



Science Foundation
Deen Dayal Upadhyaya College
(University of Delhi)
And



IEEE Electron Device Society (EDS) Delhi Chapter

Jointly Organizes

Fifth Workshop

on

Recent Trends in Semiconductor Devices and Technology

Under the Aegis of DBT Star College Scheme (Electronics)

February 22, 2019

Venue: Lecture Theatre 111, First Floor, Deen Dayal Upadhyaya College, University of Delhi

Theme of the Workshop

The main theme of the workshop is to provide a forum for undergraduate and post graduate students to interact with the technologists carrying out leading edge research and development in the area of process and device technology. The workshop is organized on the success of first, second, third and fourth national workshop held in Feb 2010, Sept 2010, January 2013 and September 2014 respectively which witnessed gathering of over 100 delegates from all over India. This time we have invited speakers from Defense labs. Of Govt of India and leading research and academic institutions, who will present new ideas about device and process physics, demonstrate applications to leading edge technologies, and show new models for devices. The aim of the workshop is to inspire young students to take up research and development as a career in the core and thrust areas of R&D as proposed by DRDO.

Technical Program Schedule

09:30 am – 10:00 am	Registration
10:00 am – 10:45 am	<i>Inaugural Address and Invited Talk</i> Recent trends in semiconductor Industry Dr. Meena Mishra , Scientist-G, Solid State Physics Laboratory (SSPL)
10:45 am – 11:30 am	Advances in AlGaIn/GaN HEMT Device Technology for Microwave Applications Dr. D. S. Rawal , Scientist-G, Solid State Physics Laboratory (SSPL)
11:30 am – 11:45 am	Tea Break
11:45 am – 12:30 am	Semiconductor Qubit Technology for Quantum Computers Dr. Mamta Khaneja , Scientist-F, Solid State Physics Laboratory (SSPL)
12:30 pm – 01:15 pm	Recent Developments in Tera Hertz and Infrared Devices Dr. Ravinder Pal , Scientist-G, Solid State Physics Laboratory (SSPL)

Organizing Committee

Dr. Manoj Saxena

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Dr. Poonam Kasturi

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Dr Meena Mishra is heading the division responsible for RF Characterization, Device modelling, MMIC and Module design of GaN HEMT based technology. She is PhD (Electronics) and has more than twenty six years of experience in the area of MMIC design and RF Characterization. She has worked on Design and development of high frequency GaAs based Digital integrated Circuits. Developed the small signal, nonlinear and noise models for high frequency devices like MESFET, HEMT and PHEMT. Developed design kits for the in-house developed devices. Worked on Design and development of low noise amplifiers with less than 1dB Noise Figure. Co-ordinated devices, design and development of GaAs and GaN based MMICs. On the basis of the research work carried out in this field, she has 40 publications in International journals and Conference proceedings. She is also Vice chairman of IEEE EDS design of GaAs PHEMT based 40GHz MMIC. Her present assignment includes RF Measurement, Development of GaN based high power amplifiers, Design and Modeling of GaAs and GaN based semiconductor Delhi chapter. She has many awards to his credit like DRDO Path Breaking Research Award, Scientist of the Year Award, Technology Group Award .

Dr. D. S. Rawal joined SSPL, Delhi in 1992 as Scientist–B and mainly worked for the development and Transfer of Technology of GaAs MMIC technology that is presently under production at GAETEC, Hyderabad. He received his M.Sc. in Physics and M.Tech. in Electronics and Communication Engineering from University of Roorkee, Roorkee, India (Now IIT Roorkee), in 1988 and 1990, respectively. He did his PhD in Experimental Plasma Physics from IIT Delhi. Presently, he is heading GaN device fabrication team in SSPL Delhi for the development of GaN HEMT based MMIC Technology for microwave power applications. He has published more than 70 research papers in various international journals and conferences. Also delivered more than 40 invited talks in various forums on GaAs/GaN device technology. He is also an active reviewer for various international journals like IEEE transactions on Semiconductor Manufacturing, IEEE Sensors, Surface Coating and Technology, Applied Surface Science, Vacuum, Journal of Vacuum Science and Technology, Journal of Physics D, Plasma Science and Technology, Semiconductor Science and Technology, RSC advances, Journal of Micromechanics and Microengineering and Indian Journal of Pure and Applied Physics. He has many awards to his credit like DRDO Path Breaking Research Award (Twice), Technology Day Award, Scientist of the Year Award, Technology Group Award, Outstanding Reviewer Award-Elsevier etc.

