

“This book provides a comprehensive collection of recent progress made by leading experts in surface electromagnetics. It is an excellent reference for researchers, practicing engineers, and graduate students with an interest in this disruptive technology in electromagnetics.”

Chi-Hou Chan,
City University of Hong Kong

“This book is an impressive compendium of recent scientific and engineering progress made in surface electromagnetics, a disruptive technology with many important, practical applications. Chapters written by many of the internationally recognized leaders in this field make it an outstanding reference for scientists and engineers at all levels.”

Richard W. Ziolkowski, Professor Emeritus,
IEEE Fellow, The University of Arizona

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Surface Electromagnetics

Written by the leading experts in the field, this text provides systematic coverage of the theory, physics, functional designs, and engineering applications of advanced engineered electromagnetic surfaces. All the essential topics are included, from the fundamental theorems of surface electromagnetics to analytical models, general sheet transmission conditions (GSTC), metasurface synthesis, and quasi-periodic analysis. A plethora of examples throughout illustrate the practical applications of surface electromagnetics, including gap waveguides, modulated metasurface antennas, transmit arrays, microwave imaging, cloaking, and orbital angular momentum (OAM) beam generation, allowing readers to develop their own surface electromagnetics-based devices and systems. Enabling a fully comprehensive understanding of surface electromagnetics, this is an invaluable text for researchers, practicing engineers, and students working in electromagnetics, antennas, metasurfaces, and optics.

Fan Yang is Professor in the Department of Electronic Engineering and Director of the Microwave and Antenna Institute at Tsinghua University. He is the coauthor of *Electromagnetic Band Gap Structures in Antenna Engineering* (Cambridge, 2008) and *Reflectarray Antennas: Theory Designs and Applications* (2018) and is a Fellow of the IEEE and ACES.

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With Applications in Antenna, Microwave,
and Optical Engineering

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We dedicate this book to our family, mentors, and past, present, and future students. May surface electromagnetics enlighten all of us!

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Contents

	<i>Contributors</i>	page xvi
	<i>Acknowledgments</i>	xix
1	Introduction to Surface Electromagnetics	1
	Fan Yang and Yahya Rahmat-Samii	
	1.1 What Is Surface Electromagnetics?	1
	1.2 Development of Electromagnetic Surfaces	3
	1.2.1 Classical Uniform EM Surfaces	3
	1.2.2 Periodic EM Surfaces: Frequency Selective Surface	5
	1.2.3 Periodic EM Surfaces: Soft/Hard Surface and EBG Surface	7
	1.2.4 Recent Progress on Quasi-periodic EM Surfaces	9
	1.3 Importance of Surface Electromagnetics	12
	1.3.1 Surface Equivalence Theorem	13
	1.3.2 Prominent Features of EM Surfaces	16
	1.3.3 Comparisons with Related Sciences and Technologies	19
	1.4 Research Frontiers of Surface Electromagnetics	20
	1.4.1 Surface Electromagnetic Theory	21
	1.4.2 Artificial Surface Designs with Novel Properties	22
	1.4.3 SEM-Based Engineering Applications	22
	1.5 Contents of This Book	23
	1.5.1 Models, Analysis, and Synthesis of EM Surfaces	24
	1.5.2 Guided Wave, Leaky Wave, and Plane Wave Properties of EM Surfaces	24
	1.5.3 Applications of Surface Electromagnetics	26
	References	27
2	Analytical Modeling of Electromagnetic Surfaces	30
	Viktar Asadchy, Ana Díaz-Rubio, Do-Hoon Kwon, and Sergei Tretyakov	
	2.1 Introduction: Definitions, Basic Classification, Main Functionalities of Metasurfaces	30
	2.2 Metasurfaces versus Thin Slabs of Homogeneous Materials and Other Artificial Periodic Surfaces	33
		ix

