Arnulf Leuther

List of Publications by Year
in descending order

141 papers	3,516 citations	318942 23 h-index	198040 52 g-index
141 all docs	141 docs citations	141 times ranked	3336 citing authors

#	Article	IF	Citations
1	Wireless sub-THz communication system with high data rate. Nature Photonics, 2013, 7, 977-981.	15.6	1,137
2	All Active MMIC-Based Wireless Communication at 220 GHz. IEEE Transactions on Terahertz Science and Technology, 2011, 1, 477-487.	2.0	188
3	Towards MMIC-Based 300GHz Indoor Wireless Communication Systems. IEICE Transactions on Electronics, 2015, E98.C, 1081-1090.	0.3	113
4	${W}$ -Band Time-Domain Multiplexing FMCW MIMO Radar for Far-Field 3-D Imaging. IEEE Transactions on Microwave Theory and Techniques, 2017, 65, 3474-3484.	2.9	105
5	Metamorphic HEMT MMICs and Modules Operating Between 300 and 500 GHz. IEEE Journal of Solid-State Circuits, 2011, 46, 2193-2202.	3.5	89
6	35 nm metamorphic HEMT MMIC technology. , 2008, , .		73
7	4â€“12- and 25â€“34-GHz Cryogenic mHEMT MMIC Low-Noise Amplifiers. IEEE Transactions on Microwave Theory and Techniques, 2012, 60, 4080-4088.	2.9	70
8	Metamorphic HEMT MMICs and Modules for Use in a High-Bandwidth 210 GHz Radar. IEEE Journal of Solid-State Circuits, 2008, 43, 2194-2205.	3.5	56
9	35 nm mHEMT Technology for THz and ultra low noise applications. , 2013, , .		52
10	Metamorphic HEMT technology for low-noise applications. , 2009, , .		50
11	Single-Chip Frequency Multiplier Chains for Millimeter-Wave Signal Generation. IEEE Transactions on Microwave Theory and Techniques, 2009, 57, 3134-3142.	2.9	49
12	A 220 GHz Single-Chip Receiver MMIC With Integrated Antenna. IEEE Microwave and Wireless Components Letters, 2008, 18, 284-286.	2.0	45
13	A 600 GHz low-noise amplifier module. , 2014, , .		44
14	G-band metamorphic HEMT-based frequency multipliers. IEEE Transactions on Microwave Theory and Techniques, 2006, 54, 2983-2992.	2.9	40
15	A subharmonic chipset for gigabit communication around 240 GHz. , 2012, , .		40
16	Reliability and degradation mechanism of AlGaAs/InGaAs and InAlAs/InGaAs HEMTs. Physica Status Solidi A, 2003, 195, 81-86.	1.7	38
17	Broadband 300-GHz Power Amplifier MMICs in InGaAs mHEMT Technology. IEEE Transactions on Terahertz Science and Technology, 2020, 10, 309-320.	2.0	37
18	Broadband 240-GHz Radar for Non-Destructive Testing of Composite Materials. IEEE Journal of Solid-State Circuits, 2019, 54, 2388-2401.	3.5	34

