

Contents

A New Computer Aided LNA Design Approach Targeting Constant Noise-figure and Maximum Gain ..	9
EDA Designs of RFIC Inductors	14
CAD Models for Estimating the Capacitance of a Microstrip Interconnect: Comparison and Improvisation	18
Spacecraft Power Systems Design to Minimize Electro Magnetic Interference (EMI) Effects	24
Intertwined Two-section Dual-polarized Log Periodic Dipole Antenna	30
A Complete Simulation of a Radiated Emission Test according to IEC 61000-4-20	34
Design and Modeling of Planar Power Switching Inductors for Monolithic and Single Chip DC-DC Power Converters	39
Study of Magnetic Field Distribution in Infant Incubators	43
Scientific Thematic Network “Electromagnetic Compatibility of Devices, Systems and Installations for IT Community EMC-Net”	47
Implanted Antenna for an Artificial Cardiac Pacemaker System	51
Extension of the Finite Network Method to Magnetic Materials and Its Application to Eddy-current Testing	55
Calculation of Electromagnetic Field with Integral Equation Based on Clifford Algebra	62
Wiener-Hopf Analysis of the Diffraction by a Terminated, Semi-infinite Parallel-plate Waveguide with Four-layer Material Loading	72
Combined Perturbation and Wiener-Hopf Analysis of the Diffraction by Two Parallel, Corrugated Half-planes	78
Polarization Evolution in Weakly Anisotropic Media: Quasi-Isotropic Approximation (QIA) of Geometrical Optics Method and Its Recent Generalizations	85
Field Propagation in Nanoporous Metal Waveguides	90
Metamaterial Comprising Plasmonic Nanolasers	95
Wave Interaction with Double-negative and Double-positive Plates	99
Mutual Coupling Effects on the Mean Capacity of MIMO Antenna Systems	103
Ultrashort Electromagnetic Pulse Dynamics in the Singular and Weak Dispersion Limits	107
Optimizing of System Partition and Software Architecture of Distributed Control Computer of Power Electronics Facility	112
EMI in Induction Motor Drive Fed from IGCT Voltage Source Inverter	117
PWM Strategy Applied to Realized Matrix Converter System	122
Technological Aspects of Noise-suppressing Filter Design	126
Testing of Robust Control Characteristics for Traction PMSM	131
Automated Passive Ground Remote Surveillance of Critical Oil & Gas Transport Infrastructures	136
Comparative Analysis of WLAN, WiMAX and UMTS Technologies	140
Research on Asymmetric Characteristics of Mobile Communications System Based on Electromagnetic Radiation	145
Reflectarray with Variable-patch-and-slot Size	150

Design of an UWB Antenna with Band-rejection Characteristic.....	155
A Novel Antenna Design for UHF RFID Tag on Metallic Objects.....	158
A Neural Network Approach to the Prediction of the Propagation Path-loss for Mobile Communications Systems in Urban Environments.....	162
Calculation of EM Characteristics of a Cellular Phone Handset by Time-domain MoM.....	167
Topology Finite Element Method for Field Calculation Problems.....	173
Design of Conformal Tapered Leaky Wave Antenna.....	177
Design of an Internal Wideband Antenna for DTV Laptop Application.....	182
Compact Representation of the Inductance Coefficients in Presence of Uncertain Parameters.....	187
Balancing the Interference Probability between Systems for Sharing Frequency Spectrum.....	193
Impulse Response of Seafloor Hydrocarbon Reservoir Model.....	198
Generalized Approach for Phase Interferometric Measurements of Electromagnetic Field.....	204
Artificial Neural Network Employment in the Design of Multilayered Microstrip Antenna with Specified Frequency Operation.....	210
Electrical Vibrations of Yeast Cell Membrane.....	215
A New Spectral Method for Scattering by Impedance Polygons.....	220
A Finite Difference Frequency Domain Study of Curvature Lifted Modes Degeneration.....	222
Optimization of a Microwave Amplifier Using Neural Performance Data Sheets with a Memetic Algorithm.....	227
A Simple and Accurate Model for Wire Diagnosis Using Reflectometry.....	232
Effect of Motion of the Scatterers on Localization: Quasi Localization and Quasi Mobility Edge.....	237
Multi-layered Fe Films for Microwave Applications.....	242
Modal Analysis of Extraordinary Transmission through Subwavelength Slits in a Silver Plate.....	246
Low Frequency Relaxation Oscillations in a Capacitive Discharge Chamber Connected to a Peripheral Grounded Chamber.....	250
RF-ID Tag Location Using RF-over-fibre Techniques.....	255
Design of New DGS Hairpin Microstrip Bandpass Filter Using Coupling Matrix Method.....	261
Inverse Problem of ECG for Different Equivalent Cardiac Sources.....	266
A Sensitivity Matrix Based Microwave Tomography Exploiting an Adjoint Network Theorem.....	272
Identification of Multiple Cylindrical Targets Located above Perfectly Conducting Flat Surface by Artificial Neural Networks.....	277
A Dynamic Simulation Approach for Electrostatic Force Microscopy on Inhomogeneous Sample Material.....	282
Controlled Approximation of the Coefficient Matrix of the Finite Network Method.....	287
Numerical Analysis of Cylindrical Cavities Used for Microwave Heating, Employing the Mode Matching Technique.....	292
Driving Characteristics for Hybrid Electric Drive with Super-capacitor as Energy Storage Unit.....	296
Steady-state Analysis of Salient Poles Synchronous Motor with Damper Based on Determination of the Magnetic Field Distribution.....	300
On the Influence of Slot Width of Field Shapers in Electromagnetic Metal Forming of Aluminum Sheets.....	305
Amplification of Acoustic-electromagnetic Waves in GaN Films.....	310
Energy Emission from Evanescent Wave and Interference of Opposite Wave Streams: Near Field Coherent Scattering by Random Medium.....	314
Near Field Effect in Microwave Radiation of Periodically Heated Plane-like Thermal Source.....	319
Operation of Evanescent Wave Intensity Using Metamaterials of Negative Permittivity and Permeability.....	324
Performance of a Folded Dipole with a Closed Loop for RFID Applications.....	329
Radiation Characteristics of Optimized Ultra Wideband Printed Dipoles for Different Impulse Excitations.....	332

