

## Dr. NAGENDRA PRASAD PATHAK

### CONTACT DETAILS:

Designation: Professor  
Office: Department of Electronics & Communication Engineering,  
IIT Roorkee -247667, Uttarakhand, India  
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Uttarakhand, India  
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**RESEARCH AREA: RF *through* THz INTEGRATED CIRCUITS, SYSTEMS & SENSORS**

### ACADEMIC QUALIFICATIONS:

Degree	University /Institute	Discipline	Year of Passing/Thesis Defended	Division
Ph.D.	IIT Delhi	Millimeter Wave Integrated Circuits	2005	NA
M. Tech.	University of Allahabad	Electronics Engineering	1998	First
B. Tech.	University of Allahabad	Electronics & Telecommunication	1996	First
B. Sc.	University of Allahabad	Science	1993	First
Intermediate	GIC Allahabad	Science (PCM)	1990	First
High School	GIC Allahabad	Science	1988	First (Honours)

### EMPLOYMENT DETAILS:

Position Held	Name of Employer	Duration
Professor	Indian Institute of Technology Roorkee	December 22, 2018- Till date
Associate Professor	Indian Institute of Technology Roorkee	October 23, 2012 – December 21, 2018
Assistant Professor	Indian Institute of Technology Roorkee	October 5, 2006 – October 22, 2012

Assistant Professor	PDPM - Indian Institute of Information Technology - Design and Manufacturing, Jabalpur	July 2006 - September 2006
Research Fellow	NRD Super Broadband Research Centre, Tohoku Institute of Technology, Sendai, Japan	December 1, 2005- Jun 30, 2006
Research Fellow	Institution of Electronics & Telecommunication Engineers (IETE), New Delhi fellowship tenable at IIT Delhi	April 1, 2004 – October 31, 2005
Junior Research Fellow	Instruments Research & Development Establishments (IRDE) Dehradun, DRDO	December 1999 – December 2000

### **HONOURS/FELLOWSHIPS/ AWARDS:**

- # Member, Technical Committee on THz technology and Applications (TC-MTT-21), IEEE Microwave Theory and Techniques Society, USA, 2019
- # Research Advisor, Nan Yang Academy of Sciences Singapore (NASS) (2018)
- # Associate Editor, IEEE Access (2018)
- # Associate Editor, Advanced Electromagnetics (2018)
- # Invited speaker, 9<sup>th</sup> National Frontiers of Engineering Symposium for Young Indian Engineers, Organized by Indian National Academy of Engineering (INAE) & IIT Jodhpur, 2015
- # Co-author (as PhD Supervisor) of 'Best Student Paper' at IEEE MTT-S IMaRC 2013
- # DST Fast Track Research Grant for Young Scientists, 2007
- # Post Doctoral Research Fellowship: Tohoku Institute of Technology, Sendai, Japan (2005)
- # Research Fellowship: Institution of Electronics & Communication Engineers (IETE), India (2004)
- # Research Fellowship: Indian Institute of Technology, New Delhi, India (2000)
- # Junior Research Fellowship: DRDO, Ministry of Defense, Govt. of India (1999)
- # MHRD Fellowship: University of Allahabad (1998)
- # National Scholarship: Govt. of Education, Uttar Pradesh (1988)

### **IEEE SOCIETY ACTIVITIES:**

- # Treasurer, IEEE Roorkee Sub-section – (2016- 2017)
- # Faculty Advisor, IEEE MTT-S IIT Roorkee Student Branch Chapter (2012- Till Date)
- # Member, Executive Committee, IEEE Uttar Pradesh Section (2015-16)
- # Member, conference quality control committee, IEEE U P Section (2015-16)
- # Convener, Student activity committee, IEEE U P Section (2015-16)
- # Vice – Chairman, IEEE Microwave Theory & Techniques Society Uttar Pradesh Chapter (2013 – 2015), 2019-Till date

