Chan-Byoung Chae

List of Publications by Year
in descending order

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158 papers	6,607 citations	126907 33 h-index	71685 76 g-index
162 all docs	162 docs citations	162 times ranked	3924 citing authors

#	Article	IF	Citations
1	Shifting the MIMO Paradigm. IEEE Signal Processing Magazine, 2007, 24, 36-46.	5.6	886
2	A Comprehensive Survey of Recent Advancements in Molecular Communication. IEEE Communications Surveys and Tutorials, 2016, 18, 1887-1919.	39.4	681
3	Reconfigurable Intelligent Surface-Based Wireless Communications: Antenna Design, Prototyping, and Experimental Results. IEEE Access, 2020, 8, 45913-45923.	4.2	432
4	MIMO Relaying With Linear Processing for Multiuser Transmission in Fixed Relay Networks. IEEE Transactions on Signal Processing, 2008, 56, 727-738.	5.3	320
5	Three-Dimensional Channel Characteristics for Molecular Communications With an Absorbing Receiver. IEEE Communications Letters, 2014, 18, 929-932.	4.1	290
6	Novel Modulation Techniques using Isomers as Messenger Molecules for Nano Communication Networks via Diffusion. IEEE Journal on Selected Areas in Communications, 2013, 31, 847-856.	14.0	180
7	Coordinated beamforming with limited feedback in the MIMO broadcast channel. IEEE Journal on Selected Areas in Communications, 2008, 26, 1505-1515.	14.0	158
8	Molecular MIMO: From Theory to Prototype. IEEE Journal on Selected Areas in Communications, 2016, 34, 600-614.	14.0	155
9	Prototyping real-time full duplex radios. , 2015, 53, 56-63.		145
10	Performance Analysis of Massive MIMO for Cell-Boundary Users. IEEE Transactions on Wireless Communications, 2015, 14, 6827-6842.	9.2	144
11	A cross-layer approach to energy efficiency for adaptive MIMO systems exploiting spare capacity. IEEE Transactions on Wireless Communications, 2009, 8, 4264-4275.	9.2	134
12	ISI Mitigation Techniques in Molecular Communication. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2015, 1, 202-216.	2.1	123
13	RF Lens-Embedded Antenna Array for mmWave MIMO: Design and Performance. IEEE Communications Magazine, 2018, 56, 42-48.	6.1	111
14	Adaptive MIMO transmission techniques for broadband wireless communication systems [Topics in Wireless Communications]. IEEE Communications Magazine, 2010, 48, 112-118.	6.1	99
15	Deep Learning-Based mmWave Beam Selection for 5G NR/6G With Sub-6 GHz Channel Information: Algorithms and Prototype Validation. IEEE Access, 2020, 8, 51634-51646.	4.2	97
16	Ultrareliable and Low-Latency Communication Techniques for Tactile Internet Services. Proceedings of the IEEE, 2019, 107, 376-393.	21.3	95
17	Nonlinear Self-Interference Cancellation for Full-Duplex Radios: From Link-Level and System-Level Performance Perspectives. , 2017, 55, 158-167.		93
18	Channel and Noise Models for Nonlinear Molecular Communication Systems. IEEE Journal on Selected Areas in Communications, 2014, 32, 2392-2401.	14.0	89

