Kim, Jusung

Contact Information

Bldg-Jinsunmi, Room-223
Ewha Womans University
52 Ewhayeodae-gil, Seodaemun-gu, Seoul, Korea

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Research Interests

- Broadband wireless link in RF and Millimeter-wave frequencies
- Quantum sensing, control, and computing
- Integrated circuits for biomedical devices and sensors
- Design of analog and mixed-signal integrated circuits
- Analog and mixed-signal circuits for cryogenic operation
- Analysis on device noise and non-linearity

Education

Texas A&M University, College Station, Texas, USA
Department of Electrical and Computer Engineering

Doctor of Philosophy in Electrical Engineering, December, 2011

- Dissertation: "Broadband RF Front-End Design for Multi-Standard Receiver with High-Linearity and Low-Noise Techniques"
- Chair of Advisory Committee: Jose Silva-Martinez
- Committee: Edgar Sanchez-Sinencio, Shankar P. Bhattacharyya, and Duncan M. Walker

Yonsei University, Seoul, Korea
Department of Electrical and Electronics Engineering

Bachelor of Science in Electrical Engineering (Highest Honors), August, 2006

- Minor Degree in Economics

Experience

Ewha Womans University, Seoul, Korea
Full Professor, Division of Electronic and Semiconductor Engineering **Mar, 2025 - Present**

Hanbat National University, Daejeon, Korea
Full Professor, Department of Electronics Engineering **Sep, 2024 - Feb. 2025**

Hanbat National University, Daejeon, Korea
Associate Professor, Department of Electronics Engineering **Sep, 2019 - Aug. 2024**

Hanbat National University, Daejeon, Korea
Assistant Professor, Department of Electronics Engineering **Sep, 2015 - Aug, 2019**

Qualcomm Technologies, Inc, San Diego, CA, USA
Staff Engineer **April, 2014 - Aug, 2015**

Qualcomm Technologies, Inc, San Diego, CA, USA
Senior Engineer **January, 2012 - March 2014**

Qualcomm Technologies, Inc, San Diego, CA, USA
IC Design Engineer Intern **January, 2011 - July, 2011**

Texas Instruments, Dallas, TX, USA
IC Design Engineer Intern **May, 2008 - August, 2008**

Hynix Semiconductors, Seoul, Korea
Process Engineer Intern **December, 2005 - January, 2006**

Teaching

Ewha Womans University, Seoul, Korea
Division of Electronic and Semiconductor Engineering

- Electronic Circuits-I, Undergraduate (Spring Semester)
- Digital Logic Circuits (Experiments), Undergraduate (Spring Semester)
- Electronic Circuits-II, Undergraduate (Fall Semester)
- Analog Integrated Circuits, Undergraduate (Fall Semester)
- Advanced Topics in Analog Integrated Circuits, Graduate (Fall Semester)

Hanbat National University, Daejeon, Korea
Department of Electronics Engineering

- Analog CMOS Integrated Circuits and Systems, Graduate school
- Wireless Communication Circuits and Systems, Graduate school
- Operational Amplifier, Undergraduate school
- Digital Logic Circuits, Undergraduate school
- Microprocessor, Undergraduate school
- Capstone Designs, Undergraduate school

Professional Activity

PM, Program Manager, *National Research Foundation of Korea (NRF)*, 2024-2026
TPC, Organizing Committee, *IEEE International SoC Design Conference (ISOCC)*, 2026
TPC, Technical Program Committee, *IEEE International SoC Design Conference (ISOCC)*, 2026
Guest Editor, *IEEE Open Journal of Circuits and Systems (ICECS special session)*, 2025
TPC, Technical Committee Member, *IEEE Asian Solid-State Circuits Conference (ASSCC)*, 2025
OC, Organizing Committee, *IEEE Asian Solid-State Circuits Conference (ASSCC)*, 2025
TPC, Technical Committee Member, *IEEE Asia Pacific Conference on Circuits and Systems (APCCAS)*, 2025
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2025
ASPTC, Analog and Signal Processing Technical Committee, *IEEE Circuits and Systems Society*, 2018-present
TPC, Technical Program Committee, *IEEE International Conference on Latin America Symposium on Circuits and Systems (LASCAS)*, 2025
TPC, Technical Program Committee, *IEEE International SoC Design Conference (ISOCC)*, 2024
TPC, Technical Program Committee, *IEEE International Conference on Latin America Symposium on Circuits and Systems (LASCAS)*, 2024
TPC, Technical Program Committee, *IEEE International SoC Design Conference (ISOCC)*, 2023
TPC, Technical Program Committee, *IEEE International Conference on Latin America Symposium on Circuits and Systems (LASCAS)*, 2023
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2022
TPC, Technical Program Committee, *IEEE International SoC Design Conference (ISOCC)*, 2022
TPC, Technical Program Committee, *IEEE International Symposium on Radio-Frequency Integration Technology (RFIT)*, 2022
Guest Editor, "Low Power Circuit Design and Signal Processing Technique for Biomedical Implantable Device and System," *Sensors*, 2022
TPC, Technical Program Committee, *IEEE International Conference on Latin America Symposium on Circuits and Systems (LASCAS)*, 2022
TPC, Technical Program Committee, *IEEE International SoC Design Conference (ISOCC)*,

2021
Topic Editor, *MDPI Sensors*, 2021
TPC, Technical Program Committee, *IEEE International Conference on Latin America Symposium on Circuits and Systems (LASCAS)*, 2021
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2020
RCM, Review Committee Member, *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2020
TPC, Technical Program Committee, *International Symposium on Electrical and Electronics Engineering (ISEE)*, 2019
Track Chair, *IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, 2019
Technical Program Vice Chair, *IEIE SoC Conference*, 2019
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2019
RCM, Review Committee Member, *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2019
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2018
Associate Editor, *IEEE Access*, 2018
RCM, Review Committee Member, *IEEE International Symposium on Circuits and Systems (ISCAS)*, 2018
TPC, Technical Program Committee, *IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2017
Guest Editor, "Special Section Proposal Tunable Devices for Modern Communications: Materials, Integration, Modeling, and Applications," *IEEE Access*, 2017
Associate Editor, *IEEE Transaction on Circuits and Systems II*, 2014-2015
Reviewer, *IEEE Journal of Solid-State Circuits*
Reviewer, *IEEE Solid-State Circuits Letters*
Reviewer, *IEEE Transaction on Circuits and Systems I, II*
Reviewer, *IEEE Transaction on Microwave Theory and Techniques*
Reviewer, *IEEE Microwave and Wireless Components Letters*
Reviewer, *IEEE Transaction on VLSI systems*
Reviewer, *IEEE Access*
Reviewer, *Analog Integrated Circuits and Signal Processing, Springer*
Reviewer, *Microelectronics journal, Elsevier*
Reviewer, *International Journal of Circuit Theory and Applications, Wiley*
Reviewer, *IEEE International Symposium on Circuits and Systems*
Reviewer, *IEEE International Midwest Symposium on Circuits and Systems*

