

Profile Page

Research Interests :

Microelectronics, III-V Compound Semiconductors, Material Growth and Device Fabrication, Device Physics, Microwaves and RF

Other Profile Links :

Google Scholar Link :

Dr. Rakesh Kumar Sarin [Click Here](#)

Personal Web Link :

ORCID [Click Here](#)

Microsoft Academic [Click Here](#)

Vidwan [Click Here](#)

Scopus [Click Here](#)

Researchgate [Click Here](#)

Journal Publications :

Year	Journal	Publication
2019	International Journal of Electronics Letters	35. D Singh and R K Sarin, “ Convex constant modulus algorithm for PAPR reduction in MIMO-OFDM systems”
2019	Wireless Personal Communication, Springer, 2019	Harmandar Kaur, Mamta Khosla, R.K. Sarin, “Hybrid Type-2 Fuzzy based Channel Estimation for MIMO OFDM System with Doppler Offset Influences”
2019	ETRI Journal	Singh, Davinder, and Rakesh Kumar Sarin. "Computationally efficient variational Bayesian method for PAPR reduction in multiuser MIMO OFDM systems
2018	Advanced Electromagnetics, vol. 7, no. 3, pp. 56-63	Akanksha Jaiswal, R K Sarin, Balwinder Raj, Shikha Sukhija, "A Novel Circular Slotted Microstrip-Fed Patch Antenna with Three Triangle Shaped Defected Ground Structure for Multiband Applications"
2018	Progress In Electromagnetics Research M, vol. 66, pp. 53-63	Shikha Sukhija, R. K. Sarin and Nitesh Kashyap, “Design of Compact Wideband Serpentine Patch Antenna for Ingestible Endoscopic Applications
2018	International Journal of Communication Systems, Wiley, 2018; doi:10.1002/dac.3792	Harmandar Kaur, Mamta Khosla, R.K. Sarin, “Interval Type-2 Nie-Tan Fuzzy Kalman Filter based Non Linear Individual Channel Estimation in MIMO Relay System”
2018	International Journal of Communication Systems, Wiley, 2018; doi: 10.1002/dac.3469	Harmandar Kaur, Mamta Khosla, R.K. Sarin, “Hybrid channel estimation for MIMO relay systems with Doppler offset influences”
2018	Radioengineering 27.2	Singh, Davinder, and R. K. Sarin. "A first-order primal–dual method for saddle point optimization of PAPR problem in MU-MIMO-OFDM systems
2018	Radioengineering, 27(2)	Singh, D. and Sarin, R.K., “A first-order primal–dual method for saddle point optimization of PAPR problem in MU-MIMO-OFDM systems”.

2017	Transactions on Electrical and Electronic Materials, vol. 18, no. 6, pp. 359-363	Adil Al Ayubi, Shikha Sukhija and R K Sarin, "A Slotted Implantable Patch Antenna for ISM Band Application and its Usage in Wi-MAX with I-Shaped Defected Ground Structure
2017	Progress In Electromagnetics Research M, vol. 62, pp. 65-77	Shikha Sukhija and R K Sarin, "A U-shaped meandered slot antenna for biomedical applications,"
2017	Journal of semiconductors, vol.38, pp. 024001/1- 024001/7	Sunny Anand, R.K.Sarin, "Dual Material Gate Doping-Less Tunnel FET with Hetero Gate Dielectric for Enhancement of Analog/RF performance
2017	Indian Journal of Pure & Applied Physics (IJPAP), vol.55, pp. 97-103,	16. Gurmohan Singh, Balwinder Raj and R. K. Sarin, "Design and performance analysis of a new efficient coplanar quantum-dot cellular automata adder,"
2017	Journal of Computational Electronics, vol.16, no.2, pp 354-368,	Shikha Sukhija and R. K. Sarin, "Low-profile patch antennas for biomedical and wireless applications
2016	Journal of semiconductors," vol.37, no. 5	Sunny Anand, S. Intekhab Amin, R.K. Sarin, "Performance Analysis of Charge Plasma based Dual Electrode Tunnel FET
2016	Journal of Nanoelectronics and Optoelectronics, vol.11, pp. 1-8,	Sunny Anand, R.K.Sarin, "An Analysis on Ambipolar Reduction Techniques for Charge Plasma Based Tunnel FETs
2016	Superlattice and Microstructure, Elsevier, vol. 92, pp. 143-156,	G. Singh, S. Intekhab Amin, Sunny Anand, and R. K. Sarin, "Design of Si 0.5 Ge 0.5 Based Tunnel Field Effect Transistor and its Performance Evaluation,"
2016	Journal of Computational Electronics, 15, pp 850-856	Sunny Anand, R.K.Sarin, "Analog and RF performance of doping-less tunnel FETs with Si0.55Ge0.45 source
2016	Superlattices and Microstructures, 97 pp. 60-69, 2016	Sunny Anand, R.K.Sarin, "Performance Investigation of InAs Based Dual Electrode Tunnel FET on the Analog/RF Platform",
2016	Journal of Computational Electronics, vol. 15, pp. 455-465	Gurmohan Singh, Balwinder Raj and R.K. Sarin, "A novel robust exclusive-OR function implementation in QCA nanotechnology with energy dissipation analysis
2016	Journal of Electrical Systems and Information Technology, Dec. 2016. DOI: 10.1016/j.jesit.2016.10.013	Shikha Sukhija and R. K. Sarin, "Design and performance of two-sleeve low profile antenna for bio-medical applications
2015	Journal of Compt. Electron	Sunny Anand, S Intekhab Amin, and R.K.Sarin, "Analog Performance Investigation of Charge Plasma Based Dual Electrode Tunnel FET
2015	Super-lattice and Microstructure, Elsevier, 2015 vol. 88, pp. 582-590	4. S. Intekhab Amin and R K Sarin, "Charge-Plasma Based Dual-Material and Gate-Stacked Architecture of Junction-less Transistor for Enhanced Analog Performance,"
2015	Journal of semiconductor, IOP science. 2015 Volume 36, Issue 9, pp. 94001-94007	3. S. Intekhab Amin and R K Sarin, "The Impact of Gate Misalignment on Analog Performance of Dual-Material Double Gate Junction-less Transistor",
2015	Journal of Computational Electronics, Springer. 2015 Volume 14, Issue 3, pp 675-685	2. S. Intekhab Amin and R K Sarin, "Analog Performance Investigation of Gate misaligned Double gate Junctionless Transistor,"
2015	International Journal of Information and Communication Technology – Inderscience (Published/Forthcoming Issue, 2015)	Ashish Raman, R K Sarin, "Design and Analysis of RF-Low Power and low-phase Noise CMOS Ring Oscillator for Fully Integrated RF Communication Systems Technologies,"
2014	Journal of Electron Devices, Vol. 20, 2014, pp. 1786-1791 © JED [ISSN: 1682 -3427]	Bhuwan Chandra Joshi, S. Intekhab Amin and R. K. Sarin, "Analysis of GIDL and Impact Ionization Writing Methods in 100nm SOI Z-DRAM"

