

2015 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO 2015)

**Ottawa, Ontario, Canada
11 – 14 August 2015**



**IEEE Catalog Number: CFP15NEN-POD
ISBN: 978-1-4799-6812-1**

**Copyright © 2015 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP15NEN-POD
ISBN (Print-On-Demand):	978-1-4799-6812-1
ISBN (Online):	978-1-4799-6811-4

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

PYRAMIDAL HORN ANTENNA DESIGN LOADED BY METAMATERIAL FOR PERFORMANCE ENHANCEMENT	1
<i>C. A. Patel ; S. K. Patel</i>	
COMPUTATIONALLY-EFFICIENT MULTI-OBJECTIVE OPTIMIZATION OF ANTENNA STRUCTURES USING POINT-BY-POINT PARETO SET IDENTIFICATION AND LOCAL APPROXIMATION SURROGATES.....	4
<i>S. Koziel ; A. Bekasiewicz</i>	
MULTIPOINT MODEL ORDER REDUCTION FOR SYSTEMS WITH DELAYS.....	7
<i>E. R. Samuel ; D. Deschrijver ; F. Ferranti ; L. Knockaert ; T. Dhaene</i>	
A NOVEL COMPACT PLANAR UWB ANTENNA WITH L-SHAPED PARASITIC STRIPS.....	10
<i>M. C. Tang ; L. Guo ; H. Xiong ; Q. Zeng</i>	
DESIGN OF SUBSTRATE INTEGRATED WAVEGUIDE COMPONENTS USING MODE-MATCHING TECHNIQUES.....	13
<i>Z. Kordiboroujeni ; J. Bornemann</i>	
A MODE-MATCHING TECHNIQUE FOR THE ANALYSIS OF WAVEGUIDE-ON-SUBSTRATE COMPONENTS.....	16
<i>J. Schorer ; J. Bornemann</i>	
A MINIATURIZED ULTRA-WIDEBAND CPW-FED ANTENNA	19
<i>W. Ding ; S. Liu ; B. Zhan ; G. Wang</i>	
A STUDY ON EFFECTS OF COIL LOCATIONS IN WIRELESS POWER TRANSFER.....	22
<i>X. Shi ; C. Qi ; M. Qu ; S. Ye ; G. Wang</i>	
TOWARDS 3-D CARBON-BASED HETEROGENEOUS INTERCONNECTS	25
<i>J. Zheng ; X. C. Wang ; W. S. Zhao ; G. Wang ; W. Y. Yin ; L. Sun</i>	
EXTENDED KACZMARZ ALGORITHM WITH PROJECTION ADJUSTMENT.....	28
<i>C. Lin ; J. Zang ; A. Qing</i>	
MULTI-OBJECTIVE OPTIMIZATION OF DIELECTRIC LAYER PBG FILTER STRUCTURE ON THE WEIGHTING FACTORS METHOD AND THE RESPONSE SURFACE METHODOLOGY	31
<i>H. Yang ; C. Huang ; G. Wang ; S. Meng</i>	
STUDY ON TUNABLE PERIODIC GRAPHENE SPLIT-RING RESONATOR (GSRR) STRUCTURES USING FDTD METHOD	34
<i>X. H. Wang ; J. Hu ; W. Y. Yin ; Z. David Chen</i>	
EFFICIENT MODELING OF THE WIRELESS POWER TRANSFER EFFICIENCY FOR VARYING POSITIONS AND ORIENTATIONS BETWEEN TRANSMITTER AND RECEIVER.....	37
<i>G. J. Stockman ; D. Vande Ginste ; H. Rogier</i>	
OPTIMIZATION OF LEAKY-WAVE ANTENNAS BASED ON NON-UNIFORM HMSIW.....	40
<i>N. Nguyen-Trong ; T. Kaufmann ; L. Hall ; C. Fumeaux</i>	