Service

Secretary, *IEEE CAS Daejeon Chapte*, 2024-Present
Treasurer, *IEEE SSCS Seoul Chapter*, 2023-Present
Delegate of Korea, *ITU Radiocommunication Sector (ITU-R) Working Party 5D (WP-5D)*, 2020-2023
Project Plan & Search Committee, *ICT Device Section, Institute for Information & Communications Technology Promotion, Korea*, 2018
Project Plan & Search Committee, *ICT Device Section, Institute for Information & Communications Technology Promotion, Korea*, 2016

Honors and Awards

Outstanding Research Achievement Award, Hanbat National University, 2023
Outstanding Research Achievement Award, Hanbat National University, 2021
ISOCC 2021 Synopsys Award, 2021

Outstanding Research Achievement Award, Hanbat National University, 2020
Qualcomm-KAIST Innovation Award, "A 80 MHz Bandwidth and 26.8 dBm OOB IIP3 Transimpedance Amplifier with Improved Nested Feedforward Compensation and Multi-order Filtering," 2019
Broadcom Corporation Fellowship, ECE Department, Texas A&M University, 2009-2011
Texas Instruments Fellowship, ECE Department, Texas A&M University, 2008-2009
Segers Fellowship, ECE Department, Texas A&M University, 2007-2008
Fouraker/Ebsensberger Fellowship, ECE Department, Texas A&M University, 2006-2007
Graduation with highest honors (first rank), Yonsei University, 2006
Early graduation for academic excellence, Yonsei University, 2006
Merit-based tuition scholarship, Yonsei University, 2000-2006
Scholarship for study-abroad program at UC, Santa-Cruz, The Ministry of Information and Communication, Korea, 2004-2005

Supervised students

Raymond Gyaang, Sep. 2017 - Aug. 2019, "A Broadband Doherty Power Amplifier Using a Klopfenstein Taper for Efficiency and Bandwidth Improvement", MS
Raymond Gyaang, Mar. 2020 - Sep. 2022, Ph.D. (Candidate)
Muhammad Fakhri Mauludin, Sep. 2020 - Aug. 2022, "A Wideband Low-Power Balun-LNA with Feedback and Current Reuse Technique", MS
Akram Muhamad Rafli, Mar. 2022 - Feb. 2024, "A Low-Power ILFD Divide By 4 With Darlington Pairs And Differential Direct Injection Technique", MS
Hapsah Aulia Azzahra, Mar. 2022 - Feb. 2024, "Low phase noise and large VCO gain using noise circulation with additional PMOS cross-coupled VCO", MS
Prily Nindita, Mar. 2023 - Feb. 2025, "A Modified Gate-Biasing Topology for 5.8 GHz Rectenna with Improved Conversion Efficiency", MS
Assyifa Nur Annisa Rizkia, Sep. 2023 - Aug. 2025, "A 464 MHz, 30 dB Dynamic Range dB-Linear Variable Gain Amplifier with Current Reused Feedforward Compensation in 65nm CMOS", MS
Aulya Sholehah Wataawa Sau, Sep. 2023 - Aug. 2025, "17 GHz - 19.1 GHz, 188.4 dBc/Hz FoM Complementary VCO With Current Harmonic Cancelation for Phase Noise Improvement of 5 dBc at $1/f^3$ Region", MS
Hong Chae, Sep. 2023 - Aug. 2025, "CMOS Rectifier with Bootstrap Technology for 5.8 GHz Wireless Power Transfer", MS
Daeun Kwak, Sep. 2023 - Aug. 2025, "A 4–8 GHz Wideband Low-Noise Amplifier Employing a Noise-Cancellation Technique", MS
Muhammad Fakhri Mauludin, Sep. 2022 - Present, Ph.D.
Hyunsik Ahn, Mar. 2022 - Present, Ph.D.

Co-supervised students

Hyungi Jung, KAIST Electrical Engineering, Mar. 2017 - Feb. 2019, "A 80MHz Bandwidth and 38.5dBm OOB IIP3 Trans-Impedance Amplifier with Nested Feedforward Compensation", M.S. (Advisor: Lee, Sang-Gug)
Saebyeok Shin, KAIST Electrical Engineering, Mar. 2017 - Feb. 2019, "A 20.4 to 36.6 GHz Injection-Locked Frequency Tripler with Embedded Notch Filtering and Quadrature Outputs", M.S. (Advisor: Lee, Sang-Gug)
Dzuhri Radityo Utomo, KAIST Electrical Engineering, Mar. 2017 - Aug. 2019, "Design of High-Power sub-THz Oscillators", Ph.D. (Advisor: Lee, Sang-Gug)
Hafiz Usman Mahmood, KAIST Electrical Engineering, Sep. 2017 - Aug. 2019, "Impulse-based Ultra-wideband Transmitter for IoT Applications", M.S. (Advisor: Lee, Sang-Gug)
Quyen Chang, KAIST Electrical Engineering, Sep. 2017 - Aug. 2019, "An Energy Efficient Low Complexity and PVT Insensitive Pulse Generator for IR-UWB", M.S. (Advisor: Lee, Sang-Gug)
Hongkie Lim, KAIST Electrical Engineering, Mar. 2019 - Feb. 2021, "Broadband Dielectric Spectroscopy for Liquid Permittivity Measurement", M.S. (Advisor: Hong, Songcheol)

Kiho Lee, KAIST Electrical Engineering, Mar. 2020 - Feb. 2022, "Temperature-Compensated Wideband VCO Integrated in Dielectric Spectroscopy", M.S. (Advisor: Hong, Songcheol)
Jinglong Xu, KAIST Electrical Engineering, Sep. 2020 - Aug. 2022, "Design of CMOS Receivers for 5G NR and LPWAN Applications", M.S. (Advisor: Lee, Sang-Gug)
Hyungi Jung, KAIST Electrical Engineering, Mar. 2019 - Aug. 2023, "Design of Frequency Synthesizer for UHF RFID Reader Applications", Ph.D. (Advisor: Lee, Sang-Gug)
Hafiz Usman Mahmood, KAIST Electrical Engineering, Sep. 2019 - Feb. 2024, "Multi-standard Transceiver Solutions for IoT Applications", Ph.D. (Advisor: Lee, Sang-Gug)

PUBLICATIONS-JOURNAL (* DENOTES THE CORRESPONDING AUTHOR)

J. Park, J. kim, M. Shin, S. Oh, S. Lee, **Jusung Kim***, and K. Cho, "An Active Half-Bridge GaN Gate Driver with Digitally Controlled Slew-Rate Regulation and Dual-Edge Near-Zero Dead-Time Optimization," *IEEE Transactions on Industrial Electronics*, Submitted.