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19	Molecular communications: channel model and physical layer techniques. IEEE Wireless Communications, 2016, 23, 120-127.	9.0	89
20	Block Diagonalized Vector Perturbation for Multiuser MIMO Systems. IEEE Transactions on Wireless Communications, 2008, 7, 4051-4057.	9.2	83
21	Simulation study of molecular communication systems with an absorbing receiver: Modulation and ISI mitigation techniques. Simulation Modelling Practice and Theory, 2014, 49, 136-150.	3.8	75
22	Effect of Receptor Density and Size on Signal Reception in Molecular Communication via Diffusion With an Absorbing Receiver. IEEE Communications Letters, 2015, 19, 155-158.	4.1	75
23	Symbol Interval Optimization for Molecular Communication With Drift. IEEE Transactions on Nanobioscience, 2014, 13, 223-229.	3.3	70
24	QoE-Aware Scalable Video Transmission in MIMO Systems. IEEE Communications Magazine, 2017, 55, 196-203.	6.1	68
25	Coordinated Beamforming for the Multiuser MIMO Broadcast Channel With Limited Feedforward. IEEE Transactions on Signal Processing, 2008, 56, 6044-6056.	5.3	66
26	Arrival modelling for molecular communication via diffusion. Electronics Letters, 2014, 50, 1667-1669.	1.0	65
27	Effect of Degradation in Molecular Communication: Impairment or Enhancement?. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2015, 1, 217-229.	2.1	64
28	Compressed channel feedback for correlated massive MIMO systems. Journal of Communications and Networks, 2016, 18, 95-104.	2.6	61
29	Interference Aware-Coordinated Beamforming in a Multi-Cell System. IEEE Transactions on Wireless Communications, 2012, 11, 3692-3703.	9.2	58
30	Network Coordinated Beamforming for Cell-Boundary Users: Linear and Nonlinear Approaches. IEEE Journal on Selected Topics in Signal Processing, 2009, 3, 1094-1105.	10.8	56
31	Dual-Polarization Slot Antenna With High Cross-Polarization Discrimination for Indoor Small-Cell MIMO Systems. IEEE Antennas and Wireless Propagation Letters, 2015, 14, 374-377.	4.0	54
32	Smart Small Cell with Hybrid Beamforming for 5G: Theoretical Feasibility and Prototype Results. IEEE Wireless Communications, 2016, 23, 124-131.	9.0	47
33	Spatial Modulation for Molecular Communication. IEEE Transactions on Nanobioscience, 2019, 18, 381-395.	3.3	45
34	RF Lens-Embedded Massive MIMO Systems: Fabrication Issues and Codebook Design. IEEE Transactions on Microwave Theory and Techniques, 2016, 64, 2256-2271.	4.6	43
35	Machine learning based channel modeling for molecular MIMO communications. , 2017, , .		42
36	Ergodic Capacity of Spatial Multiplexing MIMO Systems with ZF Receivers for Log-Normal Shadowing and Rayleigh Fading Channels. , 2007, , .		39

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37	On the Power Leakage Problem in Millimeter-Wave Massive MIMO With Lens Antenna Arrays. IEEE Transactions on Signal Processing, 2019, 67, 4730-4744.	5.3	38
38	Large-scale antenna operation in heterogeneous cloud radio access networks: a partial centralization approach. IEEE Wireless Communications, 2015, 22, 32-40.	9.0	33
39	Compact Full Duplex MIMO Radios in D2D Underlaid Cellular Networks: From System Design to Prototype Results. IEEE Access, 2017, 5, 16601-16617.	4.2	33
40	Arrival Modeling and Error Analysis for Molecular Communication via Diffusion with Drift. , 2015, , .		32
41	Network massive MIMO for cell-boundary users: From a precoding normalization perspective. , 2012, , .		30
42	Spectrum Leasing via Cooperation for Enhanced Physical-Layer Secrecy. IEEE Transactions on Vehicular Technology, 2013, 62, 4672-4678.	6.3	30
43	Spectrum Leasing via Cooperation for Enhanced Physical-Layer Secrecy. , 2011, , .		29
44	On the Feasibility of Full-Duplex Large-Scale MIMO Cellular Systems. IEEE Transactions on Wireless Communications, 2018, 17, 6231-6250.	9.2	27
45	Map-Based Millimeter-Wave Channel Models: An Overview, Data for B5G Evaluation and Machine Learning. IEEE Wireless Communications, 2020, 27, 54-62.	9.0	27
46	Low-Complexity MIMO Detection Based on Belief Propagation Over Pairwise Graphs. IEEE Transactions on Vehicular Technology, 2014, 63, 2363-2377.	6.3	26
47	Impact of Pointing Errors on the Performance of Coherent Free-Space Optical Systems. IEEE Photonics Technology Letters, 2016, 28, 181-184.	2.5	26
48	Chemical Propagation Pattern for Molecular Communications. IEEE Wireless Communications Letters, 2017, 6, 226-229.	5.0	26
49	MIMO Transceiver Designs for Spatial Sensing in Cognitive Radio Networks. IEEE Transactions on Wireless Communications, 2011, 10, 3570-3576.	9.2	25
50	SMIET: Simultaneous Molecular Information and Energy Transfer. IEEE Wireless Communications, 2018, 25, 106-113.	9.0	25
51	Energy-Efficient Deployment of Multiple UAVs Using Ellipse Clustering to Establish Base Stations. IEEE Wireless Communications Letters, 2020, 9, 1155-1159.	5.0	24
52	On Achievable Sum Rates of A Multiuser MIMO Relay Channel. , 2006, , .		23
53	On the Optimality of Linear Multiuser MIMO Beamforming for a Two-User Two-Input Multiple-Output Broadcast System. IEEE Signal Processing Letters, 2009, 16, 117-120.	3.6	23
54	Array Gain Analysis in Molecular MIMO Communications. IEEE Access, 2018, 6, 61091-61102.	4.2	23

