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978-0-521-19787-8 - Advanced Optical Wireless Communication Systems

Edited by Shlomi Arnon, John R. Barry, George K. Karagiannidis, Robert Schober and Murat Uysal

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## Advanced Optical Wireless Communication Systems

Optical wireless communications is a dynamic area of research and development. Combining fundamental theory with a broad overview, this book is an ideal reference for anyone working in the field, as well as a valuable guide for self-study. It begins by describing important issues in optical wireless theory, including coding and modulation techniques for optical wireless, wireless optical CDMA communication systems, equalization and Markov chains in cloud channels, and optical MIMO systems, as well as explaining key issues in information theory for optical wireless channels. The next part describes unique channels that could be found in optical wireless applications, such as NLOS UV atmospheric scattering channels, underwater communication links, and a combination of hybrid RF/optical wireless systems. The final part describes applications of optical wireless technology, such as quantum encryption, visible light communication, IR links, and sensor networks, with step-by-step guidelines to help reduce design time and cost.

**Shlomi Arnon** is an Associate Professor at the Department of Electrical and Computer Engineering at Ben-Gurion University (BGU), Israel, and the Principal Investigator of Israel Partnership with NASA LUNAR Science Institute. In addition to research, Professor Arnon and his students work on many challenging engineering projects with emphasis on the humanitarian dimension, such as developing a system to detect human survival after earthquakes, or an infant respiration monitoring system to prevent cardiac arrest and apnea.

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Frontmatter

[More information](#)

# Contents

	<i>page x</i>
<i>List of contributors</i>	
<b>Part I Outlook</b>	1
<b>1 Introduction</b>	3
Shlomi Arnon, John Barry, George Karagiannidis, Robert Schober, and Murat Uysal	
<b>Part II Optical wireless communication theory</b>	9
<b>2 Coded modulation techniques for optical wireless channels</b>	11
Ivan B. Djordjevic	
2.1 Atmospheric turbulence channel modeling	12
2.2 Codes on graphs	13
2.3 Coded-MIMO free-space optical communication	19
2.4 Raptor codes for temporally correlated FSO channels	26
2.5 Adaptive modulation and coding (AMC) for FSO communications	29
2.6 Multidimensional coded modulation for FSO communications	35
2.7 Free-space optical OFDM communication	38
2.8 Heterogeneous optical networks (HONs)	43
2.9 Summary	48
Acknowledgments	49
References	49
<b>3 Wireless optical CDMA communication systems</b>	54
Jawad A. Salehi, Babak M. Ghaffari, and Mehdi D. Matinfar	
3.1 Introduction	54
3.2 OCDMA system description	55
3.3 Indoor wireless optical CDMA LAN	59
3.4 Free-space optical CDMA systems	68
3.5 Modulation	75
3.6 Experimental prototypes	81

Cambridge University Press

978-0-521-19787-8 - Advanced Optical Wireless Communication Systems

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Frontmatter

[More information](#)

vi	<b>Contents</b>	
	Acknowledgment	84
	References	84
<b>4</b>	<b>Pointing error statistics</b>	87
	Shlomi Arnon	
	References	89
<b>5</b>	<b>Equalization and Markov chains in cloud channel</b>	90
	Mohsen Kavehrad	
	5.1 Introduction	91
	5.2 Channel propagation modeling	92
	5.3 Modeling results and eigen analyses	99
	5.4 Equalization related issues	103
	5.5 Summary and conclusions	112
	Acknowledgment	113
	References	113
<b>6</b>	<b>Multiple-input multiple-output techniques for indoor optical wireless communications</b>	116
	Steve Hranilovic	
	6.1 Indoor OW MIMO channel characteristics	117
	6.2 MIMO for diffuse OW channels	119
	6.3 Spot-diffusing OW MIMO systems	123
	6.4 Point-to-Point OW MIMO communications	127
	6.5 Future directions	138
	References	139
<b>7</b>	<b>Channel capacity</b>	146
	Amos Lapidoth, Stefan M. Moser, and Michèle Wigger	
	7.1 Introduction and channel models	146
	7.2 Capacity results	150
	7.3 Proof techniques	163
	References	172
	<b>Part III Unique channels</b>	175
<b>8</b>	<b>Modeling and characterization of ultraviolet scattering communication channels</b>	177
	Haipeng Ding, Brian M. Sadler, Gang Chen, and Zhengyuan Xu	
	8.1 Introduction	177
	8.2 Single scattering models	181

