

Jae-Sung Rieh

List of Publications by Year in descending order

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109
papers

1,261
citations

394421

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454955

30
g-index

110
all docs

110
docs citations

110
times ranked

801
citing authors

#	ARTICLE	IF	CITATIONS
1	Half-terahertz operation of SiGe HBTs. IEEE Electron Device Letters, 2006, 27, 567-569.	3.9	89
2	SiGe Heterojunction Bipolar Transistors and Circuits Toward Terahertz Communication Applications. IEEE Transactions on Microwave Theory and Techniques, 2004, 52, 2390-2408.	4.6	77
3	Structure Optimization of Trench-Isolated SiGe HBTs for Simultaneous Improvements in Thermal and Electrical Performances. IEEE Transactions on Electron Devices, 2005, 52, 2744-2752.	3.0	59
4	Transistor design and application considerations for < 200-GHz SiGe HBTs. IEEE Transactions on Electron Devices, 2003, 50, 645-655.	3.0	56
5	300-GHz InP HBT Oscillators Based on Common-Base Cross-Coupled Topology. IEEE Transactions on Microwave Theory and Techniques, 2014, 62, 3053-3064.	4.6	51
6	X- and Ku-band amplifiers based on Si/SiGe HBT's and micromachined lumped components. IEEE Transactions on Microwave Theory and Techniques, 1998, 46, 685-694.	4.6	48
7	On the Performance Limits of Cryogenically Operated SiGe HBTs and Its Relation to Scaling for Terahertz Speeds. IEEE Transactions on Electron Devices, 2009, 56, 1007-1019.	3.0	45
8	300 GHz Integrated Heterodyne Receiver and Transmitter With On-Chip Fundamental Local Oscillator and Mixers. IEEE Transactions on Terahertz Science and Technology, 2014, , 1-10.	3.1	43
9	Proton tolerance of fourth-generation 350 GHz UHV/CVD SiGe HBTs. IEEE Transactions on Nuclear Science, 2004, 51, 3736-3742.	2.0	41
10	Product applications and technology directions with SiGe BiCMOS. IEEE Journal of Solid-State Circuits, 2003, 38, 1471-1478.	5.4	38
11	3.9 ps SiGe HBT ECL ring oscillator and transistor design for minimum gate delay. IEEE Electron Device Letters, 2003, 24, 324-326.	3.9	38
12	Reliability of high-speed SiGe heterojunction bipolar transistors under very high forward current density. IEEE Transactions on Device and Materials Reliability, 2003, 3, 31-38.	2.0	37
13	300-GHz Direct and Heterodyne Active Imagers Based on 0.13- μ m SiGe HBT Technology. IEEE Transactions on Terahertz Science and Technology, 2017, 7, 536-545.	3.1	34
14	A doping concentration-dependent upper limit of the breakdown voltage-cutoff frequency product in Si bipolar transistors. Solid-State Electronics, 2004, 48, 339-343.	1.4	27
15	A \$D\$ -Band CMOS Amplifier With a New Dual-Frequency Interstage Matching Technique. IEEE Transactions on Microwave Theory and Techniques, 2017, 65, 1580-1588.	4.6	27
16	Terahertz Reflection-Mode Biological Imaging Based on InP HBT Source and Detector. IEEE Transactions on Terahertz Science and Technology, 2017, 7, 274-283.	3.1	27
17	Introduction to Terahertz Electronics. , 2021, , .		24
18	Two 320 GHz Signal Sources Based on SiGe HBT Technology. IEEE Microwave and Wireless Components Letters, 2015, 25, 178-180.	3.2	22