A. S. W. Sau, H. A. Azzahra, M. F. Mauludin, Y.-W. Ji, X. Zhu, J. Nam, and **Jusung Kim**, "-188.4 dBc/Hz FoM Complementary VCO Employing Current Harmonic Cancellation Achieving 5 dB Phase Noise Reduction at $1/f^3$ Region," *IEEE Transactions on Circuits and Systems I*, Submitted

T. Tran-Dinh, H. U. Mahmood, J. Xu, K.-M. Kim, K.-S. Choi, J. Lee, J. Ko, S.-G. Lee, and **Jusung Kim**, "Multi-band LPWAN Transceiver with Two-step WuRX and Switched-capacitor Based TX," *IEEE Solid-State Circuits Letters (SSC-L)*, submitted.

A. N. A. R. Putri, A. M. Rafli, M. F. Mauludin, Y.-W. Ji, X. Zhu, K. Cho, and **Jusung Kim**, ">370 MHz and >13.83 dBm OIP3 dB-linear Variable Gain Active-RC Feedback Amplifier with High Frequency Feedforward Compensated OTA and Ramp-based Control Schemes," *IEEE Transactions on Circuits and Systems I*, Submitted

S.-H. Kim, H. Yoo, G. Lee, Y. Kim, I-K Jang, J.-Y. Park, **Jusung Kim**, and J. Nam*, "A 1-Gb/s DDFS-based Baseband FDMA 8-Qubit Controller," *IDEC Journal of Integrated Circuits and Systems (JICAS)*, Submitted

M.-H. Jeon, Y. Kim, H. Yoo, E. Yoo, **Jusung Kim**, M.-W. Kwon, and J.-W. Nam*, "A High Temperature-Voltage Sensitivity 2-Transistor Voltage-Reference with Wide-Range Operation," *Electronic Letters*, submitted (revision).

K. Lee, H. A. Azzahra, D.-H. Lee, **Jusung Kim***, and S. Hong, "A 4.7-8.8 GHz Wideband Switched Coupled Inductor VCO for Dielectric Sensing Application," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, submitted.

A. M. Rafli, M. F. Mauludin, S. Lee, K. Cho, and **Jusung Kim***, "A 16.4-20.3 GHz Injection Locked Frequency Division-by-4 with Dual Darlington Pair and Differential Injection," *IEEE ACCESS*, vol. 13, pp. 127545-127557, July. 2025.

I. H. H. Maddumage, G. Jeong **Jusung Kim**, and D. Lee*, "A Triple-Band Doherty Amplifier for Mobile Applications," *MDPI Electronics*, vol. 14, no. 11, pp. 1-12, May. 2025.

M. F. Mauludin, J. Choi, Y. Baek, D.-W. Kang, B. Koo, and **Jusung Kim***, "Wide Range and Tunable Pulse Generator in CMOS 45-nm Technology for Pulse Radar Array," *IEEE Transactions on Instrumentation and Measurement*, vol. 74, pp. 1-10, 2025.

H. A. Azzahra, M. F. Mauludin, J. Nam, and **Jusung Kim***, "15.4-17 GHz VCO with Current Reused Coupled Oscillator and Improved Noise Circulation," *IEEE Transactions on Circuits and Systems I*, vol. 72, no. 10, pp. 5325-5336, October 2025.

S. Baek, H. Ahn, M. F. Mauludin, Y. Ji, and **Jusung Kim***, "1.8mW, 4-8GHz Bandwidth Mixer with Bleeding Transistors for Superconducting Qubit Read-out," *IEIE J. Semiconductor Technology and Science*, vol. 25, no. 5, pp. 206-212, October 2025.

H. Ahn, H. Chae, Y. Choi, P. Park, and **Jusung Kim***, "0.13μm CMOS UWB Radar Receiver Front-End with Differential Error-Correction and Feedback Gain via Back-to-Back Regeneration and Bandwidth Staggering," *IEIE J. Semiconductor Technology and Science*, vol. 24, no. 6, pp. 547-556, December 2024.

Y. Han, J. Kim, G. Koo, **Jusung Kim**, J.-Y. Kim, and K. Cho*, "DVS-Enabled Distributed Digital LDO Providing Rapid Uniform Power Grid and Ripple Reduction Achieving 20.1pS FOM in 28nm CMOS," *IEEE Transactions on Circuits and Systems I*, vol. 71, no. 11, pp. 5081-5090, November 2024.

H. U. Mahmood, S.-G. Lee, and **Jusung Kim***, "A 0.1-4.2 GHz, 960-μW Inductor-less and Negative Shunt Feedback LNA With Simultaneous Noise Cancellation and Bandwidth Extension," *IEEE Transactions on Circuits and Systems I*, vol. 71, no. 6, pp. 2563-2575, June 2024.

H. U. Mahmood, **Jusung Kim***, and S.-G. Lee, "Ultra-Wideband Pulse Generator with Simultaneous Optimization of Sidelobe Suppression and Essential Bandwidth," *IDEC Journal Of Integrated Circuits and Systems*, vol. 9, pp. 1-6, July 2023.

B.-T. Moon, B. Yun, **Jusung Kim***, and S.-G. Lee, "Analysis and Design of Power-Efficient H-Band CMOS Frequency Doubler Employing Gain Boosting and Harmonic Enhancing Techniques," *IEEE Access*, vol. 11, pp. 34942-34951, Apr. 2023.

Jusung Kim*, M. F. Mauludin, H. A. Azzahra, H. Jhon, S. Lee, and K. Cho*, "A 18-19.2 GHz Voltage-Controlled Oscillator with a Compact Varactor-Only Capacitor Array," *MDPI Electronics*, vol. 12, no. 7, pp. 1-8, Mar. 2023.

H. Jung, K.-S. Choi, K.-M. Kim, D. Jo, J. Lee, **Jusung Kim***, J. Ko, and S.-G. Lee, "CMOS Fractional-N Frequency Synthesizer for UHF RFID Reader Applications With Transformer-Based ISF Manipulation VCO," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 69, no. 10, pp. 4083-4087, Oct. 2022.

M. F. Mauludin, D.-H. Lee, and **Jusung Kim***, "A Wideband Low-Power Balun-LNA with Feedback and Current Reuse Technique," *MDPI Electronics*, vol. 11, no. 9, pp. 1-13, Sep. 2022.

H. Jung, K.-S. Choi, **Jusung Kim***, and S.-G. Lee, "Analysis and Design of Inductorless Transimpedance Amplifier Employing Nested Feedforward Noise-Cancelling Amplifiers," *IEEE Transactions on Microwave Theory and Techniques*, vol. 70, no. 8, pp. 3923-3932, Aug. 2022.