2.3	Comparison of Possible Functionalities	36
2.4	Homogenization Models of Metasurfaces	37
2.4.1	Polarizability-Based Model	40
2.4.2	Susceptibility-Based Model	42
2.4.3	Model Based on Equivalent Impedance Matrix	43
2.5	Bi-anisotropy and Nonreciprocity: Definitions and Enabled Functionalities	46
2.5.1	Bi-anisotropy	46
2.5.2	Nonreciprocity	49
2.5.3	Enabled Functionalities	52
2.6	Metasurfaces for Shaping Transmitted Fields and Reflected Fields	54
2.6.1	Control of Wave Propagation Direction in Transmission	54
2.6.2	Control of Wave Propagation Direction in Reflection	56
2.6.3	Control of Polarization in Reflection	57
2.6.4	Control of Multiple Waves in Reflection	60
	References	61

3	Using Generalized Sheet Transition Conditions (GSTCs) in the Analysis of Metasurfaces	66
	Christopher L. Holloway and Edward F. Kuester	
3.1	Introduction and Definitions of Metasurfaces	66
3.2	Metasurfaces versus Frequency-Selective Surfaces	68
3.3	Characterization of Metasurfaces: Surface versus Bulk Properties	73
3.4	Generalized Sheet Transition Conditions (GSTCs)	78
3.4.1	GSTCs for a Metafilm	78
3.4.2	GSTCs for a Metascreen	79
3.4.3	GSTCs for a Metagrating	80
3.5	Reflection and Transmission Coefficients	81
3.5.1	Metafilms	81
3.5.2	Metascreens	87
3.5.3	Metagratings	90
3.6	Determining the Surface Parameters	92
3.6.1	Retrieval Expressions for Metafilms	93
3.6.2	Retrieval Expressions for Metascreens	95
3.6.3	Retrieval Expressions for Metagratings	98
3.7	Some Applications of GSTCs	99
3.7.1	Guided Waves on a Single Metasurface	99
3.7.2	Resonator Size Reduction	103
3.7.3	Waveguides	108
3.7.4	Controllable Reflections and Transmissions	110
3.8	Impedance-Type Boundary Conditions	114
3.9	Isolated Scatterers and One-Dimensional Arrays	114
3.10	Summary	115
	References	115

	Contents	xi
4	Electromagnetic Metasurface Synthesis, Analysis, and Applications	124
	Karim Achouri, Yousef Vahabzadeh, and Christophe Caloz	
4.1	Introduction	124
4.2	Mathematical Synthesis	125
4.2.1	Metasurface Boundary Conditions	126
4.2.2	Synthesis Procedure	128
4.3	Numerical Analysis	133
4.3.1	Metasurface Analysis	133
4.3.2	Two-Dimensional Finite-Difference Frequency-Domain Method	136
4.3.3	Two-Dimensional Finite-Difference Time-Domain Method	138
4.3.4	Finite-Difference Time-Domain Scheme for Dispersive Metasurface	141
4.3.5	One-Dimensional Analysis of Nonlinear Second-Order Metasurfaces	142
4.4	Illustrative Examples	144
4.4.1	Negative Refraction Metasurface	144
4.4.2	Nongyrotropic Nonreciprocal Metasurface	145
4.4.3	Time-Varying Half-Wave Absorber	146
4.5	Practical Realization	147
4.5.1	Relation with Scattering Parameters	147
4.5.2	Implementation of the Scattering Particles	152
4.6	Conclusion	159
4.7	Conditions of Reciprocity, Passivity, and Loss	160
	References	161
5	Analysis and Modeling of Quasi-periodic Structures	165
	Maokun Li	
5.1	Introduction	165
5.2	Study of Quasi-periodic Effect	168
5.2.1	Calculation of Element Reflection Phase	168
5.2.2	Study of Quasi-periodic Effect	172
5.2.3	Phase Adjustment in Reflectarray Antennas	174
5.3	Full-Wave Modeling of Quasi-periodic Structures Using Reduced Basis Method	181
5.3.1	Formulation	181
5.3.2	Numerical Results	189
5.4	Summary and Outlook	193
	References	194

