Amir Boag

List of Publications by Year in Descending Order

167 papers	2,617 citations	28 h-index	44 g-index
262 ext. papers	3,215 ext. citations	3.2 avg, IF	5.04 L-index

#	Paper	IF	Citations
167	High efficiency coupling to metal-insulator-metal plasmonic waveguides.. *Optics Express*, **2022**, 30, 13757-13764	3.3	4
166	Modeling Electromagnetic Wave Phenomena in Large Quantum Systems: Formulation and Computational Costs. *IEEE Antennas and Propagation Magazine*, **2021**, 63, 29-39	1.7	
165	Volumetric metamaterials versus impedance surfaces in scattering applications. *Scientific Reports*, **2021**, 11, 9571	4.9	5
164	Adaptive Multilevel Non-uniform Grid Algorithm for the Accelerated Analysis of Composite Metallic-Dielectric Radomes. *IEEE Transactions on Antennas and Propagation*, **2021**, 1-1	4.9	
163	Quantum Radars and Lidars: Concepts, Realizations, and Perspectives.. *IEEE Antennas and Propagation Magazine*, **2021**, 2-12	1.7	3
162	Scattering of electromagnetic waves by two crossing metallic single-walled carbon nanotubes of finite length. *Physical Review B*, **2021**, 103,	3.3	4
161	A Low-Profile Circularly Polarized Conical-Beam Antenna with Wide Overlap Bandwidth. *Wireless Communications and Mobile Computing*, **2021**, 2021, 1-11	1.9	2
160	A low-profile ultra-wideband circularly polarized antenna array with metasurface. *International Journal of RF and Microwave Computer-Aided Engineering*, **2021**, 31, e22874	1.5	1
159	Backprojection Imaging of Moving Objects. *IEEE Transactions on Antennas and Propagation*, **2021**, 69, 4944-4954	4.9	1
158	No Significant Effects of Cellphone Electromagnetic Radiation on Mice Memory or Anxiety: Some Mixed Effects on Traumatic Brain Injured Mice. *Neurotrauma Reports*, **2021**, 2, 381-390	1.6	1
157	Scattering by thin shells in fluids: Fast solver and experimental validation. *JASA Express Letters*, **2021**, 1, 016002		0
156	Lorenz gauge formulation for time-dependent density functional theory. *Physical Review B*, **2020**, 101,	3.3	3
155	Direct Solution of Scattering Problems Using Generalized Source Integral Equations. *IEEE Transactions on Antennas and Propagation*, **2020**, 68, 5512-5523	4.9	4
154	Meta-hologram-based authentication scheme employing a speckle pattern fingerprint. *Optics Express*, **2020**, 28, 8924-8936	3.3	10
153	THE MULTILEVEL FAST PHYSICAL OPTICS METHOD FOR CALCULATING HIGH FREQUENCY SCATTERED FIELDS. *Progress in Electromagnetics Research*, **2020**, 169, 1-15	3.8	3
152	Flexible metalized tubes for electromagnetic waveguiding. *Journal of Quantitative Spectroscopy and Radiative Transfer*, **2019**, 232, 152-155	2.1	2
151	Volumetric 3D-Printed Antennas, Manufactured via Selective Polymer Metallization. *Physica Status Solidi - Rapid Research Letters*, **2019**, 13,	2.5	12

