

Personal Details	
Name:	Dr. Vipan Kakkar
School/Address:	C-102
Phone :	9419233904
Email ID:	vipan.kakar@smvdu.ac.in
Specialization	Ultra Low Power VLSI, Power Electronics and Power Management Techniques, Multimedia System-on-Chip
Subjects Taught	VLSI, Power Electronics, Control Systems, Electronic Devices & Circuits, Signal Processing, Embedded Systems
Google Scholar Link:	https://scholar.google.com/citations?user=q7wwlQ0AAAAJ&hl=en
Vidwan Link:	https://vidwan.inflibnet.ac.in/profile/145347
Educational Qualification	
UG	Bachelor of Engineering in Electronics and Power (Nagpur University)
PG	Master of Science in Engineering in Power Electronics & Control Engineering
Doctorate	Doctorate in Engineering (Delft University of Technology)

Work Experience		
Teaching	1. Shri Mata Vaishno Devi University 2. Teaching assistant (Delft University of Technology)	16 2
R&D in Industry	Philips / NXP Semiconductors, Netherlands, India	8

Research Experience	
Research Interests :	Ultra Low Power VLSI, Lab-on-Chip, Power Electronics especially DC-DC converters for ultra low-power and medium power applications.
Brief Research Statement:	Research interests primarily include applied engineering techniques basically in the field of System-on-Chip design. The research works targeting complex chip design includes ultra low power VLSI techniques, on-chip power electronics and control, ultra-low power analog and mixed signal design, Microelectromechanical Systems (MEMS) design, Lab-on-Chip and implantable devices. Published several research articles in peer reviewed high impact journals and international conferences. Authored a book on system on chip design. Life Member of IETE and has been an Executive Member of IEEE, India. He served as an Editorial Board Member for few journals. Evaluated research projects for Swiss National Science Foundation (SNSF) and the Swiss Innovation Agency. Worked on several academic and R&D projects including collaboration with international organisations.

Academic/Research Projects

S.no.	Title	Funding Agency	Grant	Duration	PI/ Co-PI	Status
1.	Development of Microbial Fuel Cell	UGC	Rs. 8.16 Lakhs	2012-15	PI	completed
2.	An audio content based semantic music search system	in collaboration with Singapore University of Technology & Design	SG-$ 2 lakhs	2016-17	Co-PI	completed
3.	Study of Fault Tolerant Quantum dot Cellular Automata Circuits for Ultra-low Power Applications	TEQIP III	Rs. 5.05 Lakhs	2019-20	Co-PI	completed
4.	Alternative/Herbal Medicine	University of California, Irvine		2019-20	Co-PI	

Consultancy

Title of Consultancy	Client Organization	Status
Electric Vehicles feasibility study (2010)	Shri Mata Vaishno Devi Shrine Board	**Completed**
Surveillance/CCTV plan for the shrine / bhavan area (2011)	Shri Mata Vaishno Devi Shrine Board	**Completed**
Solar Lighting Solution at Low Temperature areas (2017)	Philips India, Bengaluru	**Completed**

R&D Industry Projects

S.No.	Organisation	Description
1	R&D Engineer, Philips Semiconductors	Research and Development in System-on-Chip (SoC) functional verification for TV Applications (till 2002/3)
2	R&D Engineer, Philips/NXP Semiconductors	System-on-Chip (SoC) low-power design for Hearing Aid
3	Senior R&D/SoC integration Architect	DSP-system for audio applications, Audio Processor for Car music system–Datasheet
4	Technical Lead/Senior R&D Engineer	Power aware co-design and test architecture for multimedia SoCs, Adaptive Low power design for Complex mobile multimedia
5	Chief Architect, Principal Design	Developed Business Creation concept and Created chip architecture that features Low Power SoCs, SoC for Smart E-Metering

Journal Publications (selected publications (SCI/Scopus))