2014	International Journal of BioInspired Computation-Inderscience, Volume 2, Issue 9, pages 156-178	Mamta Khosla, R K Sarin and Moin Uddin, "Evolutionary Design of Efficient Type- 2 Fuzzy Models from Noisy Data using Hybrid PSO Model"
2013	International Journal of Pure and Applied Research in Engineering and Technology, (IJPRET), Vol.1(8),46-53,	Perna Saxena, Dr. Sarabjeet Singh, Dr. R.K. Sarin, "Study of Patch Antenna Array using Single Negative Metamaterial Structure
2013	International Journal of Pure and Applied Research in Engineering and Technology, (IJPRET), Vol.1(8),46-53,	Perna Saxena, Sarabjeet Singh, R.K. Sarin, "Study of Patch Antenna Array using Single Negative Metamaterial Structure
2013	Int. J. Biomedical Engineering and Technology, Vol. 13, No. 1, 2013, pp. 1-16.	Ashish Raman, R K Sarin, "The design of a novel delay cell based 8.3 GHz, low phase noise ring oscillator in C-MOS 180 nm technology for biomedical ultra-wide-band integrated applications",
2013	International Journal of Advanced Science and Technology (IJAST), (SERSC, Korea) Vol.58, pp.87-102	Ashish Raman, R K Sarin, "Design and Investigative Aspects of RF-Low Power 0.18 μ m based CMOS Differential Ring Oscillator
2012	International Journal of Engineering Research and Applications (IJERA), Vol. 2, pp.1538-1542,	Gupta, Kuludip Kumar, R. K. Sarin, and Er Nitin Kr Tiwari. "Low Power and Area Efficient Asymmetrical Differential Amplifier Based Content Addressable Memory,"
2012	International Journal of Electronics 99 (10), 1449-1469,	HP Singh, S Singh, R K Sarin, J Singh, "Evaluating the perceived voice quality on VoIP network using interpolated FIR filter algorithm"
2012	International Journal of Computational Intelligence Studies Inderscience, Volume 1, Issue 4, pages 349-367.ISSNPrint:1755-4977	Mamta Khosla, R K Sarin and Moin Uddin, "A Simplified Architecture for Triangular Quasi Type-2 Fuzzy Logic Systems"

Conference Publications :