A CHEBYSHEV EXPRESSION FOR ARBITRARY AMPLITUDE COSINE ARGUMENTS	44
<i>G. Lemay ; P. Depalle</i>	
BEHAVIORAL MACROMODELING OF HIGH-SPEED DRIVERS VIA COMPRESSED TENSOR REPRESENTATIONS	48
<i>C. Siviero ; S. Grivet-Talocia ; I. S. Stievano ; G. Signorini</i>	
ANALYSIS AND DESIGN OF PASSIVE MICROWAVE COMPONENTS IN SUBSTRATE INTEGRATED WAVEGUIDE TECHNOLOGY	51
<i>E. Diaz-Caballero ; A. Belenguer ; H. Esteban ; V. E. Boria ; C. Bachiller ; J. V. Morro</i>	
EXPEDITED DESIGN OPTIMIZATION OF COMPACT MICROWAVE STRUCTURES USING ADJOINT SENSITIVITIES AND SPACE MAPPING.....	54
<i>S. Koziel ; A. Bekasiewicz ; L. Leifsson</i>	
ITERATIVE DETERMINATION OF CONJUGATE IMAGE IMPEDANCES FOR N-PORT NETWORKS.....	57
<i>M. Dionigi ; S. Koziel ; M. Mongiardo ; R. Perfetti</i>	
ACCURATE MODELING OF BUCK CONVERTERS WITH MAGNETIC-CORE INDUCTORS	61
<i>A. Astorino ; G. Antonini ; M. Swaminathan</i>	
FREQUENCY SPLITTING OF SPOOF SURFACE PLASMON POLARITON WAVES WITH A METAL DISC-TYPE DEVICE.....	65
<i>J. Shibayama ; D. Kusunoki ; J. Yamauchi ; H. Nakano</i>	

MODELING LUMPED SOURCES AND RESISTANCES FOR THE FDTD THAT USES THE SCATTERED FIELD FORMALISM.....	68
<i>J. E. Roy</i>	
EFFICIENT DESIGN OPTIMIZATION OF COMPACT DUAL-BAND MICROSTRIP BRANCH-LINE COUPLER USING RESPONSE FEATURES.....	71
<i>S. Koziel ; A. Bekasiewicz</i>	
FAST MULTI-OBJECTIVE DESIGN OPTIMIZATION OF COMPACT UWB MATCHING TRANSFORMERS USING VARIABLE-FIDELITY EM SIMULATIONS AND DESIGN SPACE REDUCTION.....	74
<i>A. Bekasiewicz ; S. Koziel ; L. Leifsson</i>	
PASSIVE MACROMODELING OF ONE-PORT IMMITTANCES VIA DIRECT RATIONAL FITTING OF SPECTRAL FACTORS.....	77
<i>S. Grivet-Talocia ; A. Ubolli ; G. C. Calafiore</i>	
AUTOMATED EM-BASED DESIGN OF BANDPASS FILTER BY SEQUENTIAL PARAMETER EXTRACTION AND SPACE MAPPING TECHNIQUE.....	81
<i>S. Li ; X. Fan ; P. D. Laforge</i>	
DISPERSION ANALYSIS IN TIME-DOMAIN SIMULATION OF COMPLEX DISPERSIVE MEDIA	85
<i>A. Ijeh ; M. M. Ney ; F. Andriulli</i>	
ADVANCED DESIGN OF A LOW ENERGY ELECTRON SOURCE.....	89
<i>A. Leggieri ; D. Passi ; F. Di Paolo ; B. Spataro ; E. Dyunin</i>	
DISTRIBUTED PARALLEL COMPUTING TECHNIQUE FOR EM MODELING	93
<i>J. Zhang ; K. Ma ; F. Feng ; Z. Zhao ; W. Zhang ; Q. Zhang</i>	
MODELING OF FREQUENCY RESPONSE IN VORTEX STATE OF HIGH TEMPERATURE SUPERCONDUCTING MICROSTRIP AND SLOTLINE	96
<i>J. Andrews ; V. Mathew</i>	