#	ARTICLE	IF	CITATIONS
19	A 310-340-GHz Coupled-Line Voltage-Controlled Oscillator Based on 0.25- μm InP HBT Technology. IEEE Transactions on Terahertz Science and Technology, 2015, 5, 652-654.	3.1	21
20	A 248-262 GHz InP HBT VCO with Interesting Tuning Behavior. IEEE Microwave and Wireless Components Letters, 2014, 24, 560-562.	3.2	20
21	Terahertz Signal Source and Receiver Operating Near 600 GHz and Their 3-D Imaging Application. IEEE Transactions on Microwave Theory and Techniques, 2021, 69, 2762-2775.	4.6	20
22	260- μm GHz differential amplifier in SiGe heterojunction bipolar transistor technology. Electronics Letters, 2017, 53, 194-196.	1.0	17
23	Three-Dimensional Terahertz Tomography With Transistor-Based Signal Source and Detector Circuits Operating Near 300 GHz. IEEE Transactions on Terahertz Science and Technology, 2018, 8, 482-491.	3.1	17
24	Integrated planar spiral inductors with CoFe and NiFe ferromagnetic layer. Microwave and Optical Technology Letters, 2008, 50, 676-678.	1.4	16
25	A 280-GHz 10-dBm Signal Source Based on InP HBT Technology. IEEE Microwave and Wireless Components Letters, 2017, 27, 159-161.	3.2	16
26	Reverse Active Mode Current Characteristics of SiGe HBTs. IEEE Transactions on Electron Devices, 2005, 52, 1219-1222.	3.0	15
27	Reliability and performance scaling of very high speed SiGe HBTs. Microelectronics Reliability, 2004, 44, 397-410.	1.7	14
28	D-Band Heterodyne Integrated Imager in a 65-nm CMOS Technology. IEEE Microwave and Wireless Components Letters, 2015, 25, 196-198.	3.2	13
29	Analysis and understanding of unique cryogenic phenomena in state-of-the-art SiGe HBTs. Solid-State Electronics, 2006, 50, 964-972.	1.4	12
30	A 270-GHz CMOS Triple-Push Ring Oscillator With a Coupled-Line Matching Network. IEEE Transactions on Terahertz Science and Technology, 2019, 9, 449-462.	3.1	12
31	The Island-Gate Varactor—A High-Q MOS Varactor for Millimeter-Wave Applications. IEEE Microwave and Wireless Components Letters, 2009, 19, 215-217.	3.2	11
32	A V-Band Waveguide Transition Design Appropriate for Monolithic Integration. , 2007, , .		10
33	A 47 GHz LC Cross-Coupled VCO Employing High- Q Island-Gate Varactor for Phase Noise Reduction. IEEE Microwave and Wireless Components Letters, 2010, 20, 94-96.	3.2	10
34	A 135 GHz Differential Active Star Mixer in SiGe BiCMOS Technology. IEEE Microwave and Wireless Components Letters, 2012, 22, 409-411.	3.2	10
35	645- μm GHz InP heterojunction bipolar transistor harmonic oscillator. Electronics Letters, 2017, 53, 1475-1477.	1.0	10
36	An overview of solid-state electronic sources and detectors for Terahertz imaging. , 2014, , .		9

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37	A Scalable 300-GHz Multichip Stitched CMOS Detector Array. IEEE Transactions on Microwave Theory and Techniques, 2022, 70, 1797-1809.	4.6	9
38	An Overview of Semiconductor Technologies and Circuits for Terahertz Communication Applications. , 2009, , .		8
39	A 60 GHz Wideband Quadrature-Balanced Mixer Based on 0.13 μm RFCMOS Technology. IEEE Microwave and Wireless Components Letters, 2011, 21, 215-217.	3.2	8
40	A Comprehensive Study of High- Q Island-Gate Varactors (IGVs) for CMOS Millimeter-Wave Applications. IEEE Transactions on Microwave Theory and Techniques, 2011, 59, 1520-1528.	4.6	8
41	Two 122-GHz Phase-Locked Loops in 65-nm CMOS Technology. IEEE Transactions on Microwave Theory and Techniques, 2016, , 1-8.	4.6	8
42	A 300-GHz CMOS 7-by-7 Detector Array for Optics-less THz Imaging with Scan-less Target Object. Journal of Infrared, Millimeter, and Terahertz Waves, 2020, 41, 202-214.	2.2	8
43	A 20-30 GHz divide-by-3 ring-oscillator-based injection locked frequency divider with a wide locking range. Microwave and Optical Technology Letters, 2011, 53, 839-841.	1.4	7
44	A D-band Active Imager in a SiGe HBT Technology. Journal of Infrared, Millimeter, and Terahertz Waves, 2015, 36, 335-349.	2.2	7
45	A 300-GHz SPST Switch With a New Coupled-Line Topology in 65-nm CMOS Technology. IEEE Transactions on Terahertz Science and Technology, 2019, 9, 215-218.	3.1	7
46	A Q -Band Injection-Locked Frequency Divider With Inductive Feedback for a Locking Range Enhancement. IEEE Microwave and Wireless Components Letters, 2011, 21, 317-319.	3.2	6
47	An overview of integrated THz electronics for communication applications. , 2011, , .		6
48	A 140 GHz single-ended injection locked frequency divider with inductive feedback in SiGe HBT technology. , 2012, , .		6
49	CMOS 138-...GHz low-power active mixer with branch-line coupler. Electronics Letters, 2012, 48, 554.	1.0	6
50	3-D THz tomography with an InP HBT signal source and a SiGe HBT imaging receiver operating near 300 GHz. , 2015, , .		6
51	Evaluating and designing the optimal 2D collector profile for a 300GHz SiGe HBT. Materials Science in Semiconductor Processing, 2005, 8, 295-299.	4.0	5
52	Technology and design considerations for millimeter-wave circuits. , 2008, , .		5
53	SiGe 140-...GHz ring-oscillator-based injection-locked frequency divider. Electronics Letters, 2012, 48, 847.	1.0	5
54	Effect of Device Layout on the Stability of RF MOSFETs. IEEE Transactions on Microwave Theory and Techniques, 2013, 61, 1861-1869.	4.6	5

