

Faculty Details proforma for DU Web-site

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Title Pro	f. First	Mridula	Last Name	Gupta	Photograph		
Designation	Profe						
Address	Unive	rtment of Electronic Scien rsity of Delhi, South Cam Delhi – 110 021	62				
Phone No Office		-24115580					
Residence	91-11	-28522365					
Mobile	98108	868230					
Email	mridu	ıla_du@yahoo.com, mric	dula@south.du.ac.in				
Web- Page	http:/	/sdrl-does.edsdelhi.org/i	ndex.html				
Educational	Qualificatio	ns					
Degree	Instit	ution			Year		
Ph.D.	Unive	rsity of Delhi			1998		
M.Tech.		University of Delhi 1988					
M.Sc. (Electron	cs) Unive	University of Delhi 1986					
B.Sc. (H) (Physic	cs) Unive	rsity of Delhi			1984		
Any other qualification							
Career Profil	e						
Organization	n Desig	nation	Duration		Role		
Deptt. of Electronic Science, UDSO INDIA	Profe	ssor	10.08.2006 -till	date	Teaching & Research		
Deptt. of Electronic Science, UDSC INDIA		iate Professor/ Reader	10.08.1998-09.0	08.2006	Teaching & Research		
Deptt. of Electronic Science, UDSO INDIA	Lectu	rer	18.10.1989 - 09. 01.08.1988 - 30. (Ad-hoc)		Teaching & Research		
C-DOT, Govt. India		rch Engineer	01.05.1989 - 17.	10.1989	Design of Transreceiver		

Administrative Assignments

- Member of Board of Studies in Electronics, University of Jammu, 2018-2021
- Member of technical advisory committee of DUCC, University of Delhi, 2019-till date
- Provost- Geetanjali Hostel South Campus, w.e.f. July 2014 to Jan 2020.

- External Member of the board meeting(s) for Assessment of Scientist(s) in the discipline of ELECTONICS on 16-18
 May, 2017 at Bangalore, Targeted Training Centre (TTC) Dr. Raja Raman Complex, Raj Bhawan Circle, High
 Ground, Bangalore.
- External Member of the board for the Recruitment & Development Centre of Defence Research & Development Organisation (DRDO) of Scientist(s) in the discipline of Electronics on 11/05/2017, dated 09 May, 2017
- Expert Member of Selection committee for the interview in the subject-Field Electronics of Chinese Government Scholarship 2017-2018, at West Block-1, 2nd Floor, Wing-6, R. K. Puram Sector-1, New Delhi-110066, Held on April 19. 2017.
- Expert Member of the Selection Committee for the post of Information Scientist of the University of Haryana, at the central University of Haryana Transit Office at 3110, Opposite House No. T/25/8, DLF, Phase III, Gurgaon, held on November 26, 2016
- Expert Member for Selection of candidates for the 2017 Commonwealth Scholarship in the subject-field of Electronics/Electrical at West Block-1, Wing-6, 2nd Floor, Sector-1, R. K. Puram, New Delhi-110066, held on November 17, 2016.
- Expert Committee Member for evaluation and assessment of the proposals submitted by college teachers for availing travel grant assistance to attend International Conferences abroad, at University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002, held on October 25, 2016
- Expert Member for the selection of Scientist(s) in the discipline of Electronics & Eng. at Recruitment & Eng
- Expert Member for short listing of applications for the 2017 Commonwealth Scholarship in the subject-field of Electronics/Electrical at West Block-1, Wing-6, 2 nd Floor, Sector-1, R. K. Puram, New Delhi-110066, held on October 4, 2016
- Selection Committee Member for appointment of Guest faculty at Cluster Innovation Centre, University of Delhi, held on July 30, 2016
- Appointment as the superintendent for the Post-Graduate Examinations of various departments under the South Delhi Campus w.e.f. March 25. 2015 to till date.
- Purchase Committee Member of W.U.S. Health Centre, University of Delhi, on March 23, 2015.
- Vice Chancellor Nominee as one of the expert member of the selection Committee for the interviews of the applicants under the stream Physical Sciences (Physics/Chemistry/Electronics), under the Faculty Training Program, University of Delhi, on February 25, 2015.
- Selection Committee Member for the Promotion of the Lecturer in the department of Physics and Electronics, Rajdhani College, University of Delhi, on February 25, 2015.
- Convener of the food Courts Committee, annual multifaceted academic and cultural festival (Antardhvani 2015)
 organized by University of Delhi during February 20-22, 2015.
- Vice-Chancellor Nominee as an Expert for the Selection Committee for the post of Professor in Electronics and Communication Engineering, BPS Women University, Khanpur, Kalan, Sonepat on February 7, 2015.
- Purchase Committee Member of W.U.S. Health Centre, University of Delhi, on February 03, 2015.
- Vice-Chancellor Nominee of the selection committee for the post of Assistance Professor in the department of Computer Science, Shaheed Sukhdev College of Business Studies, University of Delhi, on November 28-29, 2014.
- Chairperson of the Selection Committee for the post of Assistance Professor in the department of Chemistry,
 Deshbandhu College, University of Delhi, on October 24-29, 2014.
- Member of the panel of paper Setters for M.Tech. (ICT) and M.Tech. Electronics and Communication Engineering,
 Bhagat Phool Singh Mahila Vishwavidyalaya, Khanpur Kalan (Sonepat), Haryana, India on September 9, 2014.
- Departmental Research Committee (DRC) member nomination by Vice Chancellor in the Department of Technology for the period of two years w.e.f. August 2, 2014.
- Expert Committee Member nomination by Chairman, UGC for the proposals received under Electronics and Communication Engineering Departments as per Special Assistance Programme (SAP) scheme on July 09, 2014.
- Expert Committee Member nomination by Chairman, UGC for preliminary evaluation of received online applications for Major Research Projects held on July 23, 2014.

