

Mark S. Mirotznik

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Computer Engineering
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Research Interests

Biomedical Engineering: Bioelectromagnetics, biosensors and microwave and radiofrequency tissue ablation

Electromagnetics and Optics: Multifunctional materials, computational electromagnetics, diffractive optics, micro-optical devices.

Professional Experience

- Full Professor** Primary Appointment: Department of Electrical and Computer Engineering, University of Delaware, 2014-Present
- Secondary appointment: Biomedical Engineering Program, University of Delaware, 2011-Present
- Associate Professor** Primary Appointment: Department of Electrical and Computer Engineering, University of Delaware, 2009-2014
- Secondary appointment: Biomedical Engineering Program, University of Delaware, 2011-Present
- Associate Professor** Primary Appointment: Department of Electrical Engineering, Catholic University of America, 1998–2009
- Secondary appointment: Department of Biomedical Engineering, The Catholic University of America, 1998-2009
- Department Chair** Department of Biomedical Engineering, Catholic University of America, 2001–2004
- Assistant Professor** Primary Appointment: Department of Electrical Engineering, Catholic University of America, 1992–1998
- Secondary appointment: Department of Biomedical Engineering, The Catholic University of America, 1992-1998
- Sabbaticals** Army Research Laboratory, Adelphi MD, 2000-2001 and 2006-2007
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Education

- Doctor of Philosophy
Biomedical Engineering** University of Pennsylvania, December 1992
Dissertation title: *Design of Microwave Antennas for use in Cardiac Catheter Ablation*
- Master of
Biomedical Engineering** University of Pennsylvania, August 1991

**Master of
Electrical Engineering** University of Pennsylvania, August 1991

**Bachelor of Science
Electrical Engineering** Bradley University, May 1988
Honors: Degree received Summa Cum Laude

Awards and Professional Recognition

1987	Eta Kappa Nu and Tau Beta Pi, Engineering Honor Societies
1988-90	University Fellowship, University of Pennsylvania
1993-2000	Army Research Laboratories Summer Faculty Fellowship
1997	Maryland Science Center Distinguished Young Engineer Award
1998	Teacher of the Year Award, School of Engineering, Catholic University of America
1998	Alpha Delta Gamma Fraternity, Instructor of the Month Award, Catholic University of America
2002	Catholic University of America, Charles H. Kaman Award for Excellence in Teaching
2004	Catholic University of America, Charles H. Kaman Award for Excellence in Research
2007	Senior Member, <i>IEEE</i>
2011	Recipient of the H.A. Wheeler Prize from the <i>IEEE</i> Antennas and Propagation Society for the best paper of 2011
2011	Keynote lecture, IDGA's 8th Military Antennas Symposium, Washington D.C.

Professional Activities

- Associate Editor, *Optical Engineering* (2009-2013)
- Associate Editor, *International Journal on Modeling and Simulation* (1997-2009)
- Associate Editor, *International Journal of Antennas and Propagation* (2011-present)
- Guest Editor, *International Journal of Optics*, Special Issue on Nanoplasmonics and Metamaterials (2011)
- Committee Member, *IEEE* Committee on Man and Radiation (COMAR) (1994-2000)
- Committee Member, URSI Commission B (2011-present)
- Technical Advisory Committee (TAC) Member, Food and Drug Administration Center for Device Evaluation and Radiological Health (2008-present)
- Member, EMBS Engineering in Medicine and Biology Society
- Member, BMES Biomedical Engineering Society
- Member, OSA Optical Society of America

- DOD Graduate Fellowship Selection Panelist (2004, 2005, 2006)
- NSF Engineering Research Center (ERC) site visit evaluation team member (2008)
- Panel reviewer, the *National Institutes of Health* (1998, 1999, 2003, 2010, 2011)
- Panel reviewer, the *National Science Foundation* (2007, 2008, 2010)
- Panel reviewer, Office of Naval Research (2011)
- Textbook reviewer, *McGraw Hill* (2013)
- Technical reviewer (1992-present):
 - *IEEE Transactions on Antennas and Propagation*
 - *IEEE Transactional of Microwave Theory and Techniques*
 - *Optical Engineering, The International Society for Optical Engineering*
 - *Applied Optics, Optical Society of America*
 - *Journal of the Optical Society of America A*
 - *Journal of Modern Optics, Taylor & Francis*
 - *Biomedical Engineering Online*
 - *IEEE Transactional on Biomedical Engineering*
 - *Microwave and Optical Technology Letters, Wiley*
 - *IEEE International Conference on Antennas and Propagation*
 - *IEEE International Conference on Microwave Theory and Techniques*
 - *International Union of Radio Science (URSI) conference*

University, College and Department Service (since 2009)

- Director of Educational Outreach, Department of Electrical and Computer Engineering (2009-present)
- Director of Offsite Graduate Education at Aberdeen Proving Ground (APG), College of Engineering (2009-present)
- Committee Member, University Task Force for Middle States Accreditation (2010)
- Committee Member, Faculty Search Committee in Composites Materials (2010)
- Committee Member, Executive committee of the Biomedical Engineering Program (2010-present)
- Committee Member, Department of Electrical and Computer Engineering Secondary Appointments Committee (2010-present)
- Committee Member, Faculty Search Committee in Biomedical Engineering (2012)
- Committee Member, Staff Search Committee in College of Engineering (2012)
- Industrial Advisory Board Member, College of Engineering (2011-present)

Teaching Experience

Undergraduate Courses Taught:

- Biomedical Instrumentation
- Linear Circuit Theory
- Introduction to Electronics
- Microelectronics Laboratory
- Freshman Design
- Signals and Systems
- Digital Circuit Theory
- *Bioelectric Phenomenon*
- *Introduction to Microcontrollers*
- Senior Capstone Design
- *Freshman Laboratory*
- Undergraduate Electromagnetic Theory
- *Computational Methods for Engineers using Matlab*
- Medical Imaging Systems

Graduate Courses Taught:

- *Numerical Methods in Electromagnetics*
- *Advanced Numerical Methods in Electromagnetics*
- Microwave Engineering
- Antenna Theory
- *Biomedical Signal Processing*
- *Biomedical Instrumentation*
- *Introduction to Photonics*
- Numerical Methods for Graduate Engineering
- Medical Imaging Systems

*note that all courses in italics are new courses that I introduced

Graduate Student Supervision

Masters Dissertations

1. David Stovall, 1994 (Catholic University of America)
Dissertation Title: 'Advanced Signal Processing Methods for the Analysis of Structural Damage to Bridges'
2. Tom Conway, 1996 (Catholic University of America)
Dissertation Title: 'Specific Absorption Measurements and Modeling of Radiofrequency Electrodes used in Catheter Ablation of the Heart'
3. Labib Knafer, 1999 (Catholic University of America)
Dissertation Title: 'Numerical Modeling of RF Power Absorption during Magnetic Resonance Imaging using an Anatomically Accurate 3D Human Model'
4. Brandon Good, 2008 (Catholic University of America)
Dissertation Title: 'Optimal Design of Moth-eye Coatings at Millimeter Wave Frequencies'
5. Fikru Gennene, 2009 (Catholic University of America)
Dissertation Title: 'Image Dehazing using Multi-aperture Fly's Eye Camera'
6. Matthew Somerville, 2012 (University of Delaware)
Dissertation Title: 'Novel Fiber-Optical Flow Sensor'
7. William Maslin, 2014 (University of Delaware)
Dissertation Title: 'Optimal Design of Infrared Near-Perfect Absorbers'
8. David Roper, 2014 (University of Delaware)
Dissertation Title: 'Three Dimensional Printing of Graded Dielectrics'

Ph.D. Dissertations

1. Dr. Isaac Chang, completed 1998 (co-directed with Dr. Kenneth Foster of The University of Pennsylvania)
Dissertation Title: 'Dielectric Properties of Healthy and Chronically Infarcted Myocardium'
2. Dr. Uyen Nguyen, completed 2001 (Catholic University of America)
Dissertation Title: 'Numerical Modeling of Heating during High Field Magnetic Resonance Imaging'
3. Dr. Jerry Smith, completed 2004 (Catholic University of America)
Dissertation Title: 'Electromagnetic Forward Scattering over Maritime Environments'
4. Dr. Terry Walsh, completed 2005 (Catholic University of America)
Dissertation Title: 'Three Dimensional Reconstruction of Multi-electrode Heart Catheters using Biplanar Fluoroscopy'