G. Shin, W. Kim, M.-C. Kim, **Jusung Kim**, J.-Y. Chung, J. Nah, and I.-J. Yoon*, "A Deionized Water Infilled Dual-Layer Insulator Applied Brain-implanted UWB Antenna for Wireless Bio-telemetry Applications," *IEEE Transactions on Antennas and Propagation*, vol. 70, no. 8, pp. 6469-6478, Aug. 2022.

J.-H. Kim, J.-S. Kim, **Jusung Kim***, and S.-G. Lee, "Time-Multiplexed PWM LED Driver with Grayscale Enhancement Techniques for Signage Display," *IEEE Transactions on Industrial Electronics*, vol. 69, no. 6, pp. 6410-6419, June 2022.

K.-S. Choi, J. Ko, K.-M. Kim, **Jusung Kim***, and S.-G. Lee, "A 0.3-to-1 GHz IoT Transmitter Employing Pseudo-Randomized Phase Switching Modulator and Single-Supply Class-G Harmonic Rejection PA," *IEEE J. Solid-State Circuits*, vol. 57, no. 3, pp. 892-905, Mar. 2022.

H. Lim, D.-H. Lee, **Jusung Kim***, S. Hong, "Spectroscopy Sensing Method of Liquid Permittivity with On-chip Capacitor," Journal of Electromagnetic Engineering and Science, vol. 22, no. 1, pp. 28-33, Jan. 2022.

H. Lim, D.-H. Lee, **Jusung Kim***, and S. Hong, "Current-mode Dielectric Spectroscopy for Liquid Permittivity Measurement," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 15, no. 4, pp. 647-654, Aug. 2021.

S. Kim, K.-S. Choi, K.-M. Kim, J. Ko, **Jusung Kim***, and S.-G. Lee, "A Low-Noise and Fast-Settling UHF RFID Receiver with Digitally Controlled Leakage Cancellation," *IEEE Transactions on Circuits and Systems II*, vol. 68, no. 8, pp. 2810-2814, Aug. 2021.

H. U. Mahmood, D. R. Utomo, **Jusung Kim***, and S.-G. Lee, "A 27 dB Sidelobe Suppression, 1.12 GHz BW_{-10dB} UWB Pulse Generator with Process Compensation," *IEEE Transactions on Circuits and Systems II*, vol. 68, no. 8, pp. 2805-2809, Aug. 2021.

S. Lee, K. Jung, H.-S. Kim, H. Nguyen, T. Nguyen, L. Nguyen, C. Huynh, K. Cho, and **Jusung Kim***, "Frequency Locked RF Power Oscillator with 43dBm Output Power and 58% Efficiency," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, vol. 29, no. 4, pp. 739-746, April 2021.

Jusung Kim, Y. Kim, S. Oh, J. Choi, D.-H. Lee, K. Cho, S. Lee, and C.-H. Ahn*, "A 20W Wide Bandwidth GaN HEMT Power Amplifier for VHF/UHF Applications," *IEEE Transactions on Industrial Electronics*, vol. 67, no. 12, pp. 10905-10910, Dec. 2020.

H. Jung, D. R. Utomo, S.-K. Han, **Jusung Kim***, and S.-G. Lee, "A 80 MHz Bandwidth and 26.8 dBm OOB IIP3 Transimpedance Amplifier with Improved Nested Feedforward Compensation and Multi-order Filtering," *IEEE Transactions on Circuits and Systems I*, vol. 67, no. 10, pp. 3410-3421, Oct. 2020.

R. Gyaang, D.-H. Lee, and **Jusung Kim***, "Analysis and Design of Harmonic Rejection Low Noise Amplifier with An Embedded Notch Filter," *MDPI Electronics*, vol. 9, no. 4, pp. 1-11, April 2020.

H. U. Mahmood, D. R. Utomo, S.-K. Han, **Jusung Kim***, and S.-G. Lee, "A Ku-Band RF Front-end Employing Broadband Impedance Matching with 3.5 dB NF and 21 dB Conversion Gain in 45-nm CMOS Technology," *MDPI Electronics*, vol. 9, no. 3, pp. 1-19, Mar. 2020.

K. Choi, K. Kim, S. Kim, B. Yun, J. Ko, **Jusung Kim***, and S.-G. Lee, "A 5.5 dBm, 32.8 % Efficiency 915 MHz Transmitter Employing Frequency Tripler and 207μW Synthesizer," *IEEE Microwave and Wireless Component Letters*, vol. 30, no. 1, pp. 90-93, Jan. 2020.

S. Shin, D. R. Utomo, H. Jung, S.-K. Han, **Jusung Kim***, and S.-G. Lee,, "Wide Locking-Range Frequency Multiplier by 1.5 Employing Quadrature Injection-Locked Frequency Tripler With Embedded Notch Filtering," *IEEE Transactions on Microwave Theory and Techniques*, vol. 67, no. 12, pp. 4791-4802, Dec. 2019.

K. Jung, K. Cho, S. Lee, and **Jusung Kim***, "A Temperature Compensated RF LC Clock Generator with ±50 ppm Frequency Accuracy from -40°C to 80°C," *IEEE Transactions on Microwave Theory and Techniques*, vol. 67, no. 11, pp. 4441-4449, Nov. 2019.

J. Jiang*, **Jusung Kim**, A. I. Karsilayan, and J. Silva-Martinez, "A 3 to 6 GHz Highly Linear I-Channel Receiver with Over +3.0 dBm In-band P1dB and 200 MHz Baseband Bandwidth Suitable for 5G Wireless and Cognitive Radio Applications," *IEEE Transactions on Circuits and Systems I*, vol. 66, no. 8, pp. 3134-3147, Aug. 2019.

H. Jung, D. R. Utomo, S. Shin, S.-K. Han, S.-G. Lee, and **Jusung Kim***, "A 30-40 GHz CMOS Receiver Front-End with 5.9 dB NF and 16.5 dB Conversion Gain for Broadband Spectrum Sensing Applications," *MDPI Electronics*, vol. 8, no. 5, pp. 1-12, May 2019.

Jusung Kim, H.-S. Jo, K.-J. Lee, D.-H. Lee, D.-H. Choi, and S. Kim*, "A Low-complexity I/Q Imbalance Calibration Method for Quadrature Modulator," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, vol. 27, no.4, pp. 974-977, April 2019.

C.-H. Ahn, Y. Kim, S. Oh, Y. Noh, D. Lee, S. Lee, K. Cho, and **Jusung Kim***, "Design and realization of low-cost 10W power amplifier module at 7.9-8.4GHz," *IEICE Electronics Express*, vol. 15, no.19, pp. 1-9, Sep. 2018.

S. Kim and **Jusung Kim***, "Design of Reconfigurable Antenna Feeding Network Using Coupled-line Switch for 5G Millimeter-wave Communication System," *Applied Computational Electromagnetics Society Journal*, vol. 33, no. 8, pp. 861-867, Aug. 2018.

