FAST National University (NUCES),
Dept. of Electrical Engineering
Islamabad, Pakistan
Email: rashad.ramzan@nu.edu.pk

Mobile: +92 336 539 8560
Office: 111 128 128 (389)
Skype: rashad2150
Nationality: Pakistani

Rashad M. Ramzan

PEC: ELEC/ 11815; CV updated: 03 Dec, 2020

SHORT BIOGRAPHY

Rashad Ramzan (S'04–M'09–SM'11) received the B.Sc. degree from the University of Engineering and Technology, Lahore, Pakistan, the M.Sc. degree from the Royal Institute of Technology, Stockholm, Sweden, and the Ph.D. degree from Linkoping University, Linkoping, Sweden, in 1994, 2003, and 2009, respectively, all in electronics engineering. He has been involved in research and development throughout his professional carrier in industry and academia. He has authored over 70 journals, US patents, and conference papers. One of his designed LNA was published in ISSCC 2007. He is a recipient of the two best paper awards and two chancellor innovation awards. His current research interests include microwave sensors and circuits, RFICs, Radio design techniques, and low power biomedical circuits. He is a Reviewer for several IEEE publications.

RESEARCH INTERESTS

RF Circuits, Analog & Mixed Circuit IC Design, Signal Integrity Analysis, VLSI Design, RF IC Design, Microwave Sensors, Energy Tunneling, Bio-Medical Electronics and Low Power Circuits, Military Thermal Imaging Systems, and Fire Control System of MBTs.

EDUCATION

PhD in Electronics Engineering, Linkoping University, Sweden, June 2009
Dissertation: *Flexible Wireless Receiver: On-Chip Testing Techniques and Design for Test*

MSc in Electronics Engineering, Royal Institute of Technology Stockholm, Sweden, 2003
Thesis Title: *Basic Cell design for Current Mode Logic (CML) in 0.35μm CMOS*
Thesis Venue: Fraunhofer Institute of Electronics, Nuremberg, Germany
Equivalent GPA: 3.9/4

BSc in Electronics Engineering with Honors[1], UET, Lahore, Pakistan, 1994
Equivalent GPA: (4/4) Aggregate Marks: 82.5%
Recipient of University Merit[2] Scholarship for excellent performance

SHORT COURSES &TRAININGS

- "Entrepreneurship and New Business Development", Centre for Innovation and Entrepreneurship (CIE) and HELIX VINNOVA Excellence Centre, Sweden, 2009.
- "Sigma-Delta Analog to Digital Converters - From Basics to State of the Art", offered by KTH, Stockholm and Spanish Microelectronics Centre, Seville, Spain, 2007.
- "Radio Design in Nanometer Technologies", RaMSiS Summer School, Visby, Sweden, 2005.
- "Teaching and Learning in Higher Education", A year long, pedagogy training offered by Centre for Education and Teaching, Linkoping, Sweden, 2005.
- "Communication Networks for Computers and Unix Network programming", course from University of Illinois at Urbana Champaign, USA, 2001.
- Visiting scholar VLSI Lab Ohio State University, Columbus, USA. Performed a study and design of low noise pre-amp for infrared array sensors, 1998.

TEACHING EXPERIENCE

ASSOCIATE PROFESSOR 9 YEARS + ASSISTANT PROFESSOR ~1 YEAR

- **Professor**, EE Department, FAST-NU, Islamabad, Pakistan Aug 2018 – to date.
- **Associate Professor**, EE Department, UAE University, Al Ain, UAE, Aug 2012 – July 2018.
  Taught Courses: Fund. of Electronic Circuits, Electronic Circuits, Electromagnetics, Electric Circuits-I, Introduction to RF Electronics, Introduction to Engineering Ethics.
- **Associate Professor**, EE Department, American University, Sharjah, UAE, Sept 2011 - Aug 2012.
  Taught Courses: Electric Circuits-II, Electric Circuits and Devices, RF Electronics.
- **Associate Professor**, EE Department, FAST-NU, Islamabad, Pakistan, Jun 2009 – Aug 2011.
  Taught Graduate Courses: Digital Communication, RF Electronics, CMOS Radio Transceiver Design, Electromagnetics, Signal Integrity Techniques - IC and PCB Design.

[1] Honors means passed all courses in first attempt securing more than 80% marks
[2] Merit Scholarship was awarded to top three students for excellent academic performance

- **Assistant Professor,** Bahria University, Islamabad, Pakistan, Jan 2004 – Sept 2004.
  Taught Courses: Computer Networks, Digital Electronics, UNIX Network programming, Digital Design using FPGAs.

INDUSTRIAL & RESEARCH EXPERIENCE

MEMBER TECHNICAL STAFF
3 YEARS
ASSISTANT MANAGER
5 YEARS

NexGin Research Centre, FAST-NU, Islamabad, Project Director (June 2009 – June 2011)

As a project director and an active designer, designed the complete Remote Patient Monitoring System (RPMS) including HCI compliant smart phone applications, CDSS, bio-medical sensor box (Blood pressure, ECG, Pulse, temperature, weight, height, and Oxygen saturation) for antenatal care for the rural and remote areas.
(http://www.youtube.com/watch?v=PqgLGOR6D5w)

Fraunhofer Institute of Integrated Circuits, Nuremberg, Germany, IC Designer (Sept 2003 – June 2004)

Was involved in the project related to the design low-cost optical communication transceiver in commercial low cost 0.35μm CMOS.