START-UP SOLUTIONS FOR ULTRA-LOW POWER RF HARVESTING SCENARIOS	100
<i>D. Masotti ; A. Costanzo</i>	
TIME VARYING GAIN AMPLIFIER LINEARITY ENHANCEMENT FOR WIDE DYNAMIC RANGE IN RADAR RECEIVER	103
<i>A. Almslmany ; C. Y. Wang ; Q. S. Cao ; Q. S. Zeng</i>	
CHARACTERIZATION OF CMOS ON-CHIP TRANSMISSION LINES TOWARDS SUB-THZ REGIME	107
<i>Z. Feng ; N. Li ; X. Li</i>	
MODELING AND LINEARIZATION OF POWER AMPLIFIERS FOR CONCURRENT DUAL-BAND DIFFERING IN POWER	110
<i>C. Wang ; X. W. Zhu ; P. Miao ; Z. Song</i>	
QUANTUM ELECTRODYNAMIC MODELING OF QUANTUM DOT LUMINESCENCE IN PLASMONIC METAMATERIALS	113
<i>M. Fang ; Z. Huang ; X. Wu</i>	
EFFICIENT SMALL-SIGNAL EXTRACTION TECHNIQUE FOR ULTRA-THIN BODY AND ULTRA-THIN BOX FD-SOI TRANSISTOR.....	116
<i>D. Maafrri ; M. C. E. Yagoub ; R. Touhami ; A. Slimane ; M. T. Belaroussi ; J. P. Raskin</i>	
STATISTICAL DESIGN CENTERING OF RF CAVITY LINEAR ACCELERATOR VIA NON-DERIVATIVE TRUST REGION OPTIMIZATION	119
<i>A. K. S. O. Hassan ; H. L. Abdel-Malek ; A. S. A. Mohamed ; T. M. Abuelfadl ; A. E. Elqenawy</i>	
PARAMETRIC MODELING USING SENSITIVITY-BASED ADJOINT NEURO-TRANSFER FUNCTIONS FOR MICROWAVE PASSIVE COMPONENTS	122
<i>F. Feng ; Q. J. Zhang</i>	
UNIFIED AUTOMATED KNOWLEDGE-BASED NEURAL NETWORK MODELING FOR MICROWAVE DEVICES.....	125
<i>W. Na ; Q. j. Zhang</i>	
RAPID HIERARCHICAL SIMULATION-DRIVEN DESIGN OF COMPACT MULTI-SECTION BRANCH-LINE COUPLERS	128
<i>S. Koziel ; P. Kurgan</i>	
FAST AND SIMPLE TECHNIQUE FOR COMPUTING CIRCUIT NOISE FIGURE FROM COMPONENT NOISE MODEL USING ARTIFICIAL NEURAL NETWORK.....	131
<i>W. Zhang ; S. Yan ; F. Feng ; Q. Zhang</i>	
ACCELERATED 3D MOM SOLUTION OF ADAPTIVELY REFINED SUCCESSIVE NEW MESHES ON PACKAGE-BOARD GEOMETRY	134
<i>G. Chatterjee ; A. Das ; D. Gope</i>	

SAR DISTRIBUTION OVER WHOLE HUMAN BODY EXISTED IN THE FIELD OF MOBILE BASE STATION ANTENNA	137
<i>H. Elsadek ; H. Eldeeb ; H. Abdallah ; N. Baghrzadeh</i>	
SHAPE OPTIMIZATION OF PLANAR MICROWAVE COMPONENTS.....	140
<i>N. Mahdi ; S. Bila ; M. Aubourg ; C. Durousseau ; J. Puech ; D. Baillargeat</i>	
DESIGN OF A BROADBAND, HIGH GAIN, HOLLOW CAVITY, MULTI-LAYER ANTENNA	144
<i>Z. Ding ; S. Xiao ; M. C. Tang ; C. Liu ; B. Z. Wang ; Q. Zeng</i>	
SINGLE-BLOCK ANALYSIS OF THE CENTRAL SECTION OF E-PLANE BRANCHED OMT	147
<i>L. Accatino ; G. Bertin ; G. G. Gentili</i>	