150	Quantum noise radar: superresolution with quantum antennas by accessing spatiotemporal correlations. *Optics Express*, **2019**, 27, 29217-29231	3.3	4
149	Selective Metallization of Graphene-based Polymers for Volumetric 3D-printed Antennas **2019**,		2
148	Moving Target Detection and Imaging Using a Single-Channel SAR **2019**,		1
147	Fast Evaluation of Retarded Electromagnetic Potentials for Quantum Calculations **2019**,		1
146	Synthesis of Quantum Antennas for Shaping Field Correlations. *Physical Review Applied*, **2018**, 9,	4.3	11
145	Shadow Radiation Iterative Physical Optics Method for High-Frequency Scattering. *IEEE Transactions on Antennas and Propagation*, **2018**, 66, 871-883	4.9	13
144	Holographic anti-counterfeiting tags utilizing speckle pattern fingerprint **2018**,		2
143	In situ real-time beam monitoring with dielectric meta-holograms. *Optics Express*, **2018**, 26, 28469-28483	3.3	1
142	A fast algorithm for the analysis of scattering by elongated cavities. *Journal of Electromagnetic Waves and Applications*, **2018**, 32, 1675-1696	1.3	
141	Artificial localized magnon resonances in subwavelength meta-particles. *Applied Physics Letters*, **2018**, 113, 123505	3.4	10
140	Anomalous electromagnetic coupling via entanglement at the nanoscale. *New Journal of Physics*, **2017**, 19, 023014	2.9	7
139	Optimizing kernel methods for Poisson integrals on a uniform grid. *Computer Physics Communications*, **2017**, 215, 1-6	4.2	5
138	On small signal equivalent circuit models for quantum dots. *International Journal of Circuit Theory and Applications*, **2017**, 45, 935-950	2	1
137	Convergence analysis for iterative physical optics algorithms **2017**,		1
136	Size dependent electronic properties of silicon quantum dots—An analysis with hybrid, screened hybrid and local density functional theory. *Computer Physics Communications*, **2017**, 221, 95-101	4.2	6
135	Integral equation technique for scatterers with mesoscopic insertions: Application to a carbon nanotube. *Physical Review B*, **2017**, 96,	3.3	6
134	Quantum light rectification in nano-rectennas **2017**,		1
133	Fast iterative physical optics with shadowing **2016**,		3

132	A fast and stable solver for acoustic scattering problems based on the nonuniform grid approach. *Journal of the Acoustical Society of America*, **2016**, 139, 472-80	2.2	6
131	Fast computation of modified Green's function for generalized source integral equation solvers **2016**,		1
130	Fast Antenna Diagnosis Algorithm Using Oblate Spheroidal Nonuniform Grids. *IEEE Transactions on Antennas and Propagation*, **2016**, 64, 4197-4207	4.9	4
129	An auxilliary grid method for the calculation of electrostatic terms in density functional theory on a real-space grid. *Physical Chemistry Chemical Physics*, **2015**, 17, 31550-7	3.6	9
128	Degeneracy Breaking of Wood's Anomaly for Enhanced Refractive Index Sensing. *ACS Photonics*, **2015**, 2, 615-621	6.3	31
127	. *IEEE Transactions on Electromagnetic Compatibility*, **2015**, 57, 1645-1654	2	16
126	Plasmonic holography: obtaining wide angle, broadband, and high efficiency **2015**,		1
125	Wide-angle scanning optical linear phased array **2015**,		2
124	Multilevel Physical Optics Algorithm for Near-Field Double-Bounce Scattering. *IEEE Transactions on Antennas and Propagation*, **2015**, 63, 5015-5025	4.9	5
123	Electromagnetic compatibility in nano-electronics: Manifestation and suppression of quantum crosstalk **2015**,		1
122	Equivalent electrical multiport for quantum systems in entangled states **2015**,		1
121	GPU accelerated multilevel fast physical optics algorithm for radiation from non-planar apertures **2015**,		1
120	Highly efficient and broadband wide-angle holography using patch-dipole nanoantenna reflectarrays. *Nano Letters*, **2014**, 14, 2485-90	11.5	116
119	Fast Green's Function Evaluation for Sources and Observers Near Smooth Convex Bodies. *IEEE Transactions on Antennas and Propagation*, **2014**, 62, 3374-3378	4.9	7
118	Multilevel Physical Optics Algorithm for Near Field Scattering. *IEEE Transactions on Antennas and Propagation*, **2014**, 62, 4325-4335	4.9	9
117	Fast Direct Solver for Essentially Convex Scatterers Using Multilevel Non-Uniform Grids. *IEEE Transactions on Antennas and Propagation*, **2014**, 62, 4314-4324	4.9	27
116	Fast surface integral equation solver based on NG-accelerated method of moments **2014**,		1
115	Contact-less RF and optical measurement of antenna array active impedance using scattering data **2014**,		4