- Naira Nafees, Vipan Kakkar, “Optimization and Design of Efficient D Flip-Flops using QCA Technology”, Lecture Notes in Electrical Engineering, Vol. 1001, Springer Nature (2023)
- Naira Nafees, Suhaib Ahmed, Vipan Kakkar, Ali Newaz Bahar, Khan A. Wahid, and Akira Otsuki, “QCA-Based PIPO and SIPO Shift Registers Using Cost-Optimized and Energy-Efficient D Flip Flop” *Electronics* 11, no. 19 (2022)
- Neeraj Tripathi, Vipan Kakkar, “Medical Implant Electronic System For Deep Brain Stimulation”, European Chemical Bulletin, Vol. 12, No.S3 (2023)
- Soha M Bhat, Suhaib Ahmed, Vipan Kakkar, “Design of SSG-1 gate-based cost-efficient reversible digital circuits using quantum-dot cellular automata technology”, International Journal of Numerical Modeling, Electronic Networks, Devices and Fields (2022)
- Soha M Bhat, Suhaib Ahmed, Vipan Kakkar, “Quantum dot Cellular Automata based Design of 4x4 TKG Gate and Multiplier with Energy Dissipation Analysis”, Lecture Notes in Electrical Engineering, Springer (2022)
- Neeraj Tripathi, Vipan Kakkar, “Low Power Electrode Interface for Implantable Medical Devices”, Neuroquantology, Vol. 20, No.6 (2022)
- Vikram Kumar, Vipan Kakkar, Krishan Kumar, Vinaya Rana, “Hybrid Power Modulation Scheme for High Frequency Isolated Bidirectional Dual-Active-Bridge DC-DC Converter”, Special issue on Advance Innovation and Technology with Sustainability Engineering in International Journal of Social Ecology and Sustainable Development, Vol. 13, No. 2 (2022)
- Neeraj Tripathi, Vipan Kakkar, “Electrical Modelling of Neuron System for Deep Brain Stimulation Microelectrode”, Turkish Online Journal of Qualitative Inquiry, Vol. 12, No.7 (2021)
- Shagun Gupta, Vipan Kakkar, Suhaib Ahmed, Farooq Khanday, Sparsh Sharma, Saurabh Singh, Byungun Yoon, “Modelling of On-Chip Biosensor for the in vivo Diagnosis of Hypertension in Wireless Body Area Networks”, IEEE Access, Vol. 10 (2021)
- Shagun Gupta, Vipan Kakkar, “Point-of-Care Detection of Tuberculosis using Magnetoresistive Biosensing Chip”, Tuberculosis, Vol. 127 (2021)
- Tanveer Ahmed Rather, Suhaib Ahmed, Vipan Kakkar, “Modelling and Simulation of a Reversible Quantum Logic based 4x4 Multiplier Design for Nanotechnology Applications”, International Journal of Theoretical Physics, Vol. 58 (2019)
- Shagun Gupta, Vipan Kakkar, Indu Bhushan Sharma, “Crosstalk between Vaginal Microbiome and Female Health: A review”, Microbial Pathogenesis, Vol. 136 (2019)
- Shagun Gupta, Vipan Kakkar, “DARPin based GMR biosensor for the detection of ESAT-6 tuberculosis protein”, Tuberculosis, Vol. 118 (2019)
- Firdous Ahmed, Suhaib Ahmed, Vipan Kakkar, G.M. Bhat, Ali Newaz Bahar, Shah Jahan Wani, “Modular Design of "Ultra-Efficient Reversible Full Adder-Subtractor in QCA with Power Dissipation Analysis”, International Journal of Theoretical Physics, Vol. 57, No. 9 (2018)
- Shagun Gupta, Vipan Kakkar, “Recent Technological Advancements in Tuberculosis Diagnostics- A Review”, Biosensors & Bioelectronics, Vol 115 (2018)
- Suhaib Ahmed, Vipan Kakkar, “A Novel Angular SiO2 Electret-based Electrostatic Energy Harvester for Cardiac and Neural Implants”, Biomedical Research, Vol. 29(8) (2018)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, “Modular Adder Designs using Optimal Reversible and Fault Tolerant Gates in Field-Coupled QCA Nanocomputing”, International Journal of Theoretical Physics, Vol. 57, No. 5 (2018)
- Vipan Kakkar, “An Ultra Low Power System Architecture for Implantable Medical Devices”, IEEE Access, Vol. 7 (2018)
- Suhaib Ahmed, Vipan Kakkar, “Modeling and Simulation of an eight-bit auto-configurable successive approximation register analog-to-digital converter for cardiac and neural implants”, Simulation: Transactions of the Society for Modeling and Simulation International, Vol. 94, No. 1 (2018)
- Sanna Mairaj, Suhaib Ahmed, Vipan Kakkar, Survey on Emerging Technologies and Architectures of Low Power Preamplifiers for Biomedical Applications”, International Journal of Nanoelectronics and Materials, Vol. 11 (2018)
- Sanna Mairaj, Suhaib Ahmed, Vipan Kakkar, “An Optimized Low-Noise Low-Power Preamplifier for Cardiac Implants”, International Journal of Nanoelectronics and Materials, Vol. 11, No. 1 (2018)
- Neeraj Tripathi, Vipan Kakkar, “Deep Brain Stimulation: Applications and Challenges”,
- International Journal on Future Revolution in Computer Science & Communication Engineering, Vol. 4 (2018)
- Suhaib Ahmed, Sakshi Koul, Vipan Kakkar, “Modelling of Silicon Based Electrostatic Energy Harvester for Cardiac Implants”, International Journal of Nanoelectronics and Materials, Vol. 11 (2018)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, “Quantum Dot Cellular Automata: A New Paradigm for Digital Design”, International Journal of Nanoelectronics and Materials, Vol. 11. No. 1 (2018)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, “Optimal Realization of Universality of Peres Gate using Explicit Interaction of Cells in Quantum Dot Cellular Automata Nanotechnology”, International Journal of Intelligent Systems and Applications vol. 9, no.6 (2018)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, “An Insight into Beyond CMOS Next Generation Computing using Quantum-dot Cellular Automata Nanotechnology”, International Journal of Engineering and Manufacturing, vol. 8, no. 1 (2018)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, “QCA Based Efficient Toffoli Gate Design and Implemented for Nanotechnology Applications”, International Journal of Engineering and Technology, Vol. 9 (3S) (2017)
- Suhaib Ahmed, Vipan Kakkar, “An Electret-Based Angular Electrostatic Energy Harvester for Battery-Less Cardiac and Neural Implants”, IEEE Access, Vol. 5 (2017)
- Furqan Zahoor, Swastik Gupta, Vipan Kakkar, “A Comparative Study of High Efficiency DC/DC Boost Converters for Medium Power Applications”, International Journal of Emerging Technologies in Engineering Research, Vol. 5 (2017)
- Suhaib Ahmed, Saima Bashir, Bisma Bilal, Vipan Kakkar, “Feasibility of Successive Approximation Register ADC in Ultra Low Power Biomedical Applications”, International Journal of Engineering and Technology, Vol. 9 (3S) (2017)
- Vikram Kumar, Vipan Kakkar, “Miniaturized Resonant Power Conversion for Implanted Medical Devices”, IEEE Access, Vol. 5 (2017)
- Furqan Zahoor, Swastik Gupta, Vipan Kakkar, “High Efficiency DC/DC Boost Converters for Medium/High Power Applications”, International Journal of Hybrid Information Technology, Vol. 9, No. 11, 2016 (2016)
- Shagun Gupta, Kritika Ramesh, Vipan Kakkar, “Lab-on-Chip Technology: A Review on Design Trends and Future Scope in Biomedical Applications”, International Journal of Bio-SCIence and Bio-Technology, vol. 8, no. 5 (2016)