6	Gap Waveguide Technology	198
	Eva Rajo-Iglesias, Zvonimir Sipus, and Ashraf Uz Zaman	
6.1	Origin of Gap Waveguide Technology	198
6.2	Approximate Method of Analysis of Parallel-Plate Waveguides Containing EBG Surfaces	203
6.2.1	Plane Wave Spectral Domain Approach	203
6.2.2	Homogenization Using Spectral Surface Admittance	204
6.3	Design of Stop Bands for Parallel Plate Structures	208
6.4	Application to RF Packaging	211
6.5	Evaluation of Losses	213
6.6	Gap Waveguide Antennas	214
6.6.1	High-Gain Antennas Designed in Ridge Gap Waveguide and Groove Gap Waveguide Geometries	216
6.6.2	High-Gain Antennas Designed in Inverted Microstrip Gap Waveguide and Printed Gap Waveguide Geometry	220
6.6.3	Single-Layer Antennas Based on Gap Waveguide Technology	222
6.6.4	Frequency Scanning Antenna Based on Gap Waveguide Technology	223
6.7	Conclusion	225
	References	226
7	Modulated Metasurface Antennas	231
	Gabriele Minatti, David González-Ovejero, Enrica Martini, and Stefano Maci	
7.1	Introduction	231
7.2	Adiabatic Floquet Waves for Curvilinear Locally Periodic Boundary Conditions	234
7.2.1	Constant Average Non-uniform Reactances	235
7.2.2	Adiabatic Floquet Wave Expansion	236
7.3	Design of Modulated MTS Antennas	238
7.3.1	Continuous Reactance Synthesis	240
7.3.2	Pixel Modeling and Detailed Layout	241
7.4	Analysis of Modulated Metasurface Antennas	245
7.4.1	Full-Wave Homogenized Impedance Analysis	246
7.5	Efficiency and Bandwidth of Modulated Metasurface Antennas	250
7.5.1	Efficiency of Metasurface Antennas	251
7.5.2	Bandwidth of Gain	255
7.6	Examples of Antenna Design	258
7.6.1	Shaped Beam Antenna	258
7.6.2	Multibeam Modulated Metasurface Antennas	259
7.7	Discussion and Future Outlook	266
	References	268

	Contents	xiii
8	Transmission Surfaces and Transmitarray Antennas	272
	Fan Yang and Shenheng Xu	
8.1	Introduction	272
8.2	Phase Limits of Transmission Surfaces	274
8.2.1	Phase Limit of a Single-Layer Transmission Surface	274
8.2.2	Phase Limits of Multilayer Transmission Surfaces	276
8.2.3	Discussion on Nonidentical Layers, Wire Coupling, and Cross-Polarization	279
8.3	Transmission Surface Designs	280
8.3.1	A Quad-Layer Transmission Surface Using E-Shaped Elements	280
8.3.2	A Double-Layer Transmission Surface Using Malta-Cross Elements with Vias	283
8.3.3	A Single-Layer Transmission Surface Using Cross-Polarized Fields	284
8.3.4	Other Transmission Surface Designs	287
8.4	Reconfigurable Transmission Surface Designs	287
8.4.1	FSS-Type Reconfigurable Design	288
8.4.2	R/T-Type Reconfigurable Design	290
8.5	Transmitarray Antennas	293
8.5.1	Concept and Design Procedure of Transmitarray Antennas	293
8.5.2	A Transmitarray Design Example	296
	References	298
9	Coding and Programmable Metasurfaces	301
	Shuo Liu and Tie Jun Cui	
9.1	Introduction	301
9.2	Coding Metasurfaces and Their Controls to EM Waves	304
9.3	Programmable Metasurfaces and Imaging Applications	307
9.3.1	Programmable Metasurface	307
9.3.2	Programmable Metasurface under Point Source Excitation	311
9.3.3	Transmission-Type Programmable Metasurface for Imaging Applications	315
9.4	Summary and Outlook	319
	References	320
10	Metamaterial and Metasurface Cloaking: Principles and Applications	325
	Giuseppe Labate, Ladislau Matekovits, and Andrea Alù	
10.1	Introduction	325
10.2	Non-uniqueness of the Scattering Problem: Non-radiating Sources and Cloaking Devices	325