### **REVIEWER:**

IEEE Transactions on Microwave Theory & Techniques, IEEE Microwave & Wireless Component Letters, IEEE Antennas and Wireless Propagation Letters, IEEE Photonics Technology Letters, IEEE Sensor Journal, , IEEE Transactions

on Wireless Communications, IEEE Transactions on Geoscience & Remote Sensing, IEEE Transactions on Instrumentation and Measurements, Journal of Infrared, Millimeter, and Terahertz Waves, International Journal of RF & Microwave Computer Aided Engineering, IETE Journal of Research, Electronic Letters

#### **CONFERENCE ATTENDED/PARTICIPATED (MTT SPONSORED):**

- IEEE IMS 2019, 2018, APMC - 2016, 2004, URSIGA- 2011, 2005, IMArc-2013, 2014, 2015, 2016, 2017, 2019, AEMC -2015, APACE-2014, IEEE TENCON-2016

#### **MEMBER OF CONFERENCE EXECUTIVE/ADVISORY/STEERING COMMITTEES:**

- TPC Chair, IEEE IMArc 2020 (Now in 2021)
- 3<sup>rd</sup> International conference on computing, communication and signal processing (ICCASP-2018)- member advisory committee and TPC Chair (RF & Microwave Engineering)
- IEEE 1<sup>st</sup> International Conference on "Power Energy, Environment and Intelligent Control", 2018
- IEEE INDICON 2017- Publication Chair
- IEEE International Conference on Circuits and Systems (ICCS 2017) - National advisory committee member
- IEEE VDAT 2017 – Fellowship Chair
- APMC 2016- Publicity Chair
- IEEE ICIIS 2016
- IEEE U P Section conference on Electrical, Computer and Electronics (IEEE UPCON-2015)- member Advisory Committee
- Member, Organizing Committee, Brain storming session on Curricula Design for Different levels of Technical Education Mechatronics, IIT Roorkee (Mechanical Engg.) Sept 18, 2010
- Member, Technical program Committee, National Seminar on "Radar Remote Sensing and its Applications" September 25-26, 2009, Department of E & CE, IITR

#### **CONFERENCE SESSION CHAIR:**

- Technical session chair: International Conference on Advances in Functional Materials, 2017. University of California, Los Angeles, USA
- Technical session chair: APMC-2016, New Delhi
- Technical session chair: 11<sup>th</sup> ICIIS 2016, IIT Roorkee
- Technical session chair: "Research & Sustainable Business", IIT Roorkee, March 2014
- Technical session chair: NCC 2013, IIT Delhi
- Technical session chair: International conference on Nanomaterials and Devices: Processing and Applications (NADPA 2008) held at IIT Roorkee (December 11-13, 2008)

#### **WORKSHOP/SEMINAR ORGANIZED:**

1. Organized two day workshop on "Software defined radio using LabView", **February 4-5, 2014, Sponsored by IEEE MTT17 SBC and NI, India**
2. Organized half day seminar on "The RF Measurement System and Device Characterization", **May 20, 2014, Sponsored by IIT-Roorkee IEEE MTT17 SBC**

3. Organized jointly with IEEE MTT-S IIT Kanpur SBC, a one day IEEE MTT-S workshop on “RF and Microwaves for Cellular and Industrial Applications”, **December 13, 2014, New Delhi**
4. Organized half day workshop on “Recent developments in CMOS RFICs”, **November 7, 2014**
5. Organized half day workshop on “Substrate integrated waveguides and Antennas”, **April 13, 2015**
6. IEEE MTT-S Mini Colloquium on Recent Advances in Microwave Integrated Circuits Technology, **April 8, 2016**
7. Organized half day workshop on “Application of RF Techniques in Producing Plasmas”, **November 2, 2016**

#### **COURSES DEVELOPED FOR UG/PG AT IIT ROORKEE:**

- # RF & Mixed Signal Circuits – New B Tech Curriculum (Effective from 2013)
- # Communication Systems & Techniques -EC312
- # Optical Communication -EC517
- # Microwave/Millimeter Wave Integrated Circuits -EC554

#### **COURSES TAUGHT AT IIT ROORKEE:**

- # RF/Microwave Design for Wireless Communication (EC-631)
- # Microwave/Millimeter Wave Circuits (EC-537, 554)
- # Advanced Electromagnetic Field Theory (EC-532)
- # Microwave Engineering (EC-531)
- # Microwave Techniques (EC-332)
- # Communication Systems & Techniques (EC-312)
- # Signals & Systems (EC-202)
- # Linear Circuits (EC-201)
- # Fundamentals of Electronics (EC-102)
- # RF & Mixed Signal Circuits (EC-342)