J.-H. Lee, G.-T. Kim, **Jusung Kim**, O. Lee, K.-J. Koh, and D.-H. Lee*, "A Linearity Improvement Technique for Two-Stage Amplifiers with Second Harmonic Driving," *International Journal of Microwave and Optical Technology*, vol. 13, pp. 310-316, July 2018.

Jusung Kim, R. Dzuhri, D. Anjana, S.-K. Han, and S.-G. Lee*, "The Evolution of Channelization Receiver Architecture: Principles and Design Challenges," *IEEE Access*, vol. 5, pp. 25385-25395, Nov. 2017.

S. Lee, S. Jang, C. Nguyen, D. Choi, and **Jusung Kim***, "Self-Injection-Locked Divide-by-3 Frequency Divider with Improved Locking-Range, Phase Noise, and Input Sensitivity," *IEIE J. Semiconductor Technology and Science*, vol. 17, pp. 492-498, Aug. 2017.

Jusung Kim, B.-H. Ku, S. Lee, S. Kim and K. Ryu*, "High Performance Receiver Design for RX Carrier Aggregation," *MDPI J. Low Power Electron. Appl.*, vol. 7, pp. 1-10, May 2017.

Jusung Kim, S. Lee, and D.-H. Choi*, "Injection-Locked Frequency Divider Topology and Design Techniques for Wide Locking-Range and High-Order Division," *IEEE Access*, vol. 5, pp. 4410-4417, April 2017.

Jusung Kim*, and J. Silva-Martinez, "Low-Power, Low-Cost CMOS Direct-Conversion Receiver Front-End for Multi-Standard Applications," *IEEE J. Solid-State Circuits*, vol. 48, pp. 2090-2103, Sep. 2013. **Top 4 most downloaded paper of the IEEE JSSC, August 2013**. **The most downloaded paper of the IEEE JSSC, September through November 2013**. **Top 3 most downloaded paper of the IEEE JSSC, December 2013**. **Top 8 most downloaded paper of the IEEE JSSC, January 2014**. **Top 69, 17, 35, 62, and 47 paper accessed in IEEE overall, August through December 2013**.

H.-J. Jeon*, R. Kulkarni, Y.-C. Lo, **Jusung Kim**, and J. Silva-Martinez, "A Bang-Bang Clock and Data Recovery using Mixed Mode Adaptive Loop Gain Strategy for Jitter Performance Enhancement," *IEEE J. Solid-State Circuits*, vol. 48, pp. 1398-1415, June 2013. **Top 4 most downloaded paper of the IEEE JSSC, June 2013**. **Top 25 most downloaded paper of the IEEE JSSC, July 2013**. **Top 20 paper accessed in IEEE overall, June 2013**.

A. A. Helmy*, H.-J. Jeon, Y.-C. Lo, A. J. Larsson, R. Kulkarni, **Jusung Kim**, J. Silva-Martinez, and K. Entesari, "A Self-Sustained CMOS Microwave Chemical Sensor Using a Frequency Synthesizer," *IEEE J. Solid-State Circuits*, vol. 47, pp. 2467-2483, Oct. 2012. **Top 14 most downloaded paper of the IEEE JSSC, November 2012**.

Jusung Kim*, and J. Silva-Martinez, "Wideband Inductor-less Balun-LNA Employing Feedback with Noise and Distortion Cancelling," *IEEE Transactions on Microwave Theory and Techniques*, vol. 60, pp. 2833-2842, Sep. 2012.

R. Kulkarni*, **Jusung Kim**, H.-J. Jeon, J. Xiao, and J. Silva-Martinez, "UHF Receiver Front-End: Implementation and Analog Baseband Design Considerations," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, vol. 20, pp. 197-210, Feb. 2012. **Top 8 most downloaded paper of the IEEE T-VLSI, February. 2012**.

Jusung Kim*, S. Hoyos, and J. Silva-Martinez, "Wideband Common-Gate CMOS LNA Employing Dual Negative Feedback with Simultaneous Noise, Gain, and Bandwidth Optimization," *IEEE Transactions on Microwave Theory and Techniques*, vol. 58, pp. 2340-2351, Sep. 2010. **Top 2 most downloaded paper of the IEEE T-MTT, September 2010**.

PUBLICATIONS-CONFERENCE

H. Ahn, M. F. Mauludin, and **Jusung Kim** "Cryo-CMOS Interconnects for Scalable and Multiplexed Superconducting Quantum Computer," *IEIE ICEIC*, Jan. 2026.

H. Ahn, J. Jeong, P. Assyifa, J. Kim, J. W. Nam, **Jusung Kim**, and J. Han "A 4-to-7GHz, 52.3dB SFDR, and 48K Noise Temperature Cryo-CMOS Based Noise-Canceling Receiver for Superconducting Multi-Qubits Read-Out," *IEEE ASSCC*, Nov. 2025.

T. Tran-Dinh, H. U. Mahmood, J. Xu, K. Kim, K.-S. Choi, J. Lee, J. Ko, S.-G. Lee, and **Jusung Kim** "Multi-Band LPWAN Transceiver with Two-Step Wake-Up Receiver and Switched-Capacitor PA-Based Transmitter Achieving -125 dBm Sensitivity, 6.7 μW at 1 s Wake-up Latency, and 1 Mbps BFSK Modulation," *IEEE ASSCC*, Nov. 2025.

A. S. W. Sau, H. A. Azzahra, M. F. Mauludin, Xi Zhu, J. W. Nam, and **Jusung Kim**, "Phase Manipulation VCO Employing Current Harmonic Cancellation Achieving 5 dB Phase Noise Reduction at $1/f^3$ Region," *IEEE APCCAS*, Oct. 2025.

H. Yoo, M. F. Mauludin, Y. Kim, S.-H. Kim, E.-J. Yoo, J.-Y. Park, **Jusung Kim**, and J.-W. Nam "MASH Digital Delta-Sigma Modulators for the CMOS Qubit Controller," *IEEE ISVLSI*, Jul. 2025.

A. S. W. Sau, H. A. Azzahra, M. F. Mauludin, and **Jusung Kim**, "A High-Efficiency NRMGC-Based VCO with Enhanced Transconductance and Low Phase Noise," *IEEE LASCAS*, Feb. 2025.

H.-U. Mahmood, K-M. Kim, D. Tran, J. Xu, A. Qahir, J. Ko, **Jusung Kim**, S.-G. Lee, and K. Choi "A 24% Efficient, 15.36 dBm Output Power, Multi-Standard Digital Polar Transmitter with 7-bit Phase Interpolator-based BFSK Modulator and 23 dB Sidelobe Suppressed PA for Low-Power Wide Area Networks," *IEEE ASSCC*, Nov. 2024.