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55	A 200 GHz Heterodyne Image Receiver With an Integrated VCO in a SiGe BiCMOS Technology. IEEE Microwave and Wireless Components Letters, 2014, 24, 557-559.	3.2	5
56	A 300-GHz Integrated Transmitter Based on InP HBT Technology. , 2018, , .		5
57	Terahertz InP HBT Oscillators. , 2018, , .		5
58	A 283-GHz Fully Integrated Phase-Locked Loop Based on 65-nm CMOS. IEEE Transactions on Terahertz Science and Technology, 2018, 8, 784-792.	3.1	5
59	300-GHz InP HBT Quadrature VCO With Integrated Mixer. IEEE Transactions on Terahertz Science and Technology, 2020, 10, 419-422.	3.1	5
60	A 253-280 GHz Wide Tuning Range VCO with -3.5 dBm Peak Output Power in 40-nm CMOS. , 2021, , .		5
61	THz Applications. , 2021, , 273-350.		5
62	Hybrid Bulk Acoustic Wave Structure for Temperature Stability in LTE Applications. IEEE Microwave and Wireless Components Letters, 2013, 23, 453-455.	3.2	4
63	SiGe 135-GHz amplifier with inductive positive feedback operating near f_{max} . Electronics Letters, 2013, 49, 1229-1230.	1.0	4
64	Design and optimization of a 200 GHz SiGe HBT collector profile by TCAD. Applied Surface Science, 2004, 224, 324-329.	6.1	3
65	Impact of Substrate Digital Noise Coupling on the High-Frequency Noise Performance of RF MOSFETs. IEEE Microwave and Wireless Components Letters, 2009, 19, 557-559.	3.2	3
66	Variation in RF Performance of MOSFETs Due to Substrate Digital Noise Coupling. IEEE Microwave and Wireless Components Letters, 2010, 20, 384-386.	3.2	3
67	Recent progress in terahertz monolithic integrated circuits. , 2012, , .		3
68	Balanced RF Duplexer with Low Interference Using Hybrid BAW Resonators for LTE Application. ETRI Journal, 2014, 36, 317-320.	2.0	3
69	A CMOS 300-GHz 7 by 7 detector array for THz imaging. , 2017, , .		3
70	InP HBT Oscillators Operating up to 682 GHz with Coupled-Line Load for Improved Efficiency and Output Power. , 2020, , .		3
71	A CMOS 300-GHz Injection-Locked Frequency Tripler With a Tri-Layer Dual Coupled Line for Improved Locking Range. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 309-313.	3.0	3
72	A CMOS 180-GHz Signal Source with an Integrated Frequency Doubler. Journal of the Korean Institute of Electromagnetic Engineering and Science, 2016, 16, 229-231.	3.0	3