114	Equation-based interpolation and incremental unknowns for solving the three-dimensional Helmholtz equation. *Applied Mathematics and Computation*, **2014**, 232, 1200-1208	2.7	0
113	Reconstruction of surface potential from Kelvin probe force microscopy images. *Nanotechnology*, **2013**, 24, 295702	3.4	50
112	Quantum nonreciprocity of nanoscale antenna arrays in timed Dicke states. *Physical Review Letters*, **2013**, 111, 023602	7.4	28
111	Grid metastructures for ultrabroadband acoustic cloaking. *AIP Advances*, **2013**, 3, 092133	1.5	
110	High load sensitivity in wideband infrared dual-Vivaldi nanoantennas. *Optics Letters*, **2013**, 38, 205-7	3	14
109	Compression of matrices representing directive source integral equation **2013**,		1
108	Method of Generalized Debye Sources for the Analysis of Electromagnetic Scattering by Perfectly Conducting Bodies With Piecewise Smooth Boundaries. *IEEE Transactions on Antennas and Propagation*, **2013**, 61, 2108-2115	4.9	6
107	Mono-detection spatially super resolved microwave imaging for RADAR applications. *Optics Communications*, **2012**, 285, 2519-2524	2	3
106	Analysis of the RATAN-600 radiotelescope antenna with a multilevel Physical Optics algorithm. *Comptes Rendus Physique*, **2012**, 13, 38-45	1.4	1
105	Quantifying the radiation efficiency of nano antennas. *Applied Physics Letters*, **2012**, 100, 111113	3.4	19
104	Fast Electromagnetic Integral-Equation Solvers on Graphics Processing Units. *IEEE Antennas and Propagation Magazine*, **2012**, 54, 71-87	1.7	19
103	The Effect of the Measuring Tip and Image Reconstruction. *Springer Series in Surface Sciences*, **2012**, 45-67	1.4	
102	Generalized Multilevel Physical Optics (MLPO) for Comprehensive Analysis of Reflector Antennas. *IEEE Transactions on Antennas and Propagation*, **2012**, 60, 1182-1186	4.9	9
101	A Cartesian non-uniform grid interpolation method for fast field evaluation on elongated domains. *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, **2012**, 25, 645-655	1	1
100	Generalized Equivalence Integral Equations. *IEEE Antennas and Wireless Propagation Letters*, **2012**, 11, 1568-1571	3.8	10
99	Wideband dual Vivaldi nano-antenna with high radiation efficiency over the infrared frequency band **2011**,		2
98	Fast direct solution of 3-D scattering problems via nonuniform grid-based matrix compression. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2011**, 58, 2405-17	3.2	10
97	Dual-Vivaldi wideband nanoantenna with high radiation efficiency over the infrared frequency band. *Optics Letters*, **2011**, 36, 2773-5	3	19

96	Direct measurement of individual deep traps in single silicon nanowires. *Nano Letters*, **2011**, 11, 2499-502	21.5	36
95	The role of the cantilever in Kelvin probe force microscopy measurements. *Beilstein Journal of Nanotechnology*, **2011**, 2, 252-60	3	63
94	Direct measurement of nanowire Schottky junction depletion region. *Applied Physics Letters*, **2011**, 99, 223511	3.4	23
93	Gaussian beam summation algorithm for ultra wide band indoor channel characterization **2010**,		2
92	Multilevel nonuniform grid algorithm for acceleration of integral equation-based solvers for acoustic scattering. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2010**, 57, 262-73	3.2	29
91	Optical and diffraction simulation techniques for large multibeam reflector **2010**,		2
90	A multilevel Cartesian non-uniform grid time domain algorithm. *Journal of Computational Physics*, **2010**, 229, 8430-8444	4.1	10
89	Equation-based interpolation and incremental unknowns for solving the Helmholtz equation. *Applied Numerical Mathematics*, **2010**, 60, 1148-1156	2.5	3
88	A multilevel fast direct solver for EM scattering from quasi-planar objects **2009**,		13
87	Dielectric inserts for sensitivity and RF magnetic field enhancement in NMR volume coils. *Journal of Magnetic Resonance*, **2009**, 200, 49-55	3	11
86	Optimization of focusing optics of RATAN-600 radio telescope **2009**,		2
85	Multilevel Surface Decomposition Algorithm for Rapid Evaluation of Transient Near-Field to Far-Field Transforms. *IEEE Transactions on Antennas and Propagation*, **2009**, 57, 188-195	4.9	2
84	Nonuniform grid algorithm for fast calculation of magnetostatic interactions in micromagnetics. *Journal of Applied Physics*, **2009**, 105, 07D541	2.5	19
83	Two-dimensional imaging of III-V quantum dots confinement potential. *Europhysics Letters*, **2009**, 88, 66003	1.6	10
82	Kelvin Probe Force Microscopy: Recent Advances and Applications **2008**, 351-376		1
81	Analysis of Very Large Dual-Reflector Antennas Using Multilevel Physical Optics (MLPO) Algorithm **2007**,		1
80	Incremental unknowns preconditioning for solving the Helmholtz equation. *Numerical Methods for Partial Differential Equations*, **2007**, 23, 1396-1410	2.5	5
79	Mechanical tuning of two-dimensional photonic crystal cavity by micro Electro mechanical flexures. *Sensors and Actuators A: Physical*, **2007**, 139, 47-52	3.9	4

