

IEEE 802.11ay-Based mmWave WLANs: Design Challenges

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#	ARTICLE	IF	CITATIONS
1	The Race to 5G Era; LTE and Wi-Fi. IEEE Access, 2018, 6, 56598-56636.	2.6	44
2	Multi-Beam Transmission and Dual-Band Cooperation for Control/Data Plane Decoupled WLANs. IEEE Transactions on Vehicular Technology, 2019, 68, 9806-9819.	3.9	13
3	A Survey on 5G Millimeter Wave Communications for UAV-Assisted Wireless Networks. IEEE Access, 2019, 7, 117460-117504.	2.6	221
4	Synchronization-Phase Alignment of All-Digital Phase-Locked Loop Chips for a 60-GHz MIMO Transmitter and Evaluation of Phase Noise Effects. IEEE Transactions on Microwave Theory and Techniques, 2019, 67, 3187-3199.	2.9	4
5	Millimeter Wave Time-Varying Channel Estimation via Exploiting Block-Sparse and Low-Rank Structures. IEEE Access, 2019, 7, 123355-123366.	2.6	21
6	Blockage Effect and Beam Cooperation in Indoor Hotspot Based on 3GPP NR Blockage Model. , 2019, , .		2
7	Millimeter-Wave Propagation Measurements at 60 GHz in Indoor Environments. , 2019, , .		6
8	An Efficient Algorithm for mmWave MIMO Systems. Symmetry, 2019, 11, 786.	1.1	4
9	Integrated Use of Licensed- and Unlicensed-Band mmWave Radio Technology in 5G and Beyond. IEEE Access, 2019, 7, 24376-24391.	2.6	38
10	Human Bond Communication with Head-Mounted Displays: Scope, Challenges, Solutions, and Applications. IEEE Communications Magazine, 2019, 57, 26-32.	4.9	33
11	Angular Measurements and Analysis of the Indoor Propagation Channel at 60 GHz. , 2019, , .		8
12	Adaptive Scheduling for Asymmetric Beamforming Training in IEEE 802.11ay-based Environments. , 2019, , .		2
13	Beam Design for Beam Training Based Millimeter Wave V2I Communications. , 2019, , .		2
14	Multi-User MAC Protocol for WLANs in MmWave Massive MIMO Systems With Mobile Edge Computing. IEEE Access, 2019, 7, 181242-181256.	2.6	8
15	Tunable Reflectors Enabled Environment Augmentation for Better mmWave WLANs. , 2019, , .		4
16	Millimeter-Wave Fixed Wireless Access Using IEEE 802.11ay. IEEE Communications Magazine, 2019, 57, 98-104.	4.9	18
17	Efficient MU-MIMO Beamforming Protocol for IEEE 802.11ay WLANs. IEEE Communications Letters, 2019, 23, 144-147.	2.5	8
18	Deep Learning-Based Beam Management and Interference Coordination in Dense mmWave Networks. IEEE Transactions on Vehicular Technology, 2019, 68, 592-603.	3.9	81

#	ARTICLE	IF	CITATIONS
19	Channel Prediction for Millimeter Wave MIMO-OFDM Communications in Rapidly Time-Varying Frequency-Selective Fading Channels. IEEE Access, 2019, 7, 15183-15195.	2.6	20
20	Beam Management and Self-Healing for mmWave UAV Mesh Networks. IEEE Transactions on Vehicular Technology, 2019, 68, 1718-1732.	3.9	60
21	New Radio Beam-Based Access to Unlicensed Spectrum: Design Challenges and Solutions. IEEE Communications Surveys and Tutorials, 2020, 22, 8-37.	24.8	88
22	Double-Sequence Frequency Synchronization for Wideband Millimeter-Wave Systems With Few-Bit ADCs. IEEE Transactions on Wireless Communications, 2020, 19, 1357-1372.	6.1	7
23	An Efficient Radio Access Resource Management Scheme Based on Priority Strategy in Dense mmWave Cellular Networks. Wireless Communications and Mobile Computing, 2020, 2020, 1-19.	0.8	2
24	MAC Aspects of Millimeter-Wave Cellular Networks. , 0, , .		1
25	Design and Analysis of Multi-User Association and Beam Training Schemes for Millimeter Wave Based WLANs. IEEE Transactions on Vehicular Technology, 2020, 69, 7458-7472.	3.9	8