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73	A 24-48 GHz Wideband Frequency Tripler in SiGe BiCMOS Technology. , 2020, , .		3
74	Reliability of microwave SiGe/Si heterojunction bipolar transistors. IEEE Microwave and Wireless Components Letters, 2001, 11, 401-403.	3.2	2
75	50-200 GHz Silicon-Germanium Heterojunction Bipolar Transistor BICMOS Technology and a Computer-Aided Design Environment for 50+ GHz Very Large-Scale Integration Mixed-Signal ICs. Japanese Journal of Applied Physics, 2002, 41, 1111-1123.	1.5	2
76	On the scaling limits of low-frequency noise in SiGe HBTs. Solid-State Electronics, 2004, 48, 1897-1900.	1.4	2
77	Manufacturable Parasitic-Aware Circuit-Level FETs in 65-nm SOI CMOS Technology. IEEE Electron Device Letters, 2007, 28, 520-522.	3.9	2
78	Noise Figure Formulas of RF MOSFETs in the Presence of Digital Substrate Noise. IEEE Microwave and Wireless Components Letters, 2010, 20, 622-624.	3.2	2
79	Trench-type deep N-well dual guard ring for the suppression of substrate noise coupling. International Journal of RF and Microwave Computer-Aided Engineering, 2011, 21, 36-44.	1.2	2
80	A CMOS triple-push 280-GHz VCO integrated with 1/16,384 divider chain. , 2015, , .		2
81	D2ART: Direct Data Accessing from Passive RFID Tag for infra-less, contact-less, and battery-less pervasive computing. Microprocessors and Microsystems, 2015, 39, 767-781.	2.8	2
82	Characterization of a CMOS 135-GHz Low Noise Amplifier with Two Different Noise Measurement Methods. Journal of Semiconductor Technology and Science, 2018, 18, 536-540.	0.4	2
83	A brief overview of modern high-speed SiGe HBTs. , 2006, , .		1
84	PRESENT STATUS AND FUTURE DIRECTIONS OF SiGe HBT TECHNOLOGY. International Journal of High Speed Electronics and Systems, 2007, 17, 61-80.	0.7	1
85	A Magnetostatic Model for Square Spiral Inductors Incorporating a Magnetic Layer. IEEE Transactions on Magnetics, 2008, 44, 2085-2087.	2.1	1
86	Effect of Printed Circuit Board Structures on Temperature-Dependent Gain Characteristics of RF Power Amplifier Chips. IEEE Microwave and Wireless Components Letters, 2008, 18, 323-325.	3.2	1
87	Suppression of Digital Noise Coupling on LNA in 0.13-µm RFCMOS Technology by Global Guard Rings. , 2008, , .		1
88	Si-based D-band frequency conversion circuits. , 2012, , .		1
89	A wide band 215-255 GHz CB differential amplifier in a 0.25-µm SiGe HBT technology. , 2013, , .		1
90	Bulk acoustic wave resonator with suppressed energy loss using improved lateral structure. IEICE Electronics Express, 2014, 11, 20130938-20130938.	0.8	1

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91	Compact MMWAVE CMOS distributed amplifier using series-coupling line and $\lambda/4$ -derived section. Microwave and Optical Technology Letters, 2015, 57, 814-817.	1.4	1
92	Approaches to enhance the performance of SiGe imagers operating near 130 GHz and 300 GHz. , 2016, , .		1
93	290-GHz 17-dB ON/OFF-Ratio Modulator With Resonance Control Varactors. IEEE Microwave and Wireless Components Letters, 2019, 29, 50-52.	3.2	1
94	A Wideband CMOS On-Chip Terahertz Frequency Detector With Slow Wave Structure. IEEE Microwave and Wireless Components Letters, 2021, 31, 600-603.	3.2	1
95	Terahertz Signal Sources Based on Semiconductor Electronic Devices. The Journal of Korean Institute of Electromagnetic Engineering and Science, 2021, 32, 505-516.	0.3	1
96	THz Detectors and Related Topics. , 2021, , 95-161.		1
97	A single-balanced 60-GHz down-conversion mixer in 0.13 μm CMOS technology for WPAN applications. , 2009, , .		0
98	A Low Power V-Band Injection-Locked Frequency Divider in 0.13- μm Si RFCMOS Technology. IEICE Transactions on Electronics, 2010, E93-C, 614-618.	0.6	0
99	SiRF 2012. IEEE Microwave Magazine, 2011, 12, S15-S15.	0.8	0
100	An overview of challenges and current status of Si-based terahertz monolithic integrated circuits. , 2012, , .		0
101	Phase noise calculation and variability analysis of RFCMOS LC oscillator based on physics-based mixed-mode simulation. Solid-State Electronics, 2013, 79, 152-158.	1.4	0
102	Characterisation and analysis of harmonic emissions in nonlinear bulk acoustic wave resonators. Electronics Letters, 2013, 49, 1311-1312.	1.0	0
103	A 130-GHz OOK transmitter in 65-nm CMOS technology. , 2016, , .		0
104	WR-3 Band Integrated Circuits in InP HBT Technology. , 2019, , .		0
105	A 90-GHz High DC-to-RF Efficiency VCO with Multi-Way Transformers in 65-nm CMOS. , 2020, , .		0
106	A 54-GHz Injection-Locked Frequency Divider Based on 0.13- μm RFCMOS Technology. The Journal of Korean Institute of Electromagnetic Engineering and Science, 2011, 22, 522-527.	0.3	0
107	THz Sources and Related Topics. , 2021, , 19-93.		0
108	THz Propagation and Related Topics. , 2021, , 163-237.		0

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109	Suppression of Digital Noise Coupling on LNA in 0.13- μm RFCMOS Technology by Global Guard Rings. , 2008, , .		0