

Natalia K Nikolova

List of Publications by Year in descending order

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97
papers

2,186
citations

279798

23
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254184

43
g-index

102
all docs

102
docs citations

102
times ranked

1488
citing authors

#	ARTICLE	IF	CITATIONS
1	Microwave Imaging for Breast Cancer. IEEE Microwave Magazine, 2011, 12, 78-94.	0.8	489
2	Analytical Adjoint Sensitivity Formula for the Scattering Parameters of Metallic Structures. IEEE Transactions on Microwave Theory and Techniques, 2012, 60, 2713-2722.	4.6	113
3	Sizing of 3-D Arbitrary Defects Using Magnetic Flux Leakage Measurements. IEEE Transactions on Magnetics, 2010, 46, 1024-1033.	2.1	100
4	Three-Dimensional Near-Field Microwave Holography Using Reflected and Transmitted Signals. IEEE Transactions on Antennas and Propagation, 2011, 59, 4777-4789.	5.1	89
5	Machine Learning Techniques for the Analysis of Magnetic Flux Leakage Images in Pipeline Inspection. IEEE Transactions on Magnetics, 2009, 45, 3073-3084.	2.1	83
6	Antenna Optimization Through Space Mapping. IEEE Transactions on Antennas and Propagation, 2007, 55, 651-658.	5.1	78
7	A Novel Quad-Band Diversity Antenna for LTE and Wi-Fi Applications With High Isolation. IEEE Transactions on Antennas and Propagation, 2012, 60, 4360-4371.	5.1	73
8	TEM HORN ANTENNA FOR ULTRA-WIDE BAND MICROWAVE BREAST IMAGING. Progress in Electromagnetics Research B, 2009, 13, 59-74.	1.0	70
9	A Study of Ultrawideband Antennas for Near-Field Imaging. IEEE Transactions on Antennas and Propagation, 2007, 55, 1184-1188.	5.1	68
10	A Space Mapping Methodology for Defect Characterization From Magnetic Flux Leakage Measurements. IEEE Transactions on Magnetics, 2008, 44, 2058-2065.	2.1	61
11	Microwave Holography Using Point-Spread Functions Measured With Calibration Objects. IEEE Transactions on Instrumentation and Measurement, 2015, 64, 403-417.	4.7	54
12	Characterization of Surface-Breaking Cracks Using One Tangential Component of Magnetic Leakage Field Measurements. IEEE Transactions on Magnetics, 2008, 44, 516-524.	2.1	50
13	Two-dimensional near-field microwave holography. Inverse Problems, 2010, 26, 055011.	2.0	45
14	Real-Time Microwave Imaging of a Compressed Breast Phantom With Planar Scanning. IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, 2018, 2, 154-162.	3.4	35
15	Self-adjointS-parameter sensitivities for lossless homogeneous TLM problems. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2005, 18, 441-455.	1.9	32
16	Space Mapping Optimization of Handset Antennas Exploiting Thin-Wire Models. IEEE Transactions on Antennas and Propagation, 2013, 61, 3797-3807.	5.1	31
17	Adjoint Sensitivity Analysis of Dielectric Discontinuities Using FDTD. Electromagnetics, 2007, 27, 123-140.	0.7	30
18	Frequency-Domain Integral Equations of Scattering for Complex Scalar Responses. IEEE Transactions on Microwave Theory and Techniques, 2017, 65, 1120-1132.	4.6	29