26	Millimeter-Wave Base Stations in the Sky: An Experimental Study of UAV-to-Ground Communications. IEEE Transactions on Mobile Computing, 2022, 21, 644-662.	3.9	22
27	Twice Simulated Annealing Resource Allocation for mmWave Multi-hop Networks with Interference. , 2020, , .		7
28	On the Potential Benefits of Mobile Access Points in mmWave Wireless LANs. , 2020, , .		3
29	Influence of Access Point Location on Dynamic Indoor Radio Channel at 60 GHz. , 2020, , .		0
30	STS Adaptation for Beamforming Training of Asymmetric Links in IEEE 802.11ay-based Dense Networks. , 2020, , .		2
31	Measurements and Ray Tracing Simulations: Impact of Different Antenna Positions on Meeting Room Coverage at 60 GHz. , 2020, , .		1
32	Resource Management for Maximizing the Secure Sum Rate in Dense Millimeter-Wave Networks. IEEE Access, 2020, 8, 158416-158431.	2.6	5
33	Header Information Based Channel Estimation for Highly Modulated Orthogonal Frequency-Division Multiplexing Transmissions in IEEE 802.11ad. Wireless Personal Communications, 2020, 115, 2081-2092.	1.8	1
34	mmMuxing: Pushing the Limit of Spatial Reuse in Directional Millimeter-wave Wireless Networks. , 2020, , .		3
35	On 60 GHz MIMO Diversity in an Underground Mine Propagation Channel. IEEE Antennas and Wireless Propagation Letters, 2020, 19, 1769-1773.	2.4	4
36	Energy-Efficient Beam Management in Millimeter-Wave Shared Spectrum. IEEE Wireless Communications, 2020, 27, 38-43.	6.6	1

#	ARTICLE	IF	CITATIONS
37	Coordinated Multiple Access Point Multiuser Beamforming Training Protocol for Millimeter Wave WLANs. IEEE Transactions on Vehicular Technology, 2020, 69, 13875-13889.	3.9	6
38	Position-Aided Beam Learning for Initial Access in mmWave MIMO Cellular Networks. IEEE Systems Journal, 2022, 16, 1103-1113.	2.9	5
39	mmWave IEEE 802.11ay for 5G Fixed Wireless Access. IEEE Wireless Communications, 2020, 27, 88-95.	6.6	30
40	Augmenting Transmission Environments for Better Communications: Tunable Reflector Assisted MmWave WLANs. IEEE Transactions on Vehicular Technology, 2020, 69, 7416-7428.	3.9	9
41	Immersive Interconnected Virtual and Augmented Reality: A 5G and IoT Perspective. Journal of Network and Systems Management, 2020, 28, 796-826.	3.3	32
42	NR-U and IEEE 802.11 Technologies Coexistence in Unlicensed mmWave Spectrum: Models and Evaluation. IEEE Access, 2020, 8, 71254-71271.	2.6	55
43	Adaptive Detection and Localization Exploiting the IEEE 802.11ad Standard. IEEE Transactions on Wireless Communications, 2020, 19, 4394-4407.	6.1	26
44	Conflict Graph Based Concurrent Transmission Scheduling Algorithms for the Next Generation WLAN. Mobile Networks and Applications, 2020, 25, 1873-1885.	2.2	0
45	Performance Analysis and Enhancement of Beamforming Training in 802.11ad. IEEE Transactions on Vehicular Technology, 2020, 69, 5293-5306.	3.9	13
46	3D On-Demand Flying Mobile Communication for Millimeter-Wave Heterogeneous Networks. IEEE Network, 2020, 34, 198-204.	4.9	13
47	Man-in-the-Middle Attack Detection and Localization Based on Cross-Layer Location Consistency. IEEE Access, 2020, 8, 103860-103874.	2.6	12
48	Cloud Based mmWave WLANs: Architectural Paradigms, Proposals and Perspectives. IEEE Wireless Communications, 2020, 27, 170-177.	6.6	4
49	Low-Complexity User Selection Algorithms for Multiuser Transmissions in mmWave WLANs. IEEE Transactions on Wireless Communications, 2020, 19, 2397-2410.	6.1	16
50	Modeling of Real-Time Multimedia Streaming in Wi-Fi Networks With Periodic Reservations. IEEE Access, 2020, 8, 55633-55653.	2.6	10