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55	Coordinated Beamforming for Multiuser MIMO Systems with Limited Feedforward. , 2006, , .		19
56	Multicell cooperative systems with multiple receive antennas. IEEE Wireless Communications, 2013, 20, 50-58.	9.0	19
57	Molecular MIMO communication link. , 2015, , .		19
58	ISI-Mitigating Channel Codes for Molecular Communication Via Diffusion. IEEE Access, 2020, 8, 24588-24599.	4.2	19
59	Detection algorithms for molecular MIMO. , 2015, , .		18
60	Asymmetric Simultaneous Transmit and Receive in WiFi Networks. IEEE Access, 2017, 5, 14079-14094.	4.2	18
61	Communication System Design and Analysis for Asynchronous Molecular Timing Channels. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2017, 3, 239-253.	2.1	18
62	Molecular Signal Modeling of a Partially Counting Absorbing Spherical Receiver. IEEE Transactions on Communications, 2018, 66, 6237-6246.	7.8	18
63	Two-Way Molecular Communications. IEEE Transactions on Communications, 2020, 68, 3550-3563.	7.8	18
64	Compressed channel feedback for correlated massive MIMO systems. , 2014, , .		17
65	Effective Enzyme Deployment for Degradation of Interference Molecules in Molecular Communication. , 2017, , .		17
66	Graph-Theory-Based Resource Allocation and Mode Selection in D2D Communication Systems: The Role of Full-Duplex. IEEE Wireless Communications Letters, 2021, 10, 236-240.	5.0	17
67	Novel modulation techniques using isomers as messenger molecules for molecular communication via diffusion. , 2012, , .		16
68	A machine learning approach to model the received signal in molecular communications. , 2017, , .		16
69	Space Shift Keying for Molecular Communication: Theory and Experiment. , 2019, , .		16
70	Opportunism in Spectrum Sharing for Beyond 5G With Sub-6 GHz: A Concept and Its Application to Duplexing. IEEE Access, 2020, 8, 148877-148891.	4.2	16
71	Before/after precoding massive MIMO systems for cloud radio access networks. Journal of Communications and Networks, 2013, 15, 398-406.	2.6	15
72	Performance Analysis of Coherent Free-Space Optical Systems With Multiple Receivers. IEEE Photonics Technology Letters, 2015, 27, 1010-1013.	2.5	15

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73	Energy model for vesicle-based active transport molecular communication. , 2016, , .		15
74	A universal channel model for molecular communication systems with metal-oxide detectors. , 2015, , .		14
75	An Experimentally Validated Channel Model for Molecular Communication Systems. IEEE Access, 2019, 7, 81849-81858.	4.2	14
76	Effect of ISI Mitigation on Modulation Techniques in Molecular Communication via Diffusion. , 2007, , .		13
77	Cognitive beamforming based smart metering for coexistence with wireless local area networks. Journal of Communications and Networks, 2012, 14, 619-628.	2.6	13
78	Uncoordinated Beamforming for Cognitive Networks. IEEE Transactions on Communications, 2012, 60, 1390-1397.	7.8	13
79	A Two-Way Molecular Communication Assisted by an Impulsive Force. IEEE Transactions on Industrial Informatics, 2019, 15, 3048-3057.	11.3	13
80	Resource Allocation for Multiuser Molecular Communication Systems Oriented to the Internet of Medical Things. IEEE Internet of Things Journal, 2021, 8, 15939-15952.	8.7	13
81	Secrecy Rate for MISO Rayleigh Fading Channels with Relative Distance of Eavesdropper. IEEE Communications Letters, 2012, 16, 1408-1411.	4.1	12
82	Performance Analysis of Fair Medium Access Control Protocol for Asymmetric Full Duplex in WLAN. IEEE Access, 2020, 8, 140546-140557.	4.2	12
83	Outage Probability Analysis of a Coherent FSO Amplify-and-Forward Relaying System. IEEE Photonics Technology Letters, 2015, 27, 1204-1207.	2.5	11
84	Stable Distributions as Noise Models for Molecular Communication. , 2014, , .		10
85	Waveform Multiplexing for New Radio: Numerology Management and 3D Evaluation. IEEE Wireless Communications, 2018, 25, 86-94.	9.0	10
86	A Comparative Study of Analog/Digital Self-Interference Cancellation for Full Duplex Radios. , 2019, , .		10
87	A Rising Edge-Based Detection Algorithm for MIMO Molecular Communication. IEEE Wireless Communications Letters, 2020, 9, 523-527.	5.0	10
88	WLC06-4: A Lattice-Based MIMO Broadcast Precoder with Block Diagonalization for Multi-Stream Transmission. IEEE Global Telecommunications Conference (GLOBECOM), 2006, , .	0.0	9
89	Subjective and objective quality assessment of videos in error-prone network environments. Multimedia Tools and Applications, 2016, 75, 6849-6870.	3.9	9
90	CramÃ©râ€“Rao Lower Bound on AoA Estimation Using an RF Lens-Embedded Antenna Array. IEEE Antennas and Wireless Propagation Letters, 2018, 17, 2359-2363.	4.0	9