Year	Conference	Publication
2018	2nd International Conference on Inventive Systems and Control (ICISC)	46. Kaur, H., Khosla, M. and Sarin, R.K., 2018, January. Channel estimation in a MIMO relay system: Challenges & approaches channel estimation in MIMO relay system: A review
2018	,” International Conference on Communication, Computing and Networking 2019, NITTER, Chandigarh	G.Singh,R. k. Sarin and B.Raj, "Reliability Aware Design and Performance Analysis of QCA Based Exclusive-OR Gate,"
2016	European Advanced Materials Congress, M/S Mariella, Viking Line, Stockholm, Sweden	Performance Analysis of different material based Dual Electrode Doping-less TFET
2016	3rd IEEE Uttar Pradesh Section International Conference at IIT(Banaras Hindu University) Varanasi, India	Performance Investigation of Charge Plasma Based Dual Material Gate Junctionless Transistor
2015	Electrical, Electronics, Signals, Communication and Optimization (EESCO), 2015	Designing of Phase and Frequency Detector for low Jitter and high speed applications
2014	India Conference (INDICON), 2013 Annual IEEE	Comparison of thermometer to binary encoders for flash ADCs
2013	Computational Intelligence and Information Technology, 2013. CIIT 2013.	Junctionless Transistor: A review

2012	Devices, Circuits and Systems (ICDCS), 2012	Analysis and modeling of 1/f noise in mosfets: The joint effect of channel length and channel resistance
2012	Control and System Graduate Research Colloquium (ICSGRC), 2012 IEEE	Implementation of interval type-2 fuzzy systems with analog modules
2012	Communication Systems and Network Technologies (CSNT)	Identification of Type-2 Fuzzy Models for Time-Series Forecasting Using Particle Swarm Optimization
2012	BEATS 2012	Chunn, A.; Sarin, R.K., "Design of 0.5V flash ADC for biomedical applications,"
2011	ICECT 2011 - 2011 3rd International Conference on Electronics Computer Technology	Analog realization of fuzzifier for IT2 fuzzy processor
2010	Computational Intelligence, Communication Systems and Networks (CICSyN)	Analysis of Interpolated FIR Filter for VoIP in Noisy Environment

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISSN No.	Year
	Cross-Disciplinary Applications of Artificial Intelligence and Pattern Recognition: Advancing Technologies/Realizing Interval Type-2 Fuzzy Systems with Type-1 Fuzzy Systems	IGI Global, USA	Mamta Khosla, R K Sarin, MoinUddin, Arun Khosla and Satvir Singh		2012

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
Principal Investigator		SMDP-II	DIT, Ministry of Comm. and Information Technology	2005	2013	50 Lakhs	Completed	
Principal Investigator		Facilities for VLSI CAD	MHRD	2001	2005	12.50 Lakhs	Completed	
Principal Investigator		SMDP-C2SD	Meity	2014	2019	150 Lakhs (approx.)	Ongoing	
Co-investigator		IoT based Activities	CIMO Asia Programme 2016	2016	2018	40000 Euros	Ongoing	
Team member		FIST						

Events Organized :

Category	Type	Title	Venue	From	To	Designation
TUM Germany and NIT Jalandhar	National	Research Teaching Exchange Excursion Workshop	NIT Jalandhar	15-Sep-2016	24-Sep-2016	

	National	Electronics and Communication Systems Design Aspects		25-May-2015	29-May-2015	
	National	Recent Trends in VLSI and Communication Systems		17-Jun-2013	21-Jun-2013	

Professional Affiliations :

Designation	Organization
Fellow	IETE
Member	IEEE

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Ankush Chunn	Design and Performance Analysis of Low Power ADCs for UWB receiver Applications	Completed	Aug, 2011	
Sarabjeet Kaur	Semiconductor Device Modelling	Ongoing	2016	Dr. Ashish Raman
Dr Ashish Raman	Design and Analysis of Low Phase Noise, RF Wide-Band Delay Cell for Integrated Application	Completed	2015	
Davinder Singh	Peak-to-Average Power Ratio Reduction in MIMO-OFDM Systems	Ongoing	2015	
Gurmohan Singh	Design and Performance Analysis of Quantum Cellular Automata based Circuits	Completed	2014	Dr. Balwinder Raj
Shikha Sukhija	Design of Low Profile Antennas of different configurations for Bio-medical Applications	Completed	2013-2018	
Sunny Anand	Design and Performance Analysis of Doping-less Tunnel Field Effect Transistor	Completed	2013-2017	
Dr Mamta Khosla	Design and Implementation of Type-2 Fuzzy Logic Systems	Completed	2013	
Harmander Kaur	Performance evaluation and enhancement through improvement measures in MIMO-OFDM systems	Submitted	2013	Dr. Mamta Khosla
S.Intekhab Amin	Device Design Considerations and Performance Analysis of Multiple Gate Junctionless Transistor	Completed	2012-2017	

Admin. Responsibilities :

Position Held	Organization	From	To
Chairman Dept. Board of Studies	Board of Studies	2006	2010
Coordinator	Industrial Training	2010	Till date
Coordinator	M.Tech admissions	2006	2008
Head, Department of ECE	NIT Jalandhar	1994	2010
Dean Academic	NIT Jalandhar	2010	2013
Chairman, Institute Library Committee	NIT Jalandhar		
Chairman, Institute Telecommunication Committee	NIT Jalandhar		