51	A Link Quality Estimation-Based Beamforming Training Protocol for IEEE 802.11ay MU-MIMO Communications. IEEE Transactions on Communications, 2021, 69, 634-648.	4.9	3
52	Wireless Avionics Intra-communications: A Survey of Benefits, Challenges, and Solutions. IEEE Internet of Things Journal, 2021, 8, 7745-7767.	5.5	24
53	An Analytical Model for CBAP Allocations in IEEE 802.11ad. IEEE Transactions on Communications, 2021, 69, 649-663.	4.9	8
54	A Link-Layer Synchronization and Medium Access Control Protocol for Terahertz-Band Communication Networks. IEEE Transactions on Mobile Computing, 2021, 20, 2-18.	3.9	34

#	ARTICLE	IF	CITATIONS
55	Conceptual Model of Security Variables in Wi-Fi Wireless Networks: Review. <i>Advances in Intelligent Systems and Computing</i> , 2021, , 59-67.	0.5	1
56	Dynamic Time Slot Adjustment Based Beamform Training for the Next Generation Millimeter Wave WLAN. <i>Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering</i> , 2021, , 340-350.	0.2	0
57	Overview of Beamforming Antennas. <i>Springer Briefs in Electrical and Computer Engineering</i> , 2021, , 9-17.	0.3	0
58	Accuracy Versus Complexity for mmWave Ray-Tracing: A Full Stack Perspective. <i>IEEE Transactions on Wireless Communications</i> , 2021, 20, 7826-7841.	6.1	19
59	URLLC for 5G and Beyond: Requirements, Enabling Incumbent Technologies and Network Intelligence. <i>IEEE Access</i> , 2021, 9, 67064-67095.	2.6	57
60	Application of TSVR algorithm in 5G mmWave indoor networks. <i>Wireless Networks</i> , 2021, 27, 1491-1502.	2.0	3
61	Joint Transmission Reception Point Selection and Resource Allocation for Energy-Efficient Millimeter-Wave Communications. <i>IEEE Transactions on Vehicular Technology</i> , 2021, 70, 412-428.	3.9	10
62	Millimeter-Wave and Terahertz Spectrum for 6G Wireless. <i>Computer Communications and Networks</i> , 2021, , 83-121.	0.8	65
63	: Multi-Dimensional Spatial Reuse Enhancement for Directional Millimeter-Wave Wireless Networks<i>/>. <i>IEEE Transactions on Mobile Computing</i> , 2022, 21, 4439-4455.	3.9	2
64	Beamwidth Optimization for Millimeter-Wave V2V Communication Between Neighbor Vehicles in Highway Scenarios. <i>IEEE Access</i> , 2021, 9, 4335-4350.	2.6	15
65	Multiobjective Resource Allocation for mmWave MEC Offloading Under Competition of Communication and Computing Tasks. <i>IEEE Internet of Things Journal</i> , 2022, 9, 8707-8719.	5.5	10
66	Open Research Areas. <i>Springer Briefs in Electrical and Computer Engineering</i> , 2021, , 121-124.	0.3	0
67	Rotational motion-aware beam refinement for high-throughput mmWave communications. <i>Wireless Networks</i> , 2021, 27, 2159-2172.	2.0	1
68	Mobile Communications Beyond 52.6 GHz: Waveforms, Numerology, and Phase Noise Challenge. <i>IEEE Wireless Communications</i> , 2021, 28, 128-135.	6.6	23
69	Millimeter-wave wireless communications for home network in fiber-to-the-room scenario. <i>Frontiers of Information Technology and Electronic Engineering</i> , 2021, 22, 441-456.	1.5	3
70	Wi-Fi Assisted Contextual Multi-Armed Bandit for Neighbor Discovery and Selection in Millimeter Wave Device to Device Communications. <i>Sensors</i> , 2021, 21, 2835.	2.1	15
71	A study about signal variation with minor receiver displacement in a meeting room at 60ÂGHz: measurements and simulations. <i>Eurasip Journal on Wireless Communications and Networking</i> , 2021, ,	1.5	0
72	Design and Analysis of Network Behaviors for Optimizing Network Energy Efficiency in 5G Mmwave Systems. <i>IEEE Transactions on Network Science and Engineering</i> , 2021, 8, 1842-1861.	4.1	4