- Kritika Ramesh, Shagun Gupta, Suhaib Ahmed, Vipan Kakkar, "A Comparative Study on Design Trends and Future Scope of Implantable Drug Delivery Systems", International Journal of Bio-Science and Bio-Technology, vol. 8, no. 6 (2016)
- Vipan Kakkar, "Performance Analysis of Nanometer CMOS for Mixed Signal Circuits", Journal of Circuits, Systems and Computers", World Scientific Publishing, Vol. 20, No. 6 (2011)
- Manish Sabraj, Vipan Kakkar, "Spectral Analysis of Sample Rate Converter", Signal Processing: An International Journal, Volume(4): Issue (4), October 2010, pp 219-217 (2011)
- Vipan Kakkar, "Space Technology in the 21st Century", International Journal of Engineering and Technology Vol. 2, No. 2 (2010)
- Manish Sabraj, Vipan Kakkar, "Distribution Function Estimation of the Timing Jitter in Sample Rate Converter", International Journal of Engineering and Technology Vol. 2, No. 2 (2010)
- Vipan Kakkar, "Comparative Study of Analog and Digital Neural Networks", International Journal of Computer Science and Network Systems, Vol. 9, No. 7 (2009)
- Vipan Kakkar, "Architecture for Efficient Energy Meter", International Journal of Computer Science and Network Systems, Vol. 9, No. 11 (2009)

