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| **Dr.Parul Dawar** | mobile: 9999475939|Delhi,INDIA |
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**EDUCATION**



**Delhi Technological University,Delhi,INDIA | Nov 2011- Sept 2018**

PhD, Electronics and Communication Engineering, GPA: 9.0/10.0

**DOES,Delhi University, Delhi,INDIA | July 2005 – July 2007**

Master of Technology, Electronics and Communication Engineering. GPA: 8.9/10.0

**GPMCE,Guru Gobind Singh Indraprastha University, Delhi,INDIA | Aug 2001 – May 2005**

Bachelor of Technology, Electronics and Communication Engineering. GPA: 8.89/10.0

**WORK EXPERIENCE**



**Assistant Professor,GTBIT | July 2007 – present**

Subjects:

Microwave and RADAR Engineering

Electromagnetic Field Theory

Digital Communication

Optical Communication

Communication Systems and Circuits

Switching Theory and Logic Design

**PUBLICATIONS**



*1) Parul Dawar, N.S. Raghava, Asok De, “UWB metamaterial loaded antenna for C- band applications,”International Journal of Antenna and Propagation, HINDAWI,(SCI-E indexed), Volume 2019, Article ID 6087039, 13 pages.*

*2)Parul Dawar, N.S. Raghava, Asok De, " S-shaped metamaterial ultra-wideband and Directive patch antenna”,Radioelectronics and Communications Systems, SPRINGER (SCOPUS indexed), Vol 61, No 9 (2018)..*

*3)Parul Dawar, N.S. Raghava, Asok De, “UWB , miniaturized and directive metamaterial loaded antenna for satellite applications,” International Journal of Networked and Distributed Computing ,(ESCI indexed) , Atlantis Press, Vol. 6, Issue 1, pp 24-34, 2018.*

1. *Parul Dawar, N.S. Raghava, Asok De, “UWB and miniaturized meandered stripline fed metamaterial loaded antenna for satellite applications,” IOP conference series: Material Science and Engineering Journal, (Web of Science, CPCI-S, indexed) , Dec 2018.*

*5)Parul Dawar, N.S. Raghava, Asok De , “A study on the effect of metamaterial‟s positioning and stacking on antenna‟s parameters, “International journal of Electronics, Taylor and Francis Group (SCI Indexed), May 2017.*

*6)Parul Dawar, N.S. Raghava, Asok De , “Miniaturized UWB multi-resonance patch antenna loaded with novel modified H-shape SRR metamaterial for microspacecraft applications,” Frontiers of Information Technology and Electronic Engineering, vol. 18, no. 11, pp. 1883–1891, 2017, Springer (SCI Indexed),*

*7)Parul Dawar, N.S. Raghava, Asok De, “Proposing a 4-seg SRR metamaterial structure for improvement of performance parameters of microstrip antennas,” International Journal of Advanced Science and Technology, Vol. 97, Dec 2016.*

*8)Parul Dawar, N.S. Raghava, Asok De, “Ultra Wide Band , Multi-resonance Antenna using swastika metamaterial,” International Journal of Microwave and Optical Technology,(SCOPUS indexed),Vol. 11, No. 6,November 2016.*

*9)Parul Dawar, Asok De , N.S. Raghava, “UWB and Directive E-shaped metamaterial patch antenna,” Materials Research Innovations, (SCOPUS indexed), Taylor and Francis Group, Volume 20, Issue 3,pp. 240-246, 2016.*

*10)Parul Dawar, N.S. Raghava, Asok De, “High gain, directive and miniaturized metamaterial C-band antenna,” Cogent OA Physics, Taylor and Francis Group, (ESCI indexed) ,Vol 3: 1236510,September 2016.*

*11)Parul Dawar, N.S. Raghava, Asok De, “A novel metamaterial for miniaturization and multi-resonance in antenna,” Cogent OA Physics, Taylor and Francis Group, (ESCI indexed), Vol. 2, Issue 1, Nov.2015.*

*12)Parul Dawar, N.S. Raghava, Asok De, “Tunable and directive metamaterial-inspired antennas for „C‟ Band Applications,” International Journal of Microwave and Optical Technology,(SCOPUS indexed), Vol. 10, No. 3 May 2015,pp. 168-175.*

*13)Parul Dawar, Asok De , “ Bandwidth and gain enhancement of RPA using C shaped metamaterial at THz,” International Journal of Scientific World, Feb 2015, Vol. 3 No.1, pp. 59-68, article id: 413.*

