 2454
Mixing Matrix Estimation of MIMO Radar Based on Adaptive Hierarchical Clustering Algorithm for Underdetermined Blind Source Separation ......................................................................................... 2459
Electromagnetic Compatibility of Raspberry PI Development Platform in Near and Far-field .............. 2466
Far-field to Near-field Investigation of Thermal Radiation Emitted by a Single Optical Nanoantenna .......... 2473
Numerical Simulation of Low-frequency Acoustic Wave Scattering by Corrugated Structures ............... 2479
Threshold Levels of Electromagnetic Susceptibility for Unarmed Air Vehicles ......................................... 2483
Impact of Multiple-directional Mechanical Deformation on the Resonant Frequency of Patch Antennas .... 2489
Gain Improvement for Conventional Rectangular Horn Antenna with Additional Two-layer Wire Medium Structure ................................................................. 2493
A New Type of Differential Transmission Lines with Surface Plasmon Polaritons in Microwave Regime 2498
Tight Focusing of Circularly Polarized Laser Light by Amplitude Zone Plate with Chromium Rings ... 2501
Orbital Angular Momentum of a Gaussian Beam without Optical Vortices Produced by Cylindrical Lenses ................................................................. 2506
Metalens Investigation with Different Sectors Number ........................................ 2509
Highly Efficient and Low Cost Radio Frequency Rectifier for Energy Harvesting Applications ...... 2513
Design of Reflection-type Metasurface with Phase Discontinuities ......................... 2517
Comparison of Chirp and Chaotic Wideband Signals for Hydroacoustics ................ 2521
Application of Harmonic Wavelets to Processing Oscillating Hydroacoustic Signals ........ 2528
AMD Codes Based on Wavelet Transform ......................................................... 2534
Nonuniform Lossy Transmission Lines with Fractional-order Elements Using NILT Method ...... 2540
Scattering of Infrared by Prismatic Cloud Ice Crystals .................................... 2548
Millimeter-wave Propagation and Attenuation in Closed Packed Sea-foam Layer and Complex Dielectric Constant of Sea-foam Using Split-step Fourier Transform ......................... 2556
Research on Harmonic Transmission Characteristics of Capacitor Voltage Transformer ........ 2564
Design of Double Bowtie Ring Shaped Slot Nano-antenna and Their Absorption Properties ... 2571
Room Temperature Strong Coupling of Monolayer WS2 with Gold Nanoantennae .......... 2578
Influence of Seam Type with Wave Absorbing Sponge on Shielding Effectiveness for Electromagnetic Shielding Clothing ......................................... 2581
Power Transfer $kQ$ View on Parallel-faced Square Spiral Coils ....................... 2587
UHF RFID Dipole Tag with Modified Multi-fractal Cantor Arms for Broadband Operation .......... 2592
Design of All-optical Photonic Crystal Half Adder with T-shaped Waveguides Using Path Difference Based Interference ............................................. 2596
Investigation on Power Efficiency of GPON with Heterogeneous Traffic .................. 2603
Microwave Heating with Nano Ferro Fluid for Heavy Oil Application ...................... 2608
Response of Radar Cross Section Reduction Bandwidth to the Dielectric Constant .......... 2612
An Embroidered Millimeter Full Wave Dipole Antenna for UWB Applications ............. 2617
Design of Narrow Wall Slotted Waveguide Antenna for X-band Application ............... 2625
A New Non-parametric Bayesian Based Space Upscaling Method for In-situ Soil Moisture Sampling ... 2629
120 W Wireless Power Transfer System for the Wireless Seat in Automobile ............ 2635
Tunable Plasmon-induced Transparency in Bilayer Graphene Metamaterials ................ 2638
Develop a Demonstration Kit for Education of Circuit Design with Radiated EMI Control .... 2641
Design of Implantable Monopole Inset-feed C-shaped Slot Patch Antenna for Bio-medical Applications ... 2645
Inductance Calculation for the Curved Rectangular Coil ........................................ 2650
Design of a Compact Self-coupled Resonator and Dual-band Bandpass Filter in 0.13-μm CMOS Technology for Millimetre-wave Application .............................. 2653
Reduction of Volume Integral Equations for Penetrable Body-of-Revolution Structures .... 2659
Time-domain A-EFIE Solution Based on Nyström Scheme with MOD Approach ........... 2663
Influence of Wave Absorbing Material on Shielding Effect of the Neckline of Electromagnetic Shielding Clothing .............................................................. 2667
Design and Performance Evaluation of FBG-based Temperature Sensors Network .......... 2673
Design of $2\times2$ MIMO Microstrip Antenna Rectangular Patch Array for 5G Wireless Communication Network ............................................................... 2679
Printed Traveling Wave Antenna with Vertical Transition for Wireless Communications ............... 2684