Communications Enabling Technologies, Islamabad, Member Tech. Staff (1999 – 2002)

Communications Enabling Technology (CET) was a design center of Avaz Networks; a company based in Irvine, CA USA. The company designed its own proprietary media and communication ASICs (VZM1000, VZM2000) for VOIP-enabled telephone exchanges. I participated in the above project at different levels, working individually and also leading the team of engineers.

- Worked on the RTL synthesis, using DC (Design Complier) and TSMC 0.18um libraries.
- Wrote the RTL (Verilog) for different blocks of the media processor.
- Designed hardware test environment for VZM1000 running at 350MHz with bus speed of 133MHz. The ASIC served as media gateway between PSTN and Data Networks when combined with Packet Processor.
- Designed multilayer layers, high speed PCBs with more than 3000 pins as a test platform for verification of RTL before passing Media Processor (VZM1000) to FAB.

My contributions in other projects carried out at CET:

- Designed the PCI plug-in traffic generator for Nortel Networks proprietary switch using QLC protocol and PC based call generator.
- System and PCB design of VoIP (Voice over IP) demo system which consists of SLICS, CO Interface, Ethernet MAC and PHY, FPGA, PCI interface, MIPS Processor and 16-Bit CODECs on board.
- Developed the test environment for 100BaseT Ethernet MAC (Media Access Controller) and USB. Verified the RTL and implemented on FPGA for testing.
- Designed and implemented hardware for Encryption Unit for secure telephone, fax and data communications. The system had SLICS, CODEC, Modem, μController, vocoder, memories, ADSP21xx smart card interface, display and keyboard with telephone, CO line and fax interfaces.
- Designed the hardware for E1&E3 to 155Mb/sec ATM and 100BaseT Ethernet Encryption/ Conversion unit with E3, T3, ATM, Ethernet, H100, and PCI interfaces.

Advanced Engineering Research Organization, Assistant Manager, Pakistan (1995 – 1999)

- Low noise electronics design, cryogenic cooled electronics, analog IC design for Military Thermal Imaging applications. I was also involved in system level design and field testing of the thermal imaging system integrated with tanks and aircraft fire control system.
- Fire Control System design and testing of Al-Zarar (Modified T-59) Tank to replace its 105mm gun with its 125mm gun.
- SMPS (Switch Mode Power Supplies) design to meet the high efficiency and military/Space specification at same time.
- High Speed Multilayer PCB design for SMPS, Fire Control system, and Thermal Imaging systems installed in ground and airborne platforms.

MEDIQUIPS, Assistant Manager, Lahore Pakistan (1994 – 1995)

- Worked on the Maintenance and installation of CT Scanner and Ultra sound Machines

MANAGEMENT EXPERIENCE

Worked in Pakistan, USA, Germany, Sweden, and South Africa with individuals of diverse cultural, religious, and ethnic backgrounds. I am a good team player and have successfully managed the teams of engineers and IT professionals meeting the stringent schedules. I also worked as project director at NexGINRC, a research center with more than 25 engineers at FAST-NU, Islamabad. In UAE, I have completed more than six research project successfully in last seven years.

PATENTS (USA)

PATENTS ARE AVAILABLE ONLINE IN THE LINK GIVEN BELOW.

1. **R. Ramzan**, A. Beg, N. Bastaki, "Temperature Monitoring of Subject Bodies using Wireless Energy Transfer" Patent No: 10222270; Granted **March 05, 2019**, US Patent Office.
2. **R. Ramzan**, M. Amin, O. Siddiqui, N. Bastaki, "Microstrip Circuits Exhibiting Electromagnetically Induced Transparency and Fano Resonance" Patent No: 10186743; Granted **22 Jan, 2019**, US Patent Office.
3. **R. Ramzan**, M. Amin, O. Siddiqui, N. Bastaki, "Microstrip Fano Resonator Switch" Patent No 10186744; Granted **22 Jan, 2019**, US Patent Office.
4. **R. Ramzan**, O. Sidiqui, A. Beg, "Printed Circuit Board Structure and Method of Manufacturing using Wideband Microstrip Lines" Patent No: 10027010; Granted **July 17, 2018**, US Patent Office.
5. **R. Ramzan**, O. Sidiqui, A. Beg, O. Ramahi, "Dielectric Constant Detection Method and Device Using Anomalous Phase Dispersion" Patent No: 10309909; Granted **June 4, 2019**, US Patent Office.
6. **R. Ramzan**, O. Siddiqui, N. Bastaki, "Fuel Quality Sensor" Patent No: 10281423; Granted **May 7, 2019**, US Patent Office.
7. **R. Ramzan**, O. Siddiqui, M. Amin, N.Bastaki, "Plant Moisture Sensor" Patent Application No 15846051; Patent No: 10605746; Granted **31 March, 2020**, US Patent Office.