*14)Parul Dawar, N.S. Raghava, Asok De, “FEM and Transmission line based analysis of “Closed Ring Pair‟ metamaterial,” International Journal of Signal Processing ,Image Processing and Pattern, Vol. 8, Issue 12, pp. 351-356,2015.*

*15) Parul Dawar, Asok De, “Tunability of Triangular SRR and Wire Strip (TSRR-WS) metamaterial at THz,” Advances in Optical Technologies (SCOPUS indexed), Hindawi Journal, Vol. 2014, Article ID 405301, 10 pages.*

*16)Parul Dawar, Asok De, “Effect of splits in resonance permeability of ESRR metamaterial at THz,” Procedia Materials Science Journal (SCOPUS indexed), Elsevier, Sept 2014, pp. 1936-1941.*

*17)Parul Dawar, Asok De, “Bandwidth Enhancement of RMPA Using 2-Segment Labyrinth Metamaterial at THz,” Materials Sciences and Applications (SCIRP), Vol.4, No.10 October 2013, pp. 579-588.*

1. *Parul Dawar ‟Design and simulation of rotary field ferrite phase shifter using Ansoft HFSS”, ACCTA-2010,International conference on advances in computer communication technology,IJCCT,vol 1 Issue 2,3,4:pg 111-115.*
2. *Parul Dawar,”Design and simulation of magic tee and ring hybrid coupler using Ansoft HFSS”, IJCST 2011,Vol 2 Issue 1,March 2011.ISSN no.-09768491(online) and 22294333 (print) pg 199-202*
3. *Parul Dawar,”C-V characterization of GaAs MESFET” IJECT 2011,ISSN 22307109 online, ISSN 22309543 print, Vol 2 issue 2, pg 53-54*

*21) Parul Dawar, “Analysis of branchline coupler using Sonnetlite”, IJECT 2012,ISSN 22307109 online, ISSN 22309543 print, Vol.3 Issue 1, Jan to March, 2012*

**PRESENTATIONS**



*1)Parul Dawar, N.S. Raghava, Asok De, “Broadband and Directive metamaterial antenna,” 2nd URSI Regional conference on Radio Science to be held on 16-19th November 2015, at Jawaharlal Nehru University, New Delhi.*

*2)Parul Dawar, Asok De, “Performance Enhancement of RMPA Using ESRR Metamaterial at THz,” session: THz Metamaterials and Applications, PIERS (SCOPUS indexed) 2014, pp 721-724, in Guangzhou, China, 25-28 August, 2014.*

*3)Parul Dawar, Asok De, “Bandwidth Enhancement of RMPA using ENG metamaterials at THz,” IEEE Xplore, ISBN No. 978-1-4799-1569-9 ,Page No. 11-16,International Conference on Computer Advances in Engineering and Technology (ICCCT-2013) held at MotiLal Nehru National Institute of Technology, Allahabad during 20-22 September 2013.*

*4)Parul Dawar, Asok De, “Planar Antenna Design Using Metamaterials at high frequencies: A Review,” in Fourth Elsevier proceedings of International Joint Conference on Advances in Engineering and Technology, AET 2013,pp 591-598, jointly organized by the ACEEE, AMAE and ACEE and sponsored by ISTE during Dec 13-14, 2013, in NCR, India.*

*5)Parul Dawar, Asok De , “Optimizing RMPA Using Different Orientations of Modified SRR Metamaterial At THz ,” Souvenir of 9th International Conference on Microwaves, Antenna, Propagation & Remote Sensing (ICMARS 2013),pp.78,Jodhpur,11-14th Dec 2013.*

*6)Parul Dawar, N.S. Raghava , Asok De, “UWB and miniaturized meandered stripline fed metamaterial loaded antenna for satellite applications,” Accepted to be published in ICMMRE 2017, 8-10th Dec 2017, in IOP Conference Series: Materials Science & Engineering.*

*7)Parul Dawar,‟Factors affecting planarising in back-end processing of GaAs wafer”, NCADSP 11, National Conference on advances in DSP,Chitkara COE ,paper id-003,page 4-7.*

*8)Parul Dawar,‟D.C. characterization of 0.7 micron X 150 micron GaAs MESFET”, NCEEE 10,National Conference on emerging technologies in electrical engineering NCEEE106502039, pg 198-200.*

*9)Parul Dawar,‟lithium ferrite characterization”, NCEEE 2010,National Conference on future challenges and budding intelligent techniques in electrical and electronics engineering,vol2, pg 230-235.*

