Publication Details

Dr. Ashish Kumar Sharma
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Project Completed

Funding Agency - UGC Start-Up grant
Project Title "Modeling, Design and Analysis of Semiconductor switch (Pin diode) based Reconfigurable Antenna"
Amount- 6 Lakhs, Role- PI, Duration- Jul 2021 to June 2024

Publication in Referred Journal

1. **Ashish K Sharma**. "Liquid Crystal Materials for Electronically Reconfigurable Antennas: Overview Towards 5 G Applications." Journal of Molecular and Engineering Materials (2024). (ESCI) **https://doi.org/10.1142/S2251237324400124**

2. Das, Punyatoya, T. Jaison Jose, **Ashish K Sharma**, D. S. Ramakrishna, and P. Lakshmi Praveen. "Ultraviolet Response Data of Liquid Crystals for Bioprocess Monitoring: A Methodical Exploration." Journal of Molecular Structure (2024): 137805. **Accepted** (SCI/SCIE/Scopus) **https://doi.org/10.1016/j.molstruc.2024.137805**

3. B. Usharani, D. Mahaptra**, Ashish K. Sharma,** "A CPW-Fed Frequency Reconfigurable Quasi-Yagi Antenna for Satellite and Millimeter-wave Applications" Journal of VDI-Z Integrierte Produktion, Vol.10 Issue No. 12, pp. 134-139, 2023. (**Scopus indexed**). [ISSN **:0042-1766**]. **DOI: 10.37897.VZIPJ.2023.V10I12.23.40709**

4. J. P. Sethi, **Ashish K. Sharma,** "An Investigation of CPW-Fed Dual Rectangular Slot (DRS) Microstrip Patch For Wlan And 5G-NR Applications" Journal of Tianjin University Science and Technology, Vol.55 Issue No. 12, pp. 1009-1014, 2022. (**Scopus indexed**). [ISSN **0493-2137**]. **DOI**:10.17605/OSF.IO/RNGHT

5. M. K. Bonthu, **Ashish K. Sharma**, "Electrically Reconfigurable Microstrip patch Antennas for Space-based Applications: - A Review" ***Sensor Letters***, American Scientific Publishers, Vol. 18, No. 7, 515–526, 2020 (**Scopus indexed**). [ISSN **1546-1971**]
DOI: https://doi.org/10.1166/sl.2020.4254.

6. B. R. Swain, **Ashish. k. Sharma**, "An Investigation of Dual-band Dual-square Ring (DSR) BasedMicrostrip Antenna for WiFi/WLAN and 5G-NR Wireless Applications" Progress in Electromagnetic Research M (**PIER M**)Vol. 86, pp.

17–26, 2019 **(ESCI, Scopus indexed). [ISSN 1937-8726]** doi:10.2528/PIERM19060501

7. M. K. Bonthu**, Ashish. K. Sharma, "**An investigation of dielectric material selection of RF-MEMS switches using Ashby's methodology for RF applications**"** *Microsystem Technologies*, **Springer** vol.24, pp.1803-1809, 2018. **(SCI indexed) [impact factor- 1.58]|[ISSN 0946-7076] DOI:** https://doi.org/10.1007/s00542-017-3539-x**.**

8. **Ashish K Sharma** and Navneet Gupta, "An Improved Design of MEMS Switch for Radio Frequency Applications" *Int. J. of Applied Electromagnetics and Mechanics*" **IOS Press**, Japan. 11-19, vol. (47) 2015. (**SCI and Scopus indexed**) [impact factor- 0.804]. [ISSN **1383-5416**] **DOI**: **10.3233/JAE-130085**

9. **Ashish K. Sharma** and Navneet Gupta, "Electromagnetic Modeling and Parameter Extraction of RF-MEMS Switch" *Microsystem Technologies:* **Springer**-Verlag Berlin. 181-185, vol. (21) 2015. **(SCI indexed)[impact factor-1.58], DOI:** 10.1007/s00542-013-1952-3