#	ARTICLE	IF	CITATIONS
19	Memory-Efficient Method for Wideband Self-Adjoint Sensitivity Analysis. IEEE Transactions on Microwave Theory and Techniques, 2008, 56, 1917-1927.	4.6	27
20	\$\$\$-Parameter Sensitivities for Electromagnetic Optimization Based on Volume Field Solutions. IEEE Transactions on Microwave Theory and Techniques, 2009, 57, 1526-1538.	4.6	27
21	Microwave Holographic Imaging Using the Antenna Phaseless Radiation Pattern. IEEE Antennas and Wireless Propagation Letters, 2012, 11, 1529-1532.	4.0	25
22	Three-Dimensional Microwave Holographic Imaging Employing Forward-Scattered Waves Only. International Journal of Antennas and Propagation, 2013, 2013, 1-15.	1.2	25
23	Fast Quantitative Microwave Imaging With Scattered-Power Maps. IEEE Transactions on Microwave Theory and Techniques, 2018, 66, 439-449.	4.6	25
24	Three-Dimensional Microwave Holographic Imaging Using Co- and Cross-Polarized Data. IEEE Transactions on Antennas and Propagation, 2012, 60, 3526-3531.	5.1	24
25	General Theory of Holographic Inversion With Linear Frequency Modulation Radar and its Application to Whole-Body Security Scanning. IEEE Transactions on Microwave Theory and Techniques, 2020, 68, 4694-4705.	4.6	21
26	Accelerating Space Mapping Optimization with Adjoint Sensitivities. IEEE Microwave and Wireless Components Letters, 2011, 21, 280-282.	3.2	20
27	UWB Active Antenna for Microwave Breast Imaging Sensing Arrays. IEEE Antennas and Wireless Propagation Letters, 2019, 18, 1951-1955.	4.0	20
28	Design Optimization of Planar Structures Using Self-Adjoint Sensitivity Analysis. IEEE Transactions on Antennas and Propagation, 2012, 60, 3060-3066.	5.1	17
29	The Impact of On-Chip Interconnections on CMOS RF Integrated Circuits. IEEE Transactions on Electron Devices, 2009, 56, 1882-1890.	3.0	16
30	COMPARATIVE STUDY OF THE RYTOV AND BORN APPROXIMATIONS IN QUANTITATIVE MICROWAVE HOLOGRAPHY. Progress in Electromagnetics Research B, 2017, 79, 1-19.	1.0	16
31	Adjoint First Order Sensitivities of Transient Responses and Their Applications in the Solution of Inverse Problems. IEEE Transactions on Antennas and Propagation, 2009, 57, 2137-2146.	5.1	15
32	Physical phantoms for microwave imaging of the breast. , 2012, , .		11
33	Accelerated Holographic Imaging With Range Stacking for Linear Frequency Modulation Radar. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 1630-1638.	4.6	11
34	Wideband Second-Order Adjoint Sensitivity Analysis Exploiting TLM. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 389-398.	4.6	10
35	An experimental comparison between the born and Rytov approximations in microwave tissue imaging. , 2017, , .		9
36	Real-Time Imaging With Simultaneous Use of Born and Rytov Approximations in Quantitative Microwave Holography. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 1896-1909.	4.6	9

#	ARTICLE	IF	CITATIONS
37	Real-time quantitative reconstruction based on microwave holography. , 2016, , .		8
38	Sensitivity-based microwave imaging with raster scanning. , 2012, , .		7
39	Nonradiating electromagnetic sources in a nonuniform medium. Physical Review E, 2005, 71, 016617.	2.1	6
40	Self-adjoint sensitivity analysis of lossy dielectric structures with electromagnetic time-domain simulators. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2008, 21, 117-132.	1.9	6
41	Near-field microwave imaging based on planar aperture scanning. , 2010, , .		6
42	High-efficiency TEM horn antenna for ultra-wide band microwave tissue imaging. , 2011, , .		6
43	Ka Band Holographic Imaging System Based on Linear Frequency Modulation Radar. Sensors, 2020, 20, 6527.	3.8	6
44	Real-Time Quantitative Reconstruction Methods in Microwave Imaging. , 2018, , 415-442.		5
45	De-noising algorithm for enhancing microwave imaging. Journal of Engineering, 2017, 2017, 72-76.	1.1	5
46	Central-Node Approach for Accurate Self-Adjoint Sensitivity Analysis of Dielectric Structures. IEEE MTT-S International Microwave Symposium Digest IEEE MTT-S International Microwave Symposium, 2007, , .	0.0	4
47	A space mapping schematic for fast EM-based modeling and design. , 2012, , .		4
48	Adjoint sensitivity analysis of 3D problems with anisotropic materials. , 2014, , .		4
49	Modeling and design of a switched transceiver array for tissue imaging. , 2015, , .		4
50	Quality Control of Microwave Equipment for Tissue Imaging. IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, 2020, 4, 52-60.	3.4	4
51	Simultaneous Use of the Born and Rytov Approximations in Real-Time Imaging With Fourier-Space Scattered Power Mapping. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 2904-2920.	4.6	4
52	Ultra-wide band TEM horn antenna for microwave imaging of the breast. , 2009, , .		3
53	Near-field microwave holographic imaging: Target localization and resolution study. , 2010, , .		3
54	Analytical $\langle \text{formula} \text{ formulatype="inline"} \rangle \langle \text{tex Notation="TeX"} \rangle \text{\$}\text{\$}\text{\$} \langle / \text{tex} \rangle \langle / \text{formula} \rangle$ -Parameter Sensitivity Formula for the Shape Parameters of Dielectric Objects. IEEE Microwave and Wireless Components Letters, 2014, 24, 291-293.	3.2	3