H. Chae, H. A. Azzahra, H. Ahn, and **Jusung Kim**, "A 5.8 GHz Bootstrap Rectifier for Wireless RF Power Transfer," *IEEE ISOCC*, Aug. 2024.

A. Putri, A. M. Rafli, K. Cho, and **Jusung Kim**, "34.8 dB Gain, 7.7 GHz Unity Gain Frequency, 4.2 mW Operational Transconductance Amplifier with Current Re-used Feed-Forward Technique," *IEEE ISOCC*, Aug. 2024.

S. Yeo, U. Hyun, M. Kim, **Jusung Kim**, and K. Cho, "A 19.8W/29.6W Hybrid Step-Up/Down DC-DC Converter with 97.2% Peak Efficiency for 1-Cell/2-Cell Battery Charger Applications," *Proc. IEEE Symposium on VLSI Technology and Circuits (VLSI)*, June. 2023.

H. A. Azzahra and **Jusung Kim**, "16 – 18 GHz Class-C Voltage Controlled Oscillator (VCO) with Noise Circulating Technique," *JCCI*, Apr. 2023.

M. F. Mauludin and **Jusung Kim**, "A low-jitter 14 – 18 GHz frequency sub-sampling based PLL with ILFD-4," *JCCI*, Apr. 2023.

M. F. Mauludin, Y. Ji, and **Jusung Kim**, "A Low-Power Stacking Amplifier with 1.29 Noise Efficiency Factor for Neural Recording Applications," *IEIE ICEIC*, Feb. 2023.

J. Kim, G. Koo, S. Yeo, J. Kim, **Jusung Kim**, and K. Cho, "Averaged Switch Model for AC-to-DC LED Lighting Driver Based on Peak Current Control," *IEIE ICEIC*, Feb. 2023.

J. Xu, K-M. Kim, H.-U. Mahmood, **Jusung Kim**, and S.-G. Lee "An n79 Sub-1dB Noise Figure Highly Linear Variable-Gain LNA Employing Adaptive Imbalanced Bleeding for 5G NR," *IEEE ASSCC*, Oct. 2022.

H. Jung, K.-S. Choi, K.-M. Kim, D. Jo, J. Lee, **Jusung Kim**, J. Ko, and S.-G. Lee "CMOS Fractional-N Frequency Synthesizer for UHF RFID Reader Applications With Transformer-Based ISF Manipulation VCO," *IEEE ISICAS*, Oct. 2022.

Jusung Kim, H. Lim, D.-H. Lee, and S. Hong, "Current-mode Dielectric Spectroscopy for Liquid Permittivity Measurement," *IEEE ISICAS*, Dec. 2021.

M. F. Mauludin, D.-H. Lee, and **Jusung Kim**, "Wideband Operational Trans-conductance Amplifier with Feed-forward Compensation Technique," *IEEE ISOCC*, Oct. 2021.

K. Lee, D.-H. Lee, and **Jusung Kim**, S. Hong, "Wideband LC VCO with 39.3% Frequency Tuning Range for Dielectric Spectroscopy System," *IEEE ISOCC*, Oct. 2021 **(ISOCC 2021 Synopsys Award)**.

Jusung Kim, H. Jung, D. R. Utomo, S.-K. Han, and S.-G. Lee,"An 80 MHz Bandwidth and 26.8 dBm OOB IIP3 Transimpedance Amplifier with Improved Nested Feedforward Compensation and Multi-Order Filtering," *IEEE ISCAS*, May. 2021.

R. Gyaang, D.-H. Lee, M. F. Mauludin, and **Jusung Kim**, "Design of a Low Noise Amplifier Employing On-Chip Notch Filters for Blocker Rejection," *IEIE ICEIC*, Jan. 2021.

R. Gyaang, D.-H. Lee, and **Jusung Kim**, "Design and Validation of a Blocker Rejection LNA with On-chip Dual-Notch Filters," *IEEE ISOCC*, Oct. 2020.

Jusung Kim, J. Jiang, A. I. Karsilayan, J. Silva-Martinez, and J. Xiao,"A 3 to 6 GHz Highly Linear I-Channel Receiver with Over +3.0 dBm In-band P1dB and 200 MHz Baseband Bandwidth Suitable for 5G Wireless and Cognitive Radio Applications," *IEEE ISCAS*, Oct. 2020.

Jusung Kim, H.-S. Jo, K.-J. Lee, D.-H. Lee, D.-H. Choi, and S. Kim,"A Low-complexity I/Q Imbalance Calibration Method for Quadrature Modulator," *IEEE ISCAS*, Oct. 2020.

S. Shin, R. Dzuhri, H. Jung, S.-K. Han, S.-G. Lee, and **Jusung Kim**, "A 22.8-to-32.4 GHz Injection-locked Frequncy Tripler with Source Degeneration," *IEEE ISOCC*, Nov. 2018.

H. Jung, R. Dzuhri, S. Shin, S.-K. Han, S.-G. Lee, and **Jusung Kim**, "Ka-band RF Front-End with 5dB NF and 16dB conversion gain in 45nm CMOS technology," *IEEE ISOCC*, Nov. 2018.

Jusung Kim, R. Dzuhri, D. Anjana, S.-K. Han, and S.-G. Lee, "DC-40GHz RF Front-End for Spectrum Sensing Applications," *IEEE ISOCC*, Nov. 2017 (Invited).

Jusung Kim, K. Ryu, S. Kim, and S. Lee, "LNA Topologies for RX Carrier Aggregation," *IEEE*

ISOCC, Oct 2016 (Invited).

S. Lee, **Jusung Kim**, Cam Nguyen,"Investigation of On-Chip Phase-Noise Reduction Using Self-Injection Technique on Fully Integrated Frequency Dividers," *IEEE APMC*, Dec 2012.

R. Kulkarni, **Jusung Kim**, H.-J. Jeon, J. Silva-Martinez, and J. Xiao,"A Broadband 470-862MHz Direct Conversion CMOS Receiver," *IEEE ISCAS*, pp. 2227-2230, May 2010.

H.-J. Jeon, R. Kulkarni, Y.-C. Lo, **Jusung Kim**, J. Li, and J. Silva-Martinez,"A Full On-chip Bang-Bang 10Gb/s CDR Using an Adaptive Loop Bandwidth Strategy," *2008 Jazz AIMS-CAT conference*.

Patents

Jusung Kim, and et al., "Harmonic Reject upconverter employing 6-phase mixers and non-quadrature TX Baseband processing for use in a RF Transmitter," submitted for US patent

Jusung Kim, and et al., "Harmonic Reject upconverter employing multi-phase mixers and multi-phase baseband input signals for use in a RF Transmitter," submitted for US patent

Jusung Kim, and et al., "Temperature Compensation Circuit for Voltage Controlled Oscillator Based on Injection Lock," KR-10-2684677, 2024.07.09.