5. Dr. Joseph Krycia, completed 2005 (Catholic University of America)
Dissertation Title: 'Electromagnetic Scattering from Composite Materials'
6. Dr. Gregory Behrmann, completed 2008 (Catholic University of America)
Dissertation Title: 'Fiber-based Optical Strain Sensor for In-Vivo Tendon Measurements'
7. Dr. Rocco Arizzi, completed 2011 (Catholic University of America)
Dissertation Title: 'Biologically Inspired Electrolocation'
8. Dr. Ian McMichael, completed 2013 (University of Delaware)
Dissertation Title: 'Broadband High Impedance Surfaces'
9. Dr. Richard Vollmerhausen, completed 2013 (University of Delaware)
Dissertation Title: 'Active UV imager for man portable and rifle sight applications'
10. Mr. Paul Ransom, in progress (Catholic University of America)
Dissertation Title: 'Iterative Design of Anti-reflective Coatings at Millimeter wavelengths'
11. Mr. Brandon Good, in progress (passed qualifier, University of Delaware)
Dissertation Title: 'Transformational Optics Applied to Multifunctional Composites'
12. Mr. Peter Pa, in progress (passed qualifier, University of Delaware)
Dissertation Title: '3D Conductor Networks in Structural Composites'
13. Mr. Shaun Simmons, in progress (passed qualifier, University of Delaware)
Dissertation Title: 'Woven Fabric Conductor Networks in Composites'
14. Hisham Sherif, MD, in progress in Biomedical Engineering (passed qualifier, University of Delaware)
Dissertation Title: TBD
15. Mr. Zach Lattimore, in progress (new student, University of Delaware)
Dissertation Title: TBD

Contracts and Grants

1. Principal Investigator, **EP Technologies, Sunnyvale CA**, 'Numerical Modeling of Radiofrequency Ablation', 1993-1994 funded for \$25,000
2. Principal Investigator, **The US Department of Transportation**, 'Advanced Signal Processing Methods for the Analysis of Structural Damage to Bridges', 1994-1995 funded for \$37,000
3. Principal Investigator, **EP Technologies, Sunnyvale CA**, '3D Reconstruction of Bi-planer Fluoroscopy during Catheter Ablation', 1996-1997 funded for \$13,000
4. Principal Investigator, **Arrow International Reading PA**, 'Design of Helical Antennas for Catheter Ablation of Atrial Fibrillation', 1996-1997 funded for \$25,000

5. Principal Investigator, **The Army Research Laboratories**, 'Numerical Modeling of Diffractive Optical Elements', 1996-1997 funded for \$25,000
6. Principal Investigator, **Lockheed Martin Corporation**, 'Numerical Modeling of Infrared Detectors', 1996-1997 funded for \$69,000
7. Co-Principal Investigator, **The Whitaker Foundation**, 'Grant for the development of an Industrial Internship Program in Biomedical Engineering at CUA', 1997-2000 funded for \$59,000
8. Principal Investigator, **The Army Research Laboratories**, 'Three-Dimensional Modeling of Diffractive Optical Elements', 1997-1999 funded for \$60,000
9. Co-Investigator, **The Whitaker Foundation**, 'Special Opportunities Award in Home Care Technologies', 1998-2001 funded for a total of \$1,000,000
10. Principal Investigator, **US Army Night Vision Laboratory**, 'Numerical modeling of un-cooled IR detectors', 1998-1999 funded for \$45,000
11. Principal Investigator, **Army Research Laboratories**, 'FDTD Modeling of 3D Diffractive Optical Elements', 1999-2000 funded for \$25,000
12. Principal Investigator, **US Army Night Vision Laboratory**, 'Numerical modeling of Electromagnetic Absorption of MCT IR detector arrays using the FDTD Method', 2000-2001 funded for \$30,000
13. Principal Investigator, **Booze Allen Hamilton Corporation**, 'Modeling of High Density Antenna Placement', 2001-2002 funded for \$20,000
13. Principal Investigator, **Office of Naval Research (ONR)**, 'Form-Birefringent IR Surface Coatings', 2003-2004 funded for \$60,000
14. Principal Investigator, **Office of Naval Research (ONR)**, 'Coherent Emissions from IR Surface Gratings', 2004-2005 funded for \$51,000
15. Principal Investigator, **Office of Naval Research (ONR)**, **Defense University Research Instrumentation Project (DURIP)**, 'Rapid Prototyping System of Micro-Machined Electromagnetic Surfaces', 2004 funded for \$210,000
16. Principal Investigator, **Advanced Research and Development Activity**, 'A Practical Enhanced-Resolution Integrated Optical-Digital Imaging Camera (PERIODIC) System', 2005-2006 funded for \$245,000
17. Principal Investigator, **Office of Naval Research (ONR)**, 'Spectral Shaping of Materials by Statistically Dithering Frequency Selective Surfaces', 2005-2007 funded for \$154,800
18. Principal Investigator, **Defense Advanced Research Projects Agency (DARPA)**, 'Anatomically Accurate Modeling of Thermally Induced Eye Damage Due to Microwave and Millimeter Wave Radiation', 2005-2006 funded for \$120,000
19. Principal Investigator, **Northrop Grumman Corporation**, 'Distributed Optical Sensing of Large Composite Plate Deflections', 2006-2007 funded for \$150,000

20. Co-Investigator, **Disruptive Technology Office of the Director of National Intelligence**, 'Compact Multi-aperture Imaging Camera', 2007 funded for \$312,000
21. Principal Investigator, **Office of Naval Research (ONR), Defense University Research Instrumentation Project (DURIP)**, 'Millimeter Wave Characterization System for Composite Electromagnetic Materials', 2007 funded for \$297,000
22. Principal Investigator, **Navy Surface Warfare Center, Carderock Division**, 'Electromagnetic Codes for the Analysis of Planar Periodic Structures', 2007 funded for \$50,000
23. Principal Investigator, **Defense Microelectronics Activity (DMEA)**, 'A Practical Enhanced-Resolution Integrated Optical-Digital Imaging Camera (PERIODIC)', 2007-2009 funded for \$2,699,907
24. Principal Investigator, **Army Research Laboratory (ARL)**, 'Design and Modeling of Resonant LWIR Structures', 2008-2010 funded for \$300,000
25. Principal Investigator, **Office of Naval Research (ONR)**, 'Antenna Isolation using Antireflective Micro-Surface Coatings', 2008-2010 funded for \$124,534
26. Principal Investigator, **Northrop Grumman Corporation**, 'Distributed optical sensing of deflections in two-dimensional antenna arrays', 2008-2009 funded for \$25,000
27. Principal Investigator, **Office of Naval Research (ONR)**, 'The Electromagnetic and Mechanical Properties of Structural Composites: A Theoretical and Experimental Design Study', 2009-2012 funded for \$383,074
28. Principal Investigator, **Army Research Laboratory (ARL)**, 'Wavelength Sensitive Micro-optical Retroreflector Design', 2010-2011 funded for \$100,000
29. Co-Principal Investigator with Shridhar Yarlagadda (CCM), **Army Research Laboratory (ARL)**, '3D Conductor Networks in Structural Composites', 2010-2011 funded for \$115,000
30. Principal Investigator, **Office of Naval Research (ONR), Defense University Research Instrumentation Project (DURIP)**, 'A System for Rapid Prototyping of Advanced Multifunctional Composite Structures', 2011-2012 funded for \$144,155
31. Principal Investigator, **Fibertek Inc.**, 'Active UV imager for man portable and rifle sight applications', 2011-2012 funded for \$75,000
32. Principal Investigator, **Naval Surface Warfare Center, Carderock Division**, 'Design, Fabrication and Characterization of Wide Band Structural Radomes', 2011-2014 funded for \$1,300,000
33. Principal Investigator, **Office of Naval Research (ONR)**, 'Design of Hybrid Composite Fabrics with Desirable Electromagnetic Properties', 2013-2016 funded for \$360,000
34. Principal Investigator, **Boeing Corporation**, 'Multiphysics Modeling of Lightning on Carbon Fiber Reinforced Composites', 2014-2015 funded for \$100,000

35. Principal Investigator, **Office of Naval Research (ONR), Defense University Research Instrumentation Project (DURIP)**, 'Additive Manufacturing of Electromagnetically Functionalized Composite Structures', 2014-2015 funded for \$274,675

TOTAL FUNDING: \$9,126,145

Publications

<i>Summary of Publications</i>			
	<i>Total published</i>	<i>Citations (Google scholar, August 2013)</i>	<i>H-index and i10-index (Google scholar, July 2014)</i>
Book Chapters	1		
Journal Articles	51		
Conference Proceedings	102		
Total	154	1,812	<i>H-index = 21 I10-index = 41</i>