#	Article	IF	Citations
19	A High Gain 600 GHz Amplifier TMIC Using 35 nm Metamorphic HEMT Technology. , 2012, , .		31
20	A 183 GHz Metamorphic HEMT Low-Noise Amplifier With 3.5 dB Noise Figure. IEEE Microwave and Wireless Components Letters, 2015, 25, 618-620.	2.0	31
21	450 GHz amplifier MMIC in 50 nm metamorphic HEMT technology. , 2012, , .		30
22	On the Accurate Measurement and Calibration of S-Parameters for Millimeter Wavelengths and Beyond. IEEE Transactions on Microwave Theory and Techniques, 2015, 63, 2335-2342.	2.9	30
23	Security Pre-screening of Moving Persons Using a Rotating Multichannel W-Band Radar. IEEE Transactions on Microwave Theory and Techniques, 2012, 60, 870-880.	2.9	29
24	Comparison of a 35-nm and a 50-nm gate-length metamorphic HEMT technology for millimeter-wave low-noise amplifier MMICs. , 2017, , .		29
25	Broadband High-Power W-Band Amplifier MMICs Based on Stacked-HEMT Unit Cells. IEEE Transactions on Microwave Theory and Techniques, 2018, 66, 1312-1318.	2.9	29
26	DX centres, conduction band offsets and Si-dopant segregation in heterostructures. Semiconductor Science and Technology, 1996, 11, 766-771.	1.0	28
27	A 120â€"145 GHz Heterodyne Receiver Chipset Utilizing the 140 GHz Atmospheric Window for Passive Millimeter-Wave Imaging Applications. IEEE Journal of Solid-State Circuits, 2010, 45, 1961-1967.	3.5	28
28	A W-Band $imes$12 Multiplier MMIC With Excellent Spurious Suppression. IEEE Microwave and Wireless Components Letters, 2011, 21, 212-214.	2.0	28
29	20 nm Metamorphic HEMT technology for terahertz monolithic integrated circuits. , 2014, , .		27
30	Reliability of 70 nm metamorphic HEMTs. Microelectronics Reliability, 2004, 44, 939-943.	0.9	26
31	A 200 GHz Monolithic Integrated Power Amplifier in Metamorphic HEMT Technology. IEEE Microwave and Wireless Components Letters, 2009, 19, 410-412.	2.0	25
32	20-nm In_{0.8}Ga_{0.2}As MOSHEMT MMIC Technology on Silicon. IEEE Journal of Solid-State Circuits, 2019, 54, 2411-2418.	3.5	24
33	First Demonstration of Distributed Amplifier MMICs With More Than 300-GHz Bandwidth. IEEE Journal of Solid-State Circuits, 2021, 56, 2647-2655.	3.5	24
34	A 220 GHz (G-Band) Microstrip MMIC Single-Ended Resistive Mixer. IEEE Microwave and Wireless Components Letters, 2008, 18, 215-217.	2.0	23
35	Cryogenic Low-Noise mHEMT-Based MMIC Amplifiers for 4â€"12 GHz Band. IEEE Microwave and Wireless Components Letters, 2011, 21, 613-615.	2.0	23
36	A 50 to 146 GHz Power Amplifier Based on Magnetic Transformers and Distributed Gain Cells. IEEE Microwave and Wireless Components Letters, 2015, 25, 615-617.	2.0	23

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37	A 243 GHz LNA Module Based on mHEMT MMICs With Integrated Waveguide Transitions. IEEE Microwave and Wireless Components Letters, 2013, 23, 486-488.	2.0	22
38	Testbed for phased array communications from 275 to 325 GHz. , 2017, , .		22
39	A Transmitter System-in-Package at 300 GHz With an Off-Chip Antenna and GaAs-Based MMICs. IEEE Transactions on Terahertz Science and Technology, 2019, 9, 335-344.	2.0	22
40	Dual-Gate GaN MMICs for MM-Wave Operation. IEEE Microwave and Wireless Components Letters, 2011, 21, 95-97.	2.0	20
41	Development of a high transconductance GaN MMIC technology for millimeter wave applications. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 297-299.	0.8	18
42	Quasi-two-dimensional plasmons of a single Î´-doped layer in GaAs studied by high-resolution electron-energy-loss spectroscopy. Physical Review B, 1993, 47, 3819-3826.	1.1	17
43	W-Band LNA MMICs Based on a Noise-Optimized 50-nm Gate-Length Metamorphic HEMT Technology. , 2019, , .		17
44	Low-Loss Millimeter-Wave SPDT Switch MMICs in a Metamorphic HEMT Technology. IEEE Microwave and Wireless Components Letters, 2020, 30, 197-200.	2.0	17
45	A 50-nm Gate-Length Metamorphic HEMT Technology Optimized for Cryogenic Ultra-Low-Noise Operation. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 3896-3907.	2.9	17
46	Complete monolithic integrated 2.5 Gbit/s optoelectronic receiver with large area MSM photodiode for 850 nm wavelength. Electronics Letters, 2001, 37, 1247.	0.5	16
47	Monolithically Integrated 200-GHz Double-Slot Antenna and Resistive Mixers in a GaAs-mHEMT MMIC Process. IEEE Transactions on Microwave Theory and Techniques, 2011, 59, 2494-2503.	2.9	16
48	255 to 330 GHz active frequency tripler MMIC. , 2012, , .		16
49	Stability Investigation of Large Gate-Width Metamorphic High Electron-Mobility Transistors at Cryogenic Temperature. IEEE Transactions on Microwave Theory and Techniques, 2016, 64, 3139-3150.	2.9	16
50	220 GHz wireless data transmission experiments up to 30 Gbit/s. , 2012, , .		15
51	243ÂGHz low-noise amplifier MMICs and modules based on metamorphic HEMT technology. International Journal of Microwave and Wireless Technologies, 2014, 6, 215-223.	1.5	15
52	Analysis and Development of Submillimeter-Wave Stacked-FET Power Amplifier MMICs in 35-nm mHEMT Technology. IEEE Transactions on Terahertz Science and Technology, 2018, 8, 357-364.	2.0	14
53	MMIC-Based Components for MM-Wave Instrumentation. IEEE Microwave and Wireless Components Letters, 2010, 20, 578-580.	2.0	13
54	A W-Band MMIC Radar System for Remote Detection of Vital Signs. Journal of Infrared, Millimeter, and Terahertz Waves, 2012, 33, 1250-1267.	1.2	13