- Expert Committee Member nomination by Chairman, UGC for evaluation and assessment of the proposals submitted by the College teachers for the purpose of availing travel grant assistance to attend the International Conferences abroad on September 25, 2014.
- Grievance Redressal Committee Member for two years of University of Delhi South Campus, w.e.f. December 3, 2014
- Member of the panel, work related to objective type Question paper for Examination/test, Union Public Service Commission (UPSC) during December 15-16, 2014.
- Advisory Committee Member for Recent trends in Instrumentation and Electronics (RTIE -2015), Shaheed Rajguru
 College of Applied Science for Women, on January, 5-6, 2015.
- Technical Chair for Recent trends in Instrumentation and Electronics (RTIE -2015), Shaheed Rajguru College of Applied Science for Women, on January, 5-6, 2015.
- Expert Committee Member of UGC for the proposals received from University Departments (Electronics Science Engineering) as per Special Assistance Programme (SAP) scheme on January 14, 2015.
- Member & Treasure of Governing Body Deshbandhu College, Kalkaji, New Delhi, w.e.f. Sept. 2013.
- Member, General council of Netaji Subhas Institute of Technology (NSIT), Dwarka, w.e. f. Feb. 2014.
- Member of Governing body of Rajkumari Amrit Kaur College of Nursing w.e.f. April 2014.
- VC Nominee-DRC, IIC, UDSC, New Delhi-21, w.e.f. Jan. 2014.
- External expert of Board of Studies & Research in Department of Electronics & Communication Engineering of Guru Jambheshwar University of Science & Technology, Hisar, w.e.f. April 2014.
- External expert of Board of Studies & Research in Department of Electronics & Communication Engineering of Bhagat Phool Singh Mahila Vishvidyalaya, Sonipat, w.e.f. January 2014.
- Chairperson purchase committee-DOES UDSC New Delhi-21.
- Placement coordinator, Department of Electronic Science, University of Delhi, South Campus
- Coordinator B.Sc. (H) Electronics program

Areas of Interest / Specialization

Modeling & characterization of submicron and deep submicron field effect devices. This includes the Si MOSFET, Tunnel FET, MESFET, GaAs MESFET, JunctionLess Transistor and GaAs/InP HEMT

Subjects Taught

31 years teaching experience of M.Sc. (Electronics), M.Sc. (Informatics) and M.Tech. (Microwave Electronics) classes. Modern Communication Systems, Analog & Digital Circuit Design, Control Systems, Communication Theory

Research Guidance

List against each head (If applicable)