Collinear and Coparallel Principles in Antenna Design	337
An Expression for the Intrinsic Coupling Unbalance of a Symmetrical 4 Port Directional Coupler in Terms of the Cross Ratio of Its 4 Eigenadmittances or 4 Eigenimpedances	342
Development of 60 GHz Band Fabry-Perot Resonator	345
MUSIC-type Imaging of Dielectric Spheres from Single-Frequency, Asymptotic and Exact Array Data ..	348
Propagation Characteristics of a Nonlinear TM Surface Wave in a Parallel Plate Superconductor/Antiferromagnet Waveguide	353
A New GL Method for Solving Differential Equation in Electromagnetic and Phys-Chemical and Financial Mathematics	357
Interference Calculation for ATSC System against Interference from ISDB-T System Using Computational Simulation	366
Feasibility of Defect Detection in Concrete Structures via Ultrasonic Investigation	371
Microwave Phase Interferometry for Nondestructive Testing in Industry	376
A Signal Explanation for the Electromagnetic Induction Law	379
Analytical Solutions to the Applicators for Microwave Textile Drying by Means of Zigzag Method	384
Modal Analysis of Miniature Microstrip Patch Antennas Based on Fractal Geometry	388
Algorithm for Noise Reduction in Output Signal of Race-track Core Fluxgate	393
Microwave Applicator for Treatment of Atherosclerosis	397
Antenna Rotation Aperture Synthesis for Short-range Personnel Scanning at mm-wavelengths	400
Printed Antennas Tuned by Transversely Magnetized Ferrite Operating at a Novel Resonant Mode	411
Neural Network — Based Design of EBG Surfaces for Effective Polarization Diversity of Wireless Communications Antenna Systems	415
Multiple Signal Direction of Arrival (DoA) Estimation for a Switched-Beam System Using Neural Networks	420
Design of Dual-band Reconfigurable Smart Antenna	425
Inversion Reconstruction of Signals Measured by the NMR Techniques	430
The Effect of Non-homogeneous Parts into Materials	434
Magnetic Field Approximation in MR Tomography	439
Progress in Gain Performance of Parametrically Amplifying Travelling-wave Antennas (PATA): PATA Analogous to Travelling-wave Tube Amplification and Negative Resistivity of Esaki Diodes	443
Design, Simulation and Realization the Specific Source of Light	447
Preemphasis Corection of Gradient Magnetic Field in MR Thomograph	450
Optimization Method of EMI Power Filters	455
T_1 Relaxation Time of the Xenon 129 Influenced by Magnetic Susceptibility of the Laboratory Glasses ..	459
Experiments of Accuracy Air Ion Field Measurement	463
The Calculation of the V-shape Microstrip Line Impedance by the Conformal Mapping Method	467
Experimental Results of a Wave Guide Using a Photorefractive Material SBN:Ce	470
A Higher-order Accurate FDTD Solution to Scalar SHG Problems	475
Full-wave Solution of the Second Harmonic Generation Problem Using a Nonlinear FDTD Algorithm ..	479
Spectral Monte-Carlo Simulations of Photon Penetration in Biotissue in Visible and Near Infrared	483
Modeling and Analysis of Crosstalk between Differential Lines in High-speed Interconnects	488
A Novel Time-domain Approach Using TDR/TDT for Synthesizing SPICE-compatible Models of Power Delivery Networks with Resonance Effect	493
A Study of Layout Strategies in RF CMOS Design	497
Ultra-wide Band Noise-signal Radar Utilizing Microwave Chaotic Signals and Chaos Synchronization ..	503

High-dimensional Chaotic Regimes in Distributed Radiophysical Systems Operating near the Cutoff Frequency.....	507
Improving the Accuracy of PHEMT Models Using Corrective Artificial Neural Networks.....	512
A Dual Resonance Three Segment Rectangular Dielectric Resonator Antenna.....	516
Design and Comparison of Exposure Chambers for Verification of Microwave Influence on Biological Systems.....	521
The Effects of 884 MHz GSM Wireless Communication Signals on Spatial Memory Performance: An Experimental Provocation Study.....	526
EBG Substrate in Unilateral Fin Line Resonator.....	530
Time Reversal in Lossy Material: An Assessment.....	535
Eigenfunction Expansions of Source-excited Electromagnetic Fields on Open Cylindrical Guiding Structures in Unbounded Gyrotropic Media.....	540
Author Index	545