The Effect of 2.45 GHz Electromagnetic Interference on a Microcontroller IC ...................... 2689
Holographic Design of Arbitrary Multi-beam Leaky-wave Antennas .................................. 2695
Terahertz Far-field Subwavelength Imaging by Frequency Scanning ................................... 2700
An Empirical Characterization of a Flexible Current Probe for In-Circuit Impedance Measurement . 2703
Analysis of Design Parameter Issues for Next Generation OFDMA Downlinks .................... 2707
A Novel Doublet Hermite Pulse for Performance Enhancement and Interference Mitigation in UWB STC Systems ................................................................. 2715
Optimization of Coil Geometry Using Strongly Coupled Magnetic Resonance at 13.56 MHz ISM Band 2722
Design of a Subharmonic Mixer for Millimeter-wave Applications .................................. 2727
Visibility Range Distribution Modeling for Free Space Optical Link Design in South Africa: Durban as Case Study ................................................................. 2732
Design Considerations of a Circular Phased Array 4 × 4 MIMO Antenna for Ad Hoc Connected Car System ................................................................. 2742
Surface Plasmon Bragg Grating Using Hybrid Metal Insulator Metal Plasmonic Waveguide ........ 2747
Comparisons of the Super-resolution TOA/TDOA Estimation Algorithms ...................... 2752
A Photonic Assisted Analog-to-Digital Converter (p-ADC) Based on a 10 GHz Frequency Comb Source 2759
Experimental Study on Textile Properties for Wearable Absorber Using Cavity Method .......... 2765
An Alternating Iterative Hybrid Beamforming Method for Millimeter Wave Large-scale Antenna Arrays ................................................................. 2769
Enhancement of Electromagnetic Radiation Source Reconstruction Utilizing Sparseness ........ 2777
Robust Adaptive Beamforming against the Array Pointing Error .......................... 2782
Parameter Estimation of Polynomial Phase Signal Based on Particle Swarm Optimization .... 2790
Near-field Effects on Light Absorption in Nanoparticle System .................................. 2797
A Novel Dual-band Millimeter-wave Antenna for Automotive Radar and Multi-gigabit Wireless Communications ................................................................. 2802
A Study on Fibre Weave Effect on Intra-pair Skew of Differential Lines Using Analytical Approach .. 2808
Backscattering Reduction of Dihedral Corner Reflector with Metallo-dielectric Structure Based on Sierpinsky Carpet Array ................................................................. 2813
Performance Enhancement of Coupled-fed Printed Log-periodic Antenna Using Complimentary Split Ring Resonator ................................................................. 2817
Matlab Simulation of Nonlinear Electrical Networks via Volterra Series Expansion and Multidimensional NLT ................................................................. 2822
Compact Dumbbell Shaped Microstrip Antenna with Suppressed Harmonics .................. 2838
The Method for Solving the Inverse Problem of Bistatic Remote Sensing of the Sea Surface with Moving Receiver and Transmitter ................................................................. 2844
The Use of Underwater Sonar at Small Angles of Incidence for In-Situ Measurements of Sea Surface Parameters ................................................................. 2850
ISAR Imaging and Target Characterization in the Presence of Multiplicative Noise ................ 2857
On the Performance Characteristics of a Thin-wire Zigzag Circular-loop Antenna ................ 2864
Full-wave Electromagnetic Optimizations of Photonic Crystals Involving Dielectric Rods .................. 2871
Retrieving Chlorophyll-a Levels, Transparency and TSS Concentration from Multispectral Satellite Data by Using Artificial Neural Networks .................................................. 2876
Integration of Sparse Array Feed and Phase Correction to Design High Gain Resonant Cavity Antennas 2884
Design and Multiphysics Analysis of a High Power RF Window for LHCD System of Tokamaks ............... 2888
The Growth Dependent Radiative Properties of Microalgae and Light Field Distribution within Photobioreactors .................................................................................................................. 2895
Comparison of Nano On-chip Dielectric Ridge Waveguides with Graded Junction ................................. 2903
A Double Negative Metamaterial Inspired Miniaturized Rectangular Patch Antenna with Improved Gain and Bandwidth ................................................................................................. 2907
Implementation of Bi-modal Statistical Distribution into SPICE Models ................................................ 2914
Phase-corrected H-plane Horn Antenna Based on Corrugated Substrate Integrated Waveguide .......... 2920