Supervision of awarded Doctoral Thesis
 Supervision of Submitted Doctoral Thesis
 Supervision of Doctoral Thesis, under progress
 Supervision of awarded M.Phil dissertations
 Nil
 Supervision of M.Phil dissertations, under progress
 Nil

S.No.	Name	Year	Title of the Thesis
1.	Gupta, Ritesh	2003	Modeling, Characterization and Optimization of InAlAs/InGaAs Heterojunction, InP based High Electron Mobility Transistor (HEMT) For Microwave and Millimeter Wave Frequency Applications
2.	Singh, Adarsh	2004	Analytical Modeling, Analysis and Characterization of GaN MESFET for Optoelectronic Applications

3.	Sehgal, Amit	2007	Poly-Crystalline Silicon Thin Film Transistors: Modeling, Simulation and Characterization
4.	Mangla, Tina	2007	Modeling and Simulation Characterization of Nano Scale MOSFETs with Quantum Mechanical Effects and Gate Stack Engineering for ULSI
5.	Goel, Kirti	2007	Two Dimensional Analytical Modeling and Simulation of Non-Uniformly Doped Dual Martial Gate(DMG) and Triple Material Gate (TMG) MOSFET Structures
6.	Aggarwal, Sandeep	2008	Correlation & Enhancement of Circuit Parameters with Device Parameters of Different Metal-Insulator Geometric Single/ Double/Dual Gate 4H-SiC MESFET
7.	Kabra, Sneha	2008	Modeling Simulation and Characterization of GaN MESFET
8.	Parvesh	2008	Polarization dependent analysis and characterization of AlGaN/GaN HEMT
9.	Chaujar, Rishu	2008	Analytical modeling and simulation of gate electrode workfunction and dielectric engineered recessed channel MOSFET in Sub-100nm Regime
10.	Kumar, Sona P.	2010	Analysis , Modeling and Simulation of AlGaN/GaN Modular Doped Field Effect Transistor
11.	Sharma, Rupendra	2010	Two Dimensional Analytical Modeling and Simulation of Gate Misalignment Effect in Fully Depleted Double Gate MOSFET
12.	Aggarwal, Ruchika	2011	Modeling, Characterization and Simulation of AlGaN/GaN Metal Insulator Semiconductor Heterostructure Field Effect Transistor(MISHFET) for High Power Microwave Applications
13.	Rathi, Servin	2012	Modeling, Simulation & Characterization of Modified Different Gate Geometric Double Gate High Electron Mobility Transistor for High Power and High Frequency Applications with Two Separate/Common Gate Control
14.	Malik, Priyanka	2013	Analytical modeling and simulation of advanced MOSFET structures in sub- 100nm regime
15.	Ghosh, Pujarini	2013	Capacitive Modeling Simulation and Characterization of Surrounded/Cylindrical Gate MOSFET (SGT/CGT) for High Frequency Applications
16.	Gautam, Rajni	2014	Analytical modeling and simulation of cylindrical gate all around MOSFET-reliability and sensor applications
17.	Bhattacharya, Monika	2014	Modeling, Simulation and Characterization of Noise in InAlAs/InGaAs Tied- geometry Double-gate High Electron Mobility Transistor for Millimeter- wave Applications
18.	Kumari, Vandana	2014	Impact of Dielectric Pocket on Different Gate Geometry MOSFET Architectures for Improved Analog and Digital Performance: Modeling and Simulation
19.	Narang, Rakhi	2014	Analytical Modeling and Simulation of Multiple Gate Geometry Tunneling Field Effect Transistors for Low Power Logic Circuit Design and Biosensing Applications
20.	Pratap, Yogesh	2016	Modelling and Characterization of all around Gate Nano-Scale MOSFETs
21.	Verma, Jay Hind Kumar	2017	Noise Analysis and Modeling of Cylindrical/surrounding gate MOSFET
22.	Ajay	2017	Analytical Modeling and Simulation study of BioFETs for label free electrical detection of biomolecules