(For Patents : https://patents.justia.com/inventor/rashad-ramzan)

JOURNAL PUBLICATIONS

MOST OF THE PAPERS ARE PUBLISHED IN PRESTIGIOUS JOURNALS AS NATURE SCIENTIFIC REPORTS, IEEE TRANSACTIONS, AND ELSEVIER JOURNALS.

1. A. Jabbar, **R. Ramzan**, O. Siddiqui, M. Amin, F.A.Tahir "Wave Discrimination at C-band Frequencies in Microstrip Structures Inspired by Electromagnetically Induced Transparency", Accepted in **Nature** Scientific Reports, Dec, 2020. (**JCR IF 5.28**)
2. R. Kraim, A. Iftikhar, **R. Ramzan**, "Performance-Issues-Mitigation-Techniques for On-Chip-Antennas -- Recent Developments in RF, MM-Wave, and THz Bands with Future Directions", Accepted in **IEEE** Access, December, 2020. (**JCR IF 3.557**)
3. **R. Ramzan,** M. Omar, O. Siddiqui, T. Ksiksi and N. Bastaki, "Internet of Trees (IoTr) Implemented by Highly Dispersive Electromagnetic Sensors," in **IEEE** Sensors Journal, doi: 10.1109/JSEN.2020.3014387., 18 Nov, 2020. (**JCR IF 2.617**)
4. Q. Navid, A. Hassan, A. Fardoun, **R. Ramzan**, "An Online Novel Two-Layered Photovoltaic Fault Monitoring Technique Based Upon the Thermal Signatures", DOI: 10.3390/su12229607. Vol.12, Issue 22, Page. 9607 **MDPI** Journal, Sustainability, 18 Nov, 2020. (**JCR IF 2.78**)
5. **R. Ramzan**, M. Omar, and O. Siddiqui, "Energy Tunneling: A Way to Achieve Highly Sensitive Material Detection with Sub-Wavelength Resolution", DOI: 10.1109/MMM.2019.2935390, Vol.20, Issue 11, Page. 32-48, **IEEE** Microwave Magazine, 11 Oct, 2019. (**JCR IF 3.02**)
6. **R. Ramzan**, M.Omar, O.Siddiqui. M. Amin, N. Bastaki and T. Ksiksi, "Electromagnetically Induced Absorption in the Near-Field of Microwave Radiative Elements with Application to Foliage Moisture Sensing", DOI: 10.1109/ACCESS.2018.2884224, **IEEE** Access, Vol.6, pp. 77859-77868, 04 December, 2018. (**JCR IF 3.557**)
7. O. Siddiqui, **R. Ramzan**, "Lorentz Reflect-Phase Detector for Dielectric and Moisture Sensing" **IEEE** Sensors Journal, DOI: 10.1109/JSEN.2018.2869401, Vol.18, Issue 22, Page. 9236-9242, 15 Nov, 2018. (**JCR IF 2.617**)
8. M. Amin, **R. Ramzan**, O. Siddiqui, "Slow Wave Applications of Electromagnetically Induced Transparency in Microstrip Resonator", **Nature** Scientific Reports, DOI:10.1038/s41598-018-24177-6, Report No: 6129, 05 February 2018, (**JCR IF 5.28**)
9. S. Arshad**, R. Ramzan,** "50–830MHz Noise and Distortion Canceling CMOS Low Noise Amplifier", **ELSVIER** Integration, The VLSI Journal, DOI: 10.1016/j.vlsi.2017.07.006, Vol.60, pp. 63-73, 01 January 2018. (**JCR IF 0.97**)