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91	Distributed Beam Scheduling in Multi-Cell Networks via Auction over Competitive Markets. , 2011, , .		8
92	Jointly optimized two-cell MIMO systems. , 2011, , .		8
93	Massive MIMO operation in partially centralized cloud radio access networks. Computer Networks, 2017, 115, 54-64.	5.1	8
94	Amplify-and-forward two-way relaying system over free-space optics channels. Journal of Communications and Networks, 2017, 19, 481-492.	2.6	8
95	Molecular-Type Permutation Shift Keying in Molecular MIMO Communications for IoBNT. IEEE Internet of Things Journal, 2021, 8, 16023-16034.	8.7	8
96	Non-iterative multiuser MIMO coordinated beamforming with limited feedforward. Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, 2008, , .	1.8	7
97	Quality perception of coding artifacts and packet loss in networked video communications. , 2012, , .		7
98	On Unequal Power Allocation for Video Communications Using Scalable Video Coding in Massive MIMO Systems. , 2014, , .		7
99	On the Impact of Time-Synchronization in Molecular Timing Channels. , 2016, , .		7
100	Relationship Between Cross-Polarization Discrimination (XPD) and Spatial Correlation in Indoor Small-Cell MIMO Systems. IEEE Wireless Communications Letters, 2018, 7, 654-657.	5.0	7
101	MIMO Operations in Molecular Communications: Theory, Prototypes, and Open Challenges. IEEE Communications Magazine, 2021, 59, 98-104.	6.1	7
102	Two way molecular communications. , 2018, , .		7
103	RF Lens Antenna Array-Based One-Shot Coarse Pointing for Hybrid RF/FSO Communications. IEEE Wireless Communications Letters, 2022, 11, 240-244.	5.0	7
104	Cooperative Spectral Covariance Sensing under Correlated Shadowing. IEEE Transactions on Wireless Communications, 2011, 10, 3589-3593.	9.2	6
105	A realistic channel model for molecular communication with imperfect receivers. , 2014, , .		6
106	Effective interâ€symbol interference mitigation with a limited amount of enzymes in molecular communications. Transactions on Emerging Telecommunications Technologies, 2017, 28, e3106.	3.9	6
107	Demo: mmWave Lens MIMO. , 2020, , .		6
108	Opportunistic Scheduling in Multiuser OFDM Systems with Clustered Feedback. Wireless Personal Communications, 2010, 52, 209.	2.7	5

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109	Sensor placement algorithm for radio environment map construction in cognitive radio networks. , 2014, , .		5
110	Limited channel feedback for RF lens antenna based massive MIMO systems. , 2015, , .		5
111	Low-Complexity Nonlinear Self-Interference Cancellation for Full-Duplex Radios. , 2016, , .		5
112	Frequency assignment problem with net filter discrimination constraints. Journal of Communications and Networks, 2017, 19, 329-340.	2.6	5
113	Low complexity DoA estimation in millimeter wave MIMO with RF lens. , 2018, , .		5
114	MOL-eye: A new metric for the performance evaluation of a molecular signal. , 2018, , .		5
115	Demo: In-Vessel Molecular MIMO Communications. , 2020, , .		5
116	Limited Feedback Precoding for Correlated Massive MIMO Systems. The Journal of Korean Institute of Communications and Information Sciences, 2014, 39A, 431-436.	0.1	5
117	Jointly Optimized Multiuser Beamforming for the MIMO Broadcast Channel with Limited Feedback. , 2007, , .		4
118	Linear network coordinated beamforming for cell-boundary users. , 2009, , .		4
119	On the optimization of two-way AF MIMO relay channel with beamforming. , 2010, , .		4
120	Scaling laws for molecular communication. , 2014, , .		4
121	Performance Analysis of Self-Interference Cancellation in Full-Duplex Large-Scale MIMO Systems. , 2016, , .		4
122	Heuristics for frequency assignment problem with realistic interference constraints. , 2016, , .		4
123	MASTaR: MAC Protocol for Access Points in Simultaneous Transmit and Receive Mode. , 2016, , .		4
124	V2X Downlink Coverage Analysis with a Realistic Urban Vehicular Model. , 2018, , .		4
125	Analytical Asymptotic Extraction Technique for the Analysis of Bend Discontinuity. Progress in Electromagnetics Research, 2001, 33, 219-235.	4.4	3
126	Multichannel Feedback in OFDM Ad Hoc Networks. , 2006, , .		3