EFFECTS OF HUMAN HEAD ON FREQUENCY RECONFIGURABLE PIFA ANTENNA PERFORMANCE AND SAR CALCULATIONS	150
<i>M. A. Al-alaa ; H. A. Elsadek ; E. A. Abdallah</i>	
DESIGN OF CROSS-COUPLED SUBSTRATE INTEGRATED WAVEGUIDE FILTERS WITH THE MODE-MATCHING AND FINITE ELEMENT METHODS	153
<i>R. Beyer ; P. W. Krauss ; T. Sieverding</i>	
STATISTICAL ANALYSIS OF INTERMODULATION DISTORTION IN RF CIRCUITS USING DECOUPLED POLYNOMIAL CHAOS	156
<i>S. G. Nabavi ; E. Gad ; M. Nakhla ; R. Achar</i>	
CLOSED-FORM OPTIMIZATION OF MULTI-TRANSMITTER WIRELESS POWER TRANSFER SYSTEMS	159
<i>H. D. Lang ; A. Ludwig ; C. D. Sarris</i>	
A REVIEW OF IMPLICIT SPACE MAPPING OPTIMIZATION AND MODELING TECHNIQUES.....	162
<i>Q. S. Cheng ; J. W. Bandler ; S. Koziel</i>	
THERMAL HEATING DURING MICROWAVE PROCESSING FOR CERIUM OXIDE PARTICLES PACKING; MULTIPHYSICS MODELLING APPROACH. STUDY OF THE EFFECT OF PARTICLE AND NECK SIZES	165
<i>H. Hammoud ; F. Valdivieso ; S. Vaucher</i>	
A WAVE EQUATION BASED UNCONDITIONALLY STABLE EXPLICIT FDTD METHOD.....	169
<i>W. Fan ; Z. David Chen ; S. Yang</i>	
ELECTROMAGNETIC MODELING AND OPTIMIZATION OF MAGNETIC RESONANT COUPLING WIRELESS POWER TRANSFER USING COIL ARRAY	172
<i>F. Jolani ; Y. q. Yu ; Z. David Chen</i>	
MODELING AND DESIGN OF A SWITCHED TRANSCEIVER ARRAY FOR TISSUE IMAGING	175
<i>A. S. Beaverstone ; N. K. Nikolova</i>	
NUMERICAL MODELLING AND CHARACTERIZATION OF THE MICROWAVE BREAKDOWN IN OMUX FILTERS	178
<i>K. Frigui ; D. Baillargeat ; S. Bila ; S. Verdeyme ; A. Catherinot ; J. Puech ; L. Estagerie ; D. Pacaud ; H. Dillenbourg</i>	
FAST MULTIDIMENSIONAL STATISTICAL ANALYSIS OF MICROWAVE NETWORKS VIA STROUD CUBATURE APPROACH.....	182
<i>M. Ahadi ; M. Kabir ; S. Roy ; R. Khazaka</i>	
MODELING OF ELECTROMAGNETIC HEATING IN RF COPPER ACCELERATING CAVITIES.....	185
<i>M. H. Awida ; I. Gonin ; G. Romanov ; T. Khabiboulline ; V. Yakovlev</i>	
MULTIPHYSICS ANALYSIS OF FREQUENCY DETUNING IN SUPERCONDUCTING RF CAVITIES FOR PROTON PARTICLE ACCELERATORS	188
<i>M. H. Awida ; I. Gonin ; D. Passarelli ; A. Sukanov ; T. Khabiboulline ; V. Yakovlev</i>	
HIGH-RESOLUTION 3-D MICROWAVE BREAST IMAGING USING SPATIAL PRIOR CONSTRAINTS WITH VARIABLE STRENGTH	191
<i>L. M. Neira ; B. D. Van Veen ; S. C. Hagness</i>	
MODELING AND INFLUENCE OF MATCHING NETWORK INSERTION LOSSES ON AMBIENT MICROWAVE POWER HARVESTER	194
<i>C. H. P. Lorenz ; S. Hemour ; K. Wu</i>	