10. M. Omar, **R. Ramzan**, O. Siddiqui, "Energy Tunneling Behavior in Geometrically Separated Wave Guides", Journal of Advanced Electromagnetics, DOI: 10.7716/aem.v6i3, Vol. 6, Issue: 3, October, 2017.
11. M. Amin, **R. Ramzan**, O. Siddiqui, "Fano Resonance Based Ultra High-Contrast Electromagnetic Switch", American Institute of Physics **(AIP),** Applied Physics Letters, DOI: 10.1063/1.4982725, Vol. 110, Issue: 18, May 2017. (**JCR IF 3.41**)
12. **R. Ramzan**, Muhammad Omar, Omar Siddiqui. "Energy-Tunneling Dielectric Sensor Based on Substrate Integrated Waveguides." **IEEE** Sensors Journal, DOI: 10.1109/JSEN.2016.2641340, Dec 2016. (**JCR IF 2.617**)
13. **R. Ramzan**, O. Siddiqui, M. Waseem, OM. Ramahi, "A Complex Permittivity Extraction Method Based on Anomalous Dispersion", **IEEE** Transactions on Microwave Theory and Techniques, DOI: 10.1109/TMTT.2016.2605664, Online September 2016. (**JCR IF 2.28**)
14. O. Siddiqui, **R. Ramzan**, M. Amin, OM. Ramahi, "A Non-Invasive Phase Sensor for Permittivity and Moisture Estimation Based on Anomalous Dispersion", **Nature** Scientific Reports, DOI: 10.1038/srep28626, online June, 2016. (**JCR IF 5.28**)
15. **R. Ramzan**, O. Siddiqui, A. Nauroze, O. M. Ramahi, "A Microstrip Probe Based On Electromagnetic Energy Tunneling for Extremely Small and Arbitrarily Shaped Dielectric Samples," **IEEE** Antennas and Wireless Propagation Letters, DOI: 10.1109/LAWP.2015.2412254, Vol. 14, pp. 1554-1556, Aug 2015. (**JCR IF 1.751**)
16. **R. Ramzan**, J. Dabrowski, "RF Calibration of On-Chip DfT Chain by DC Stimuli and Statistical Multivariate Regression Technique" **ELSVIER** Integration, The VLSI Journal, DOI: 10.1016/j.vlsi.2014.11.006, Vol. 49, pp. 14-21, March 2015. (**JCR IF 0.97**)
17. **R. Ramzan**, F. Zafar, "High-Efficiency Fully CMOS VCO Rectifier for Microwatt Resonant Wireless Power Transfer", **IEEE** Transaction on Circuits and Systems-II, DOI: 10.1109/TCSII.2014.2386262, Vol.62, Issue: 2, pp. 134–138, Feb 2015. (**JCR IF 1.13**)
18. S. Arshad, **R. Ramzan**, M. Khurram, "A sub-10mW, Noise Cancelling, Wideband LNA for UWB Applications" **ELSVIER** International Journal of Electronics and Communications, DOI: 10.1016/j.aeue.2014.08.002, Vol. 69, Issue: 1, pp. 109–118, Jan 2015. (**JCR IF 0.75**)
19. S. Arshad, F. Zafar**, R. Ramzan**, "Wideband and multiband CMOS LNAs: State-of-the-art and future prospects", **ELSVIER** Microelectronics Journal, DOI: 10.1016/j.mejo.2013.04.011, Vol. 44, Issue:9, pp. 774–786, Sept 2013. (**JCR IF 0.920**)
20. **R. Ramzan**, F. Zafar, "Figure of Merit for Narrowband, Wideband and Multiband LNAs" T**aylor & Francis**, International Journal of Electronics, DOI:10.1080/00207217.2012.692635, Vol. 99, Issue:11, pp. 1603–1610, Jun 2012. (**JCR IF 0.414**)
21. N. Ahsan, C. Svensson, **R. Ramzan**, J. Dabrowski, A. Ouacha, C.Samuelsson, "A 1.1 V 6.2 mW, wideband RF front-end for 0 dBm blocker tolerant receivers in 90 nm CMOS", **Springer** Journal of Analog Integrated Circuits and Signal Processing, DOI: 10.1007/s10470-011-9667-9, Vol. 70, Issue: 1, pp. 79–90, Jan 2012. (**JCR IF 0.417**)
22. **R. Ramzan, J.** Fritzin, J. Dabrowski, C. Svensson, "Wideband Low Reflection Transmission Lines for Bare Chip on Multilayer PCB", Electronics and Telecommunications Research Institute (**ETRI**) Journal, DOI: 10.4218/etrij.11.0110.0386, Vol. 33, Issue:3, pp. 335–343, Jun 2011. (**JCR IF 1.1**)
23. **R. Ramzan**, N. Ahsan, J. Dabrowski, C. Svensson "On-Chip Stimulus Generator for Gain, Linearity, and Blocking Profile Test of Wideband RF Front Ends", **IEEE** Transactions on Measurement and Instrumentation, DOI: 10.1109/TIM.2009.2036454, Vol. 59, Issue: 11, pp. 2870-2876, Nov 2010. (JCR IF 1.808)
24. J. Dabrowski, **R. Ramzan,** "Built-in Loopback Test for IC RF Transceivers", **IEEE** Transaction on Very Large Scale Integrated Systems (TVLSI), DOI: 10.1109/TVLSI.2009.2019085, Vol. 18, pp. 933–946, Jun 2010. (**JCR IF 1.245**)
25. **R. Ramzan**, S. Andersson, J. Dabrowski, C. Svensson, "Multiband RF Sampling Receiver Front-End with On-Chip Testability in 0.13µm CMOS", **Springer** Journal of Analog Integrated Circuits and Signal Processing, DOI: 10.1007/s10470-009-9286-x, Vol. 61, Issue:2, pp. 115–127, Nov 2009. (**JCR IF 0.417**)

26. **R. Ramzan**, J. Dabraowski, "CMOS blocks for on-chip RF test", **Springer** Journal of Analog Integrated Circuits and Signal Processing, D.O.I: 10.1007/s10470-006-9615-2, Vol. 49, Issue: 2, pp. 151-160, Nov 2006. (**JCR IF 0.417**)

SELECTED PEER REVIEWED CONFERENCE PUBLICATIONS

SOME OF THE PAPERS ARE PUBLISHED IN TOP RANKING CONFERENCES LIKE ISSCC, RFIC, AND ISCAS.