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55	SNR assessment of microwave imaging systems. , 2014, , .		3
56	Experimental investigation of axial-null and axial-peak illumination schemes in microwave imaging. , 2016, , .		3
57	Accurate Range Migration for Fast Quantitative Fourier-Based Image Reconstruction With Monostatic Radar. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 4273-4283.	4.6	3
58	Uniaxial approach to time-domain computations using electromagnetic potentials. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2004, 17, 269-284.	1.9	2
59	Parasitics-aware layout design of a low-power fully integrated complementary metal-oxide semiconductor power amplifier. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2006, 24, 835-840.	2.1	2
60	Ultra-wide band TEM horn antenna for microwave imaging of the breast. Digest / IEEE Antennas and Propagation Society International Symposium, 2009, , .	0.0	2
61	An efficient algorithm for solving inverse source problems using time domain TLM. , 2010, , .		2
62	Microwave holography for near-field imaging. , 2010, , .		2
63	Fast space mapping modeling with adjoint sensitivity. , 2011, , .		2
64	Panel and rump sessions. IEEE Microwave Magazine, 2012, 13, 60-62.	0.8	2
65	Quantitative imaging of dielectric objects based on holographic reconstruction. , 2015, , .		2
66	Fast quantitative microwave imaging based on measured point spread functions and inversion in real space. , 2015, , .		2
67	Efficient electromagnetic optimization using self-adjoint Jacobian computation based on a central-node FDFD method. , 2008, , .		1
68	Accuracy assessment of photogrammetry surface reconstruction for improving microwave imaging. , 2008, , .		1
69	Electromagnetic software in microwave engineering [Guest Editorial]. IEEE Microwave Magazine, 2008, 9, 10-12.	0.8	1
70	Accuracy improvement of the S-parameter adjoint sensitivity analysis for shape parameters. , 2009, , .		1
71	Detection at microwave frequencies based on self-adjoint sensitivity analysis. , 2010, , .		1
72	Image quality enhancement in the microwave raster scanning method. , 2011, , .		1

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73	Space mapping design exploiting library antenna models. , 2012, , .		1
74	Second-order time-domain adjoint sensitivity analysis exploiting TLM. , 2012, , .		1
75	Printed antenna design using sensitivity analysis based on method of moment solutions. , 2012, , .		1
76	Evaluating the efficiency of antennas used as sensors in microwave tissue imaging. , 2013, , .		1
77	Sensitivity evaluation of microwave imaging systems employing scattering-parameter measurements. , 2014, , .		1
78	Switched sensor array for near-field microwave imaging of tissue. , 2015, , .		1
79	Quasi-real time reconstruction of the complex permittivity of tissue through microwave holography. , 2017, , .		1
80	Sensitivity Analysis of Ferrites With TLM. IEEE Microwave and Wireless Components Letters, 2017, 27, 1044-1046.	3.2	1
81	Dynamic Range of an Active Radio Sensor for Bias-Switched Arrays for Microwave Tissue Imaging. , 2018, , .		1
82	Printed Cactus Monopole Antenna with Enhanced Impedance Bandwidth. , 2019, , .		1
83	Extended GHI-LFM Algorithm for Sparse Array. , 2021, , .		1
84	Time-domain sensitivity analysis of planar structures using first-order one-way wave equation boundaries. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2008, 21, 287-296.	1.9	0
85	Systematic fidelity assessment of antennas for near-field microwave imaging. , 2010, , .		0
86	Microwave imaging for breast cancer diagnosis based on planar aperture scanning. , 2010, , .		0
87	Sensitivity analysis with discrete perturbation of planar structure on method-of-moment grids. , 2010, , .		0
88	Detection using microwaves and self-adjoint sensitivity analysis. , 2010, , .		0
89	Electromagnetics-based CAD and optimization of microwave circuits exploiting time-domain techniques. , 2011, , .		0
90	TLM: A robust tool for electromagnetics-based optimization. , 2012, , .		0

#	ARTICLE	IF	CITATIONS
91	Re-discovering adjoint sensitivities: Toward field-based analysis. , 2012, , .		0
92	Errata to "Three-Dimensional Near-Field Microwave Holography Using Reflected and Transmitted Signals"[Dec 11 4777-4789]. IEEE Transactions on Antennas and Propagation, 2012, 60, 425-425.	5.1	0
93	The Solution of Transient Electromagnetic Inverse Source Problems Using Time-Domain TLM Method. IEEE Transactions on Antennas and Propagation, 2012, 60, 4326-4335.	5.1	0
94	Overview of Focus and Special Sessions at IMS2012. IEEE Microwave Magazine, 2012, 13, 52-56.	0.8	0
95	Sensitivity-based quantitative imaging using planar raster scanning. , 2014, , .		0
96	Sensitivity-based reconstruction in microwave imaging using near-field calibration measurements. , 2014, , .		0
97	Reduction of the Line-of-Sight Equivalence Principle. Electronics (Switzerland), 2020, 9, 1278.	3.1	0