10. **Ashish K. Sharma** and Navneet Gupta, "Investigation of Actuation Voltage for Non-Uniform Serpentine Flexure Design of RF-MEMS Switch", *Microsystem Technologies:* **Springer**-Verlag Berlin, 413-418, vol. (20) 2014. **(SCI indexed) [impact factor- 1.58]** [ISSN **0946-7076**] **https://doi.org/10.1007/s00542-013-1930-9**

11. **Ashish K. Sharma** and Navneet Gupta, "Analytical Modeling for Spring Constant of Non-Uniform Serpentine Radio Frequency-Micro Electro Mechanical System Switch" *Advanced Science, Engineering and Medicine,* **American Scientific Publishers**, 5 (12), 1322-1325, (2013). [ISSN 2164-6635] **DOI**: 10.1166/asem.2013.1433

12. **Ashish K. Sharma** and Navneet Gupta," Microelectromechanical System (MEMS) Switches for Radio Frequency Applications-A Review," ***Sensors & Transducers***, pp. 11-21, Vol. 148 (2013)**(Scopus indexed).** [ISSN **1726-5479**] **DOI**: https://doi.org/10.1007/s00542-020-05025-y

13. **AshishK. Sharma** and NavneetGupta,"Material Selection of RF-MEMS Switch used for reconfigurable antenna using Ashby's methodology" *Progress in Electromagnetics Research Letters (PIER-L),* 147-157, vol. 31 (2012), Cambridge, USA. (Scopus indexed).
(ISSN 1937-6480) DOI: 10.2528/PIERL12021101

Publication in Referred Conference

1. B R Swain, **Ashish K Sharma**, "Frequency Reconfigurable Microstrip Antenna for WLAN/WiFi Wireless Applications" 2023 IEEE 11th Region 10 Humanitarian Technology Conference (R10-HTC) Rajkot · India, , Oct. 16 - 18, 2023, Electronic ISSN: **2572-7621**
   DOI: **10.1109/R10-HTC57504.2023.10461795**
2. Deepshikha Mahapatra and **Ashish K Sharma** "A Polarization Reconfigurable Equilateral Triangular Microstrip Antenna (ETMA) For 5G-NR Communication" IEEE 3rd ASIANCON 2023 , PCCOER, Pune, India. Electronic ISBN:**979-8-3503-0228-8**
   DOI: **10.1109/ASIANCON58793.2023.10270433**
3. **M. K. Bonthu, Ashish K. Sharma, "**An Investigation of Right Angle Isosceles Triangular Microstrip Patch (RAITMP) for Polarization Diversity" International Conference on Next Generation Systems and Networks, 4-5 November, 2022 BITS Pilani / 2022).

4. B. R. Swain,, P. C. Satapathy, , & A. K. Sharma, "A Compact Fractal Antenna for Ultra-Wide Band Operation". IEEE 2nd International Conference on Applied Electromagnetics, Signal Processing, & Communication (AESPC) (pp. 1-3). IEEE (2021, November). **ISBN:**978-1-6654-4299-2
   DOI: 10.1109/AESPC52704.2021.9708493

.

5. M. K. Bonthu, and A. K. Sharma, "Design and Analysis of Frequency Reconfigurable Equilateral Triangular Microstrip Patch Antenna", 17th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) Thailand, pp. 226-229, 24-27 June 2020.
   ISBN:978-1-7281-6486-1
   DOI: 10.1109/ECTI-CON49241.2020.9158121

6. M. K. Bonthu, and A. K. Sharma**,** "An Investigation of Multiband Triangular Microstrip Patch Antenna Using DGS" *IEEE International Conference on Wireless communications, Signal Processing and Networking (WISPNET 2019*), Chennai, India, March21-23, 2019.Pp. 440-443, 2019. **ISBN:**978-1-5386-9280-6
   DOI: 10.1109/WiSPNET45539.2019.9032739

7. K. mazumdar, and A. K. Sharma**,** "A Study of 30°-30°-120° Triangular Microstrip Patch miniaturization using Shorting Pin" *IEEE International Conference on Wireless communications, Signal Processing and Networking (WISPNET 2019*), Chennai, India, March 21-23, 2019. **ISBN**:978-1-5386-9279-0
   DOI: 10.1109/WiSPNET45539.2019.9032809