Transmission Characterization of Glucose Solutions at Ku-band for Non-invasive Glucose Monitoring 2925
A 93-GHz Beam Switched Grid Array Antenna on PCB ....................................................................... 2929
A Compact Dualband Circularly Polarized GNSS Antenna ...................................................................... 2932
A Tapered Leaky-wave Slot Antenna with Wideband Boresight Radiation ............................................. 2936
Broadband Circularly Polarized Antenna Using Metasurface ................................................................. 2940
Usability of Hilbert Transform for Complex Channel Transfer Function Calculation in 60 GHz Band . 2945
A Novel Spoof SPP-fed Circular Patch Antenna with Wideband Harmonic Rejection ......................... 2952
General Condition to Achieve Negative Group Delay Transmission in Coupled Resonator Structure .. 2956
Extraction of Electrical Properties of Strokes from Magnetic Resonance Scans — Testing on Simplified Head Phantoms ...................................................................................................... 2961
Influence of Media Type on Heating of Selected Magnetic Nanoparticles with Time-harmonic Magnetic Fields ................................................................................................................... 2966
Numerical Study of Propagation of EM Waves through Human Head .................................................... 2971
A Compact Passive Microwave Calibration Target for Full-polarized Radiometer ............................... 2977
Enhancement of Gain with Coplanar Isosceles Triangular Patch Antenna for Dual-band Applications 2981
Design of Slot Antenna Array for Tracking Radar Using Particle Swarm Optimization ..................... 2985
Circuit Modeling and Simulation of CMOS Circuits Latchup Induced by Microwave Pulse Injection . 2988
Broadband Supercontinuum Generation in Photonics Crystal Fiber Pumped by Femtosecond Carbon-Nanotube-based Passively Mode-locked Erbium-doped Fiber Laser .............................................. 2993
3D Correlation Function of a Uniform Circular Array Using Maximum Power in the Direction of Arrival .............................................................................................................................................. 2996
Electromagnetic Properties of Magnetite/Epoxy Resin Composites at X-band Frequency ..................... 3004
A Low-power Low-voltage Current-reused Voltage-controlled Oscillator with Amplitude-balanced Technique ........................................................................................................................................... 3011
Hybrid Method Combining Generalized T Matrix of Single Objects and Foldy-Lax Equations in NMM3D Microwave Scattering in Vegetation ................................................................................. 3016
A High Gain Six Band Frequency Independent Dual CP Planar Log Periodic Antenna for Ambient RF Energy Harvesting .......................................................................................................................... 3024
Incident Wave and Unidirectional Wave Source Implementation in Crank-Nicolson Scheme for One-dimensional Maxwell’s Equations ............................................................................... 3029
A Compact Four Element MIMO Slot Antenna for Ultra-wideband Application ............................... 3036
A Low-field Portable Magnetic Resonance Imaging System for Head Imaging .................................. 3038
Size-miniaturized Bandpass Filter Made of Folded Stepped-impedance Resonators with Adjacent and Nonadjacent Coupling for Selectivity Enhancement ...................................................... 3042
Enhanced Security Functionality for Communication Networks in Smart Grid Systems ....................... 3049
Scattering of Lossy Dielectric Surfaces in Full Wave Simulation of Maxwell’s Equations with Dense Grid and Neighborhood Impedance Boundary Conditions ...................................................... 3054
Hyperspectral Target Detection Based on Sparse Errors Matrix ............................................................. 3058
Study on Refractivity Terahertz Gas Sensor of Metal Triangular Cylinder Array ................. 3063
Graphene Based Surface Plasmon Resonance Gas Sensor with Magnetic Field Control for Terahertz .... 3068
Graph-based Femtocell Enhanced Universal Resource Allocation Strategy for LTE-A HetNets ........... 3073
Long Range Wireless Power Transfer via Magnetic Resonance ........................................... 3079
Level Anti-crossing in 13C-enriched Diamond ................................................................. 3086
Bench Top Wireless Power Transmission Using Magnetic Resonance for Multiple Devices ........... 3092
A TSVD-based Approach for Flexible Spatial Encoding Strategy in Portable Magnetic Resonance Imaging (MRI) System ................................................................. 3100

Author Index