78	Adaptive multilevel non-uniform grid algorithm for fast field evaluation in multilayered media **2007**,		2
77	Non-uniform grid based fast direct solver for quasi-planar scatterers **2007**,		2
76	Compression of the Method of Moments Matrices Using the Non-Uniform Grid Approach **2007**,		6
75	Splitting of microcavity degenerate modes in rotating photonic crystals: the miniature optical gyroscopes. *Journal of the Optical Society of America B: Optical Physics*, **2007**, 24, 142	1.7	25
74	Rotation-induced superstructure in slow-light waveguides with mode-degeneracy: optical gyroscopes with exponential sensitivity. *Journal of the Optical Society of America B: Optical Physics*, **2007**, 24, 1216	1.7	56
73	Fast Evaluation of the Radiation Patterns of True Time Delay Arrays With Beam Steering. *IEEE Transactions on Antennas and Propagation*, **2007**, 55, 3421-3432	4.9	2
72	Adaptive Nonuniform-Grid (NG) Algorithm for Fast Capacitance Extraction. *IEEE Transactions on Microwave Theory and Techniques*, **2006**, 54, 3565-3570	4.1	15
71	Substructuring approach to optimization of matching for photonic crystal waveguides. *Microwave and Optical Technology Letters*, **2006**, 48, 1866-1871	1.2	1
70	Slow-Light Waveguides with Mode Degeneracy: Rotation-Induced Super Structures and Optical Gyroscopes **2006**, MB3		1
69	Two-dimensional Green's function theory for the electrodynamics of a rotating medium. *Physical Review E*, **2006**, 74, 016608	2.4	13
68	Nonuniform grid time domain (NGTD) algorithm for fast evaluation of transient wave fields. *IEEE Transactions on Antennas and Propagation*, **2006**, 54, 1943-1951	4.9	20
67	Propagation in photonic crystal coupled-cavity waveguides with discontinuities in their optical properties. *Journal of the Optical Society of America B: Optical Physics*, **2006**, 23, 1442	1.7	4
66	Non-uniform grid accelerated local–global boundary condition (NG-LGBC) for acoustic scattering. *Computer Methods in Applied Mechanics and Engineering*, **2006**, 195, 3608-3621	5.7	3
65	Reconstruction of electrostatic force microscopy images. *Review of Scientific Instruments*, **2005**, 76, 083705	1.7	87
64	Nanoscale potential distribution across multiquantum well structures: Kelvin probe force microscopy and secondary electron imaging. *Journal of Applied Physics*, **2005**, 98, 084310	2.5	18
63	. *IEEE Transactions on Antennas and Propagation*, **2005**, 53, 948-957	4.9	21
62	A pulsed beam summation formulation for short pulse radiation based on windowed Radon transform (WRT) frames. *IEEE Transactions on Antennas and Propagation*, **2005**, 53, 3030-3048	4.9	29
61	Ultrasensitive displacement sensing using photonic crystal waveguides. *Applied Physics Letters*, **2005**, 86, 104102	3.4	29