#	ARTICLE	IF	CITATIONS
73	A survey on TCP over mmWave. Computer Communications, 2021, 171, 80-88.	3.1	19
74	Realistic beamforming design using SRS-based channel estimate for ns-3 5G-LENA module. , 2021, , .		4
75	Joint Radio Resource Allocation for Decoupled Control and Data Planes in Densely Deployed Coordinated WLANs. IEEE Transactions on Wireless Communications, 2021, 20, 3749-3759.	6.1	6
76	Opportunistic Sensing Using mmWave Communication Signals: A Subspace Approach. IEEE Transactions on Wireless Communications, 2021, 20, 4420-4434.	6.1	12
77	Efficient Radio Channel Allocation in Integrated mmWave/Sub-6GHz UAV-Assisted Disaster Relief Networks. Mobile Information Systems, 2021, 2021, 1-18.	0.4	0
78	Efficient Management of Multicast Traffic in Directional mmWave Networks. IEEE Transactions on Broadcasting, 2021, 67, 593-605.	2.5	11
79	A Survey of Millimeter-Wave Communication: Physical-Layer Technology Specifications and Enabling Transmission Technologies. Proceedings of the IEEE, 2021, 109, 1666-1705.	16.4	41
80	InFocus: A Spatial Coding Technique to Mitigate Misfocus in Near-Field LoS Beamforming. IEEE Transactions on Wireless Communications, 2022, 21, 2193-2209.	6.1	15
81	Enhanced MAC for Millimeter Wave Communication. Springer Briefs in Electrical and Computer Engineering, 2021, , 67-80.	0.3	1
82	5G New Radio Evolution Towards Sub-THz Communications. , 2020, , .		34
83	X-Array. , 2020, , .		21
84	M-Cube. , 2020, , .		45
85	Implementation of a Spatial Channel Model for ns-3. , 2020, , .		39
86	Joint DL/UL Decouple User Association in Microwave and mmWave Enabled Beyond 5G Heterogeneous Networks. IEEE Access, 2021, 9, 134703-134715.	2.6	9
87	A High-Speed DLL-Based Hybrid Phase Conjugator for 5G Beamforming. Circuits and Systems, 2020, 11, 27-38.	0.1	1
88	Systematic Beam Management in mmWave Networks: Tradeoff Among Beam Coverage, Link Budget, and Interference Control. IEEE Transactions on Vehicular Technology, 2020, 69, 15325-15334.	3.9	4
90	Beamforming Scheme for MIMO Relay Based 5G and beyond Wireless Network. Open Journal of Applied Sciences, 2021, 11, 1157-1176.	0.2	1
91	A Survey on Millimeter-Wave Beamforming Enabled UAV Communications and Networking. IEEE Communications Surveys and Tutorials, 2022, 24, 557-610.	24.8	135

#	ARTICLE	IF	CITATIONS
92	Markov Multi-Beamtracking on 60 GHz Mobile Channel Measurements. IEEE Open Journal of Vehicular Technology, 2022, 3, 26-39.	3.4	5
93	Beamforming Training Protocol Design and Analysis. Wireless Networks, 2021, , 73-119.	0.3	0
94	Channel Characterization and Validation of Ray Tracing Simulations with Measurements at 60 GHz in Office Environment. , 2020, , .		2
95	A Millimeter-wave Multi-channel MAC with Dynamic Spectrum Access Capability for Mobile Self-organizing Heterogeneous Networks. , 2021, , .		0
96	A Comparative Study on Centralized MAC Protocols for 60 GHz mmWave Communications. , 2021, , .		2
97	Cluster Index Modulation for mmWave Communication Systems. Frontiers in Communications and Networks, 2022, 2, .	1.9	2
98	The SIMO Block Rayleigh Fading Channel Capacity Scaling With Number of Antennas, Bandwidth, and Coherence Length. IEEE Journal on Selected Areas in Information Theory, 2022, 3, 54-68.	1.9	0
100	Millimeter-Wave Smart Antenna Solutions for URLLC in Industry 4.0 and Beyond. Sensors, 2022, 22, 2688.	2.1	17
101	Enabling mmWave Wireless Rack Area Networks: Channel Characterization Within a Server Rack. IEEE Antennas and Wireless Propagation Letters, 2022, 21, 1527-1531.	2.4	0
102	Optimization of Network Throughput of Joint Radar Communication System Using Stochastic Geometry. Frontiers in Signal Processing, 2022, 2, .	1.2	5