(Citation data available at <http://scholar.google.com/citations?hl=en&user=mDpm4w8AAAAA>)

Book Chapters

1. D.W. Prather, **M.S. Mirotznik** and S. Shi, 'Vector-based analysis of diffractive optical elements', Numerical Modeling in Micro-Optics, H. Bao, ed., **SIAM** (2001)

Refereed Journal Articles

1. **M.S. Mirotznik**, N. Engheta and K.R. Foster, 'Heating Characteristics of Thin Helical Antennas with Conducting Cores I. Non-insulated Antennas,' **IEEE Transactions of Microwave Theory and Techniques**, Volume 48, February 1993 (*11 citations*)
2. M. Fallert, **M.S. Mirotznik**, K.R. Foster and D. Bogen, 'Myocardial Electrical Impedance Mapping of Ischemic Sheep Hearts,' **Circulation**, Vol. 87, No 1, Jan. 1993, pp. 199-207 (*77 citations*)
3. D. Misra, M. Chhabra, B. Epstein, **M.S. Mirotznik** and K.R. Foster, 'Noninvasive Electrical Characterization of Materials at Microwave Frequencies Using an Open-Ended Coaxial Line: Test of an Improved Calibration Technique,' **IEEE Transactions of Microwave Theory and Techniques**, Volume 38, 1991, pp. 8-14 (*142 citations*)

4. D. Schwartzman, I. Chang, **M.S. Mirotznik**, C.D. Gottlieb, K.R. Foster and F.E. Marchlinski, 'Radiofrequency Ablation in Chronic Infarction - An In-Vitro Investigation of Endocardial Lesion Formation and Tissue Electric Characteristics', *Journal of the American College of Cardiology*, Special Issue, February 1994, pp. A202-A203 (17 citations)
5. **M.S. Mirotznik** and D. Schwartzman, 'Non-uniform Heating Patterns of Commercial Electrodes for Radio frequency Catheter Ablation' **Journal of Cardiovascular Electrophysiology**, Vol. 7, No. 11, November 1996 (10 citations)
6. **M.S. Mirotznik**, E. Cheever and K.R. Foster, 'High Resolution Measurements of the Specific Absorption Rate of Small Antennas in Tissue,' **IEEE Transactions in Instrumentation and Measurements**, Vol. 45 No. 3, June 1996, pp. 754-756 (5 citations)
7. D. Panescu, J. Wayne, S. Fleischman, **M.S. Mirotznik**, D. Swanson and J.G. Webster, ' Three-dimensional finite element analysis of current density and temperature distributions during radio-frequency ablation ' **IEEE Transactions in Biomedical Engineering**, Vol. 45, September 1995, pp. 54-61 (132 citations)
8. **M.S. Mirotznik**, D. W. Prather and J. N. Mait, 'Analysis of Diffractive Optical Elements using the Hybrid Method' **Journal of Modern Optics**, Vol. 43, No. 7, Aug. 1996, pp. 1309-1321 (47 citations)
9. D. W. Prather, **M.S. Mirotznik** and J. N. Mait, 'Boundary Element Method Applied to the Analysis of Diffractive Optical Element', **JOSA A**, Vol. 14, No. 1, Jan 1997, pp. 34-43 (154 citations)
10. D.W. Prather, J. N. Mait, **M.S. Mirotznik** and J.P. Collins, 'Vector-based synthesis of finite aperiodic subwavelength diffractive optical', **JOSA A**, Vol.15, 1998, pp. 1599-1607 (66 citations)
11. J.N. Mait, D.W. Prather and **M.S. Mirotznik**, 'Binary subwavelength diffractive lens design', **Optics Letters** 23, 1998, pp. 1343-1345 (31 citations)
12. J.N. Mait, D.W. Prather and **M.S. Mirotznik**, 'Design of Binary Subwavelength Diffractive Lenses by use of Zeroth-Order Effective-Medium Theory', **JOSA A** 16: (5), May 1999, pp. 1157-1167 (45 citations)
13. D. Panescu, S. Fleischman, J. Wayne, **M.S. Mirotznik**, I. McRury, D. Haines and D. Swanson, 'Radiofrequency multielectrode catheter ablation in the atrium', **Physics in Medicine and Biology**, Vol.44, No.4, April 1999, pp. 899-915 (18 citations)
14. B. Steinberg, J. McCoy and **M.S. Mirotznik**, 'A Multiresolution Approach to Homogenization and Effective Modal Analysis of Complex Boundary Value Problems', **SIAM Journal of Applied Mathematics**, Vol. 60, Number 3, April 2000, pp. 939-966 (24 citations)
15. D. Schwartzman, I. Chang, J.J. Michele, **M.S. Mirotznik** and K.R. Foster, 'Electrical impedance properties of normal and chronically infarcted left ventricular myocardium', **Journal of Interventional Cardiac Electrophysiology** 3:(3), Oct 1999, pp. 213-224 (37 citations)

16. W. Beck and **M.S. Mirotznik**, 'General Stability and Numerical Dispersion Analysis in FDTD', **IEEE Trans. on Antennas and Propagation**, Vol. 48, No. 6, June 2000, pp. 887-894 (11 citations)
17. **M.S. Mirotznik**, D.W. Prather, J.N. Mait, W.A. Beck, S. Shi and X. Gao, 'Three dimensional analysis of subwavelength diffractive optical elements using the finite-difference-time-domain method', **Applied Optics**, Vol. 39, No. 17, June 2000, pp. 2871-2880 (40 citations)
18. B. Beard, **M.S. Mirotznik**, and I.A. Chang, 'High Spatial Resolution Measurements of Specific Absorption Rate around ICD Leads', **Medical Engineering and Physics**, Vol. 22, Number 8, October 2001, pp. 587-592 (1 citation)
19. **M.S. Mirotznik**, W.A. Beck, D.W. Prather, R. Vollmerhausen and R.N. Driggers, 'Optical absorption modeling of thermal infrared detectors by use of the finite-difference time-domain method', **Optics Letters**, Vol. 26 Issue 5, March 2001, pp. 280-282 (4 citations)
20. D. Demanzumder, **M.S. Mirotznik** and D. Schwartzman, 'Biophysics of Radiofrequency Ablation Using an Irrigated Electrode', **Journal of Interventional Cardiac Electrophysiology**, Vol. 5 Issue 4, December 2001, pp. 391-400 (53 citations)
21. D. Demanzumder, **M.S. Mirotznik** and D. Schwartzman, 'Comparison of Irrigated Electrode Designs for Radiofrequency Ablation of Myocardium', **Journal of Interventional Cardiac Electrophysiology**, Vol. 5. Issue 4, December 2001, pp. 377-388 (25 citations)
22. W. Beck and **M.S. Mirotznik**, 'Microstrip antenna coupling for quantum-well infrared photodetectors', **Infrared Physics and Technology**, Vol. 42, (2001), pp. 189-198 (7 citations)
23. J. N. Mait, D. W. Prather and **M.S. Mirotznik**, 'Binary subwavelength diffractive-lens design', **SPIE milestone series**. 166, (2001), pp. 486-488 (31 citations)
24. J.P. Durban, F.E. Ortiz, J.R. Humphrey, D.W. Prather and **M.S. Mirotznik**, 'Hardware Implementation of a Three-Dimensional Finite-Difference Time-Domain Algorithm', **IEEE Antennas and Wireless Propagation Letters**, Vol. 2, No. 1, Jan 2003 (40 citations)
25. X. Gao, **M.S. Mirotznik** and D. W. Prather, 'Applying a mapped pseudospectral time-domain method in simulating diffractive optical elements,' **J. Opt. Soc. Am. A**, Vol. 21, No. 5, May 2004, pp. 777-785 (22 citations)
26. X. Gao, **Mark S. Mirotznik**, and Dennis W. Prather, 'A Method for Introducing Soft Sources in the PSTD Algorithm', **IEEE Trans. on Antennas and Propagation**, Vol. 52, No. 7, July 2004, pp. 1665-1671 (12 citations)
27. X. Gao, **M.S. Mirotznik**, D. W. Prather, 'Dispersion compensation techniques for the Fourier PSTD algorithm,' **Microwave and Optical Tech. Letters**. Vol. 52, No.5, September 2004, pp. 357-361 (4 citations)
28. U. Nguyen, J.S. Brown, I. A. Chang, J. Krycia and **M.S. Mirotznik**, 'Numerical Evaluation of Heating of the Human Head due to Magnetic Resonance Imaging', **IEEE Trans. on Biomedical Engineering**, Issue 99, 2004, pp. 1-9 (46 citations)