Selected Conference Publications (Scopus)

- Naira Nafees, Vipan Kakkar, Optimization and Design of Efficient D Flip-Flops using QCA Technology, 5th International Conference on Recent Innovations in Computing (ICRIC-2022), Springer, CU Jammu, India, 16-17 May 2022, published 5th May 2023 (Scopus)
- Devyani Singh, Vipan Kakkar, Load forecasting: STLF using FFNN model with Adam Optimization Algorithm, Hinweis Second International Conference on Advances in Software Engineering and Information Technology (ASIT), July 2023 (Scopus)
- Mohsin Fayaz, Mohammed Waqas, Vipan Kakkar, "A Novel Design of Reversible Toffoli Gate in Quantum-Dot Cellular Automata", 2021 IEEE International Conference for Intelligent Technologies, CONIT-2021, Karnataka, India, 25-27 June, 2021 (Scopus)
- Soha M Bhat, Suhaib Ahmed, Vipan Kakkar, "Quantum dot Cellular Automata based Design of 4x4 TKG Gate and Multiplier with Energy Dissipation Analysis", 4th International Conference on Recent Innovations in Computing (ICRIC-2021), Springer, second volume, 8-9 June 2021 (Scopus)
- Neeraj Tripathi, Vipan Kakkar, Electrical Modelling of Neuron System for Deep Brain Stimulation Microelectrode, 2nd International Conference On SCIence, Engineering and Management (ICSEM-2021), Sri Lanka, 26-27 August 2021 (Scopus)
- Akshay Lal, Rakesh Sharma, Vipan Kakkar, "A Review of Short Term Electricity Load Forecasting using Artificial Intelligence Techniques",5th International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET), Shri Mata Vaishno Devi University, 17-18 Jan, 2020 (Scopus)
- Akshay Lal, Rakesh Sharma, Vipan Kakkar, "A Review of Short Term Electricity Load Forecasting using Artificial Intelligence Techniques",5th International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET), Shri Mata Vaishno Devi University, 17-18 Jan, 2020 (Scopus)
- Shagun Gupta, Purva Buttar, Suhaib Ahmed, Vipan Kakkar, "Feasibility of Lab-On-Chip Theranostic Platforms in Wireless Body Area Network" at IEEE International Conference ANTS 2019 held at BITS Pilani, Goa from 16th Dec.-19th Dec., 2019 (Scopus)
- Shagun Gupta, Indu Bhushan, Vipan Kakkar, "Microbial Communities: Rethinking Composition and Detection" at the 5th International Conference on "Microbial diversity as a source of novelty: function, adaptation and exploitation" held at Catania, Italy from 25th-27th Sept., 2019 (Scopus)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, "Multifunction Reversible Logic Gate: Logic Synthesis and Design Implementation in QCA, "Proc. of IEEE International Conference on Computing, Communication and Automation (ICCCA), Greater Noida, 5-6 May 2017 (Scopus)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, "A Study on Implementation of Reversible Circuits in Quantum dot Cellular Automata for Nanotechnology Applications," One-Day IEEE EDS Delhi Chapter and IETE Sponsored Mini Colloquium (MQ) cum National Seminar on "Advances in Electronic Devices and Circuits", Department of Electronics, University of Jammu, 26 April 2017 (Scopus)
- Furqan Zahoor, Swastik Gupta, Vipan Kakkar, "A Comparative Study of High Efficiency DC/DC Boost Converters for Medium Power Applications", ICRTAET Conference, SMVD University, Nov. 2017 (SMVD University)
- Vikram Kumar, Vipan Kakkar, "A comparative evaluation of the modulation techniques in the Soft Switched & Resonant DC to DC Converter Topology and their Control", ICRTAET Conference, SMVD University, Nov. 2017 (SMVD University)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, "A Study on Implementation of Reversible Circuits in Quantum dot Cellular Automata for Nanotechnology Applications," One-Day IEEE EDS Delhi Chapter and IETE Sponsored Mini Colloquium (MQ) cum National Seminar on "Advances in Electronic Devices and Circuits", Department of Electronics, University of Jammu, 26 April 2017 (University of Jammu)
- Suhaib Ahmed, Bisma Bilal, Sparsh Sharma, Vipan Kakkar, "A Study on Feasibility of Energy Harvesting for Battery-less Pacemakers," 12th JK Science Congress, Jammu, 2-4 March 2017 (JK Science Congress)
- Bisma Bilal, Suhaib Ahmed, Vipan Kakkar, "An Insight into Emerging Paradigms for Nanotechnology based Applications," UGC National Seminar on Electronic Devices,Systems and Information Security (SEEDS), Department of Electronics and Instrumentation Technology, University of Kashmir, India, 24-25 March 2017 (University of Jammu)
- Suhaib Ahmed, Bisma Bilal, Vipan Kakkar, "Electrostatic Energy Harvesting: An Alternative Energy Source for Cardiac Implants," UGC National Seminar on Electronic Devices, Systems and Information Security (SEEDS), Department of Electronics and Instrumentation Technology, University of Kashmir, India, 24-25 March 2017 (University of Jammu)
- Saima Bashir, Samiya Ali, Suhaib Ahmed, Vipan Kakkar, "Analog-to-Digital Converters: A Comparative Study and Performance Analysis," Proc. of IEEE InternationalConference on Computing, Communication and Automation (ICCCA), Greater Noida, 29-30 May 2016, pp. 999-1004 (Scopus)
- Samiya Ali, Saima Bashir, Suhaib Ahmed, Vipan Kakkar, "Microcantilever Biosensing: A Review and Future Perspective," Proc. of Third International Conference on Nanotechnology for Better Living (ICNBL-2016), Srinagar, 25-29 May 2016 (Scopus)
- Saima Bashir, Samiya Ali, Vipan Kakkar "Analog-to-digital converters: A comparative study and performance analysis, "International Conference on Computing, Communication and Automation (ICCCA), 2016 (Scopus)
- Sakshi Koul, Suhaib Ahmed, Vipan Kakkar, "A comparative analysis of different vibration based energy harvesting techniques for implantables", International Conference on Computing, Communication & Automation, 2015 (Scopus)
- Aamir Amin, Vipan Kakkar, Mohsin Suharwerdi, "Development of low power buck convertor for enhanced light load efficiency", IEEE India Conference (INDICON), 2015 (Scopus)
- Alok K Choudhary, Vipan Kakkar et al, "Improved Digital Design of BPSK Modulator using Look-up Table Technique", International Conference on Advances in Computing, Communications and Informatics, 2013 (Scopus)