103	A Review of Millimeter Wave Device-Based Localization and Device-Free Sensing Technologies and Applications. IEEE Communications Surveys and Tutorials, 2022, 24, 1708-1749.	24.8	24
104	MAC Protocols for mmWave Communication: A Comparative Survey. Sensors, 2022, 22, 3853.	2.1	7
105	An Efficient Radio Resource Allocation Scheme considering Terminal Mobility in Dense mmWave Cellular Networks. Wireless Communications and Mobile Computing, 2022, 2022, 1-20.	0.8	0
106	Design of a 60 GHz Microstrip Antenna for Multi-Gigabit Industrial Communication in Viewpoint of Industry 4.0. , 2022, , .		4
107	BER and throughput performances of IEEE 802.11ay SC-PHY over measured 60 GHz indoor channels. Telecommunication Systems, 2022, 80, 573-587.	1.6	2
108	A Comprehensive Analysis and Performance Enhancements for the IEEE 802.11ay Group Beamforming Protocol. , 2022, , .		1
109	Concurrent multi-beam transmissions for reliable communication in millimeter-wave networks. Computer Communications, 2022, 195, 281-291.	3.1	5
110	State-of-the-Art Millimeter-Wave Silicon Transceivers and Systems-on-Chip. Lecture Notes in Electrical Engineering, 2022, , 145-160.	0.3	1

#	ARTICLE	IF	CITATIONS
111	Antenna Array Topologies for mmWave Massive MIMO Systems: Spectral Efficiency Analysis. IEEE Transactions on Vehicular Technology, 2022, 71, 12901-12915.	3.9	5
112	Evolution of Millimeter-Wave Silicon Technology. Lecture Notes in Electrical Engineering, 2022, , 1-15.	0.3	1
113	A Directional TDMA Protocol for High Throughput URLLC in mmWave Vehicular Networks. IEEE Transactions on Vehicular Technology, 2023, 72, 3584-3599.	3.9	6
114	Five Facets of 6G: Research Challenges and Opportunities. ACM Computing Surveys, 2023, 55, 1-39.	16.1	29
115	Mobility aware resource allocation for millimeter-wave D2D communications in presence of obstacles. Computer Communications, 2023, 200, 54-65.	3.1	5
116	Multi-Group Multicast Beamforming in LEO Satellite Communications. , 2022, , .		0
117	Social-Aware Graph-Based Collaborative Caching in Edge-User Networks. IEEE Transactions on Vehicular Technology, 2023, 72, 7926-7941.	3.9	5
118	Sparse Channel Estimation From Discrete-Time Fourier Transform Beam Measurements. IEEE Transactions on Wireless Communications, 2023, 22, 6356-6368.	6.1	0
119	Fast Beam Search Based on Recorded Combinations for Distributed Massive MIMO Systems Using Sub-THz Wave Bands. IEEE Transactions on Vehicular Technology, 2023, 72, 10263-10272.	3.9	0
120	IEEE 802.11ay enabled Integrated mmWave Radar Detection and Wireless Communications. Ad Hoc Networks, 2023, , 103152.	3.4	0
121	A simple metric that correlates with public Wi-Fi throughput. Electronics Letters, 2023, 59, .	0.5	0
125	High Performance 60 GHz Beamforming Antenna Array For 5G and Beyond Industrial Applications. , 2023, , .		0
134	A Compact Wideband Millimeter-Wave Beam-Scanning Antenna Array for Industry 4.0 and Beyond Applications. , 2023, , .		0
136	Impact of Array Configuration on Head-Mounted Display Performance at mm Wave Bands. , 2023, , .		0
139	Spectrum Requirement Prediction for Future WLAN based IoT Applications. , 2023, , .		0
144	Average Sum Rate Optimization in Coordinated Multi-Beam Transmission for Reliable Millimeter-Wave Communications. , 2023, , .		0
145	Fast Ambiguity-Free Subspace-Based Multiple AoA Estimation for Hybrid Linear Arrays. , 2023, , .		0
147	Wireless Virtual-Reality by considering Hybrid Beamforming in IEEE802.11ay standard. , 2023, , .		0