#### **ADMINISTRATIVE RESPONSIBILITIES:**

- Chairman, Departmental Research Committee (DRC) 2019-2021
- Warden – Wellness (Govind Bhawan, Jawahar Bhawan and Rajiv Bhawan) – August 2018 – June 2019
- Chairman, Departmental Research Committee (DRC) – November 2015-2017
- Member Department Administrative Committee (DAC) – 2016 - 18
- Member, Institute Research Committee (IRC) - 2016-18
- Co-coordinator, IIT Roorkee Cultural Festival: THOMSO-2015
- Member DRC- 2013-15, 2009-10
- Member Academic Review Committee (ARC) - ECE Department- 2013
- In-charge Wireless Communication Laboratory & RFIC Research Laboratory (2007- Till Date)
- Faculty Advisor (ECE), Cognizance - 2012
- In-charge Examinations (ECE Department) - 2011-2013
- Member, Department Purchase Committee- 2015-17, 2011-2012
- Member, Department Academic Program Committee (DAPC) – 2017-19, 2011-2013, 2007-09

- Member Co-ordination committee for manpower development in VLSI - Since 2009 – Till Date
- Member Institute Library Advisory Committee (from Centre of Nanotechnology) - 2008-2010

#### **CONTINUING EDUCATION PROGRAM/ GIAN COURSE:**

- Jointly (with Dr Karun Rawat of E & CE) organized 5-day training course on “*RF Power Amplifier Design and Integration for 4G/5G Applications*” under MHRD Scheme on Global Initiative on Academic Network (GIAN) from **December 17, 2017 to December 21, 2017** at IIT Roorkee.
- Responsible for conducting following short term training courses organized for the faculty of TEQIP colleges of Uttarakhand at the Centre for Continuing Education, IIT Roorkee-
  - Short term course on 'Digital Signal Processing and MATLAB', **October 27-31, 2013**
  - Short term course on 'Soft Computing in Image Processing', **November 26-30, 2013**
  - Short term course on 'Advances in Computer Networks', **December 2-6, 2013**
  - Short term course on 'Mobile & Distributed Computing Systems & Models', **January 6-10, 2014**
  - Short term course on 'VLSI Design & Embedded Systems', **January 13-17, 2014**

#### **INVITED TALKS:**

- “Design and development of RF through THz integrated circuits for 5G and Beyond”, DEAL, DRDO Dehradun, May 24, 2018
- “Multiband & Multifunctional RF Integrated Circuits & Systems”, One week workshop on Antenna design and signal processing techniques for 5G networks and IoT (ADSPNIT-2017), jointly organized by IEEE SBC (MTT-S, ComSoc, BTS and Signal processing society) and ECE department, MNNIT Allahabad, Feb. 27-march 4, 2017
- “Multiband & Multifunctional RF Integrated Circuits & Systems”, 9<sup>th</sup> National Frontiers of Engineering Symposium for Young Indian Engineers, June 2015, Jodhpur
- “Design Issues of On-Chip Passive RFIC’s”, May 2015, IEEE Electron Devices & Systems Workshop on MEMS, IIT Roorkee
- “NRD Guide Based Circuits & Systems”, April 2015, National Conference on ETEC-2015, Quantum Global Campus, Roorkee
- “RF Integrated Circuit Design”, October 2014, IEEE CAS Workshop, IIT Roorkee
- “RF Integrated Circuits using RF MEMS for Wireless Applications”, September 2014, QIP Workshop, IIT Kanpur
- “Fundamentals of RF & Microwave Wireless System Design”, April 2014, SIET, Allahabad
- "Millimeter wave Integrated Circuits & Systems", November 2013, Rajasthan Technical University, Kota, Rajasthan
- "Millimeter wave Integrated Circuits & Systems", July 2013, NIT Trichy, Tamilnadu