A SCATTERING SLAB AND TIME REVERSAL MAKE A COMPUTATIONAL SUPERLENS.....	197
<i>W. J. R. Hoefler ; P. P. M. So</i>	
ACCURATE PARAMETER EXTRACTION OF SUBSTRATE INTEGRATED WAVEGUIDE WITH EQUIVALENT RESONATOR MODEL	200
<i>F. Xu ; K. Wu</i>	
ITERATIVE REFINEMENT OF FIBROGLANDULAR REGION WITH MICROWAVE BREAST IMAGING	203
<i>D. Kurrant ; A. Baran ; E. Fear ; J. LoVetri</i>	

ACCURATE POLYNOMIAL CHAOS EXPANSION FOR VARIABILITY ANALYSIS USING OPTIMAL DESIGN OF EXPERIMENTS	206
<i>A. K. Prasad ; M. Ahadi ; B. S. Thakur ; S. Roy</i>	
PARALLEL BACK-PROPAGATION NEURAL NETWORK TRAINING TECHNIQUE USING CUDA ON MULTIPLE GPUS	210
<i>S. Zhang ; P. Gunupudi ; Q. J. Zhang</i>	
FORMULATIONS OF AN ACCURATE AND STABLE MATRIX-FREE TIME-DOMAIN METHOD IN 2-D UNSTRUCTURED MESHES	213
<i>J. Yan ; D. Jiao</i>	
TIME-DOMAIN PARTIAL ELEMENT EQUIVALENT CIRCUIT SOLVER INCLUDING NON-LINEAR MAGNETIC MATERIALS	216
<i>D. Romano ; G. Antonini ; A. E. Ruehli</i>	
APPLICATION OF THE MODEL-BASED INVERSION ALGORITHM TO MICROWAVE DATA	219
<i>M. Li ; A. Abubakar ; T. M. Habashy</i>	
A NEW COMPUTATIONAL SPEED-UP BASED CRITERION FOR ACCELERATING THE WCAWE MORE TECHNIQUE	222
<i>M. Jemai ; A. B. Kouki</i>	
LEAKAGE CHARACTERISTICS OF SUBSTRATE INTEGRATED WAVEGUIDE WITH PARALLEL METALLIC PLATES	225
<i>X. Li ; C. Lu ; H. S. Wu ; C. K. C. Tzuang</i>	
EXTRACTION OF TL-LUMPED RF MACROMODELS FOR MEMS SWITCHES.....	228
<i>G. Ciuprina ; C. B. Dita ; A. S. Lup ; D. Ioan ; A. Stefanescu</i>	
A NOVEL MULTI-LAYER ELECTROMAGNETIC BAND GAP STRUCTURE (EBG) COMPRISED OF 3-D LATTICE OF SQUARE RINGS	232
<i>H. Ouassal ; J. Shaker ; L. Roy ; R. Chaharmir</i>	
SIGNAL INTEGRITY CONSIDERATIONS FOR THE PCB IMPLEMENTATION OF MULTI-GIGABIT SERDES LINKS	236
<i>S. A. Bokhari</i>	
ELECTROTHERMAL SIMULATION OF SINGLE-WALLED CARBON NANOTUBE (SWCNT)-BASED PHASE CHANGE MEMORY FOR 3-DICS	239
<i>W. Chen ; W. Y. Yin ; M. Cheng ; J. Guo</i>	
EMBEDDED CAVITY BASED DIELECTRIC LOSS MEASUREMENTS FOR LTCC SUBSTRATES UP TO 110 GHZ.....	242
<i>A. Talai ; F. SteinhauBer ; A. Bittner ; U. Schmid ; R. Weigel ; D. Schwanke ; T. Rittweg ; A. Koelpin</i>	
HYBRID METHODS - EFFICIENT EM CAD AND OPTIMIZATION OF MICROWAVE COMPONENTS AND ANTENNAS	246
<i>F. Arndt</i>	
PROPERTIES ESTIMATION OF INHOMOGENEOUS DISPERSIVE MATERIALS BY ELECTROMAGNETIC MODELING AND DIELECTRIC SPECTROSCOPY	249
<i>F. Ciuprina ; B. Ghiliftoiu</i>	