1. A. Jabber, O.Siddiqui, F.A.Tahir, M.Amin, **R. Ramzan,** "A Lumped Element Analog of Dual-Stub Microwave Electromagnetically Induced Transparency Resonator", 18th Mediterranean Microwave Symposium (MMS), DOI: 10.1109/MMS.2018.8611891, Istanbul, Turkey, 31 Oct.-2 Nov. 2018.
2. S. Arshad**,** A. Beg, **R. Ramzan,** "A 2.6 mW Single-Ended Positive Feedback LNA for 5G Applications", International Symposium on Low Power Electronics and Design (ISLPED), Seattle, WA, USA July 23–25, 2018.
3. M. Omar, M. Amin, **R. Ramzan**, and O. Siddiqui, "A New Class of High Frequency Electronically Tunable Filters", 10th IEEE International Conference on Electrical and Electronics Engineering (ELECO), Bursa, Turkey, 30 NOV - 02 DEC, 2017.
4. M. Omar, **R. Ramzan**, and O. Siddiqui, "Energy tunneling in wire-loaded in substrate integrated waveguide", IEEE Electronic Devices, Systems and Applications (ICEDSA), DOI: 10.1109/ICEDSA.2016.7818514, 2016.
5. S. Ali, **R. Ramzan**, S. Azam, "High efficiency 88–108MHz, 25W Class-E PA for transmitters in smart cities", 2017 International Conference on Electrical and Computing Technologies and Applications (ICECTA), RAK, UAE, 21-23 Nov.2017,
6. O. Siddiqui, **R. Ramzan** M. Omar, "Phase Sensing - A Novel Material Characterization Method", IEEE International Conference on Electrical and Computing Technologies and Applications (CECTA), RAK, 21-23 Nov.2017.
7. M. Omar, **R. Ramzan**, O. Siddiqui, "Energy Tunneling Behavior in Geometrically Separated Wave Guides", The 7th International Conference on Metamaterials, photonics crystals and plasmonics (META). SPAIN Malaga, Spain, 25-28 July, 2016.
8. A. Shah, **R. Ramzan**, O. Siddiqui, "Exploring the Temporal Aspect of Energy-Tunneling in a Wire-Loaded Microstrip Cavity", 4th Advanced Electromagnetics Symposium (AES), Malaga, Spain, 25-28 July, 2016.
9. S. Arshad, **R. Ramzan**, Q. Wahab "Wideband Common Gate LNA with Novel Input Matching Technique", DOI: 10.1109/MOCAST.2016.7495103IEEE International Conference on Modern Circuits and Systems Technologies (MOCAST), Thessaloniki, Greece, 12-14 May, 2016.
10. A. Beg, **R. Ramzan**, A. Elchouemi, "Optimization of 22 nm Logic Gates for Power-and-Noise-Margin and Energy-and-Noise-Margin", Proceedings on the International Conference on Artificial Intelligence (ICAI), pp. 314-318, ISBN: 1-60132-438-3, Jan.2016.
11. A. Ksiksi, S. Al Shehhi and **R. Ramzan**, "Intelligent Traffic Alert System for Smart Cities", DOI:10.1109/SmartCity.2015.65, 2015 IEEE International Conference on Smart City (Smart City), Chengdu, pp. 165-169, 19-21 Dec, 2015.
12. W. Arshad, **R. Ramzan**, A.Beg, N. Bastaki, "2.5nW Subthreshold VCO based CMOS Temperature Sensor", International Conference on Sensors Engineering and Electronics Instrumental Advances (SEIA' 2015), Dubai, UAE, 21-22 Nov, 2015.
13. W. Arshad, **R. Ramzan**, A. Beg, N. Bastaki, "Comparison and design of VCOs for ultra-low power CMOS temperature sensors", DOI: 10.1109/ICCSPA.2015.7081297, IEEE International Conference on Communications, Signal Processing, and their Applications (ICCSPA), Sharjah, UAE, pp. 1-4, 17-19 Feb. 2015.
14. S. Arshad, **R. Ramzan**, F. Zafar and Q. Wahab, "Highly linear inductively degenerated 0.13µm CMOS LNA using FDC technique", DOI: 10.1109/APCCAS.2014.7032760, IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Ishigaki, Japan, pp. 225-228. 17-20 Nov. 2014.
15. F. Alneyadi, M. Alkaabi, S. Alketbi, S. Hajraf, **R. Ramzan**, "4GHz WLAN RF Energy Harvester for Passive Indoor Sensor Nodes", DOI: 10.1109/SMELEC.2014.6920900 IEEE 11th International Conference on Semiconductor Electronics (ICSE), pp. 471-474, Kuala Lumpur, Malaysia, 27-29 Aug, 2014.