*10)Parul Dawar, “MIMO in 3G Cellular System”, RAECT 2011,second National Conference on recent advances in electronics and Communication technologies,GNDEC,4-5 th March, ISBN 9789380697727,paper id-319.*

*11)Parul Dawar,”Comparative Analysis of Microstrip and Stripline using Sonnetlite”, NCETCIT 11,AICTE sponsored National Conference, RKGITW Ghaziabad,paper id 272, pg 35.*

*12)Parul Dawar,”Performance Analysis of Space-Time Block Codes in Multiple Paths”, MERI, NEW*

*DELHI*

**AWARDS AND HONORS**



3 A level certificates in National Mathematics Olympiad ,1998-2000

C.B.S.E. Scholarship in Social Science,1999

Bronze Medal in Manavsthali Maths Talent Search,1999

Certificate of participation in Britannia Heritage Quiz and Nehru Planetorium Astronomy Quiz,1998

Gold Medal in Regional (North Zone ) Essay Writing Competition,1998

GATE SCORE 2005 --90.86

Ranked in Top 20 in order of merit B.Tech of GGSIPU,2005

First Rank in order of merit in M.Tech from Delhi University,2007

Outstanding PhD Thesis Award,30th March 2019

**BOOKS AUTHORED**



1.Electromagnetic Field Theory (GGSIPU) ,KATSON Publication

Book: Electromagnetic Field Theory

Author: Parul Dawar

ISBN: 9380027531

2.Concepts in Electromagnetic Field Theory (UPTU), KATSON Publication

**RECOGNITIONS**



1.REVIEWER of various journals

Member of technical committee of ICCTD 2011 (peer reviewer), www.icctd.org

Member of technical committee of PDCTA 2014 (peer reviewer), http://airccj.org/2013/pdcta14/programcommittee.html Reviewer of COMPEL journal.

2. URSI Official member of International Union of Radio Science(URSI) commission B:Fields and Waves

3. ProgiaLearnware: Official expert for content to be delivered for the subject Optical Communication

4. Article became issue and reference for submitting in Taylor and Francis Journal

“High gain, directive and miniaturized metamaterial C-band antenna”, is in an issue of Cogent Physics, Issue 1 and is Open Access.

5. Article became the “Most read article in 2016” in Taylor and Francis Journal

“A novel metamaterial for miniaturization and multi-resonance in antenna”

6. Guest editor of special session , “Application of Metamaterials in Antennas at high frequencies including THz ,”in ICICC-2019

7. Guest editor of special session , “Application of Metamaterials in Antennas at high frequencies including THz ,”in ICICC-2020

8.Reviewer of GUCON 2019,IEEE conference

9.Committee member of ISPECE-2019,China

**SELECTED PROJECTS**



**MESFET fabrication and characterisation**

Rf sputtered Ti/Pt/Au Schottky contacts with varying titanium thickness have been made on (n)GaAs by the lift-off process under actual device processing conditions. The ideality factor of the Schottky barrier is dose to unity (∼ 1.07) with a barrier height of 0.80 ± 0.02 eV. The contacts with Ti films as thin as 100 Å remain thermally stable with annealing up to 400°C. These contacts have been next used to fabricate submicron gate length GaAs MESFETs. The MESFET's gm increases with improved gate diode ideality but is not a strong function of it. The effect of Schottky gate annealing on the MESFET's dc characteristics shows that IDSS, gm, Vp and VR(GS) remain stable with annealing upto 350°C and degrade with 400° anneal.

**Planarising techniques and study of HBTs**

Metal oxide based hetero-structures (like Pb (Zr xti 1-x) O 3 ZnO) can be used for wide variety of future sensors and electronic devices. The nano-textured ZnO hetrostructure integrated with inter-digital-transducers and microelectronic is well suitable for low-cost, robust, programmable passive micro sensors for military structure and systems such as aircraft, missiles. Lapping is a machining process in which two surfaces are rubbed together with an abrasive between them, by hand movement or using a machine. This produces microscopic conchoidal fractures as the abrasive rolls about between the two surfaces and removes material from both. Taken to a finer limit, this will produce a polished surface such as with a polishing cloth on an automobile, or a polishing cloth or polishing pitch upon glass or steel. The heterojunction bipolar transistor (HBT) is a type of bipolar junction transistor (BJT) which uses differing semiconductor materials for the emitter and base regions, creating a heterojunction.A brief literature review submitted.