60	Multilevel fast physical optics algorithm for radiation from non-planar apertures. *IEEE Transactions on Antennas and Propagation*, **2005**, 53, 2064-2072	4.9	19
59	Nanoscale piezoelectric coefficient measurements in ionic conducting ferroelectrics. *Journal of Applied Physics*, **2005**, 97, 084312	2.5	36
58	Hybrid non-uniform grid based fast global boundary conditions for concave scatterers **2004**,		1
57	Gaussian beams representation based on periodic frames for radiation from cylindrical apertures **2004**,		1
56	Hybrid absorbing boundary conditions based on fast nonuniform grid integration for nonconvex scatterers. *Microwave and Optical Technology Letters*, **2004**, 43, 102-106	1.2	10
55	A fast physical optics (FPO) algorithm for double-bounce scattering. *IEEE Transactions on Antennas and Propagation*, **2004**, 52, 205-212	4.9	27
54	A phase-space beam summation formulation for ultrawide-band radiation. *IEEE Transactions on Antennas and Propagation*, **2004**, 52, 2042-2056	4.9	64
53	A fast physical optics (FPO) algorithm for high frequency scattering. *IEEE Transactions on Antennas and Propagation*, **2004**, 52, 197-204	4.9	15
52	Non-uniform grid time domain (NGTD) algorithm for fast evaluation of transient fields **2003**,		2
51	Gaussian beam tracking through a curved interface: comparison with a method of moments. *IET Microwaves Antennas and Propagation*, **2003**, 150, 49		11
50	Frame-based Gaussian beam summation method: Theory and applications. *Radio Science*, **2003**, 38, n/a-n/a	1.4	28
49	Sensitivity analysis of narrowband photonic crystal filters and waveguides to structure variations and inaccuracy. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, **2003**, 20, 138-46	1.8	22
48	Fast radiation pattern evaluation for lens and reflector antennas. *IEEE Transactions on Antennas and Propagation*, **2003**, 51, 1063-1068	4.9	23
47	Frame-Based Beam-Summation Algorithms for Ultra Wideband Radiation from Extended Apertures **2003**, 101-112		2
46	Multigrid analysis of scattering by large planar structures. *Microwave and Optical Technology Letters*, **2002**, 32, 454-458	1.2	2
45	A fast iterative physical optics (FIPO) algorithm based on non-uniform polar grid interpolation. *Microwave and Optical Technology Letters*, **2002**, 35, 240-244	1.2	28
44	Nonuniform polar grid algorithm for fast field evaluation. *IEEE Antennas and Wireless Propagation Letters*, **2002**, 1, 142-145	3.8	33
43	Electromagnetic analysis of an antenna embedded in a composite environment. *IEEE Transactions on Antennas and Propagation*, **2001**, 49, 681-687	4.9	

42	Narrow-band microcavity waveguides in photonic crystals. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, **2001**, 18, 2799-805	1.8	16
41	A fast multilevel domain decomposition algorithm for radar imaging. *IEEE Transactions on Antennas and Propagation*, **2001**, 49, 666-671	4.9	23
40	A multilevel domain decomposition algorithm for fast O(N2logN) reprojection of tomographic images. *IEEE Transactions on Image Processing*, **2000**, 9, 1573-82	8.7	28
39	Complex multipole beam approach to acoustic scattering problems. *Journal of the Acoustical Society of America*, **1997**, 102, 1319-1325	2.2	1
38	New designs of ultra wide-band communication antennas using a genetic algorithm. *IEEE Transactions on Antennas and Propagation*, **1997**, 45, 1494-1501	4.9	34
37	A multilevel matrix decomposition algorithm for analyzing scattering from large structures. *IEEE Transactions on Antennas and Propagation*, **1996**, 44, 1086-1093	4.9	221
36	Design of electrically loaded wire antennas using genetic algorithms. *IEEE Transactions on Antennas and Propagation*, **1996**, 44, 687	4.9	87
35	Scattering from elongated objects: direct solution in O(N log2 N) operations. *IET Microwaves Antennas and Propagation*, **1996**, 143, 277		41
34	A numerical absorbing boundary condition for 3D edge-based finite-element analysis of very low-frequency fields. *Microwave and Optical Technology Letters*, **1995**, 9, 22-27	1.2	6
33	. *IEEE Transactions on Microwave Theory and Techniques*, **1995**, 43, 150-154	4.1	6
32	A numerical absorbing boundary condition for finite-difference and finite-element analysis of open structures. *Microwave and Optical Technology Letters*, **1994**, 7, 395-398	1.2	17
31	A numerical absorbing boundary condition for edge-based finite-element analysis. *Microwave and Optical Technology Letters*, **1994**, 7, 733-737	1.2	4
30	Multilevel evaluation of electromagnetic fields for the rapid solution of scattering problems. *Microwave and Optical Technology Letters*, **1994**, 7, 790-795	1.2	61
29	Complex multipole-beam approach to three-dimensional electromagnetic scattering problems. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, **1994**, 11, 1505	1.8	24
28	. *IEEE Transactions on Antennas and Propagation*, **1994**, 42, 366-372	4.9	53
27	Analysis of Electromagnetic Scattering from Linear Periodic Arrays of Penetrable Bodies Using a Cylindrical Current Model. *Journal of Electromagnetic Waves and Applications*, **1993**, 7, 423-441	1.3	1
26	. *IEEE Transactions on Antennas and Propagation*, **1993**, 41, 1265-1272	4.9	4
25	. *IEEE Transactions on Antennas and Propagation*, **1993**, 41, 926-933	4.9	16