16. A. Sultan, **R. Ramzan**, D. Wristers, "Design Layout Optimization in the Presence of Proximity-Dependent Stress Effects", DOI: 10.1109/ICICDT.2014.6838594, IEEE International Conference on Integrated Circuit Design and Technology (ICICTD), pp. 1-4, Austin, Texas, USA, 28-30 May, 2014.
17. O. Siddiqui, **R. Ramzan**, O. M. Ramahi, "Metamaterial-Inspired Dielectric Sensor Applications", International Conference on Advances in Engineering Materials, Sharjah, UAE, 18-20 Mar, 2014.
18. R. S. Bano, **R. Ramzan**, "COTS Based Multichannel FM receiver and Recorder using SDR Concept", DOI: 10.1109/ICECS.2013.6815392, IEEE International Conference on Electronics, Circuits, and Systems (ICECS), pp. 213-216, Abu-Dhabi, UAE, 8-11 Dec, 2013.
19. O. Siddiqui, A. Nauroze, **R. Ramzan**, and O. M. Ramahi, "Tunneling of Electromagnetic Energy through Wires in Guided Media", DOI: 10.1109/APS.2013.6711344, IEEE International Symposium on Antennas and Propagation (APSURSI), pp. 1370-1371, Florida, USA, 7-12 Jul, 2013.
20. A. Nauroze, O. Siddiqui, **R. Ramzan**, and O. M. Ramahi, "Dielectric Sensing based on Energy Tunneling in Wire-loaded Microstrip Cavities", IEEE International Conference on Metamaterials, Photonic Crystals and Plasmonics, Sharjah, UAE, 18-22 Mar, 2013.
21. K. Waseem, A. Javed, **R. Ramzan**, and M. Farooq, "Using evolutionary algorithms for ECG Arrhythmia detection and classification", DOI: 10.1109/ICNC.2011.6022596, Proc. ICNC, Pg.2386-2390, 2011.
22. F. Zafar, H. Abid, J. Ahmed, H. Raza, **R. Ramzan**, and Q. Wahab, "Design of a Highly Linear 900MHz Single Ended LNA in 0.35µm CMOS", DOI: 10.1109/STUDENT.2010.5686993, IEEE Conference on Sustainable Utilization and Development in Engineering and Technology (STUDENT), pp. 127-130, UTAR, Malaysia, 20-21 Nov, 2010.
23. **R. Ramzan,** N. Ahsan**,** J. Dabrowski, and C. Svensson, "A 0.5-6GHz Low Gain Linear RF Front-End in 90nm CMOS", IEEE Mixed Design of Integrated Circuits and Systems Conference (MIXDES), Poland, pp. 168-171, 23-26 Jun, 2010.
24. **R. Ramzan,** J. Dabrowski, "On-chip Calibration of RF Detectors by DC Stimuli and artificial neural networks", DOI: 10.1109/RFIC.2008.4561502, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, pp. 571-574, Atlanta Georgia, USA, 15-17 Jun, 2008.
25. **R. Ramzan**, J. Dabrowski, "Boosting SER Test for RF Transceivers by Simple DSP Technique", DOI: 10.1109/DATE.2007.364680, IEEE Design Automation and Test in Europe Conference (DATE 2007), pp. 1-6, Acropolis, Nice, France, 16-20 Apr, 2007.
26. **R. Ramzan**, S. Andersson, J. Dabrowski, C. Svensson, "A 1.4V 25mW Inductorless Wideband LNA in 0.13µm CMOS", DOI: 10.1109/ISSCC.2007.373475, IEEE International Solid State Circuits Conference (ISSCC), pp. 424-613, San Francisco, California, USA, 11-15 Feb, 2007.
27. S. Andersson, **R. Ramzan,** J. Dabrowski, C. Svensson, "Multiband direct RF-sampling receiver front-end for WLAN in 0.13 µm CMOS", DOI: 10.1109/ECCTD.2007.4529563, 18th IEEE European Conference on Circuit Theory & Design (ECCTD), pp. 168-171, 27-30 Aug, 2007.
28. J. Dabrowski, **R. Ramzan,** "Offset Loopback Test for IC RF Transceivers", DOI: 10.1109/MIXDES.2006.1706647, IEEE Mixed Design of Integrated Circuits & Systems Conference (MIXDES), pp. 583-586, Gdynia, Poland, 22-24 Jun, 2006.
29. **R. Ramzan**, L. Zou, J. Dabrowski, "LNA Design for on-Chip RF Test", DOI: 10.1109/ISCAS.2006.1693564, IEEE International Symposium on Circuits and Systems (ISCAS), pp. 472-476, Island of Kos, Greece,21-24 May, 2006.
30. **R. Ramzan**, J. Dabrowski, "CMOS blocks for on-chip RF test", Mixed Design of Integrated Circuits and Systems Conference (MIXDES), Krakow, Poland, pp. 403-408, 22-24 Jun, 2005.
31. **R. Ramzan**, J. Dabrowski, "Wideband MCML basic cells in 0.35 um CMOS", IEEE Mixed Design of Integrated Circuits and Systems Conference (MIXDES), Krakow, Poland, pp. 227-231, 22-24 Jun, 2005.