Jusung Kim, and et al., "Multi-Band Doherty Amplifier using Shiffman Phase Shifter," KR-10-2546533, 2023.06.19.

Jusung Kim, and et al., "Noise Cancellation Method with Nested Feedforward Amplifiers," KR-10-2481079, 2022.12.21.

Jusung Kim, and et al., "Apparatus and Method for Complex Permittivity Detection Based on Heterodyne Receiver," KR-10-2406325, 2022.06.02.

Jusung Kim, and et al., "Operational Amplifier," KR-10-2191297, 2020.12.09.

Jusung Kim, and et al., "Notch Filtering Embedded Frequency Tripler," KR-10-2191295, 2020.12.09.

Jusung Kim, and et al., "Ultra-wideband (UWB) Pulse Generator," KR-10-2123999, 2020.06.11.

Jusung Kim, and et al., "Apparatus and Method for Calibrating I/Q Imbalance of Direct-Conversion Transmitter," KR-10-2055192, 2019.12.06.

Jusung Kim, and et al., "Broadband Receiver and a Receiving Method Thereafter," KR-10-1896262, 2018.09.03

Jusung Kim, and et al., "Filter with an auxiliary mixing path," US20150381112, Dec 2015

Jusung Kim, and et al., "Multiple-input multiple-output (MIMO) low noise amplifiers for carrier aggregation," US9154357, Oct 2015

Technical Reports

Jusung Kim, and et al., "Proposals on the Working Document towards Draft CPM Text on WRC-23 Agenda Item 1.4," Korea (Republic of) Government, 2022

Jusung Kim, and et al., "Proposals on the Working Document towards Sharing and Compatibility Studies of HIBS under WRC-23 Agenda Item 1.4," Korea (Republic of) Government, 2021

Jusung Kim, and et al., "ICT Research and Development Technology (R&D) Roadmap 2023," Ministry of Science, ICT and Future Planning (MSIP), 2018

Jusung Kim, and et al., "Development of Wideband (20MHz 40GHz) Receiver IC for Signal Intelligence," submitted to Defense Acquisition Program Administration (DAPA), September 2019

Jusung Kim, and et al., "ICT Research and Development Technology (R&D) Roadmap 2021," Institute for Information & Communications Technology Promotion, 2016

Jusung Kim, and et al., "A 0.18μm CMOS Direct Conversion Tuner for DVB-H Standard," submitted to Broadcom Corporation, January 2009

Jusung Kim, and et al., "A Full On-Chip Bang-Bang 10Gb/s CDR System Using an Adaptive Loop Bandwidth Strategy," submitted to Broadcom Corporation, January 2008

Short Courses

"CMOS RF-IC: System, Analog Circuits, and RF Theory"

- IC Design Education Center (IDEC), Dongtan, Korea, October 2025
- IC Design Education Center (IDEC), Dongtan, Korea, April 2025
- IC Design Education Center (IDEC), Seoul, Korea, August 2024
- IC Design Education Center (IDEC), Dongtan, Korea, November 2024
- IC Design Education Center (IDEC), Dongtan, Korea, October 2023

"Low Voltage, Low Power Analog Integrated Circuits"

- Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, June 2024

"Analysis and Design of Receiver Circuits with a focus on LNA, Mixer, VCO"

- IC Design Education Center (IDEC), Seoul, Korea, April 2025
- IC Design Education Center (IDEC), Daejeon, Korea, August 2024
- IC Design Education Center (IDEC), Dongtan, Korea, November 2023

"Analog Integrated Circuits with a focus on analytical skills"

- IC Design Education Center (IDEC), Daejeon, Korea, July 2022

"Fundamentals of RF Design"

- IC Design Education Center (IDEC), Daegu, Korea, February 2024
- IC Design Education Center (IDEC), Daegu, Korea, February 2023
- IC Design Education Center (IDEC), Pusan, Korea, August 2022
- IC Design Education Center (IDEC), Daejeon, Korea, June 2022
- IC Design Education Center (IDEC), Daegu, Korea, Febuary 2022
- Workshop on Emerging Trends in Circuits and Systems (WETCaS), Kumasi, Ghana, November 2017

Invited Talks

"Cryo-CMOS Interconnects for Scalable and Multiplexed Superconducting Quantum Computer"

- ICEIC 2026, Macau, China, January 2026

"Low Noise and Broadband Cryo-CMOS Receiver for Superconducting Multi-qubits Read-out"

- Korean Conference on Semiconductor (KCS) 2026, Kangwon-do, Korea, January 2026

"CMOS Interconnect Electronics for Scalable and Reliable Quantum Computer"

- KIEES Workshop, Seoul, Korea, May 2024
- KIEES Winter Conference 2024, Jesu-si, Korea, February 2024

"Wideband Solutions from Cellular Receiver to Bio-Telemetry"

- IEEE CASS Day Event, Daejeon, Korea, October 2022
- IEEE RFIT 2023, Cairns, Austrailia, August 2023

"Broadband Wireless Radio and Its relevance to Biomedical Applications"

- RF/Analog Circuit Workshop, Jeju, Korea, September 2022

"Broadband Dielectric Spectroscopy for Liquid Permittivity Detection"

- Intelligent IC Labs, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, April 2021

"IR-UWB CMOS Transmitter for Bio-Telemetry Application "

- Intelligent IC Labs, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, April 2021
- Kyungbook National University, Daegu, Korea, May 2021

"Wireless Transceiver for 5G Era and Beyond"

- Summer annual conference of IEIE, Jeju, Korea, August 2020
- Hanyang University, Ansan, Korea, April 2021

"Brain Implanted Bio-Telemetry Platform for Brain Signal Sensing and Monitoring"

- Iwate University, Morioka, Japan, August 2019

"Fast Spectrum Sensing Receiver"

- Pusan National University, Pusan, Korea, March 2019

"Broadband High Performance Receiver: System Analysis and Design Trade-offs"

- Mobile RF Labs, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, December 2017
- Infra Design Technology Team, Samsung LSI, Kyungi-do, Korea, December 2018

"RF Channelized Receiver for Broadband Spectrum Sensing Applications"

- RF/Analog Circuit Workshop, Jeju, Korea, September 2017

"Broadband Wireless Radio and its relevance to biomedical device, sensor, and IoT"

- Information & Communication Engineering, Sungkyunkwan University, Suwon, Korea, June 2015
- Electronics & Control Engineering, Hanbat National University, Daejeon, Korea, July 2015

"Feedback Techniques for Broadband RF Front-End Receivers"

- Electrical & Electronic Engineering, Yonsei University, Seoul, Korea, September 2014
- Information & Communication Engineering, Sungkyunkwan University, Suwon, Korea, September 2014
- Electrical & Electronic Engineering, Pusan National University, Pusan, Korea, May 2015

"Broadband RF Front-End Design for Multi-Standard Receiver with High-Linearity and Low-Noise Techniques"