- Rajit Ram Singh, Vipan Kakkar et al, "Ultra-Low Power Logic Device for Hearing Aid Applications", IEEE International Conference on Communication Systems and Network Technologies, Rajkot, May. 2012. (Scopus)
- Manish Sabraj, Vipan Kakkar et al, "Spectrum Estimation using FFT", National Conference on Emerging Trends in Electronics Engineering and Computing, Feb. 2010 (Scopus).
- Manish Sabraj, Vipan Kakkar et al, "Spectrum Estimation of Signal from the Noisy Measurements using Window-Based and AR Model-Based Methods", International Conference on Engineering Innovations, Feb. 2010. (Scopus)
- Vipan Kakkar, "Media Processers for Consumer Applications", DSP conference, Philips, Netherlands, 2004
- Vipan Kakkar, other international seminars

Book/Chapters Written

Type	Title	Publisher	Author(s)	ISBN/ISSN No.	Year
Book Chapter	Biomolecular and Cellular Manipulation and Detection	Springer Nature	Shagun Gupta, Dr. Vipan Kakkar	978-3-030-34543-3	2019
Book Chapter	Development of environmental biosensors for detection, monitoring and assessment	Springer Nature	Shagun Gupta, Dr. Vipan Kakkar	978-3-030-34543-3	2019
Book	Scheduling Techniques for System-on-Chip Design	Lambert Academic Publishing	Dr. Vipan Kakkar	978-3-847-32439-3	2011