10.3	Scattering Theory: Harmonic Field Series and Field Integral Equation Representations	328
10.4	Harmonic Field Series Representation: Cloaking Design with Mie Solutions	329
10.4.1	Plasmonic Cloaking: A Volumetric Metamaterial Coating	331
10.4.2	Mantle Cloaking: A Thin Metasurface Coating	333
10.4.3	Parity-Time Symmetry Cloaking: A Balanced Loss-Gain Coating	335
10.5	Field Integral Equation Representation: Cloaking Design with Non-radiating Sources	339
10.5.1	The Strong Solution: Impedance Matching and Transformation Optics	340
10.5.2	The Weak Solution: Kirchhoff's Current Law and General Scattering Cancellation	344
10.6	Bounds on Cloaking: Causality, Passivity, Time Invariance, Linearity	349
10.6.1	Directionality Issue	351
10.6.2	Bandwidth Issue	353
10.7	Conclusions	355
	References	357
11	Orbital Angular Momentum Beam Generation Using Textured Surfaces	363
	Mehdi Veysi, Caner Guclu, Filippo Capolino, and Yahya Rahmat-Samii	
11.1	OAM Beams: Concept and Historical Background	363
11.1.1	Bessel–Gaussian Beams	364
11.1.2	Laguerre–Gaussian (Helical) Beams	365
11.2	Near-Field Applications of OAM Beams	366
11.2.1	Generating Cylindrical Vector Beams	366
11.2.2	Increasing Channel Capacity of Wireless Communication Systems	367
11.3	Potential Far-Field Applications of OAM Beams	368
11.4	Far-Field Characteristics of OAM Beams	369
11.4.1	Bessel–Gaussian Beams	369
11.4.2	Laguerre–Gaussian (Helical) Beams	371
11.5	OAM Beam Generation Using Reflectarray Antennas	372
11.5.1	Rotational Phase Control Principle	372
11.5.2	Double Split-Ring Element	374
11.6	Reflectarrays with Cone-Shaped Patterns	376
11.6.1	Bessel-Beam Reflectarray	376
11.6.2	Helical (Laguerre–Gaussian) Beam Reflectarray	381
11.7	Reflectarrays Radiating Multiple Azimuthally Distributed Pencil Beams	383
11.8	Conclusions and Observations	386
	References	387

12	Applications of Metasurfaces in the Microwave, Terahertz, and Optical Regimes	393
	Daniel Binion, Lei Kang, Zhi Hao Jiang, Shengyuan Chang, Xingjie Ni, and Douglas H. Werner	
12.1	Applications of Metasurfaces in the Microwave and Millimeter-Wave Regimes	393
12.1.1	Ultrathin Electromagnetic Absorbers	394
12.1.2	Polarization Control Surfaces	394
12.1.3	Artificial Grounds for Low-Profile Antennas	396
12.1.4	Antenna Superstrates and Coatings	398
12.1.5	Modulated Metasurfaces for Leaky Wave Radiation	399
12.1.6	Scattering Signature Control	400
12.1.7	Reflect-/Transmit-Arrays	402
12.2	Applications of Metasurfaces in the Terahertz Regime	403
12.2.1	History of Terahertz Metasurfaces	403
12.2.2	Recent Developments in Terahertz Metamaterial Technology	406
12.2.3	Future Developments	417
12.3	Applications of Metasurfaces in the Optical Regime	418
12.3.1	Generalized Snell’s Law	418
12.3.2	Metalenses	420
12.3.3	OAM Beam Generation	421
12.3.4	Holography	422
12.3.5	Optical Invisibility Cloak	423
12.4	Conclusion	424
	References	424
Appendix	Representative Literature Review on Surface Electromagnetics	438
	Fan Yang, Yahya Rahmat-Samii, Xibi Chen, Xingliang Zhang, and Hongjing Xu	
	<i>Index</i>	466
	<i>Color plate section to be found between pages 242 and 243</i>	

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