Cambridge University Press

978-0-521-19787-8 - Advanced Optical Wireless Communication Systems

Edited by Shlomi Arnon, John R. Barry, George K. Karagiannidis, Robert Schober and Murat Uysal

Frontmatter

[More information](#)

8.3	Multiple scattering models	183
8.4	NLOS UV channel measurement systems	189
8.5	Numerical and experimental results	192
8.6	Summary	198
	References	199
<b>9</b>	<b>Free-space optical communications underwater</b>	<b>201</b>
	Brandon Cochenour and Linda Mullen	
9.1	Introduction: towards a link equation	201
9.2	Introduction to ocean optics	202
9.3	Channel characterization: theory	213
9.4	Experimental research in wireless optical communications underwater	218
9.5	System design for uFSO links	228
9.6	Summary	236
	References	237
<b>10</b>	<b>The optical wireless channel</b>	<b>240</b>
	Roger Green and Mark Leeson	
10.1	Introduction	240
10.2	System configurations	241
10.3	Optical sources	242
10.4	Optical detectors	244
10.5	Optical filters	245
10.6	Nature of the optical wireless channel	247
10.7	Interference sources	248
10.8	Impact of interference on BER	251
10.9	Channel impulse response	253
10.10	Hardware aspects of the receiver-amplifier in the indoor channel environment	255
10.11	Modulation schemes for optical wireless	263
10.12	Optics for optical wireless	267
10.13	Concluding remarks	268
	References	269
<b>11</b>	<b>Hybrid RF/FSO communications</b>	<b>273</b>
	Nick Letzepis and Albert Guillén i Fàbregas	
11.1	Introduction	273
11.2	Channel model	275
11.3	Information-theoretic preliminaries	281
11.4	Uniform power allocation	287
11.5	Power allocation	292
11.6	Conclusions and summary	295

Cambridge University Press

978-0-521-19787-8 - Advanced Optical Wireless Communication Systems

Edited by Shlomi Arnon, John R. Barry, George K. Karagiannidis, Robert Schober and Murat Uysal

Frontmatter

[More information](#)

viii

**Contents**

	Appendix A Kullback–Leibler divergence between Poisson and Gaussian distributions	297
	Appendix B Derivative of the mutual information for discrete-input Poisson channels	297
	Acknowledgments	299
	References	299
	<b>Part IV Applications</b>	<b>303</b>
<b>12</b>	<b>Quantum key distribution</b>	<b>305</b>
	Rupert Ursin, Nathan Langford and Andreas Poppe	
	12.1 Motivation	305
	12.2 Security considerations of QKD	306
	12.3 QKD protocols	308
	12.4 Technical implementation of a free-space setup	312
	12.5 QKD networks	319
	References	326
<b>13</b>	<b>Optical modulating retro-reflectors</b>	<b>328</b>
	William Rabinovich	
	13.1 Introduction	328
	13.2 Modulating retro-reflector link budgets	330
	13.3 The optical retro-reflector	332
	13.4 The optical modulator	334
	13.5 Modulating retro-reflector applications and field demonstrations	341
	13.6 Conclusion	347
	References	347
<b>14</b>	<b>Visible-light communications</b>	<b>351</b>
	Kang Tae-Gyu	
	14.1 VLC principle	351
	14.2 VLC standards	354
	14.3 VLC research and development	359
	14.4 VLC applications	361
	14.5 Future work	367
	References	367
<b>15</b>	<b>Optical wireless in sensor networks</b>	<b>369</b>
	Dominic C. O'Brien and Sashigaran Sivathasan	
	15.1 Introduction	369
	15.2 Free-space optical (FSO) sensor network	371



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Frontmatter

[More information](#)

---

**Contents**

ix

15.3	Radio frequency/Free-space optical (RF/FSO) sensor network system	378
15.4	Conclusions	383
15.5	Acknowledgments	384
	References	384
	<i>Index</i>	388

Cambridge University Press

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