- "NRD Guide based Integrated Circuits & Systems", May 2013, SLIET, Longowal, Punjab
- "Non-Radiative Dielectric Guide Based Circuits & Systems", QEP, DRDO, DEAL Dehradun, October 9, 2012
- "Planar Transmission Lines for Microwave/Millimeter Wave Integrated Circuits", CEP Course on "Microwave Communication Systems and Technologies for DATA Links", DRDO, DEAL, Dehradun, January 19, 2011
- "Fundamentals of Microwave Oscillator Design", " CEP Course on "Microwave Communication Systems and Technologies for DATA Links", DRDO, DEAL, Dehradun, January 19, 2011
- "Integrated Circuits for RFID, QIP course on RFID", IIT Roorkee, March 2011
- "Fundamentals of RF/Microwave System Design", CEP on "Wireless Communication", DRDO, DEAL, Dehradun, June 10, 2011
- "Technology for Low Cost and Low Loss Millimeter Wave Integrated Circuits", National Conference on Smart Electronic & Engineering Materials 2010, Bhatinda, Punjab, India, March 2010
- "RFIC's for SDR Applications", DEAL (DRDO), Dehradun, January 2008
- "Fundamentals of Microwave Circuits", QIP Centre, IIT Roorkee, April 2008
- "Wireless Communication Systems", QIP Centre, IIT Roorkee, April 2008
- "Introduction to Satellite Communications", QIP Centre, IIT Roorkee, April 2008
- "Radio Frequency Integrated Circuit Design For Wireless Applications", National Workshop under TEQIP On "Trends in Microwave Engineering & its Applications", Department of Electronics and Communication engineering Yeshwantrao Chahvan College of Engineering, Nagpur (M.S.), February 26 - 27, 2007
- "Non Radiative Dielectric Guides & Circuits", Seminar at EE Department, IIT Kanpur, sponsored by IEEE UP Section, August 2005

## SPONSORED R & D PROJECTS HANDLED (AS PI or Co-PI):

Title	Sponsoring Agency	Amount	PI or Co-PI	Start Date	End Date	Co-PI (if any)
Green Technology for detection of leakage, heavy metals and prevention of chokings in pipe networks and its demonstration in Himalayan setups	NMHS	99.99120 Lakh	Co-PI	30-7-2020	29-7-2023	Prof S K Mishra, WRDM (PI)
Silent Heat in Buffalo: Detection by Electronic Nose and Colorimetric Sensor	ITRA-Ag & Food Initiative	437.69 Lakh	Co-PI (LIN-1)	Approved (November 2015) but couldn't started due to lack of fund		Dr Dheer Singh (ICAR-NDRI Karnal- PI), Prof. Partha Roy and Dr D Sircar (Bio-Tech, IIT R) in LIN-1. Other Institutes are IIT BHU, ICAR-CIRB, Anna University-BIT and Bharathidasan University
Wide Bandwidth Transceiver Test System	SMILE Scheme of MHRD, Govt. of India	208.73 Lakh	Co-PI	August 29, 2017	March 2018	Dr Rajesh Kumar, Dr Vipul Rastogi, Dr M Bag, Dr S Roy, Prof M V Kartikeyan
Research and development of new optical fibers for applications in	DST Govt. of India	35 Lakh	Co-PI	Nov.2016	Oct. 2019	Dr Vipul Rastogi, Dr Rajesh Kumar

modern laser systems						
SMDP- Chip to System Design: Affordable Remote Detection of Human Cardiopulmonary Motion,	MEITY, Govt. of India	120 Lakh	Co - PI	2014	2019	Dr S Dasgupta, Dr A Bulusu, Dr K Rawat, Dr B P Das, Dr B K Kaushik
FIST Grant	DST Govt. of India	380 Lakh	Co-PI	2015	2018	Prof D Singh, Prof M V Kartikeyan, Dr S Manhas
Development of an Electronic Nose for the optimum harvesting time and fruit quality in apple and papaya	NASF, ICAR, Govt. of India	104.1076 Lakh	Co-PI	June 2017	June 2020	Dr D Sircar, Prof Partha Roy (BIO Tech-IIT Roorkee) Dr J I Mir (CTTH Srinagar J & K)
Detection of spoiled coconut at pre-processing stage by portable wireless electronic sensor	Coconut Development Board, Ministry of Agriculture, Govt. of India	54 lakh	Co-PI	June 2017	May 2020	Dr D Sircar, Prof Partha Roy
Contactless Vital Sign Monitoring System	EMR & IPR Division, DRDO, Govt. of India	34 Lakh	PI	Jan. 2015	Jan. 2018	NA
Concurrent Multiband Radio Frequency Integrated Circuits for Multifunctional	HRDG, CSIR, Govt. of India	18.5 Lakh	PI	June 2013	June 2016	NA