Dr. Mamta Khaneja did her MSc (Electronics) in 1993 from Delhi University and PhD from IIT Delhi. She is working as a Scientist in Solid State Physics Laboratory (SSPL), since 1994. Her initial work was towards the design, modelling, and simulation of SAW devices for signal processing and sensor applications. Later, she has worked in projects related to the development of Carbon Nanotube based field emitters and sensors and is also working in the project on graphene based Field Effect Transistors (FETs) for THz applications. Currently, she is also involved in research towards developing fundamental capabilities of spin quantum computing architecture in Silicon which is an area of high strategic and critical importance. She was awarded the National Science Day Award for her work on semiconductor qubit technology. She has nearly 20 research publications to her credit.

Dr. Ravinder Pal joined DRDO in 1989 after completing MSc, MTech and Ph.D. (all) from IIT Delhi. He has also served as a visiting faculty in the Department of Electronics and Computer Science at The University of Western Australia, Perth, Australia. He has published more than 60 Research Papers in reputed International Journals. He has also been awarded a patent. He has guided 5 Ph.D. in IIT Delhi, IISc Bangalore and Delhi University. Collection of his research papers have been included in a text book. Currently, he is working on the development of optoelectronic devices for defence applications.



Dr. Ravinder Pal, Scientist-G, Solid State Physics Laboratory



Audience



Mr. Ajit presenting memento to **Dr. Mamta Khaneja**, Scientist-F, Solid State Physics Laboratory (SSPL)



Dr. Poonam Kasturi presenting memento to **Dr. D. S. Rawal**, Scientist-G, Solid State Physics Laboratory (SSPL)



Ms. Neha presenting memento to **Dr. Meena Mishra**, Scientist-G, Solid State Physics Laboratory (SSPL)

S. No.	Name	College/Institute and University	Course	Year
1	Mohit	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
2	Sagar Jha	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
4	Gaurav Rauthan	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
5	Nandini Kaushik	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
6	Ankit Saini	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
7	Pankaj Kumar Yadav	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
8	Deepika Sharma	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
9	Ujjwal raghuvanshi	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
11	subham Ashish	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
13	Saloni Gupta	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
14	Shivam Kumar Maurya	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
18	Ankit Yadav	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
20	Abhishek Kumar Singh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
22	Rohit	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
24	Nawal Kishor	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
25	Kumar Keshav	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
28	Rohit Kumar	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
29	Aakansha Shukla	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
30	Rajan Kumar	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
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39	Rajat Jindal	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
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45	Yashdeep Rana	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
46	Sonam	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
48	Vishal	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
49	Sukrit	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
50	Mohan Kumar Thakur	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
51	Ashutosh Mishra	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
52	Aryan kapil	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
53	Yash	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
54	Anushka Singh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
55	Chanchal Meena	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
56	Sahil Jain	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
57	Meenakshi Kumari	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
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59	Durgesh Kumar	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
60	Sandeep Sah	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
61	Rajat	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
62	Arun Inkhiya	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
63	Asha	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
64	Deegu Pandey	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
65	Ritik	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
66	Rupesh Kumar Singh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist

67	Yash Maheshwari	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
68	Sneha	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
69	Hitesh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
70	Ekansh Gupta	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
71	Ashish Gupta	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
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73	Navneet Singh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
74	Anirudh Sharma	Deen Dayal Upadhyaya College	B.Sc. (H) Physics	Ist
75	Astha	Deen Dayal Upadhyaya College	B.Sc.(H) Physics	Ist
76	Siddhant Sen	Deen Dayal Upadhyaya College	B.Sc.(H) Physics	Ist
77	Yogesh Kumar	Deen Dayal Upadhyaya College	B.Sc.(H) Physics	Ist
78	Mayank Kumar Arya	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	Ist
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90	Apurav	Deen Dayal Upadhyaya College	B.Sc.(H) Physics	Ist
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93	Jyoti	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IInd
94	Ankit Singh	Deen Dayal Upadhyaya College	B.Sc. (H) Electronics	IIIrd
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96	Dharmesh	Deen Dayal Upadhyaya College	B.Sc.(H) Physics	Ist