23.	Kadam, Upasana	2018	Steep sub-threshold devices for energy efficient circuits: Modeling and simulation
24	Kumar, Manoj	2018	Analytical modeling, simulation and characterization of schottky barrier (SB) gate all around (GAA) MOSFET structures for low power applications
25.	Kumar, Sachin	2019	Novel Attributes of RingFET: A Modeling and Simulation Based Investigation
26.	Chander, Subhash	2019	Simulation, Modeling and Characterization of MMIC (Monolithic Microwave Integrated Circuit) Components
27.	Nitin	2020	Modeling Simulation and characterization of JunctionLess Accumulation mode Cylindrical surrounding gate (CSG) MOSFET for Digital Application
28.	Dubey, Avashesh	In progress (29 th Oct. 2015)	Modeling and Simulation of steep sub-threshold Emerging Research Devices foe Energy Efficient Low Power Sensing Application.
29.	Yadav, Hina	In Progress (25 th August 2017)	A High Gain FM Rectenna for RF power Harvesting Applications
30.	Singh, Preeti	In Progress (25 th August 2017)	Modeling and Simulation of Advanced High electron Mobility Transistor (HEMT) for High Power Applications
31.	Sharma, Monika	In Progress (25 th August 2017)	Modeling and Simulaion of Heterojunction Tunnel FET for low power circuit design and Optical Applications.
32.	Khurana, Manisha	In progress (22 nd April 2019)	Modeling and simulation of FETs under optical illumination
33.	Anand Anupama	In progress (August 2019)	Modeling, simulation and performance comparison of AlGaN and GaN channel HEMTs

Publications Profile

List against each head(If applicable) (as Illustrated with examples)

- 1. Books/Monographs (Authored/Edited)
- 2. Research papers published in Refereed/Peer Reviewed Journals
- 3.
- a) Research papers published in Academic Journals other than Refereed/Peer Reviewed Journals
- b) Research papers published in Refereed/Peer Reviewed Conferences
- c) Research papers Published in Conferences/Seminar other than Refereed/Peer Reviewed Conferences
- 4. Other publications (Edited works, Book reviews, Festschrift volumes, etc.)

Books/Monographs (Authored/Edited)

Co-authored a Chapter entitled "Current collapse in AlGaN/GaN HEMTS" First Edition, May 2019, in Handbook for III-V High Electron Mobility Transistor Technologies, CRC Press, Taylor & Francis Group. DOI: https://doi.org/10.1201/9780429460043, eBook ISBN- 9780429460043

- Research papers published in Refereed/Peer Reviewed journal (August 2019- April 2020)
- 1. "Comparative study of InGaN and InGaAs based Dopingless TFET with different Gate Engineering Techniques" Monika Sharma, Rakhi Narang, Manoj Saxena, Mridula Gupta, Advances in Natural Sciences: Nanoscience and Nanotechnology, vol. 10, no 3, pp. 035009(8pp), 2019, Published Online: 29, August, 2019,

- Online ISSN: 2043-6262, DOI: 10.1088/2043-6254/ab38b1.
- 2. "Temperature based analysis of 3-step field plate AlGaN/GaN HEMT using numerical simulation" Neha, Vandana Kumari, Mridula Gupta and Manoj Saxena, Advances in Natural Sciences: Nanoscience and Nanotechnology, Vol. 10, no.4, 2019
- 3. "TCAD Based Assessment of Dual-Gate MISHEMT with Sapphire, SiC and Silicon Substrate" Preeti, Vandana Kumari, Manoj Saxena and Mridula Gupta, IETE Technical Review, Available Online Dec. 2019, https://doi.org/10.1080/02564602.2019.1699455
- 4. "Sensitivity Assessment of RingFET Architecture for the Detection of Gas Molecules: Numerical Investigation" Vandana Kumari, Manoj Saxena and Mridula Gupta, IETE Technical Review, Available Online March. 2020, https://doi.org/10.1080/02564602.2020.1726830

International/National Conferences: (AUGUST 2019- April 2020)