**Design and simulation of Low pass filter**

This work reported design and simulation of Butte worth,Low-pass Sallen Key active filter

**Ferrite fabrication and micro wave characterization and Hands on HFSS**

This work reported the measured phase shift characteristics of C-band phase shifters constructed from lithium ferrites. The rotary field phase shifter consisted of central field rotatable half wave plate coupled at each end to fixed quarter wave plates that in turn couple to transducers to waveguide or other transmission structure. This is implemented in HFSS by first magnetizing the ferrite rod in perpendicular (to direction of propagation) direction and then in longitudinal (parallel to direction of propagation). Thereby, giving a phase shift of 180 degrees.

**Design of Planar Antennas Using Metamaterials At High Frequencies**

The main objective of PhD research work is to use metamaterial embedded in the middle of antenn substrate substrate is to ameliorate bandwidth and gain of a patch antenna. Also, due to metamaterial loading of the substrate of the antenna, miniaturization of microstrip patch antenna is obtained. Different shapes (ex: U-T, E, S etc.) and types (ex: ENG, DNG, MNG) of metamaterials are proposed and placed in the middle of the antenna’s substrate to improve the overall performance of the microstrip patch antenna.

**Advisors**:

**Scientist -D,Deepender Singh Rawal ,DRDO**

*June-July 2003*

**Advisors**:

**Scientist -E, S.K.Pandey DRDO**

*June-July 2004*

**Advisors**:

**Scientist -E, Ashok Mittal DRDO**

*June-July 2005*

**Advisors**:

**Scientist -D, N.K.Jain and S.K.Matharu, DRDO**

*Jan-June 2007*

**Advisors**:

**Prof Asok De,**

**Prof N.S.Raghava,DTU**

*Jan-June 2007*

**RELEVANT COURSES**



**(DTU)** Fundamentals of Research Methodology, Antenna Design, Metamaterials, CRLH transmission line

**(DOES)** The aim of the programme is to provide necessary theoretical background and practical experience in the fields of Microwave Devices and Circuits, Microwave Communication, Electromagnetics and Antennas, Microwave Integrated Circuit (MIC), and CAD for Microwaves.

**(GGSIPU)** Analog and Digital Communication,Switching theory and Logic design, Microprocessor and microcontrollers, network theory ,circuit theory,microwave, antenna, optical communication, analog electronics,digital system design**.**

**PATENT**

“SYSTEM AND METHOD TO PREDICT RHEUMATOID ARTHRITIS (RA)”,INDIA Patent,Application no. 202041023528,Granted on 12/06/2020

**CONTRIBUTIONS/INNOVATIONS**



1.OER Instructor at Progia Learnware for the course of Optical Comunication at UG level in 2013.

2.Co-ordinator of syllabus revision committee for EEE branch in GGSIPU in 2013.

3.manuscript titled , “A novel metamaterial for miniaturization and multi-resonance in antenna", became the most read article for the month of September 2016 in Cogent Physics Journal, Taylor and Francis (ESCI indexed).

4.Organized the following workshops in the college:

a) STC on “Virtual Instrumentation” through ICT in association with NITTTR, Chandigarh, GTBIT,28th april -2nd May,2014

b)STC on “Matlab and its Applications” through ICT in association with NITTTR, Chandigarh,GTBIT,15th -19th Sept 2014

c)STC on “VLSI Design” through ICT in association with NITTTR, Chandigarh, GTBIT,5th -9th Oct 2015

5. Member of the core committee in the following :

a)Indo-Japanese Workshop in 23rd -25th Sept,2013: handled the stage committee

b)Two day seminar on "Embedded Telecommunications & Signal Processing",7-8th March 2011,GTBIT,sponsored by CSIR: handled the stage committee

c)One day Workshop on “VLSI Trends and EDA Tools” on 15/02/2011 at Guru Tegh Bahadur Institute of Technology , with Cranes software: handled the stage committee

d)One-day workshop on “Virtual Instrumentation” on Friday, 16 April 2010,organized by Guru Tegh Bahadur Institute of Technology in association with Cranes Software Limited : handled the stage committee

e)One-day seminar on “Current Developments in Embedded Systems” on Saturday, 16,2010 at Guru Tegh Bahadur Institute of Technology: handled the stage committee

**TECHNICAL SKILLS**



Programmed in C/C++,MATLAB,VHDL, ORCAD,ADS, Microwave Office, PUFF, TRANSLIN, AUTOCAD, SONNETlite, Ansoft HFSS,LabView,CST,COMSOL