A NOVEL ALGORITHM FOR EFFICIENT SIMULATION OF NONLINEAR TRANSMISSION LINES FOR RF APPLICATIONS VIA MODEL ORDER REDUCTION	253
<i>B. Nouri ; M. S. Nakhla ; R. Achar</i>	
MAPP: A PLATFORM FOR PROTOTYPING ALGORITHMS AND MODELS QUICKLY AND EASILY	256
<i>T. Wang ; K. Aadithya ; B. Wu ; J. Roychowdhury</i>	
ACCURATE CAPACITANCE AND INDUCTANCE CALCULATIONS FOR KOCH FRACTAL SRRS.....	259
<i>O. A. Safia ; M. C. E. Yagoub</i>	
SPACE MAPPING WITH INVERSE DIFFERENCE TECHNIQUE FOR RECONFIGURABLE ANTENNA DESIGN PROBLEM	262
<i>M. Simsek ; A. Aoad</i>	
DESIGN FORMULAS FOR RADIATION AND CROSSTALK IN SUBSTRATE INTEGRATED WAVEGUIDES	265
<i>M. Pasian ; M. Bozzi ; L. Perregrini</i>	
HIGH-ORDER CONTRAST SOURCE INVERSION OF DIELECTRIC TARGETS USING A DISCONTINUOUS GALERKIN DISCRETIZATION OF THE VECTOR WAVE EQUATION	268
<i>I. Jeffrey ; J. LoVetri</i>	
COMPARISON OF CONTEMPORARY PARAMETERIZED MODEL ORDER REDUCTION TECHNIQUES.....	271
<i>R. Hossain ; P. Gunupudi</i>	

EFFICIENT STOCHASTIC TRANSMISSION LINE MODELING USING POLYNOMIAL CHAOS EXPANSION WITH MULTIPLE VARIABLES	274
<i>J. B. Preibisch ; P. Triverio ; C. Schuster</i>	
HALF-MODE VERSUS FOLDED SIW FILTERS: MODELING AND DESIGN	278
<i>S. Moscato ; N. Delmonte ; L. Silvestri ; M. Bozzi ; L. Perregrini</i>	
DEVELOPMENT OF KNOWLEDGE BASED RESPONSE CORRECTION FOR A RECONFIGURABLE N-SHAPED MICROSTRIP ANTENNA DESIGN.....	281
<i>A. Aoad ; M. Simsek ; Z. Aydin</i>	
STEADY-STATE SIMULATION BASED ON A- AND L-STABLE HIGH ORDER TIME-DOMAIN INTEGRATION METHOD FOR RF APPLICATIONS	284
<i>N. A. Ziki ; R. Khazaka</i>	
PASSIVE REDUCED ORDER MACROMODELING USING HAMILTONIAN MATRIX PENCIL PERTURBATION.....	287
<i>M. T. Kassis ; M. Kabir ; R. Khazaka</i>	
FDTD-BASED TRANSIENT ADJOINT SENSITIVITY ANALYSIS	290
<i>Y. Zhang ; M. H. Bakr</i>	
GEOMETRY EVOLUTION OF MICROWAVE FILTERS EXPLOITING SELF-ADJOINT SENSITIVITY ANALYSIS	293
<i>H. Malhi ; M. H. Bakr</i>	
EFFECTIVE MODELING OF FILTERS IN THE DESIGN AND OPTIMIZATION OF MULTIPLEXERS	296
<i>S. Q. Li ; Y. Wang ; M. Yu</i>	
STABLE FDTD SIMULATIONS WITH SUBGRIDDING AT THE TIME STEP OF THE COARSE GRID: A MODEL ORDER REDUCTION APPROACH.....	299
<i>X. Li ; P. Triverio</i>	
HIGH FREQUENCY HEMT MODELING USING ARTIFICIAL NEURAL NETWORK TECHNIQUE.....	302
<i>J. Gao ; L. Shen ; D. Luo</i>	