Communication Systems						
Development of Non-Radiative on-Radiative Dielectric (NRD) Guide based Low Cost and Low Loss Millimeter Wave Integrated Circuits for Broadband Wireless Access(BWA) Systems	SERC, DST, Govt. of India	39.4 Lakh	PI	July 2010	March 2014	Dr Vipul Rastogi
Design of NRD Guide Based Millimeter wave Integrated Circuits for Broadband Communications Network	SERC, DST, Govt. of India	18.5 Lakh	PI	August 2007	March 2011	NA
Design and Development of Microwave Integrated Circuits for Wireless Applications in ISM Band	MHRD-IIT Roorkee (FIG Grant)	1.0 Lakh	PI	April 2007	March 2008	NA

#### DETAILS OF SPONSORED CONSULTANCY RESEARCH PROJECTS:

S/N	Title	Sponsoring Agency	Amount	PI or Co-PI	Start date	End date	Co-PI (if any)
1.	Gurugram Infrastructure Development Project- IIT Roorkee	GMDA	-	PI (for Digital Infrastructure)	Under Consideration from May 2018		Dr Karun Rawat, Dr Vipul Rastogi and Dr Rajesh Kumar
2.	Validation of Technology for Road Safety under Project - Roads that Honk	HPCL	14.16 Lakh	PI	Under Consideration from August 2017 (Equipment of cost Rs 8.0 Lakh received,		Dr Karun Rawat (ECE), Dr Indrajit

					still waiting for fund)	Ghosh (Civil)	
3.	Design & Simulation of Tunable Band Pass Filter for Software Defined Radio (SDR)	DEAL, DRDO Dehradun, Govt. of India	9.5 Lakh	PI	October 2009	March 2011	Prof R Nath
4.	Course material for "Engineering Electromagnetics" under MHRD project entitled <i>Developing Suitable Pedagogical method for various classes, intellectual calibers and research in e-learning</i>	MHRD	-	Co-PI	2013	2016	Prof D Singh

### PATENT: (01)

Patent Number	Date of Patent	Inventors	Assignee	Title of Patent
US 7423497	Sep. 9, 2008	<b>Nagendra Prasad Pathak</b> , Shiban Kishen Koul & Ananjan Basu	IIT Delhi	Device for Coupling Suspended Stripline and NRD Guides

### TECHNOLOGY DEVELOPED: 02

1. Technology for wireless monitoring of human heart beats and respiration rate  
**Broad Applications:** *Defense, Home health care, Disaster management and rescue operations*
2. Technology for wireless monitoring of pressure  
**Broad Applications:** *Medical, Industrial and Veterinary sciences*

### BOOK:

1. Brijesh Iyer and **Nagendra Prasad Pathak**, "Multiband Non-Invasive Microwave Sensor: Analysis & Design", © 2018 CRC Press Taylor & Francis Group, 6000

broken Sound Parkway NW, Suite 300, Boca Raton, FL, ISBN -13: 978-1-138-30098-9 (Hardback)

2. Brijesh Iyer, S L Nalbalwar and **Nagendra Prasad Pathak** (*Editors*), "Advances in Intelligent Systems and Computing – Volume 810", Computing, Communication and Signal Processing – Proceedings of ICCASP 2018, ISBN 978-981-13-1513-8 (eBook) © Springer Nature Singapore Pte Ltd. 2019