29. J.R. Smith and **M.S. Mirotznik**, 'Analytical Simplification of the 2-D Method of Moments Impedance Integral', **IEEE Trans. on Antennas and Propagation**, Vol. 52, no. 12, Dec. 2004, pp. 3288-3294 (4 citations)
30. J.R. Smith and **M.S. Mirotznik**, 'Electromagnetic Forward Scattering Measurements Over a Known, Controlled Sea Surface at Grazing', **IEEE Trans. on Remote Sensing**, Vol. 42, No. 6, June 2004, pp. 1197-1207 (16 citations)
31. **M.S. Mirotznik**, D. Pustai, D.W. Prather and J.N. Mait, 'Design of Two Dimensional Polarization-Selective Diffractive Optical Elements using Form-Birefringent Microstructures', **Journal of Applied Optics**, Vol. 43, No.32, November 2004, pp. 5947-5954 (14 citations)
32. X. Gao, **M.S. Mirotznik** and D. W. Prather, 'Electromagnetic Simulations of Metallic Materials Using Mapped Fourier PSTD Algorithm', **Microwave and Optical Tech. Letters** Vol. 44, No. 6, March 2005, pp.569-575 (1 citation)
33. Smith J.R. and **M.S. Mirotznik**, 'The Moments via Integral Transform Method for the 2-D Dielectric Impedance Integral', **IEEE Trans. on Antennas and Propagation**, Vol. 52, no. 12, January 2005, pp. 3288-3294 (3 citations)
34. X. Gao, **M.S. Mirotznik** and D. W. Prather, '3D Simulations of Electrically Large Thin Plates Using the Hybrid PSTD-FDTD Algorithm', **Microwave and Optical Tech. Letters.**, Vol. 45, No. 6, June 2005, pp. 502-507 (1 citation)
35. P.F. Curt, J. P. Durbano, M. R. Bodnar, S. Shi and **M.S. Mirotznik**, 'Enhanced Functionality for Hardware-Based FDTD Accelerators', **Applied Computational Electromagnetics Society (ACES) Journal**, Vol. 22, No. 1, March 2007, pp. 39-46 (3 citations)
36. **M.S. Mirotznik**, S.A. Mathews and T. Creazzo, 'Design of Diffractive Elements at Millimeter Wavelengths using Subwavelength Cylindrical Microstructures', **Microwave and Optical Tech. Letters**, Vol. 49, No. 8, August 2007, pp. 1880-1884 (12 citations)
37. **M.S. Mirotznik**, J. van der Gracht, D. Pustai and S.A. Mathews, 'Design of cubic-phase optical elements using subwavelength microstructures,' **Optics Express**, Vol. 16, No. 2, January 2008, pp. 1250-1259 (7 citations)
38. G. Shambat, **M.S. Mirotznik**, G. Euliss, V. Smolski, E. Johnson and R. Athale, 'Photonic crystal filters for multi-band optical filtering on a monolithic substrate', **Journal of Nanophotonics**, Vol. 3, March 2009, pp. 1-11 (5 citations)
39. J.N. Mait, D. Wikner, **M.S. Mirotznik**, J. van der Gracht, G. Behrmann, B. Good and S.A. Mathews, '94-GHz Imager with Extended Depth of Field', **IEEE Trans on Antennas and Propagation**, Vol. 57, No. 6, June 2009, pp. 1713-1719 (15 citations)
40. S.A. Mathews, **M.S. Mirotznik** and A. Pique, 'Development of novel RF and millimeter wave structures by laser direct-write', **Journal of Laser Micro/Nanoengineering**, Vol. 3, No.3, 2009, pp. 177-181 (2 citations)
41. **M.S. Mirotznik**, B. Good, P. Ransom, D. Wikner and J.N. Mait, 'Iterative Design of Moth-Eye Antireflective Surfaces at Millimeter Wave Frequencies', **Microwave and Millimeter wave Technology Letters**, Vol. 52, No. 3, March 2010, pp. 561-568 (5 citations)

42. **M.S. Mirotznik**, B. Good, P. Ransom, D. Wikner and J.N. Mait, 'Broadband Antireflective Properties of Inverse Motheys Surfaces', **IEEE Trans on Antennas and Propagation**, Vol. 58, No. 9, September 2010, pp. 2969-2980 (8 citations, This paper was awarded the Wheeler Prize as the best applied paper of 2010 in IEEE Antennas and Propagation)
43. O. Kilic, M. Huang, C. Conner and **M.S. Mirotznik**, 'Hardware accelerated Design of Millimeter Wave Antireflective Surfaces: A Comparison of Field-Programmable Gate Array (FPGA) and Graphics Processing Unit (GPU) Implementations', **ACES Journal**, Vol. 26, No. 3. March 2011, pp. 188-198 (1 citations)
44. **M.S. Mirotznik**, S. Yarlagadda, R. McCauley and P. Pa, 'Broadband Electromagnetic Modeling of Woven Fabric Composites', **IEEE Microwave Theory and Techniques**, Vol. 60, No. 1, January 2012, pp. 158-169 (4 citations)
45. **M.S. Mirotznik**, W. Beck, K. Olver, J. Little and P. Pa, 'Passive Infrared Sensing using Plasmonic Resonant Dust Particles', **International Journal of Optics**, Vol. 2012, Article ID 651563, pp. 1-8 (0 citations)
46. B. Good, P. Ransom, S. Simmons, A. Good and **M.S. Mirotznik**, 'Design of Graded Index Flat Lenses with Integrated Antireflective Properties', **Microwave and Millimeter wave Technology Letters**, Vol. 54, No. 12, December 2012, pp. 2774-2781. (0 citations)
47. I. McMichael, A. Zaghoul and **M.S. Mirotznik**, 'A Method for Determining Optimal EBG Reflection Phase for Low Profile Dipole Antennas', **IEEE Trans on Antennas and Propagation**, Vol. 61, No. 5, May 2013, pp. 2411-2417. (0 citations)
48. G. Behrmann, J. Hidler and **M.S. Mirotznik**, 'Fiber Optic Micro Sensor for the Measurement of Tendon Forces', **Biomedical Engineering On-Line**, Vol. 11, No. 77, 2012, pp.1-16
49. I. McMichael, E. Nallon, V. Schnee, W. Scott and **M.S. Mirotznik**, 'EBG Antenna for GPR Co-Located with a Metal Detector for Landmine Detection', **IEEE Geoscience and Remote Sensing Letters**, Vol. 10, No. 6. , November 2013, pp. 1329-1333
50. I. McMichael, A. Zaghoul and **M.S. Mirotznik**, 'Annular Slot Loaded Ground Plane', **IEEE Trans on Antennas and Propagation**, Vol. 62, No. 4, April 2014, pp. 2063-2070
51. T. Miller, O. Kilic and **M.S. Mirotznik**, 'Antenna Cross Polarization Isolation and Calibration of Hybrid-Polarization Radars', **IEEE Antennas and Wireless Propagation Letters**, Vol. 12, December 2013, pp. 1200-1203
52. D. Roper, B. Good, R. McCauley, S. Yarlagadda, J. Smith, A. Good and **M.S. Mirotznik**, 'Additive Manufacturing of Graded Dielectrics', **Smart Materials and Structures**, Vol. 23, No. 4, April 2014 (featured article).
53. I. McMichael, A. Zaghoul and **M.S. Mirotznik**, 'Multi-band Annular Slot Loaded Ground Plane', submitted to **IEEE Trans on Antennas and Propagation** (March 2013)