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55	Small signal modelling approach for submillimeter wave IIIâ€"V HEMTs with analysation and optimization possibilities. , 2016, , .		13
56	Electromagnetic field simulation of MMICs including RF probe tips. , 2017, , .		13
57	300 GHz broadband power amplifier with 508 GHz gain-bandwidth product and 8 dBm output power. , 2019, , .		13
58	A 280â€"310 GHz InAlAs/InGaAs mHEMT Power Amplifier MMIC with 6.7â€"8.3 dBm Output Power. IEEE Microwave and Wireless Components Letters, 2019, 29, 143-145.	2.0	13
59	Magnetotransport and photoluminescence of two-dimensional hole gases in Si/Si1â^'xGex/Si heterostructures. Physical Review B, 1994, 50, 18113-18123.	1.1	12
60	A W-Band Monolithic Integrated Active Hot and Cold Noise Source. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 623-630.	2.9	12
61	A Novel 1$imes$4 Coupler for Compact and High-Gain Power Amplifier MMICs Around 250 GHz. IEEE Transactions on Microwave Theory and Techniques, 2015, 63, 999-1006.	2.9	12
62	A H-Band vector modulator MMIC for phase-shifting applications. , 2015, , .		12
63	InGaAs MOSHEMT <i>W</i>-Band LNAs on Silicon and Gallium Arsenide Substrates. IEEE Microwave and Wireless Components Letters, 2020, 30, 1089-1092.	2.0	12
64	A 210 GHz Dual-Gate FET Mixer MMIC With ${>}$2 dB Conversion Gain, High LO-to-RF Isolation, and Low LO-Drive Requirements. IEEE Microwave and Wireless Components Letters, 2008, 18, 557-559.	2.0	11
65	A 75â€"305-GHz Power Amplifier MMIC With 10â€"14.9-dBm <i>P</i>_{out} in a 35-nm InGaAs mHEMT Technology. IEEE Microwave and Wireless Components Letters, 2021, 31, 741-743.	2.0	11
66	Reliability of 50â€...nm low-noise metamorphic HEMTs and LNAs. Electronics Letters, 2005, 41, 699.	0.5	10
67	Multi-gigabit data transmission using MMIC-based E-band frontends. , 2014, , .		10
68	Efficiency Optimized Distributed Transformers for Broadband Monolithic Millimeter-Wave Integrated Power Amplifier Circuits. IEEE Transactions on Microwave Theory and Techniques, 2017, 65, 4901-4913.	2.9	10
69	Broadband 400-GHz InGaAs mHEMT Transmitter and Receiver S-MMICs. IEEE Transactions on Terahertz Science and Technology, 2021, 11, 660-675.	2.0	10
70	A 67â€"116-GHz Cryogenic Low-Noise Amplifier in a 50-nm InGaAs Metamorphic HEMT Technology. IEEE Microwave and Wireless Components Letters, 2022, 32, 430-433.	2.0	10
71	A D-band frequency doubler MMIC based on a 100-nm metamorphic HEMT technology. IEEE Microwave and Wireless Components Letters, 2005, 15, 466-468.	2.0	9
72	Submillimeter-Wave Amplifier Circuits Based on Thin Film Microstrip Line Front-Side Technology. , 2015, , .		9