#### BOOK CHAPTERS:

1. N Joshi and **N P Pathak**, "Graphene plasmonics based THz integrated circuits," *Reviews in Plasmonics 2017*, (Book: edited by Professor Chris D. Geddes, University of Maryland, USA), pp. 17-53, **Springer Nature Switzerland AG 2019**
2. N Joshi and **N P Pathak**, "Modelling of Graphene plasmonic THz devices," *Nanoscale Devices: Physics, Modelling and Their Application*, (Book: edited by Dr Brijesh Kumar Kaushik) CRC press, **2018 (in press)**
3. R K Jaiswal, N Pandit and **N P Pathak**, "Plasmonic Metamaterial Based RF-THz Integrated Circuits: Design and Analysis", *Nanoelectronics: Devices, Circuits and Systems*, (Book: edited by Dr Brijesh Kumar Kaushik & George Mishra), pp. 1-36, Elsevier, **2018 (in press)**
4. Shivesh Tripathi, **N P Pathak** and M Parida, "Concurrent Dual-Band Double-Layer High Gain Planar Antenna for WAICs / ITS Application", *Computing, Communications and Signal Processing (Springer) 2018 (in press)*
5. Gaurav Mittal, **Nagendra Prasad Pathak**, "Realization of Band pass Filter based on Spoof Surface Plasmon Polariton technique at Microwave Frequency," *Computing, Communications and Signal Processing (Springer) 2018 (in press)*
6. Arun Kumar Varshney and **N P Pathak**, "Design of graphene based THz antennas", *Computing, Communications and Signal Processing (Springer) 2018 (in press)*
7. R K Jaiswal, N Pandit, **N P Pathak**, "Design of spoof surface plasmon polaritons based transmission line at terahertz frequency", *Computing, Communications and Signal Processing (Springer) 2018 (in press)*
8. N Pandit, R K Jaiswal, **N P Pathak**, "Multi-band multi-mode filter for wireless applications", *Computing, Communications and Signal Processing (Springer) 2018 (in press)*

#### Ph. D. THESIS SUPERVISED:

S/N	Title	Year Awarded	Name of Scholar	Co- Supervisor (If any)
1.	Switching and Tuning Properties of Ferroelectric Cesium Nitrate Polymer Composite Films	2010	Arvind Nautiyal	Prof R Nath (Department of Physics, IIT Roorkee)

2.	Radar Remote Sensing for Soil Characterization	2011	Rishi Prakash	Prof D Singh (Department of E & CE, IIT Roorkee)
3.	Fabrication and Characterization of Multiferroic BiFeO <sub>3</sub> Thin Films and Hetrostructures	2013	Annapureddy Venkateswarulu	Prof R Nath (Department of Physics, IIT Roorkee)
4.	Multiband RF Systems for Contactless Detection of Human Respiration Rate and Heart Beats	2015	Brijesh R Iyer	Prof. D Ghosh (Department of E & CE, IIT Roorkee)
5.	Multiband Photonic Integrated Circuits using Plasmonic MIM Waveguides	2016	K Thirupathaiiah	Dr Vipul Rastogi (Department of Physics, IIT Roorkee)
6.	Investigations on Concurrent Multiband RF Circuits for Wireless Applications	2018	Snehalatha L	Dr S Manhas (Department of E & CE, IIT Roorkee)
7.	Reconfigurable Multiband and Multifunctional Radio-Frequency Integrated Circuits	2018	Amarjit Kumar	NA
8.	Graphene Based Plasmonic Integrated Circuits for THz Applications	2019	Neetu Joshi	NA
9.	Design, Analysis and Characterization of Tunable Band Pass Filters for 5G and Beyond	2019	Gaurav Mittal	NA
10.	Design, Analysis and Characterization of Basic Building Blocks of	2019	Shivesh Tripathi	Prof. M Parida (Department of Civil Engineering, IIT Roorkee)