Conference Proceedings

1. **M.S. Mirotznik**, M. Fallert and K.R. Foster, 'Electrical Characterization of Cardiac Tissue at Microwave Frequencies', Northeast Biomedical Engineering Conference Providence Rhode Island, 1990
2. **M.S. Mirotznik**, M. A. Fallert, D. K. Bogen, and K. R. Foster, 'Impedance mapping of myocardial tissue during ischemia', **17th Northeast Bioengineering Conference**, Hartford CT, April 1991
3. **M.S. Mirotznik**, N. Engheta, and K. R. Foster, 'Heating characteristics of thin helical antennas' **Northeast Bioengineering Conference**, Kingston RI, March 1992
4. **M.S. Mirotznik**, N. Engheta, and K. R. Foster, 'Heating characteristics of thin helical antennas with conducting cores', 1993 **IEEE Antennas and Propagation Society/URSI Radio Science Meeting**, Ann Arbor MI June 1993
5. D. Schwartzman, I. Chang, T. Kamplain, A. Cowen, A.A. Adas, **M.S. Mirotznik**, K. R. Foster and C. D. Gottlieb, 'Radiofrequency energy-induced myocardial lesion growth characteristics using constant power', **1993 American Heart Association Conference**, Atlanta GA, November 1993
6. D. Schwartzman, I. Chang, A. A. Adas, **M.S. Mirotznik**, I. Shai, K. R. Foster, C. D. Gottlieb, F. E. Marchlinski, 'Radiofrequency energy-induced myocardial lesion volume and formation rate is increased using a new electrode design', **1993 American Heart Association Conference**, Atlanta GA, November 1993.
7. Chang, **M.S. Mirotznik** and D. Schwartzman, 'Electrical impedance characterization of normal and chronically infarcted cardiac tissue at radiofrequencies', **Southeast Biomedical Engineering Conference**, Washington D.C. 1993
8. D. Schwartzman, I. Chang, **M.S. Mirotznik**, CD Gottlieb and F. Marchilinski, 'Left-Ventricular Endocardial Mapping during Sinus Rhythm in Chronic Myocardial-Infarction', **Journal of the American College of Cardiology**, 1994, Iss NSI, pp A202-A202
9. D. Schwartzman, I. Chang, **M.S. Mirotznik**, CD Gottlieb and F. Marchilinski, 'Radiofrequency Ablation in Chronic Infarction: An In-Vitro Investigation of Endocardial Lesion Formation and Tissue Electrical Characteristics' **Journal of the American College of Cardiology**, 1994, Iss NSI, pp A202-A202
10. M. A. Fallert, **M.S. Mirotznik**, D. K. Bogen, S. W. Downing, E. B. Savage, K. R. Foster, and M. E. Josephson, 'Myocardial electrical resistivity mapping in ischemic sheep hearts and healing aneurisms', 63rd Scientific Sessions of the American Heart Association, Dallas TX November 1990 (abstract published in **Circulation**, Vol. 82: pp 451-451 (1990)
11. I. Chang, **M.S. Mirotznik**, D. Schwartzman, C. D. Gottlieb, F. E. Marchlinski, K. R. Foster , 'Radiofrequency energy delivery results in non-uniform heating patterns', **43rd Ann. Scientific Session, American College of Cardiology**
12. D. Schwartzman, I. Chang, **M.S. Mirotznik**, C. D. Gottlieb, K. R. Foster, F. E. Marchlinski, 'Left ventricular catheter endocardial mapping during sinus rhythm in chronic myocardial infarction: Correlation of electrograms with electrical impedance', **43rd Ann. Scientific Session, American College of Cardiology (1994)**

13. D. Schwartzman, I. Chang, **M.S. Mirotznik**, C. D. Gottlieb, K. R. Foster, F. E. Marchlinski, 'Radiofrequency ablation in chronic infarction: an in vitro investigation of endocardial lesion formation and tissue electrical characteristics', **43rd Ann. Scientific Session, American College of Cardiology**
14. I. Chang, D. Schwartzman, **M.S. Mirotznik**, D. J. Callans, C. D. Gottlieb, K. R. Foster, F. E. Marchlinski, 'Does a thermistor probe provide useful information about electrode-tissue contact? An *in vitro* assessment', 1994 **North American Society of Pacing and Electrophysiology (NASPE)**
15. **M.S. Mirotznik**, D. Schwartzman, I. Chang, C. D. Gottlieb, F. E. Marchlinski, K. R. Foster, 'Prediction of myocardial lesion dimensions resulting from application of radiofrequency energy using a numerical model', 1994 **North American Society of Pacing and Electrophysiology (NASPE)**
16. D. Schwartzman, I. Chang, **M.S. Mirotznik**, C. D. Gottlieb, K. R. Foster, F. E. Marchlinski, 'Epicardial impedance changes with radiofrequency energy application in a porcine model', 1994 **North American Society of Pacing and Electrophysiology (NASPE)**.
17. **M.S. Mirotznik**, D. Schwartzman, C. D. Gottlieb, F. E. Marchlinski, K. R. Foster, 'Electrical resistivity properties of normal and chronically infarcted ovine myocardium', Proc. **Southeast Bioengineering Conference**, April 1994
18. P J Riu, K R Foster, **M S Mirotznik** and Leon Axel, 'FDTD simulations of induced fields and SAR in the body from MRI scanners', IFMBE Meeting, Nice, France, September 1997', **Published in Medical & Biological Engineering & Computing**, Vol. 35 Supplement Part 2, pp. 767, 1997
19. D. Panescu, **M.S. Mirotznik**, 'Evaluation of Infarction based on Frequency Spectra of Bipolar Ventricular Electrograms', **NASPE 1995**
20. **M.S. Mirotznik**, D. Schwartzman, I. Chang, CD Gottlieb and F. Marchilinski, 'Radiofrequency Energy Delivery Results in Non-uniform Heating Patterns', **Journal of the American College of Cardiology**, 1995, Iss. NSI, pp A205-A205
21. D. Panescu, **M.S. Mirotznik**, J Schwartzwalder, J. Wayne and D. Swanson, 'Frequency Domain Analysis of Fractionation in Ventricular Bipolar Electrograms', **IEEE EMBS 1995**, Montreal Canada
22. J.N. Mait, D.W. Prather and **M.S. Mirotznik**, 'Models for analysis and design of diffractive optical elements', **Progress in Electromagnetics Research Symposium**, Hong Kong, 1996 (Invited Presentation)
23. D. Panescu, D. E. Haines, S. D. Fleischman, J. G. Wayne, **M.S. Mirotznik**, I. McRury, M. Mitchell and D. K. Swanson, 'Atrial lesions by temperature-controlled radiofrequency ablation,' **Circulation, Proc. 69th Ann. Sci. Sess. AHA**, New Orleans, LA, USA, Vol. 94(8), pp. I-493, 1996
24. D. Panescu, S. D. Fleischman, J. G. Wayne, **M.S. Mirotznik** and D. K. Swanson, 'Coil electrodes for RF ablation of atrial fibrillation,' **Proc. 18th Ann. Intl. Conf. IEEE Eng. Med. Bio. Soc.**, Amsterdam, Netherlands, 1996

25. Chang, J. J. Michele, S. M. Dillon, K. R. Foster, **M.S. Mirotznik**, D. Panescu, F. E. Marchlinski and D. Schwartzman, 'LV endocardial electrical impedance measurement in chronic infarction using a multipolar basket catheter,' PACE, Proc. 17th Ann. Sci. Sess. **NASPE**, Seattle, WA, USA, Vol. 19, no. 4(2), pp. 713, 1996
26. **M.S. Mirotznik**, D.T. Demazumder, J. Jones and D. Schwartzman, 'Heating Distribution of Multipolar Radiofrequency Ablation Catheters', **IEEE EMBS**, Chicago Nov. 1997
27. D.W. Prather, **M.S. Mirotznik** and J.N. Mait, 'Boundary Element Method for Vector Modeling of Diffractive Optical Elements', **SPIE 2404 Diffractive and Holographic Technologies**, 1995 pp.28-39
28. D.W. Prather, **M.S. Mirotznik** and J.N. Mait, 'Design of Subwavelength Diffractive Optical Elements using a Hybrid Finite Element-Boundary Element Method', **SPIE 2654 Diffractive and Holographic Technology**, 1996
29. **M.S. Mirotznik**, D.W. Prather and J.N. Mait, 'Hybrid Finite Element-Boundary Element Method for Vector Modeling of Diffractive Optical Elements', **SPIE 2654 Diffractive and Holographic Technology**, 1996 pp. 1-13
30. D.W. Prather, **M.S. Mirotznik** and J.N. Mait, 'Boundary Element Method for Analysis and Design of One-Dimensional Diffractive Optical Elements', **OSA Conference on Diffractive Optical Elements**, Boston MA, 1996 (Invited Presentation)
31. J.N. Mait, D.W. Prather and **M.S. Mirotznik**, 'Models for analysis and design of diffractive optical elements', **Progress in Electromagnetics Research Symposium**, Hong Kong, 1996 (Invited Presentation)
32. D.W. Prather, **M.S. Mirotznik**, and J.N. Mait, 'Rigorous modeling of finite, aperiodic diffractive optical elements,' **Annual Meeting of the Society for Industrial and Applied Mathematics** 1997
33. D.W. Prather, J.N. Mait, and **M.S. Mirotznik**, 'Boundary Element Method for Analysis of Diffractive Optical Elements', in **Proc. ARL Sensors and Electron Devices Symposium** 1999, 51-54
34. J.N. Mait, D.W. Prather, and **M.S. Mirotznik**, 'Scalar-based design of subwavelength, finite extent, aperiodic diffractive elements', **Annual Meeting of the Optical Society of America** 1997
35. D.W. Prather, J.N. Mait, **M.S. Mirotznik**, and J. P. Collins, 'Optimization-based design of subwavelength, finite extent, aperiodic diffractive elements', Annual Meeting of the **Optical Society of America** 1997
36. D. W. Prather, J. N. Mait, and **M.S. Mirotznik**, 'Design and optimization of finite aperiodic subwavelength diffractive optical elements having arbitrary phase profiles', **Annual Meeting of the Optical Society of America** 1996
37. J.N. Mait, D.M. Mackie, **M.S. Mirotznik**, and D.W. Prather, 'Investigation of the focal shift in subwavelength diffractive lenses,' **Annual Meeting of the Optical Society of America** 1998
38. D.M. Mackie, **M.S. Mirotznik**, and J.N. Mait, 'Performance Models for Two-Dimensional Subwavelength Diffractive Lens', **Annual Meeting of the Optical Society of America** 1998
39. J.N. Mait, D.W. Prather, and **M.S. Mirotznik**, 'Scalar-Based Design of Binary Subwavelength Diffractive Lenses', in **Diffractive Optics and Micro-Optics** 10, 1998 OSA Technical Digest Series, (OSA, Washington DC, 1998), 88-90.