8. N. Sahu, and A. K. Sharma**,** "An Investigation of Pattern and Frequency Reconfigurable Microstrip Slot Antenna Using PIN Diodes" *Progress In Electromagnetics Research Symposium - Spring (PIERS) Saint Petersburg, Russia* May 22-25 2017. **DOI:** 10.1109/PIERS.2017.8261884 **ISBN:**978-1-5090-6269-0

9. S. Prusty, A. K. Sharma, "A study of CPW fed annular slot microstrip antenna for wlan application" *International conference on telecommunication, power analysis and computing techniques (ictpact - 2017)*chennai, Tamilnadu, India 2017. 6-8 April 2017.

10. S. Pradhan, A. K. Sharma, "An investigation of four circular microstrip slot based reconfigurable antenna for wireless communication" *International conference on telecommunication, power analysis and computing techniques (ictpact - 2017)*Chennai, Tamilnadu, India 2017.

11. S. Sarangi, A. K. Sharma, " Rectangular Ring Reconfigurable Antenna For Wireless Communication" *IEEE International Conference on Wireless communications, Signal Processing and Networking*WiSPNET2017 Chennai, Tamilnadu, India 2017. **DOI:** 10.1109/WiSPNET.2017.8300052 **Electronic ISBN:**978-1-5090-4442-9 22-24 March 2017

12. N. Sahu, and A. K. Sharma**,** "The Investigation of Bandwidth Enhancement of Microstrip Slot Antenna" *IEEE International Conference on Wireless communications, Signal Processing and Networking (WISPNET 2016*), Chennai, India, March23-25, pp. 953-956, 2016. **Electronic ISBN:**978-1-4673-9338-6 **DOI:** 10.1109/WiSPNET.2016.7566275

13. Ashish K Sharma and Navneet Gupta**,** "Pattern Reconfigurable Antenna Using Non-uniform Serpentine Flexure Based RF-MEMS Switches" *36th Progress In Electromagnetics Research Symposium* (PIERS-2015), Prague, Czech Republic, July 6-9, pp. 2840-2843, 2015.

14. Ashish K Sharma and Navneet Gupta, "Impedance Matching for RF-MEMS Based Microstrip Patch Antenna" ECTI-CON-2014, Suranaree Univ. of Tech., NakhonRatchasima, Thailand, Vol. 11 May 14-17, 2014. (**Paper Selected for Travel Grant Award from the Organizers**). DOI:10.1109/ECTICon.2014.6839775 **Electronic ISBN:**978-1-4799-2993-1

15. Ashish K. Sharma and Navneet Gupta, **"**Electromagnetic Modeling of Non-Uniform serpentine flexure based RF-MEMS switch" IEEE International conference on Advance Electronic Systems (ICAES), CSIR-CEERI Pilani, India, sep 21-23,2013. DOI: 10.1109/ICAES.2013.6659420 **Electronic ISBN:**978-1-4799-1441-8

16. Ashish K. Sharma and Navneet Gupta, **"** Switching time analysis for non-uniform serpentine flexure based RF-MEMS switches" Engineering and Systems (SCES), 2013 IEEE Students Conference , MNNIT Allahabad, April 12-14,2013(**Best Paper Award).**
Electronic ISBN:978-1-4673-5630-5
DOI: 10.1109/SCES.2013.6547531

17. Ashish K. Sharma and Navneet Gupta, " Material Selection Approach for Dielectric Layer in RF-MEMS Switch", International Conference on Emerging

Technologies - Micro to Nano; ETMN-2013, BITS, Pilani - KK Birla Goa Campus, India, February 23-24, 2013.

18. Ashish K. Sharma and Navneet Gupta, " Micro electro mechanical system (MEMS) Switches for radio frequency (RF) applications-An Overview", National Conference on "Recent Advancement in Communication System & Image Processing RACSIP-2012, BKBIET, Pilani, April 2-3, 2012.