- SW-SoC Convergeance Labs, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, December 2012
- Electrical Engineering, University of Notre Dame, South Bend, Indiana, US, April 2014

Funding

"A Cryo-CMOS Low-IF ROIC with <7K Noise Temperature and Multi-channel (bit) Quantum Sensing"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Program: 2025 Korea-Switzerland Quantum Science and Technology Programme
- Period: 2025.10.01 - 2029.9.30
- Grant: 1200M (KRW)

"Institute for Multiscale Matter and Systems"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Program: National Research Lab, 2.0
- Period: 2025.09.01 - 2034.12.31
- Grant: 100,000M (KRW)

"4-20 GHz BW, <10K Noise Temperature, >50dB SFDR CMOS Controller for Superconducting and Spin Quantum Processor"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2025.03.01 - 2029.02.28
- Grant: 1000M (KRW)

"Development of Core Technology for Low-Power Passenger Interface and Bio-sensor systems for Mobility Infortainment"

- Funding Resource: Regional Innovation Strategy (RIS), Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2024.06.01 - 2025.02.28
- Grant: 200M (KRW)

"Development of UWB Transmitter IP for Bio-telemetry"

- Funding Resource: Electronics and Telecommunications Research Institute (ETRI)
- Period: 2023.11.01 - 2024.02.29
- Grant: 20M (KRW)

"Development of Elementary Technologies of User-Machine Interaction for Future Mobilities"

- Funding Resource: Regional Innovation Strategy (RIS), Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2023.06.01 - 2024.02.29
- Grant: 200M (KRW)

"Sharing and Compatibility Study for Additional Frequency Allocation of B5G and 6G"

- Funding Resource: Korea Radio Promotion Association (RAPA)
- Period: 2023.06.01 - 2024.02.28
- Grant: 40M (KRW)

"Development of Far-Field Wireless Power Transfer (WPT) IC"

- Funding Resource: Samsung Electronics
- Period: 2023.03.01 - 2023.10.30
- Grant: 200M (KRW)

"Development of Front-end IP for ROA Radar (2nd year)"

- Funding Resource: Electronics and Telecommunications Research Institute (ETRI)
- Period: 2023.05.01 - 2023.11.30
- Grant: 25M (KRW)

"Department of Intelligent Green Semiconductor: Human Resource Development"

- Funding Resource: Korea Institute for Advancement of Technology (KIAT)
- Period: 2023.03.01 - 2026.02.28
- Grant: 7,500M (KRW)

"Development of Broadband Pulse Generator for Sub-THz Radar Transceiver"

- Funding Resource: Electronics and Telecommunications Research Institute (ETRI)
- Period: 2023.03.01 - 2023.09.30
- Grant: 50M (KRW)

"Development of Baseband IP for Sub-THz Radar Transceiver"

- Funding Resource: Electronics and Telecommunications Research Institute (ETRI)
- Period: 2022.09.01 - 2022.11.30
- Grant: 15M (KRW)

"Development of Cryogenic CMOS Interconnect Electronics for Large-Scale and Reliable Quantum Computer"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP), Basic Research Lab
- Period: 2022.06.01 - 2025.02.28
- Grant: 1,375M (KRW)

"Development of Elementary Technologies of Human Interface for mobilities"

- Funding Resource: Regional Innovation Strategy (RIS), Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2022.06.01 - 2023.03.31
- Grant: 200M (KRW)

"Sharing and Compatibility Study for Additional Frequency Allocation of 5G"

- Funding Resource: Korea Radio Promotion Association (RAPA)
- Period: 2022.06.01 - 2023.02.28
- Grant: 50M (KRW)

"Development of Front-end IP for ROA Radar"

- Funding Resource: Electronics and Telecommunications Research Institute (ETRI)
- Period: 2022.06.01 - 2022.11.30
- Grant: 20M (KRW)

"Analog Circuits and Systems for Cryogenic Temperature Operations"

- Funding Resource: Hanbat National University
- Period: 2022.05.01 - 2023.02.28
- Grant: 12M (KRW)

"Regional Innovation Center: Human Resource Development"

- Funding Resource: Ministry of Education (MOE), Korea
- Period: 2021.06.01 - 2022.04.30
- Grant: 2283.5M (KRW)

"0.2-1GHz Wide-area Transceiver SoC Achieving Sub-10μW Wake-up Receive Mode"

- Funding Resource: Ministry of Industry, Trade, and Energy (MOTIE) & Defense Acquisition Program Administration (DAPA)
- Period: 2021.07.01 - 2024.06.30
- Grant: 420M (KRW)

"Development Ultra Low-power, High Data-rate IoT Transceiver Employing RF PWM Transmitter and Wake-up Radio Embedded Receiver"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2021.06.01 - 2025.05.31
- Grant: 375M (KRW)

"Circuit and Physical Layer Design for Body Sensor Network"

- Funding Resource: Regional Innovation Strategy (RIS), Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2021.07.01 - 2022.04.30
- Grant: 63M (KRW)

"Development of Self-Sustained Silicon Based Broadband Dielectric Spectroscopy System"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2019.06.01 - 2022.02.28
- Grant: 150M (KRW)

"Notch-Filtering Embedded Low Noise Amplifier"

- Funding Resource: Hanbat National University
- Period: 2019.05.01 - 2020.02.28
- Grant: 12M (KRW)

"Brain Implanted Bio-telemetry Platform for Brain Signal Sensing And Monitoring"

- Funding Resource: Institute for Information and Communications Technology Program (IITP)
- Period: 2018.01.01 - 2020.12.31
- Grant: 180M (KRW)

"Low-Power Sigma-Delta Modulator for Broadband Applications"

- Funding Resource: Hanbat National University
- Period: 2017.05.01 - 2018.02.28
- Grant: 10M (KRW)

"Ultra-Low-Power Multiband CMOS Transceiver IC for IoT"

- Funding Resource: Ministry of Science, ICT and Future Planning (MSIP)
- Period: 2016.06.01 - 2019.05.30
- Grant: 250M (KRW)

"Development of Wideband (20MHz-40GHz) Receiver IC for Signal Intelligence"

- Funding Resource: Ministry of Industry, Trade, and Energy (MOTIE) & Defense Acquisition Program Administration (DAPA)
- Period: 2016.06.01 - 2019.05.30
- Grant: 230M (KRW)

"Study on Ultra Low-Power Broadband Now-Noise Amplifier for IoT Applications"

- Funding Resource: Hanbat National University
- Period: 2015.12.01 - 2016.11.30
- Grant: 10M (KRW)

References

Prof. Jose Silva-Martinez

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Prof. Sang-Gug Lee

- Affiliation: Department of Electrical Engineering, Korea Advanced Institute of Science and Technology (KAIST)
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Prof. Gunhee Han

- Affiliation: School of Integrated Technology, Yonsei University
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