Patents

Title	Reg./Ref.No	Date of Award/Filling	Awarding Agencies	Status
Green Synthesis of Silver Nanoparticles	202011010352A	17th Sept 2021	Indian Patent Office	Published
MRI Compatible Integrated Circuit for Implantable Medical Devices	201711025173	2019	Indian Patent Office	Filed

Conferences / Workshops/ FDP Courses Organized

Category	Type & Title	Venue	Date / Duration	Designation
Seminar	National Seminar UGC Sponsored National Seminar on Wireless Communication & Networks, 24th March 2012	Shri Mata Vaishno Devi University	24 March 2012	General Chair
Conference	International Conference 3rd International Conference on Recent Trends and Advancements in Engg. & Tech. SMVDU, 17-18 Nov. 2016	Shri Mata Vaishno Devi University	17-18 Nov. 2016	General Chair
Workshop	Workshop UGC sponsored Two-day Workshop On Ultra Low-Power Biosensors and Implantable Microsystems, at SMVDU, 2-3 Dec. 2016	Shri Mata Vaishno Devi University	2-3 Dec 2016	General Chair
Workshop	Workshop UGC sponsored Two-day Workshop On Numerical Analysis in VLSI CAD using MATLAB and SIMULINK, at SMVDU, 14-15 Jan. 2017	Shri Mata Vaishno Devi University	14-15 Jan 2017	General Chair
Workshop	Workshop General Chair, Workshop on Scientific Writing using Latex, at SMVDU, 24th Feb. 2017	Shri Mata Vaishno Devi University	24 Feb 2017	General Chair

Talks Delivered in Conference talks/Workshop/FDP

Title	Place	Year	Description of Event
Seminar talk: Lecture on VLSI Techniques in Wireless Sensor Networks at UGC Sponsored National Seminar on Wireless Communication & Networks, March 2012	Shri Mata Vaishno Devi University	2012	Low power VLSI techniques in the design of wireless sensor nodes and networks for sensitive applications at UGC Sponsored National Seminar on Wireless Communication & Networks

Seminar talk: **Keynote** speech at Seminar on Ultra Low Power Implantable Devices UGC sponsored National Seminar on Electronic Devices, Systems and Information Security, University of Kashmir, 18-19 March 2016	University of Kashmir	2016	VLSI Technology for Future Implantable devices and biomedical applications
Session Chair: National Conference and Exhibition on "Emerging and Innovative Trends in Engineering Technology" (NCEEITET-16), GCET, Jammu, Nov. 10-11, 2016.	Govt. College of Engineering and Technology, Jammu	2016	Session Chair
FDP talk: Lecture on "Tips for writing good research paper at"2-week refresher course on "Research Methodology", Shri Mata Vaishno Devi University, 27 Mar. 2017	Shri Mata Vaishno Devi University	2017	Lecture on research methodology and paper writing skills
Conference talk: **Keynote** speech on Implantable Medical Devices at National Conference on Emerging Trends and Innovations in Electronics and Communication Engineering, Baba Ghulam Shah Badshah University, Rajouri, Aug. 26-27, 2017	Baba Ghulam Shah Badshah University, Rajouri, J&K	2017	VLSI Technology for Future Implantable devices and biomedical applications
Conference talk: **Invited lecture** on Ultra Low Power Biosensors: VLSI Trends And Future Scope, Biomedical Conference, Osaka, Japan, Oct. 16-17, 2017	Osaka, Japan (online)	2017	VLSI Technology for Future Implantable devices and biosensors
Conference talk: **Keynote** speaker on Implantable Medical Devices: Technologies, Trends And Future Scope, 3rd Intl Symp. On New and Advanced Materials and Technologies for Energy, Environment and Sustainable Development, Mexico, Oct. 22-26, 2017	Mexico	2017	VLSI Technology for Future Implantable devices and biomedical applications
Seminar Talk: Full day **Keynote** speech on Intellectual Property Rights at Baba Ghulam Shah Badshah University, Rajouri, Jan. 25, 2019	Baba Ghulam Shah Badshah University, Rajouri, J&K	2019	R&D work suitability for Intellectual Property Rights
FDP Talk: DST sponsored 2 week FDP on Quantum Science & Technology at Baba Ghulam Shah Badshah University, Rajouri, Dec. 2019	Baba Ghulam Shah Badshah University, Rajouri, J&K	2019	Future of Quantum Dot Cellular Automation Technology