40. **M.S. Mirotznik**, J.N. Mait, D.W. Prather and W.A. Beck, 'Three dimensional Vector-Based Analysis of Subwavelength Diffractive Optical Elements using the Finite-Difference-Time-Domain (FDTD) Method', in **Diffractive Optics and Micro-Optics 10**, 1998 OSA Technical Digest Series, (OSA, Washington DC, 1998), 91-93
41. D.W. Prather, S. Shi, **M.S. Mirotznik** and J.N. Mait, 'Vector-Based Analysis of Axially Symmetric and Conducting Diffractive Lenses', in **Diffractive Optics and Micro-Optics 10**, 1998 OSA Technical Digest Series, (OSA, Washington DC, 1998), 94-96
42. J. N. Mait and **M.S. Mirotznik**, 'Subwavelength Diffractive Design,' **2000 Diffractive Optics and Micro-Optics**, OSA Technical Digest (Optical Society of America, Washington DC, 2000), 10-11
43. **M.S. Mirotznik**, S., Demazumder D., and Schwartzman D., 'Biophysics of radiofrequency ablation using an irrigated electrode' **Annals of Biomedical Engineering**, v 28, n SUPPL. 1, 2000, p S-53
44. **M.S. Mirotznik**, J. N. Mait, and D. W. Prather, 'Design of Two-Dimensional Polarization Selective Computer Generated Holograms using Form-Birefringence,' **OSA 2002 Diffractive Optics and Micro-Optics Topical Meeting**, August 2002
45. J.R. Smith and **M.S. Mirotznik**, 'Method of Moment (MoM) Modeling of Wireless Communications over Rough Surfaces – A New 2D Basis Function Set & Comparison with Experimental Data', invited presentation at the **Multi-Conference on Systemics, Cybernetics, and Informatics (SCI2003)**, July 2003
46. J.P. Durbano, F.E. Ortiz, J.R. Humphrey, D.W. Prather and **M.S. Mirotznik**, 'Development of Hardware Based FDTD Solvers: An Analysis of Design Strategies and Implementation Results', invited presentation at the **Multi-Conference on Systemics, Cybernetics, and Informatics (SCI2003)**, July 2003
47. J.P. Durbano, F.E. Ortiz, J.R. Humphrey, D.W. Prather and **M.S. Mirotznik**, 'Implementation of Three Dimensional FPGA-Based FDTD Solvers: An Architectural Overview', Poster presentation at **FPGAs for Custom Computing Machines (FCCM)**, Apr 2003
48. Nguyen, U., Brown S., Chang I., Krycia, J. and **M.S. Mirotznik**, 'Numerical evaluation of heating of the human head due to magnetic resonance imaging (MRI)', **Proceedings of SPIE - The International Society for Optical Engineering**, v 5030 II, 2003, p 627-638
49. J. R. Smith and **M.S. Mirotznik**, 'Forward scattering measurements & predictions,' **Proc. IGARSS 2004, Anchorage**, Sept. 2004.
50. J.R. Smith and **M.S. Mirotznik**, 'Forward scattering channeling phenomenon on rough seas,' **Proc. IGARSS 2004, Anchorage**, Sept. 2004.
51. J.R. Smith, S. J. Russell, and **M.S. Mirotznik**, 'Forward scattering and multipath phenomena at low grazing (U/N),' **Proc. HAVE_FORUM**, Boston, Sept. 2004.
52. J.R. Smith and **M.S. Mirotznik**, 'The general 2-D moments via integral transform method for radiation & scattering,' **Proc. ElectroMag. Code Consort. (EMCC 2004)**, Seattle, May 2004.

53. J.R. Smith and **M.S. Mirotznik**, 'The general 2-D moments via integral transform method for acoustic radiation & scattering,' **Proc. Acoust. Soc. Am.**, New York, May 2004.
54. J.R. Smith and **M.S. Mirotznik**, 'Forward scattering measurements,' **Proc. ElectroMag. Code Consort.** (EMCC 2003), Hampton, VA, May 2004.
55. Gao, Xiang, **M.S. Mirotznik**, Prather, Dennis W, 'Soft source generation in the Fourier PSTD algorithm', **IEEE Antennas and Propagation Society, AP-S International Symposium (Digest)**, v 4, *IEEE Antennas and Propagation Society Symposium 2004 Digest held in Conjunction with: USNC/URSI National Radio Science Meeting, 2004*, p 4224-4227
56. Durbano, J.P, Humphrey, J.R., Ortiz, F.E., Curt, P.F., Prather, D.W. and **M.S. Mirotznik**, 'Hardware acceleration of the 3D finite-difference time-domain method', **IEEE Antennas and Propagation Society Symposium**, 2004, Vol.1, pt. 1, p 77-80
57. Durbano, J.P, Humphrey, J.R., Ortiz, F.E., Curt, P.F., Prather, D.W. and **M.S. Mirotznik**, 'Hardware acceleration of the 3D finite-difference time-domain method' **IEEE Antennas and Propagation Society, AP-S International Symposium (Digest)**, Vol. 1, 2004, p 77-80
58. J.R. Smith and **M.S. Mirotznik**, 'The Forward Scattering Surface Interaction Region,' **IEEE Antennas and Propagation Society Conference**, Baltimore, MD, June 2005
59. J.R. Smith and **M.S. Mirotznik**, 'High Frequency Forward Scattering Models with Shadowing Correction,' **IEEE Antennas and Propagation Society Conference**, Baltimore, MD, June 2005
60. J.R. Smith and **M.S. Mirotznik**, 'Moments via Integral Transform Method for 2-D Curvilinear Elements,' **IEEE Antennas and Propagation Society Conference**, Baltimore, MD, June 2005
61. C.A. Schuetz, **M.S. Mirotznik**, S. Shi, G.J. Schneider, J. Murakowski and D.W. Prather, 'Applications of Optical Upconversion to Sparse Aperture Millimeter-Wave Imaging', **Proceedings of SPIE, Passive Millimeter-Wave & Terahertz Imaging II**, Vol. 5989, 2005
62. R. Plemmons, G. Behrmann, S. Mathews, **M.S. Mirotznik**, J. Nagy, P. Pauca, T. Torgersen, and J. van der Gracht, 'Preliminary Studies of Lenslet Array Imaging for Iris Recognition Biometrics', **Proceedings of the SPIE, Optics in the Southeast**, October 2005
63. S. A. Mathews, **M.S. Mirotznik**, B. Frazier, A. Piqué, 'Comparison of 355 nm and 266 nm Solid State Lasers for Micromachining Applications', **Proceedings of the 3rd International Congress on Laser Advanced Materials Processing, LMP2005**, May 2005
64. R. Barnard, V.P. Pauca, T.C. Torgersen, R. J. Plemmons, S. Prasad, J. van der Gracht, J. Nagy, J. Chung, G. Behrmann, S. Mathews and **M.S. Mirotznik**, 'High-Resolution Iris Image Reconstruction from Low-Resolution Imagery', **Proceedings of SPIE, Advanced Signal Processing Algorithms, Architectures and Implementations XVI**, Vol. 6313, 2006