	Software Defined Radio Based Intelligent Transport Systems for 5G and Beyond			
11.	Multifunctional RF Integrated Circuits & Systems	On-going (Since January 2014)	Tarun Kumar Verma	NA
12.	RF to THz Integrated Circuits using Spoof Plasmonics	On-going (Since July 2015)	Rahul Jaiswal	NA
13.	Tunable RF Integrated Circuits for Non-invasive Sensing Applications	On-going (Since January 2016)	Nidhi Pandit	NA
14.	RF through THz Integrated Circuits	Ongoing (Since January 2018)	Arun Kumar Varshney	Dr D Sircar (Biotechnology)
15.	Voltage Tunable Multiferroic RF Integrated Circuits	(Since January 2018)	Parvesh Chander	Dr Vivek Mallick (Physics)
16.	Dielectric Integrated Guide Based THz Circuits	Since July 2018)	Arpit Kumar Baranwal	NA
17.	Millimeter wave/THz Integrated Circuits	Since, January 2019	Deekhsa Pandey	NA
18.	Microwave/Millimeter wave Integrated Circuits	Since, July 2019	Govind Kumar Mishra	NA
19.	THz Integrated circuits	Since, January 2020	Gunjan Jha	NA

#### **M. TECH. THESIS SUPERVISED:**

S/N	Title	Year Awarded	Name of Scholar (Publication, if any)	Co-Supervisor (If any)
1.	Non Radiative Dielectric (NRD) Guide Based Transitions	2019	Lalit Kumar Saini	NA
2.	Design and Realisation of Front-End Circuits at 47 GHz Using Additive Printing Technology	2019	Budhaditya Bhowmick	NA
3.	Design and development of high gain and narrow beam width antenna for 5G applications	2018	Rahul Garg (IEEE InCAP 2018)	NA
4.	Self oscillating mixers for miniaturized RF transceiver	2018	Ajay Sudershan Jummid	NA
5.	Development of IoT based intelligent monitoring of traffic and car parking for smart cities	2018	Gurjar Kishan Kumar Dharmvir	NA
6.	Design, analysis and characterization of bandpass filters for 5.15 to 5.35 GHz frequency for WLAN applications	2018	Ashish Meena	NA
7.	Design, analysis and characterization of Wilkinson power divider	2018	Gurkirat Singh	NA
8.	Spoof surface Plasmon and circuit model for extraordinary transmission through a asymmetric periodic sub-wavelength array	2017	Shivam Bhagat	NA
9.	Extraordinary transmission through periodic array of sub-wavelength symmetric stepped slits	2017	Soumil Jain	NA
10.	Triple band band pass filter in spoof surface Plasmon polaritons technology	2017	Lalit Kumar	NA
11.	Design, analysis and characterization of HBT based active mixer for WLAN applications	2017	Priya Panwar (IEEE iAIM 2017)	NA
12.	Design, analysis and characterization of dual	2017	Dalam Maharshi (IEEE iAIM 2017)	NA

	band planar antenna for WLAN applications			
13.	Mixers using HEMT for microwave applications	2017	Dharmendra Kumar Singh	Prof R Nath (Department of Physics)
14.	Coupling structure for suspended strip line and NRD guide for millimeter wave applications	2017	Sidhant Sahu	NA
15.	High Accuracy Motion Sensor for Structural health Monitoring	2016	Meenal	NA
16.	Design and Analysis of Wide Band Phase Shifter	2016	Arun Kumar Varshney (IEEE ICIS 2016)	NA
17.	Design, Analysis and Implementation of Low Noise Amplifier for Ku-band Applications	2016	Shiv Shankar Pareek	NA
18.	Design and Analysis of Filtenna for Ku-band Applications	2016	Gaurav Maithani	NA
19.	Design of Multiband Band Pass Filters Using Internally Coupled Stepped Impedance Resonators	2015	Prahlad Kumar (MOTL 2016, ICMEMSS 2014)	NA
20.	Plasmonic Waveguide Structures for Future Nanoscale Photonic Integrated Circuits	2015	Akanksha Agarwal (3 <sup>rd</sup> Int. Conf. on Nanotechnology..2016)	NA
21.	Optical Antennas	2015	Rohitashv Kumar Bansal (3 <sup>rd</sup> Int. Conf. on Nanotechnology..2016)	NA
22.	Design, Analysis and Characterization of GaN Based Power Amplifier	2015	N G Viswas	Dr Karun Rawat (E & CE)
23.	Filter Design Using Coupling Matrix Synthesis Techniques	2015	Avadhesh Kumar	NA
24.	Microwave Oscillator	2015	Lawish Deshmukh	NA
25.	Concurrent Dualband Power Amplifier	2014	Anchit Jain	NA
26.	Low Noise Amplifier	2014	Arpit Kumar	NA
27.	Concurrent Dual Frequency oscillator for Multifunctional Communication System	2013	Anirudh Kumar (IEEE IMaRC 2013)	NA
28.	Design of Doherty Power Amplifier	2013	Nupur Thakker	NA