24	Analysis of the 5:1 Dipole Benchmark Case Using the Current-Model Method with an SVD-Improved Point Matching Technique. *Journal of Electromagnetic Waves and Applications*, **1993**, 7, 1577-1593	1.3	2
23	Analysis of electromagnetic scattering from doubly periodic nonplanar surfaces using a patch-current model. *IEEE Transactions on Antennas and Propagation*, **1993**, 41, 732-738	4.9	12
22	Analysis and optimization of waveguide multiapplicator hyperthermia systems. *IEEE Transactions on Biomedical Engineering*, **1993**, 40, 946-52	5	24
21	Analysis of three-dimensional acoustic scattering from doubly periodic structures using a source model. *Journal of the Acoustical Society of America*, **1992**, 91, 572-580	2.2	10
20	Analysis of electromagnetic scattering using a current model method. *Computer Physics Communications*, **1991**, 68, 331-345	4.2	31
19	. *IEEE Transactions on Antennas and Propagation*, **1991**, 39, 1332-1337	4.9	14
18	Analysis of electromagnetic scattering from doubly periodic arrays of penetrable bodies using a patch-dipole current model. *Radio Science*, **1991**, 26, 603-610	1.4	6
17	Optimal excitation of multiapplicator systems for deep regional hyperthermia. *IEEE Transactions on Biomedical Engineering*, **1990**, 37, 987-95	5	11
16	Analysis of diffraction from doubly periodic arrays of perfectly conducting bodies by using a patch-current model. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, **1990**, 7, 1712	1.8	14
15	Analysis of diffraction from echelette gratings, using a strip-current model. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, **1989**, 6, 543	1.8	17
14	Analysis of two-dimensional acoustic scattering from periodic structures using a hybrid source model. *Journal of the Acoustical Society of America*, **1989**, 86, 387-394	2.2	8
13	Analysis of acoustic scattering from fluid bodies using a multipoint source model. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **1989**, 36, 119-28	3.2	10
12	. *IEEE Transactions on Antennas and Propagation*, **1989**, 37, 1437-1446	4.9	32
11	Analysis of two-dimensional electromagnetic scattering from a periodic grating of cylinders using a hybrid current model. *Radio Science*, **1988**, 23, 612-624	1.4	24
10	. *IEEE Transactions on Antennas and Propagation*, **1988**, 36, 1026-1031	4.9	34
9	. *IEEE Transactions on Antennas and Propagation*, **1988**, 36, 1722-1734	4.9	86
8	. *IEEE Transactions on Antennas and Propagation*, **1988**, 36, 1602-1607	4.9	28
7	Analysis of acoustic scattering from fluid cylinders using a multifilament source model. *Journal of the Acoustical Society of America*, **1988**, 83, 1-8	2.2	26