65. C.A. Schuetz, **M.S. Mirotznik**, S. Shi, G.J. Schneider, J. Murakowski and D.W. Prather, 'Optical Techniques for Sparse-Aperture, Millimeter-Wave Imaging', **Proceedings of SPIE, Passive Millimeter-Wave & Terahertz Imaging Technology IX**, Vol. 6211, 2006
66. G. P. Behrmann, **M. S. Mirotznik**, J. N. Mait, D. A. Wikner, and J. vander Gracht, 'Wavefront Coding for Millimeter Wave Imaging,' **Frontiers in Optics, Optical Society of America**, Washington DC, September 2006.
67. S.A. Mathews, **M.S. Mirotznik**, B.L. Good and A. Pique, 'Rapid prototyping of frequency selective surfaces by laser direct-write', **Photonics West**, January 2007 (Invited Presentation)
68. R. Barnard, B. Gray, V. Pauca, T. Torgersen, **M.S. Mirotznik**, J. van der Gracht, R. Plemmons, G. Behrmann, S. Mathews, and S. Prasad. 'PERIODIC: State-of-the-Art Array Imaging Technology,' **Proc. 2007 ACM Southeast Conference**, March, 2007
69. R. Plemmons, S. Prasad, S. Mathews, **M.S. Mirotznik**, R. Barnard, B. Gray, V. Pauca, T. Torgersen, J. van der Gracht, and G. Behrmann. 'PERIODIC: Integrated Computational Array Imaging Technology,' **OSA Technical Digest, Conference on Computational Optical Sensing and Imaging (COSI)**, Vancouver, 2007
70. J. R. Smith, Jr. and **M.S. Mirotznik**, 'Effect of Shadowing on Propagation over Rough Water,' **Proc. App. Comp. EM Soc.**, Verona, March 2007
71. **M.S. Mirotznik**, O. Kilic, S.A. Mathews, and B. Good, 'Design of Moth-eye Antireflective Surfaces at Microwave and Millimeter Wavelengths', **North American Radio Science Meeting (URSI)**, Ottawa Canada, July 2007
72. J.R. Smith and **M.S. Mirotznik**, 'Estimation of Wave Spectra via Remote RF Forward Scattering Measurements', **North American Radio Science Meeting (URSI)**, Ottawa Canada, July 2007
73. I. Biswas, D.W. Prather, C.A. Schuetz, R.D. Martin and **M.S. Mirotznik**, 'Sparse aperture detection and imaging of millimeter sources via optical image-plane interferometry', **Proceedings of SPIE, Electro-Optical Remote Sensing, Photonic Technologies and their Applications**, Florence Italy, September 2007 (*invited talk*)
74. D.W. Prather, I. Biswas, C.A. Schuetz, R.D. Martin and **M.S. Mirotznik**, 'Multiple Aperture Imaging of Millimeter Sources via Image-Plane Interferometry', **IEEE International Geoscience and Remote Sensing Symposium**, Barcelona Spain, July 2007
75. C.A. Schuetz, R.D. Martin, I. Biswas, **M.S. Mirotznik** and D.W. Prather, 'Technologies for Distributed Aperture Millimeter-Wave Radiometric Imaging using Optical Up-conversion', **IEEE International Geoscience and Remote Sensing Symposium**, Barcelona Spain, July 2007
76. J. N. Mait, D. A. Wikner, **M.S. Mirotznik**, G.P. Behrmann, and J. vander Gracht, 'Extended Depth-of-Field Imaging at 94 GHz,' **OSA Technical Digest, Conference on Computational Optical Sensing and Imaging (COSI)**, Vancouver Canada, 2007.

77. R. Martin, C. Schuetz, C. Chen, I. Biswas, J. Samluk, E. Stein Jr., **M.S. Mirotznik**, and D. Prather, 'Two-dimensional Snapshot Distributed Aperture Millimeter-Wave Imaging using Optical Upconversion,' **Proceeding of SPIE, Defense and Security**, Orlando Florida, February 2008.
78. C. Chen, C.A. Schuetz, R.D. Martin, I. Biswas, J. Samluk, E.L. Stein Jr., D. MacKrides, **M.S. Mirotznik**, and D.W. Prather, 'Configuration Optimization and Performance Analysis of Distributed Aperture Optical System for Millimeter-Wave Imaging', **Proceeding of SPIE, Defense and Security**, Orlando Florida, February 2008.
79. B. Good and **M.S. Mirotznik**, 'Design of Dielectric Windows using Subwavelength Moth-eye Surfaces', **North American Radio Science Meeting (URSI)**, Boulder Colorado, Jan 2008
80. **M.S. Mirotznik**, 'A Practical Enhanced-Resolution Integrated Optical-Digital Imaging Camera (PERIODIC)', **SPIE Modeling and Simulation for Military Operations IV**, Orlando Florida, April 2009 (invited talk)
81. T. Dillon, C. Schuetz, R. Martin, L Stein, J. Samluk, **M. S. Mirotznik** and D. Prather, 'Optical configuration of an upconverted millimeter-wave distributed aperture imaging system', **SPIE**, Berlin Germany, September 2009
82. O. Kilic, M. Huang, C. Conner, **M. S. Mirotznik**, 'Hardware Accelerates Design of Millimeter Wave Antireflective Surfaces,' **Proc. ACES Intl. Conference**, Tampere, Finland, April 2010, (invited paper)
83. Q. Zhang, **M.S. Mirotznik**, S. Saldana, J. Smith and R. Barnard, 'Depth estimation, spatial variant image registration, and super-resolution using multi-lenslet camera', **Proceeding of SPIE Modeling and Simulation for Military Operations IV**, Orlando Florida, February 2010
84. J. Mait, D. Wikner, **M.S. Mirotznik** and C. Fernandez-Cull, 'New Technologies to Enable Millimeter-Wave Imaging', **OSA Imaging Systems Conference**, Tucson Arizona, June 2010
85. **M.S. Mirotznik**, W. Beck, K. Olver and J. Little, 'Passive Infrared Sensing using Plasmonic Resonant Dust Particles', **Proceeding of SPIE, Defense and Security**, Orlando Florida, April 2011.
86. **M.S. Mirotznik**, 'Wideband Antireflective Surfaces using Inverse Motheye Structures', **IDGA 8th Military Symposium**, Washington DC, September 2011 (90 minute invited seminar).
87. **M.S. Mirotznik**, P. Pa, R. McCauley and S. Yarlagadda, 'Wideband Antireflective Surfaces using Inverse Motheye Structures', **IDGA 8th Military Symposium**, Washington DC, September 2011 (90 minute invited seminar).
88. **M.S. Mirotznik**, S. Yarlagadda, R. McCauley and P. Pa, 'Broadband Electromagnetic Modeling of Multilayered 3D Composite Laminates', **Society for the Advancement of Material and Process Engineering**, Baltimore MD, 2012
89. P. Pa, S. Yarlagadda, R. McCauley and **M.S. Mirotznik**, 'Electromagnetic Characterization of Embedded Frequency Selective Surfaces in a Structural Composite' **Society for the Advancement of Material and Process Engineering**, Baltimore MD, 2012
90. P. Pa, K. Duncan, S. Yarlagadda, R. McCauley and **M.S. Mirotznik**, 'Integrating Metamaterials within a Structural Composite using Additive Manufacturing Methods', **IEEE International Symposium on Antennas and Propagation**, Chicago IL, 2012