- 1. "Optimization of Asymmetric π Gate HEMT for Improved Reliability & Frequency Applications" Khushwant Sehra, Vandana Kumari, Vandana Nath, Mridula Gupta and Manoj Saxena, IEEE INEC-2019, Kuching, Malaysia, 3rd -5th July 2019.
- "Comparison of Linearity and Intermodulation Distortion Metrics for T and Pi Gate HEMT" Khushwant Sehra, Vandana Kumari, Vandana Nath, Mridula Gupta and Manoj Saxena, Accepted for Publication in IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON-2019), Uttar Pradesh, India 8th – 10th Nov, 2018
- 3. "Breakdown Voltage Analysis of Dual-Gate MISHEMT: TCAD based Assessment" Preeti, Vandana Kumari, Manoj Saxena and Mridula Gupta, Accepted for Publication in IEEE Asia-Pacific Microwave Conference (APMC-2019), Singapore, 10th 13th Dec, 2019.
- 4. "Stacked Microstrip Antennas on Thin Dielectric substrate for high power harvesting applications", Hina Yadav, Sheetal Yadav, K. P. Ray and Mridula Gupta, Accepted for Publication in IEEE Asia-Pacific Microwave Conference (APMC-2019), Singapore, 10th 13th Dec, 2019.
- 5. "Optimization of Microstrip substrate parameters for efficient wireless power harvesting at 900 MHz", Hina Yadav, K. P. Ray and Mridula Gupta, Accepted for Publication in IEEE- India Conference on Antennas and Propagation 2019, Ahmedabad, Gujarat, India, 19th -22nd Dec. 2019.
- 6. "Reliability Comparison of Conventional & Two Finger AlGaN/GaN HEMT" Vandana Kumari, Manoj Saxena and Mridula Gupta, Accepted for publication in IEEE International Microwave and RF Conference (IMaRC-2019), at IIT Bombay, Mumbai, India, Dec. 13th -15th , 2019.
- 7. Analysis of Hetero Junction InGaAs based DopingLess TFET, Monika, Rakhi Narang, Manoj Saxena and Mridula Gupta, Accepted for publication in XXth International Workshop on the Physics of Semiconductor Devices (IWPSD 2019) at Kolkatta, India, 17th 20th Dec. 2019.
- 8. Pocket Doped Tunnel FET for Infrared Sensing Applications, Maneesha Khurana, Upasana, Manoj Saxena and Mridula Gupta, Accepted for publication in XXth International Workshop on the Physics of Semiconductor Devices (IWPSD 2019) at Kolkatta, India, 17th 20th Dec. 2019.
- 9. Reliability Assessment of Dual Material π Gate AlGaN/GaN HEMT, Khushwant Sehra, Vandana Kumari, Mridula Gupta and Manoj Saxena, Accepted for publication in XXth International Workshop on the Physics of Semiconductor Devices (IWPSD 2019) at Kolkatta, India, 17th 20th Dec. 2019.
- 10. An Asymmetric π Gate MOSHEMT Architecture for High Frequency Applications, Khushwant Sehra, Vandana Kumari, Mridula Gupta and Manoj Saxena, Accepted for publication in CODEC-2019 at Kolkatta, India, 19th 20th Dec. 2019.
- 11. Gate Leakage Current Assessment of AlGaN/GaN HEMT with AlN Cap Layer, Shreyashi Das, Vandana Kumari, Mridula Gupta and Manoj Saxena, Accepted for publication in CODEC-2019 at Kolkatta, India, 19th 20th Dec. 2019.
- 12. Comparative Study of AlGaN/GaN HEMT and MOS-HEMT Under Positive Gate Bias Induced Stress, Amrutamayee Nayak, Vandana Kumari, Mridula Gupta and Manoj Saxena, Accepted for publication in CODEC-2019 at Kolkatta, India, 19th 20th Dec. 2019.
- 13. Numerical Investigation of Gate Field Plate AlGaN/GaN HEMT with Multi- Recessed Buffer, Neha, Vandana Kumari, Mridula Gupta and Manoj Saxena, Accepted for publication in CODEC-2019 at Kolkatta, India, 19th –

- 20th Dec. 2019.
- 14. Reliability Comparison of Conventional & Two Finger AlGaN/GaN HEMTVandana Kumari, Manoj Saxena and Mridula Gupta, Accepted for publication in IMARC-2019, 13th 15th Dec. 2019, IIT Bombay, India
- 15. Avashesh Dubey, Rakhi Narang, Manoj Saxena, and Mridula Gupta, "Investigation of Single-Event-Transient Effect in Floating-Gate Junctionless Double-Gate Field- Effect-Transistor", IEEE Nanotechnology Materials and Devices Conference (NMDC), Stockholm, Sweden, 2019.