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73	Thermal conductivity of silver loaded conductive epoxy from cryogenic to ambient temperature and its application for precision cryogenic noise measurements. Cryogenics, 2016, 76, 23-28.	0.9	9
74	A Scalable Small-Signal and Noise Model for High-Electron-Mobility Transistors Working Down to Cryogenic Temperatures. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 1097-1110.	2.9	9
75	A Monolithic Integrated mHEMT Chipset for High-Resolution Submillimeter-Wave Radar Applications. , 2013, , .		8
76	A 200 GHz Medium Power Amplifier MMIC in Cascode Metamorphic HEMT Technology. IEEE Microwave and Wireless Components Letters, 2014, 24, 787-789.	2.0	8
77	A Miniaturized Unit Cell for Ultra-Broadband Active Millimeter-Wave Frequency Multiplication. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 1343-1351.	2.9	8
78	Active frequency-tripler MMICs for 300ÂGHz signal generation. International Journal of Microwave and Wireless Technologies, 2012, 4, 259-266.	1.5	7
79	MHEMT G-Band Low-Noise Amplifiers. IEEE Transactions on Terahertz Science and Technology, 2014, 4, 459-468.	2.0	7
80	Bandwidth Optimization Method for Reflective-Type Phase Shifters. IEEE Transactions on Microwave Theory and Techniques, 2018, 66, 1754-1763.	2.9	7
81	A G -Band Broadband Balanced Power Amplifier Module Based on Cascode mHEMTs. IEEE Microwave and Wireless Components Letters, 2018, 28, 924-926.	2.0	7
82	H-Band Quartz-Silicon Leaky-Wave Lens With Air-Bridge Interconnect to GaAs Front-End. IEEE Transactions on Terahertz Science and Technology, 2021, 11, 297-309.	2.0	7
83	66â€…GHz 2:1 static frequency divider using 100â€…nm metamorphic enhancement HEMT technology. Electronics Letters, 2002, 38, 716.	0.5	6
84	58â€“82â€…GHz 4:1 dynamic frequency divider using 100â€…nm metamorphic enhancement HEMT technology. Electronics Letters, 2002, 38, 367.	0.5	6
85	Multibias scalable HEMT small-signal modeling based on a hybrid direct extraction/particle swarm optimization approach. Microelectronics Journal, 2012, 43, 562-568.	1.1	6
86	Planar Zero Bias Schottky Diodes on an InGaAs Metamorphic HEMT MMIC Process. IEEE Microwave and Wireless Components Letters, 2014, 24, 860-862.	2.0	6
87	A scalable compact small-signal mHEMT model accounting for distributed effects in sub-millimeter wave and terahertz applications. , 2014, , .		6
88	70-116-GHz LNAs in 35-nm and 50-nm Gate-Length Metamorphic HEMT Technologies for Cryogenic and Room-Temperature Operation. , 2018, , .		6
89	Investigation of Compact Power Amplifier Cells at THz Frequencies using InGaAs mHEMT Technology. , 2019, , .		6
90	Noise Performance of Sub-100-nm Metamorphic HEMT Technologies. , 2020, , .		6

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91	Broadband and High-Gain 400-GHz InGaAs mHEMT Medium-Power Amplifier S-MMIC. , 2020, , .		6
92	Frequency Multiplier and Mixer MMICs Based on a Metamorphic HEMT Technology Including Schottky Diodes. IEEE Access, 2020, 8, 12697-12712.	2.6	6
93	A balanced 150â€"240 GHz amplifier MMIC using airbridge transmission lines. , 2012, , .		5
94	Backside Process Free Broadband Amplifier MMICs at D-Band and H-Band in 20 nm mHEMT Technology. , 2014, , .		5
95	Active single pole double throw switches for D-Band applications. , 2016, , .		5
96	Low noise amplifiers for MetOp-SG. , 2016, , .		5
97	A 250 GHz millimeter wave amplifier MMIC based on 30 nm metamorphic InGaAs MOSFET technology. , 2017, , .		5
98	Photoluminescence and magnetotransport of 2-D hole gases in Si/SiGe/Si heterostructures. Solid-State Electronics, 1994, 37, 957-959.	0.8	4
99	A fully-scalable coplanar waveguide passive library for millimeter-wave monolithic integrated circuit design. , 2011, , .		4
100	MMIC based wireless data transmission of a 12.5 Gbit/s signal using a 220 GHz carrier. , 2011, , .		4
101	High-performance 60ÂGHz MMICs for wireless digital communication in 100Ânm mHEMT technology. International Journal of Microwave and Wireless Technologies, 2011, 3, 107-113.	1.5	4
102	Modelling of transistor feeding structures based on electro-magnetic field simulations. , 2012, , .		4
103	Compact W-band receiver module on hybrid liquid crystal polymer board. , 2016, , .		4
104	Cryogenic 50-nm mHEMT MMIC LNA for 67-116 GHz with 34 K noise temperature. , 2016, , .		4
105	A Novel Unit Cell for Active Switches in the Millimeter-Wave Frequency Range. Journal of Infrared, Millimeter, and Terahertz Waves, 2018, 39, 161-176.	1.2	4
106	Integrated 220â€"260 GHz Radar Frontend. , 2018, , .		4
107	260 GHz Broadband Power Amplifier MMIC. , 2019, , .		4
108	A Fully-Integrated W-Band I/Q-Down-Conversion MMIC for Use in Radio Astronomical Multi-Pixel Receivers. , 2020, , .		4