TOOLS, PACKAGES & LANGUAGES

- Cadence Tools Suite (Analog Artist, Virtuoso, etc.) for Analog & Mixed Signal IC design
- Agilent-ADS for RF IC design and RF & Microwave sensor & PCB design
- Verilog and VHDL for digital ASIC design
- C, Basic, Assembly (8051, 8085, ARM), and UNIX network programming
- Matlab and MathCAD for simulation and modeling at system level
- Synopsys, FPGA Express, Xilinx ISE design Suite, MAX + Plus II design Suite
- Modelsim, VerilogXL, and NC-Verilog for digital IC modeling, design, and simulation
- Protel 99SE, Altium, and PCAD for PCB design
- GNU Software Defined Radio (SDR) and associated tool suite

PARTICIPATION IN CONFERENCES

- **Technical Committee Co-Chair**, IEEE International Conference on Emerging technologies (ICET), Islamabad, Pakistan, 2010 (http://icet.nu.edu.pk/)
- **Member of Technical Program Committee (TPC)**, IEEE Conference on Very Large Scale Integration (VLSI-SoC)
  - 2011, Nov 22-25, Hong Kong.
  - 2012, March 22-25, Santa Cruz, CA, USA.
  - 2014, Oct 6-8, Playa del Carmen, Mexico.
  - 2016, Sep 26-28, Tallinn, Estonia.
  - 2017, Oct 23-25, Dubai, UAE.
- Member of Technical Program Committee (TPC), International Conference on Frontiers of Information Technology (FIT), 2011 & 2014, Islamabad, Pakistan.
- Member of Technical Program Committee (TPC), IEEE International Conference on Emerging Technologies (ICET), 2014, Islamabad, Pakistan
- Member Technical Program Committee (TPC), 9th International Conference on Innovations in Information Technology, 2013, 2016. Al Ain, UAE (http://www.it-innovations.ae)

REVIEWER OF JOURNALS

- Nature Scientific Reports
- IEEE Transactions of Circuits and Systems (IEEE-TCAS)
- IEEE Transactions of Transactions on Microwave Theory and Techniques (IEEE-TMTT)
- IEEE Microwave and Wireless Components Letters (IEEE-MWCL)
- IEEE Transactions on Very Large Scale Integration Systems (IEEE-TVLSI)
- Elsevier, Microelectronics Journal
- Elsevier, Integration, the VLSI Journal
- IET Microwaves, Antennas & Propagation

  (I am an active reviewer with an average of 10-20 journal papers per year since 2014)

INVITED TALKS &TUTORIALS

- Invited Speaker," "Understanding Energy Tunneling and its Use in Microwave Sensors", IEEE International Workshop on RF & Microwave, NUST, Islamabad. 26-27 Nov, 2019
- Key Note Speaker, "RF Frontend Design for SDR and Cognitive", IBCAST, Islamabad, 9-13 January, 2018.
- Invited Tutorial Session, "Design Techniques and CMOS Implementation of LNAs for SDR and CR Applications", at 25th IEEE International Conference on Microelectronics (ICM), Beirut, Lebanon, 15-18 Dec, 2014.
- Invited Talk, "Compensation of Nonlinearities in ΣΔ Modulators Using Digital Assisted Analog Electronics", 3rd International Conference on Intelligent Information Processing (ICII), Singapore, 24-26 May, 2014.

EDITORIAL AND ADVISORY BOARD MEMBER

- Member International Advisory Committee ICIIP, Singapore, 2014.
- Member International Advisory Committee ICIIP, China, 2015.
- Member International Advisory Committee ICWOC, China, 2016.
- Editorial Boards Member, Emirates Journal of Engineering Research (EJER), UAE, 2015-16.

AFFILIATIONS

- Senior Member, IEEE, and IEEE Solid State Circuit Society
- Member, Pakistan Engineering Council
- Member, Institute of Engineers Pakistan
- Secretary UAE, IEEE Solid State Circuit Society from 2014 to 2015.

SUPERVISED PHD THESIS

- Sidera Galani, "mm-Wave Wideband Bidirectional LNA/PA", under progress.
- Sana Arshad, "Multistandard and Multiband LNA Design for SDR Applications", NED University Karachi. (graduated in Fall, 2017with 4 high quality journal papers)

SUPERVISED MS. THESIS

- Hamza Attique, "Modeling and Design of Backscattering Link for Wireless Power Transfer Systems", FAST-NU, Islamabad, 2020.
- Abdul Jabbar, "A novel C-band microstrip Diplexer and L-band bandpass filters were designed based upon Fano resonance technique", NUST, Islamabad, 2019.
- Arif Shah, "Frequency and Time Domain Characterization of Energy Tunneling Phenomena in Wire-Loaded Microstrip Structure", FAST-NU, Islamabad, 2016.
- Attique Dawood, "Finite Difference Time-Domain Modelling of Metamaterials: A GPU Based Implemental of Lossless Cylindrical Cloak", FAST-NU, Islamabad, 2013.
- Rizwana Sher Bano, "Multichannel FM Receiver, Logger and recorder based on SDR Architecture," FAST-NU, Islamabad, 2012.
- Shawkat Ali, "25 watts, 80% PAE Class-E RF Power Amplifier for 88 to108MHz Frequency band", FAST-NU, Islamabad, 2012.
- Muhammad Atif, "Modeling of DAC non-Linearity inside ΣΔ ADC Loop", FAST-NU, Islamabad, 2011.
- Atta-ul-Mustafa, "Compensation of DAC non-linearity in multi-bit ΣΔ ADC using normalized LMS algorithm", FAST-NU, Islamabad, 2011.