91. **M.S. Mirotznik**, S. Yarlagadda, R. McCauley and P. Pa, 'Broadband Electromagnetic Modeling of Heterogenous Composite Fabrics and Laminates', **USNC-URSI National Radio Science Meeting**, Chicago IL, 2012
92. E. Lee, E. Barry, K. Duncan, P. Pa and **M.S. Mirotznik**, 'Modeling, Simulation and Fabrication of a Transparent Meshed Microstrip Patch Antenna', **IEEE International Symposium on Antennas and Propagation**, Chicago IL, 2012
93. B. Good and **M.S. Mirotznik**, 'Graded Index Flat Lenses with Integrated Antireflective Properties', **USNC-URSI National Radio Science Meeting**, Chicago IL, 2012
94. I. McMichael, A. Zaghoul and **M.S. Mirotznik**, 'A Method for Determining Optimal EBG Reflection Phase from Low Profile Antennas', **IEEE International Symposium on Antennas and Propagation**, Chicago IL, 2012
95. T. Miller, O. Kilic, **M.S. Mirotznik** and S. Russell, 'Antenna Cross-Polarization Isolation Impact on the Measurement of Weakly Cross-Polarized Sea Clutter', **USNC-URSI National Radio Science Meeting**, Chicago IL, 2012
96. J. Smith, S. Yarlagadda and **M.S. Mirotznik**, 'Three Dimensional Printing of Graded Dielectrics using an Ultrasonic Powder Deposition System', **USNC-URSI National Radio Science Meeting**, Chicago IL, 2012
97. R. McCauley, P. Pa, S. Yarlagadda, M. Keefe and **M.S. Mirotznik**, 'Mechanical Behavior of Composite Laminates with High Impedance Surfaces', **Society for the Advancement of Material and Process Engineering**, Baltimore MD, 2012
98. I. McMichael, A. Zaghoul and **M.S. Mirotznik**, 'A High-Impedance Surface Using Annular-Slot-Loaded Ground Plane', **IEEE International Symposium on Antennas and Propagation**, Orlando FL, 2013
99. B. Good, D. Roper and **M.S. Mirotznik**, 'Metacomposites: Multifunctional Metamaterial within a Structural Composite', **IEEE International Symposium on Antennas and Propagation**, Orlando FL, 2013
100. P. Pa, R. McCauley, S. Yarlagadda and **M.S. Mirotznik**, 'Scaled Manufacturing Techniques for High Impedance Surfaces Integrated within a Structural Composite', **IEEE International Symposium on Antennas and Propagation**, Orlando FL, 2013
101. D. Roper, S. Yarlagadda and **M. S. Mirotznik**, 'Three Dimensional Printing of Graded Dielectrics using Ultrasonic Powder Deposition', **IEEE International Symposium on Antennas and Propagation**, Orlando FL, 2013
102. P. Ransom and **M.S. Mirotznik**, 'Broadband Antireflective Surfaces using Tapered Subwavelength Surface Texturing', **IEEE International Symposium on Antennas and Propagation**, Orlando FL, 2013
103. **M.S. Mirotznik**, B. Good, S. Stoyanov and D. Roper, 'Fabrication of Inhomogeneous Magneto-Dielectric Substrates by Functional Additive Manufacturing', **IEEE International Symposium on Antennas and Propagation**, Memphis TN, 2014
104. Z. Larimore, P. Pa, M. Keefe and **M.S. Mirotznik**, 'Additive Manufacturing of Graded Index Flat Lenses via Multi-Material Micro-Dispensing', **IEEE International Symposium on Antennas and Propagation**, Memphis TN, 2014

105. P. Pa, M. Mills, Z. Larimore, S. Yarlagadda and **M.S. Mirotznik**, 'Graded Surface Wave Absorbers Fabricates using Resistive Screen Printing', **IEEE International Symposium on Antennas and Propagation**, Memphis TN, 2014
106. D. Roper, B. Good, S. Yarlagadda and **M.S. Mirotznik**, 'Fabrication of Flat Luneburg Lens using Functional Additive Manufacturing', **IEEE International Symposium on Antennas and Propagation**, Memphis TN, 2014

U.S. Patents

1. Marchilinski F., Schwartzman D, **M.S. Mirotznik** and Foster K., 'Method of using endocardial impedance for assessing tissue heating during ablation', **U.S. Patent # 5,562,721**, Oct. 1996
2. Bourg J., Mitchell J, **M.S. Mirotznik** and Roth B., 'Pulsed Low Frequency EPR Spectrometer and Imager', **U.S Patent # 5,502,386** Mar. 1996
3. Panescu D., Swanson D., **M.S. Mirotznik** and Schwartzman D., 'Systems and methods for examining the electrical characteristics and timing of electrical events in cardiac tissue', **U.S. Patent # 5,577,509**, Nov. 1996
4. Marchilinski F., Schwartzman D, **M.S. Mirotznik** and Foster K., 'Method of using endocardial impedance for determining electrode-tissue contact, appropriate sites for arrhythmia ablation and tissue heating during ablation' **U.S Patent # 5,447,529** Sept. 1995
5. Marchilinski F., Schwartzman D., **M.S. Mirotznik**, K. R. Foster, C. D. Gottlieb, I. Chang,' Method of using endocardial impedance for determining electrode-tissue contact' **U.S. Patent #5,673,704**, Oct 1997
6. Ramella-Roman J., **Mirotznik M.S.** and Mathews S., 'Lenslet array for retinal oximetry', **U.S. Patent #7,997,732**, Oct. 2011

General Interest Articles

1. **M.S. Mirotznik**, 'Tools for Schools', **IEEE Spectrum Magazine**, September 1996, pp. 41-45 (Full length article on the use of advanced software tools in engineering education)
2. **M.S. Mirotznik and D. Prather**, 'Advanced Electromagnetic Tools', **IEEE Spectrum Magazine**, Dec 1997 (Full-length article on trends in electromagnetic field software tools)
3. **M.S. Mirotznik**, 'Data-Acquisition using Matlab', **IEEE Spectrum Magazine**, April 1999 (Software Review)
4. **M.S. Mirotznik**, 'New Matlab-to-C Compiler', **IEEE Spectrum Magazine**, Dec 1998 (Software Review)
5. **M.S. Mirotznik**, 'Matlab-to-C++ time-saver', **IEEE Spectrum Magazine**, April 1997, pp. 14-15 (Software Review)
6. **M.S. Mirotznik**, 'Translating Matlab programs into C code', **IEEE Spectrum Magazine**, Feb. 1997, pp. 63-64 (Software Review)
7. **M.S. Mirotznik**, 'Affordable electromagnetic solver', **IEEE Spectrum Magazine**, October 1996, pp. 63-64 (Software Review)
8. **M.S. Mirotznik**, 'Organizing your references', **IEEE Spectrum Magazine**, August 1995, pp. 16-17 (Software Review)

9. **M.S. Mirotznik**, 'How to chart and graph like a pro', **IEEE Spectrum Magazine**, December 1995, p. 58 (Software Review)
10. **M.S. Mirotznik**, 'EE tools for Mathematica', **IEEE Spectrum Magazine**, April 1995, p.82 (Software Review)
11. **M.S. Mirotznik**, 'Effortless dynamic system analysis', **IEEE Spectrum Magazine**, Feb. 1994, p. 16 (Software Review)
12. **M.S. Mirotznik**, 'A grand field analysis package for PCs', **IEEE Spectrum Magazine**, Dec. 1993, p. 64 (Software Review)
36. **M.S. Mirotznik**, 'Interactive object-oriented Xmath', **IEEE Spectrum Magazine**, Feb 1993, pp. 16-17 (Software Review)

Invited Lectures

1. Hofstra University Engineering Seminar, 1995, 'Catheter Ablation of the Heart using RF Energy'
2. The Food and Drug Administration, Grand Lecture 1996, 'Catheter Ablation of the Heart: an Engineering Perspective'
3. Yale University, 1996, 'Numerical Modeling of Magnetic Resonance Imaging Coils'
4. Boston Scientific Corporation, 'Radiofrequency Ablation using Multi-electrode Catheters', Jan 1998
5. The University of Delaware, Feb. 1999, 'Biomedical Electromagnetics'
6. Lockheed Sanders, April 1999, 'Rigorous Electromagnetic Analysis of Quantum Well Infrared Detector Arrays'
7. Naval Surface Warfare Center, Carderock VA, April 2000, 'Rigorous Electromagnetic Analysis and Design of Microstructures for Engineering Material Properties'
8. Jefferson Medical School, Philadelphia PA, March 2003, 'Micro-photonics in Medicine'
9. Cierra Medical Systems, Palo Alto CA, September 2006, 'Numerical Modeling of RF Tissue Ablation'
10. Army Night Vision Laboratory, December 2006, 'Multi-aperture imaging using compact CCD based camera'
11. The University of Delaware, February 2008, 'Electromagnetic modeling from catheters to crystals'
12. The Army Night Vision and Electronic Sensor Directorate, Fort Belvoir VA, April 2009, 'Computational Array Imaging'
13. IDGA's 8th Military Antennas Symposium, Washington DC, September 2011
14. IEEE Antenna and Propagation Society, Washington and Northern VA Chapter, March 21st, 2012
15. US Army Edgewood Chembio Center, Edgewood Maryland, December 10th, 2012
16. Army Research Laboratory, Adelphi MD, June 30, 2013