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109	InGaAs HEMT MMIC Technology on Silicon Substrate with Backside Field-Plate. , 2021, , .		4
110	670-GHz Cascode Circuits Based on InGaAs Metamorphic High-Electron-Mobility Transistors. IEEE Transactions on Terahertz Science and Technology, 2022, 12, 173-181.	2.0	4
111	Experimental realization of a two-dimensional to two-dimensional tunnel transistor. Semiconductor Science and Technology, 1996, 11, 772-775.	1.0	3
112	A D-Band Subharmonically-Pumped Resistive Mixer Based on a 100 nm MHEMT Technology. ETRI Journal, 2011, 33, 818-821.	1.2	3
113	Impact of Metallization Layer Structure on the Performance of G-Band Branch-Line Couplers. IEEE Microwave and Wireless Components Letters, 2015, 25, 793-795.	2.0	3
114	A 220â€"260 GHz medium power variable gain amplifier MMIC with low phase variation. , 2017, , .		3
115	Highly Scalable Distributed High Electron Mobility Transistor Model. , 2019, , .		3
116	Advanced mHEMT MMICs for 220 GHz highâ€resolution imaging systems. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 1390-1393.	0.8	2
117	A Noise Source Module for In-Situ Noise Figure Measurements From DC to 50 GHz at Cryogenic Temperatures. IEEE Microwave and Wireless Components Letters, 2012, 22, 657-659.	2.0	2
118	Cryogenic low noise amplifier development for 67â€"116 GHz. , 2014, , .		2
119	Ultra low noise V-band down-converters for MetOp-SG. , 2016, , .		2
120	Investigation of direct-coupled amplifier topologies for wireless communication systems using normally-on mHEMT technology. , 2017, , .		2
121	A WR3-band reflective-type phase shifter MMIC with integrated amplifier for error- and loss compensation. , 2017, , .		2
122	RF-Noise Modeling of InGaAs Metamorphic HEMTs and MOSFETs. , 2018, , .		2
123	High Gain 220 - 275 GHz Amplifier MMICs Based on Metamorphic 20 nm InGaAs MOSFET Technology. , 2018, , .		2
124	In situ Load- Pull MMIC for Large-Signal Characterization of mHEMT Devices at Submillimeter- Wave Frequencies. , 2018, , .		2
125	Crosstalk analysis and correction in on-wafer measurements at WR-3 band frequencies. , 2018, , .		2
126	A WR3-Band 2-bit Phase Shifter Based on Active SPDT Switches. IEEE Microwave and Wireless Components Letters, 2018, 28, 810-812.	2.0	2

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127	C-Band Low-Noise Amplifier MMIC with an Average Noise Temperature of 44.5 K and 24.8 mW Power Consumption. , 2022, , .		2
128	Design and model studies for solid-state power amplification at 210ÂGHz. International Journal of Microwave and Wireless Technologies, 2011, 3, 339-346.	1.5	1
129	Active cold load MMICs for Kaâ€; Vâ€; and Wâ€bands. IET Microwaves, Antennas and Propagation, 2015, 9, 742-747.	0.7	1
130	Complex interaction of passive multiport structures and their description by separate discrete models. Electronics Letters, 2016, 52, 52-54.	0.5	1
131	An Active Multiplier-by-Six S-MMIC for 500 GHz. , 2018, , .		1
132	RF-Noise Model Extraction Procedure for Distributed Multiport Models. , 2019, , .		1
133	High-Gain 670-GHz Amplifier Circuits in InGaAs-on-Insulator HEMT Technology. IEEE Microwave and Wireless Components Letters, 2022, 32, 728-731.	2.0	1
134	A 1â€"170-GHz Distributed Down-Converter MMIC in 35-nm Gate-Length InGaAs mHEMT Technology. IEEE Microwave and Wireless Components Letters, 2022, 32, 748-751.	2.0	1
135	Broadband MMIC tuners dedicated to noise parameter measurements at cryogenic temperatures. , 2012, , .		0
136	Wireless multi-gigabit data transmission using active MMIC components at 220ÂGHz. International Journal of Microwave and Wireless Technologies, 2012, 4, 291-298.	1.5	0
137	Molecular spectroscopy with a compact 557 GHz heterodyne receiver. , 2013, , .		0
138	Wideband 200 GHz injection-locked frequency divide-by-two MMIC in GaAs mHEMT technology. , 2015, , .		0
139	Efficient EM Simulation of GCPW Structures Applied to a 200-GHz mHEMT Power Amplifier MMIC. Journal of Infrared, Millimeter, and Terahertz Waves, 2017, 38, 596-608.	1.2	0
140	A 200â€"300 GHz 1:2 Active power divider MMIC. , 2017, , .		0
141	Investigation of differential broadband amplifiers in normally-on mHEMT technology. , 2018, , .		0