HONORS AND DISTINCTIONS

- First Prize with cash award of **7.5K US$** for winning the UAE Innovation Competition Award in Health and Technology Category, 2017. (Patent-1)
- First Prize with cash award of **7.5K US$** for winning the UAE Innovation Competition Award in Water Resources Category, 2016. (Patent-7)
- TAKAMUL Patent Assistance award of **10K US$** for filling a US Patent 14/695713 - Temperature Monitoring of Subject Bodies Using Wireless Energy Transfer" 2016.
- Published in ISSCC and Nature Scientific Reports in 2007, 2015, and 2017 respectively.
- Best paper award, Swedish System-on-Chip Conference, Arlid, Sweden, 2009.
- Two outstanding paper awards for two papers, MIXDES conference, Poland, 2005.
- Selected as 'Doktorand', a paid research position in Electrical Engineering Department, Linkoping University, Sweden from 2004 – 2009.
- Ph.D merit scholarship from Ministry of Education, Govt. of Pakistan in 1995 for higher studies abroad (not availed).
- U.E.T Lahore, Pakistan, merit scholarship for excellent academic performance. 1993 – 1994.
- 2nd Position in 3rd B.Sc EE annual exam, U.E.T Lahore, Pakistan out of 300 Students 1993.

FUNDING AND GRANTS

(1US$= 3.67AED)

PI = PRINCIPAL INVESTIGATOR

- **PI**: NUCES (FAST-NU) , Faculty Research Support Program, "A Self-Calibrated, Non-Invasive and Low-cost Plant Water Sensor", 2020, **600,000/- Pak Rs**
- **PI**: UAEU Interdisciplinary, "Low cost, Non-invasive plant water Estimation based on Electromagnetic Anomalous phase dispersion", 2017, ***400K AED (108K US$)***
- **PI**: Space Centre Grant, "High Efficiency L-Band Power Amplifier (PA) for Space Applications", 2017, ***100 K AED (27K US$)*** (Completed)
- **PI**: UAEU SURE, "A Power Efficient, Portable, Solar Powered Commercial Drone Interceptor", 2017, ***65 K AED (18K US$)*** (Completed)
- **PI**: UAEU UPAR, "New Class of Highly-sensitive Energy Tunneling based Sensors for Biomedical applications", 2014, ***397K AED (108K US$)*** (Completed)

- **PI**: UAEU Engineering College Seed Grant, "LNA Design for Cognitive Radios", 2015, ***30K AED (8K US$)*** (Completed)
- **PI**: UAEU Startup Grant, "Passive self-powered, fully CMOS temperature sensor for medicine and food monitoring", 2014, ***368K AED (108K US$)*** (Completed)
- **PI**: UAEU SURE, "FM Radio Based, Intelligent and Low Cost Speed Limit and Emergency Alert Road Sign System (icFM-TAS)", 2013, ***42K AED (12.5K US$)*** (Completed)
- **PI**: UAEU Seed Money, "Dielectric Sensing based on Energy Tunneling in PCB Microstrips", (Completed), 2013, ***30K AED (8K US$)*** (Completed)
- **Co-PI**: ADEC (External Grant), "Design and Fabrication of Novel Ultra Low Power and Reliable CMOS Logic Cells", 2015, ***399K AED (108K US$)***
- **Co-PI**: UAEU UPAR, "Enabling Logic Circuits for Zero Power Internet of Everything", 2015, ***398K AED (108K US$)***

COURSES OFFERED TO INDUSTRY

- 2019, "RF Transceiver Design" course with hands on LAB sessions in FAST-NU, Islamabad. More than 14 engineers from industry attended this course.
- 2010, Offered a 2 Week "High Speed and RF PCB design" course with hands on LAB sessions in FAST-NU, Islamabad. More than 50 engineers from industry attended this course
- 2004, Offered a 2 Week "High Speed Multilayer PCB design" course in Bahria University, Islamabad. More than 30 engineers from industry attended this course.

REFERENCES

- Prof. Dr. Waseem Ikram, Director, NUCES (FAST-NU), Islamabad-4400, Pakistan
  (Cell: +92 301 5006611, waseem.ikram@nu.edu.pk ; www.nu.edu.pk)
- Prof. Dr. Atila Alvanpour, Head of Electronic Devices Group, Linkoping University, Sweden
  (Office: *+46-13-285818,* atila@isy.liu.se, http://www.ek.isy.liu.se/~atila)
- Prof. (Emeritus) Dr. Christer Svensson, Fellow IEEE, Linkoping University, Linkoping, Sweden
  (Cell: *+46-70- 281223*, christer@isy.liu.se, http://www.ek.isy.liu.se/~christer)
- Prof. Dr. Jerzy Dabrowski, My Ph.D Supervisor, EE Department, Linkoping University, Sweden
  (Office: *+46-13-*281224*,* jdab@isy.liu.se, http://www.ek.isy.liu.se/~jdab)
- Prof. Dr. Hasan Al Nashash, Electrical Engineering, American University, Sharjah
  (Cell: *+971-50-4825001,* hnashash@aus.edu, http://www.aus.edu)
- Prof. Dr. Imad Barhumi, Chair Electrical Engineering, UAE University, Al Ain-1551, UAE
  (Cell: *+971-50-533 2287,* imad.barhumi@uaeu.ac.ae, http://www.uaeu.ac.,ae)