29.	Design and Development of Dual Band Antenna for the Contactless Detection of Heart Beats and Respiration Rate	2013	Mohit Garg (IEEE ICT 2013)	NA
30.	Liquid Level Sensor using RF	2013	Sofi Sainika	NA
31.	Design of Concurrent Dual Band QPSK Modulator for 2.4/5.2GHz Frequency Bands	2012	Sonali Nandanwar	NA
32.	Design and Development of Active Comb Line Filter	2012	Rajesh Chtrapu	NA
33.	2.4/2.5 GHz Dual Band Reflection Type Phase Shifter	2012	Amarjit Kumar (Microwaves-2012)	Prof R Nath (Department of Physics)
34.	Design and Implementation of Concurrent Dual band (2.4/5.2 GHz) Wireless Receiver	2012	Yogesh Kumar Gupta	Prof R Nath (Department of Physics)
35.	NRD Guide based Hybrid Integrated QPSK Modulator	2011	Amarnath Yadav (NCC 2013)	NA
36.	Dielectric Integrated Guides for Millimeter Wave and Terahertz Frequencies	2011	Faiz Ahmed Siddiqui	NA
37.	Design, Analysis and Development of HMIC Based 2.4/5.2 GHz Dual Band Transceiver	2011	Zubair Akhter (ISED 2011, JOLPE 2012)	NA
38.	Tunable RF and Microwave Oscillator for Wireless Applications	2011	Deepak	Prof R Nath (Department of Physics)
39.	CAD Assisted Development of Dual Band Oscillator And Its Integration With Radiating Elements	2010	Ravinder Yadav (URSIGA- 2011)	NA
40.	Design and Development of Concurrent Dual Band Power Amplifier for Wireless Applications	2010	Piyush Gupta	NA
41.	Development of Tunable Comblne Filter for Software defined Radio (SDR) Applications	2010	M V V N S Sandeep	NA
42.	Microwave Absorption Characteristics of Nano composite Silicon Carbide-	2010	Jitendra Pal	Prof. D Singh (E & CE)



	Aluminum Oxide (SiC-Al <sub>2</sub> O <sub>3</sub> ) Powder			
43.	Non-Radiative Dielectric (NRD) Guide Based Integrated Circuits	2009	Prashant Inbavaluthi (ICMARS 2009)	NA
44.	Design and Development of Dual Band Radio Frequency Integrated Circuits	2009	Harika Sreedhara	NA
45.	Performance Evaluation of Multi-Format and Multi-Wavelength ROF	2009	Anoop Makwana	NA
46.	Design, Analysis and Implementation of Active Mixer for 5 GHz Wireless Applications	2008	Naveen Kumar K.	NA
47.	Controlled Girth, Structured LDPC Codes	2008	Vinay Bhardwaj (CMC 2009)	(Late) Prof Arun Kumar (E & CE)

#### RESEARCH PUBLICATIONS IN JOURNALS:

1. R K Jaiswal (PhD Student), N Pandit (PhD Student), N P Pathak, "Amplification of Propagating Spoof Surface Plasmon Polaritons in Ring Resonator Based Filtering Structure", (Accepted) IEEE Transactions on Plasma Science, August 2020 (IEEE) Q1
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12. Shivesh Tripathi (**PhD Student**), **N P Pathak** and M Parida (**CO- Supervisor**), "A Compact Reconfigurable Multimode Resonator Based Multiband Bandpass Filter for ITS Applications" *Defence Science Journal*, (**Accepted**), August **2018 Q3**
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14. Gaurav Mittal (**PhD Student**), **Nagendra Prasad Pathak**, "Design, Analysis and characterization of Spoof Surface Plasmon Polaritons (SSPPs) Based Wideband Bandpass Filter at Microwave Frequency", *Defence Science Journal*, Vol. 68, No. 3, pp 300-306, May **2018 Q3**
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