Conference Organization/ Presentations (in the last three years)

List against each head(If applicable)

- 1. Participation as Paper/Poster Presenter
- First International Conference on Microelectronics, Devices and Technologies MicDAT-2018, Barcelona, Spain, June 20th – 22nd, 2018
- 2. Participation as Invited Speaker
- Keynote talk on "DC Characteristics of AlGaN/GaN HEMT Devices with BGaN Back Barriers" at Karunya University, Coimbatore, during 16th 17th March, ICDCS-2018.
- Invited talk on 'Satellite Communication' at Acharya Narendra Dev College, on 31st January 2019.
- Member of IEEE-WIE Networking and Penal Discussion at Department of Electronics and Communication Engineering, Amity University Noida, on 7th March 2019.
- Invited talk on 'Advancement in Semiconductor Device Technology: Modeling and Simulation" at Maharaja Agrasen Institute of Technology, IP University on 4th April, 2019.
- Invited talk on 'Advancement in Semiconductor Device Technology: Modeling and Simulation" at Deen Dayal Upadhyaya College, University of Delhi on 28th Feb, 2020.
- Attended DU LEAP Program initiative of MHRD organized by Delhi University from March 8th- 21st 2020.

Research Projects (Major Grants/Research Collaboration)

- 1. **CSIR sponsored project**: Modeling and Simulation of the Gate Electrode Engineered and Dielectric Pocket steep Subthreshold Swing Device for Low Power Digital Circuit Design and Optical Applications. (In Progress)
- 2. **DRDO sponsored project:** Device Simulation for Thermal management of High power GaN HEMT. (In Progress)

Awards and Distinctions

- 1. Name listed in Top 50 Research Guides across India in 2019 by Ulektz Wall of Fame
- 2. Received IEEE EDS best Chapter of the year award-2017 (on the basis of work done in 2016
- 3. Received IEEE EDS best Chapter of the year award-2013 (on the basis of work done in 2012)
- 4. Received University Gold Medal in 1986 for being the best candidate in the M.Sc. (Electronics) examination.
- 5. **Stood first** in the order of merit in M.Tech. (Microwave Electronics) examination in 1988.
- 6. Awarded Nehru Centenary Common Wealth Fellowship (UK) for three years in 1990.

Association With Professional Bodies

- 1. Editing
- Proceedings Edited "Second National Conference on Recent Development in Electronics" (NCRDE-2017),
 University of Delhi South Campus, New Delhi, India, Feb. 17-18, 2017.

- 2. Reviewing
- IEEE Transactions on Electron Devices
- IEEE Electron Device Letters
- Microelectronics Reliability
- Applied Physics letters
- International Journal of Numerical Modeling (IJNM)
- Journal of Semiconductor Technology and Science (JSTS)
- IET-Circuit Device and Systems (CDS)
- 3. Advisory
- 4. Committees and Boards
- Member of **Board of Directors** of Tech. Next Lab. Pvt. Ltd.
- 5. Memberships
- Senior Member IEEE
- **Fellow** The Institution of Electronics and Telecommunication Engineers.
- Life Member Semiconductor Society of India.
- 6. Office Bearer
- Life Member & Secretary Society for Microelectronics and VLSI, India.
- Chairman IEEE-EDS Delhi Chapter (2009-2016) & from 2019- till date.
- President- Women In Engineering (WIE) IEEE Delhi Section Affinity Group, 2016-2018.
- Excom Member of Women In Engineering (WIE) IEEE Delhi Section Affinity Group, 2019-till date.

Other Activities

- 1. "Mini Colloquium on Nano-electronics and advanced semiconductor devices for future electronics" being jointly organized by Shaheed Rajguru College of Applied Sciences for Women and IEEE EDS Delhi Chapter on February 27, 2020 at Shaheed Rajguru College of Applied Sciences for Women, Vasundhara Enclave.
- 2. Attended **DU LEAP Program** initiative of MHRD organized by Delhi University from March 8th- 21st 2020.

Signature of Faculty Member

 You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.