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127	Energy-efficient adaptive MIMO systems leveraging dynamic spare capacity. , 2008, , .		3
128	A low complexity linear multiuser MIMO beamforming system with limited feedback. , 2008, , .		3
129	Before/after precoded massive MIMO in cloud radio access networks. , 2013, , .		3
130	QoE-based transmission strategies for multi-user wireless information and power transfer. ICT Express, 2015, 1, 116-120.	4.8	3
131	Opportunistic map based Flexible Hybrid Duplex Systems in Dynamic Spectrum Access. , 2018, , .		3
132	A Molecular Spatio-Temporal Modulation Scheme for MIMO Communications. , 2021, , .		3
133	Molecular MIMO Communications Platform with BTSK for In-Vessel Network Systems. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2020, , 289-293.	0.3	3
134	Tomlinson-Harashima Precoding with Adaptive Modulation for Fixed Relay Networks. , 2006, , .		2
135	Adaptive mode switching in the MIMO broadcast channel. , 2008, , .		2
136	Adaptive mode switching in correlated multiple antenna cellular networks. Journal of Communications and Networks, 2009, 11, 279-286.	2.6	2
137	Compressed channel feedback for correlateci massive MIMO systems. , 2014, , .		2
138	Multiple regression models for a big data empowered SON framework. , 2015, , .		2
139	Waveform multiplexing for 5G: A concept and 3D evaluation. , 2017, , .		2
140	Game theory based hybrid frequency assignment with net filter discrimination constraints. ICT Express, 2019, 5, 89-93.	4.8	2
141	Hybrid Precoding Based on Monopulse Ratio for Millimeter Wave Systems With Limited Feedback. IEEE Access, 2020, 8, 175329-175346.	4.2	2
142	Quality Assessment of Mobile Videos. , 2015, , 99-127.		2
143	Is conflict always bad? From an interference management perspective. , 2010, , .		1
144	Channel asymmetry due to cell deployment and service in OFDMA/TDD systems. , 2011, , .		1

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145	Channel parameter extraction methodology for system-level simulator in small cell environments. , 2013, , .		1
146	Call for papers: Special issue on reconfigurable intelligent surface aided wireless communications. Intelligent and Converged Networks, 2021, 2, 86-90.	4.8	1
147	A novel definition of processing gain for the system level simulation in WCDMA. , 0, , .		0
148	MIMO Technologies for WiMAX Systems: Present and Future. , 0, , 305-334.		0
149	MMSE receiver spatial sensing technique for cognitive radio networks. , 2012, , .		0
150	A performance trade-off in wideband cognitive radio for flexible wireless systems. , 2013, , .		0
151	Multimedia Communications with Large-scale Antennas*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 94-95.	0.4	0
152	Multivariate Multiple Regression Models for a Big Data-Empowered SON Framework in Mobile Wireless Networks. Mobile Information Systems, 2016, 2016, 1-10.	0.6	0
153	Joint assignment of frequency and polarization to minimize the chromatic number. ICT Express, 2017, 3, 38-42.	4.8	0
154	Demo: Latency Control for Interactive Five Degree-of-Freedom View Exploration Systems. , 2020, , .		0
155	Resource Allocation for Max-Min Rate Fairness in Molecular Communication Systems. , 2021, , .		0
156	Overhead Reduction in Coordinated Beamforming for Multiuser MIMO-OFDM Systems with Limited Feedforward. IEICE Transactions on Communications, 2011, E94-B, 3168-3171.	0.7	0
157	A Novel Performance Evaluation Methodology for Small Cell Networks. The Journal of Korean Institute of Communications and Information Sciences, 2013, 38A, 1110-1116.	0.1	0
158	Molecular Communication in Inhomogeneous Diffusion Channels. IEEE Wireless Communications Letters, 2022, 11, 1975-1979.	5.0	0