OPTICALLY PUMPED PLASMONIC NANOLASERS: EXPERIMENTALLY FITTED TIME- RESOLVED MULTIPHYSICS MODELING OF LASING DYNAMICS (INVITED)	305
<i>J. Fang ; L. J. Prokopeva ; A. V. Kildishev</i>	
MICROWAVE IMAGING WITH CONTRAST SOURCE INVERSION METHOD IN FOCUSING MEDIA	308
<i>A. Menshov ; V. Okhmatovski</i>	
TISSUE-TYPE IMAGING USING ULTRASOUND TOMOGRAPHY.....	311
<i>P. Mojabi ; J. LoVetri</i>	
THE ANTENNA CURRENT GREEN'S FUNCTION AS AN ALTERNATIVE METHOD TO CONVENTIONAL FULL-WAVE ANALYSIS SOLVERS: AN OUTLINE	314
<i>S. M. Mikki ; Y. M. M. Antar</i>	
ELECTRICAL-THERMAL CO-SIMULATION FOR LARGE-SCALE ANALYSIS OF INTEGRATED CIRCUITS	317
<i>T. Lu ; J. M. Jin</i>	
MODELING AND SIMULATION OF A PARTIALLY-MAGNETIZED FERRITE LTCC CIRCULATOR.....	321
<i>S. Yang ; L. Roy ; J. R. Bray ; D. Vincent</i>	
MODELING SUBSTRATE INTEGRATED WAVEGUIDE STRUCTURES USING EFFECTIVE MATERIAL PROPERTIES	325
<i>N. Jess ; B. Syrett ; L. Roy ; R. E. Amaya</i>	
ENHANCED FORMULATION FOR POLYNOMIAL-BASED SURROGATE MODELING OF MICROWAVE STRUCTURES IN FREQUENCY DOMAIN.....	328
<i>J. E. Rayas-Sanchez ; J. L. Chavez-Hurtado ; Z. Brito-Brito</i>	
SUBSTRATE OPTIMIZATION FOR ACCURATE EM SIMULATION	331
<i>L. Zhang ; H. Rueda ; D. Lamey ; H. Kabir ; V. Shilimkar ; K. Kim</i>	
AN MATRIX INVERSION-LESS DERIVED PHYSICALLY EXPRESSIVE CIRCUIT MODEL FOR QUASI-STATIC MULTIPLE CONDUCTOR EM PROBLEMS.....	334
<i>Y. Dou ; L. K. Yeung ; K. L. Wu</i>	
HETEROGENEOUS SAR HEAD DISTRIBUTION MODEL FOR CORRELATION DEMONSTRATION TO EARS CANAL ACOUSTIC NEUROMA PATHOLOGY.....	337
<i>M. Haridim ; T. Haguel ; R. Zemach ; O. Hilly</i>	
TIME-INVARIANT BEHAVIORAL MODELING FOR HARMONIC BALANCE SIMULATION BASED ON WAVEFORM SHAPE MAPS	340
<i>A. R. Amini ; S. Boumaiza</i>	

BEAM SWITCHING ANTENNA BASED ON ACTIVE FREQUENCY SELECTIVE SURFACES.....	343
<i>J. Li ; T. A. Denidni ; Q. Zeng</i>	
DISTRIBUTED MULTIPHYSICS MODELING OF MICROWAVE POWER TRANSISTORS	346
<i>P. H. Aaen ; S. Gillespie</i>	
REVISIT NICKEL CHARACTERIZATION EFFECT ON HIGH-SPEED INTERCONNECT	
PERFORMANCE.....	349
<i>Y. Tao ; F. Scharf</i>	
ADVANCES IN ARTIFICIAL NEURAL NETWORK MODELS OF ACTIVE DEVICES.....	352
<i>J. Xu ; D. E. Root</i>	
HANDHELD-DEVICE BASED EM COMPUTATIONS	355
<i>P. So ; W. Hoefer</i>	
TRENDS ON EDA FOR LOW POWER.....	359
<i>R. Reis</i>	
LARGE SPACE RFIC SPIRAL INDUCTOR PARAMETRIC MODELING TECHNIQUE.....	363
<i>H. Kabir ; V. Shilimkar ; L. Zhang ; K. Kim</i>	
Author Index	