Special Lectures Delivered (Non-conference talks)

Title	**Place**	**Year**	**Description of Event**
Industry R&D lecture: Lecture in Multimedia chip development group on Low Power Design Techniques at NXP Netherlands based on experience gained at NXP, Dec 2009	NXP, Netherlands	2009	Delivered a lecture on Low power design techniques for System-on-Chip design for low power applications.
Academic Lecture: Lecture at Fontys Universitry, Netherlands	Fontys University, Netherlands	2009	Chip technologies
Several Lectures: Netherlands, Germany	Netherlands	2002-2008	Low power techniques and Chip technologies
Expert lectures: Invited Lectures for students in VLSI Development for SoC, Department of Electronic Science, University of Pune, Nov. 2012	University of Pune	2012	VLSI Techniques for System-on-Chip Development; concept to production
Lecture series: Lecture Series on Specialised Linear Integrated Circuits, Department of Electronic Science, University of Jammu, March 5-7, 2019.	University of Jammu	2019	4 day full lecture series on theory and applications of Linear Integrated Circuits

Research Supervision

Scholar Name	**Research Topic**	**Status**	**Year**	**Co-Supervisor (s)**
Dr. Amit Kant Pandit	Reduced complexity algorithms for Image and Video compression	Awarded	2011	Dr. Shekhar Verma (IIIT Allahabad)
Dr. Manish Sabraj	Spectrum Estimation of Signals and Analysis of Sample Rate Converter	Awarded	2013	

Dr. Suhaib Ahmed	A Configurable Ultra Low Power Data Converter for Cardiac and Neural Implants	Awarded	2019	
Dr. Shagun Gupta	On chip Tuberculosis Diagnostic	Awarded	2021	
Dr. Vikram Gupta	Modelling and Optimisation of Bidirectional DC-DC Converter for High Frequency Isolation of Power Conversion Systems	Awarded	2021	
Dr. Neeraj Tripathi	Modelling and Optimisation of Microelectrode for Deep Brain Stimulation	Awarded	2023	
Mr. Rakesh Sharma	Short Term Load Forecasting for Power system in J&K	On-going		

International & National Exposure

Sr.No.	Title	Description
1	University of Munich, Germany (2000)	Visited University of Munich during doctoral work at Delft University of Technology, Netherlands
2	Lectures delivered at various undergraduate colleges in Netherlands (2000-2008)	Lectures in chip technologies at various undergraduate colleges in Netherlands
3	Fontys University, Netherlands, 2009	Academic Collaboration and exchange programme
4	Ghent University, Belgium, Dec 2009	Research-collaboration and lecture on Biomedical Electronic Systems at Ghent University, Belgium, Dec 2009.
5	Lectures delivered at Philips Semiconductors, Netherlands, Germany	Worked in R&D Multisite projects in System-on-Chip design
6	R& D work at Philips / NXP Semiconductors	Worked in R&D for System-on-Chip design in nanometer VLSI technologies for Consumer applications
7	Department of Electronic Science, University of Pune (2012)	Lecture series on VLSI
8	Singapore University of Technology & Design (2018)	Research collaboration and visiting faculty
9	University of Jammu (2010)	Thesis evaluator
10	University of Jammu (2020)	Lecture series on Analog Integrated Circuits
11	Swiss National Science Foundation, Switzerland (2021-23)	Expert Project Evaluator

Honors & Recognitions Achieved

Sr.No.	Title	Given By	Year
1	Chartered Engineer	Royal Netherlands Society of engineers, Netherlands	2004
2	Low power expert	Philips, NXP, Netherlands	2005
3	Expert Life Member	VLSI Society of India	2010
4	Senior Member IEEE	IEEE	2010
5	Life Member	ISTE (Indian Society of Technical Education)	2011
6	Dr. APJ Abdul Kalam Teachers' Excellence Award	Shikshak Kalyan Foundation, Courtsey: AICTE	2020