Book Chapter

19. Ashish K. Sharma and Navneet Gupta, Book Chapter entitled, "***MEMS Switches for RFApplications - A Review***," Sensorsand Biosensors, MEMS Technologies and its Applications, Second volume, published by International frequency of sensors association (IFSA),Brussels (Belgium), 2013. **ISBN No.** -13: 978-84-616-4153-6. Pp 215-232

20. **M. K. Bonthu, Ashish K. Sharma, "**Design and Analysis of Multiband Self-Complimentary Log Periodic Tripole Antenna (LPTA) for S and C Band based Radar Applications" Book Title "Advances in Cognitive Science and Communications" Springer Singapore, ISBN No. 978-981-19-8085-5, 10 march 2023. https://doi.org/10.1007/978-981-19-8086-2_24 **PP247-254**

21. **M. K. Bonthu, K. Mazumdar and Ashish K. Sharma, "**An Investigation of Right Angle Isosceles Triangular Microstrip Patch (RAITMP) for Polarization Diversity" Book Title **Generation Systems and Networks, Networks (pp. 515-527). Singapore: Springer Nature Singapore** 2022. ISBN No. **978-981-99-0483-9.**

Project Applied

1. **Title:- Novel Radar based Health Monitoring System for Elderly Persons**
   DST-SURE New Delhi
   Amount:- 23,96,033 Rs.

2. **Title** :- Airborne LiDAR data quality assessment
   BIS R&D Project
   Amount :- 5 Lacs

Ph. D. Students: Awarded

S. No.	Name of Student	Masters/PhD	Year of completion	Title of thesis
1	Murli Krishna Bonthu (ID.No.1610070003)	PhD	2024	Design and Analysis of Frequency Reconfigurable Microstrip Patch Antennas for Wireless Communication

Awards and Honors:

1. **DST Travel Grant Award:** for*Progress In Electromagnetics Research Symposium - Spring (PIERS) Saint Petersburg, Russia* May 22-25 2017. "An Investigation of Pattern and Frequency Reconfigurable Microstrip Slot Antenna Using PIN Diodes" authored **by** N. Sahu, and A. K. Sharma**.**

2. **Best Student Paper award** in 2nd IEEE Student conference Engineering and Systems (SCES),MNNIT Allahabad, INDIA, April 12-14, 2013 for paper entitled "Switching time analysis for non-uniform serpentine flexure based RF-MEMS switches.", authored by Ashish kumar Sharma, Navneet Gupta.

3. **Senior Research Fellowship Award**: Council scientific and Industrial Research (CSIR), New Delhi, INDIA has been selected for Senior Research Fellowship (SRF). (jan-2014).

4. **Student Travel Grant Award** in IEEE international conference at ECTI-CON-2014, Suranaree Univ. of Tech., NakhonRatchasima, Thailand 2014 for paper entitled "Impedance Matching for RF- MEMS Based Microstrip Patch Antenna", authored by Ashish kumar Sharma, Navneet Gupta, by Association of Electrical Engineering/ Electronics, Computer, Telecommunications and Information Technology Thailand (ECTI Thailand).

5. **TEQIP-II seed grant award** in may 2016 at Veer Surendra Sai University of Technology Burla.

Work shop organized

1. Research Challenges and Opportunities in Antenna Design (RCOAD-2020), FDP (10-09-2020 14-09-2020) Coordinator, Veer Surendra Sai University of Technology, Burla, Sambalpur, Odisha

2. FDP on Recent Advancements in Signal Processing, Microwave & VLSI (RASPM)-2018, FDP (28-05-2018 09-06-2018) Coordinator Veer Surendra Sai University of Technology, Burla, Sambalpur, Odisha

Invited Talk

1. Ashish Kumar Sharma, "Radar-Based Unobtusive Monitoring System" at **Recent Research Developments and Challenges in Communication and Navigation Technologies**, Department of ECE, UCE, **Osmania University Hyderabad** India.

2. Ashish Kumar Sharma, "Fractal Antennas" at **Recent Trends in Antenna Analysis and Design (RTAAD-2017)**, Dept. of Electronics& Telecom VSSUT Burla15-20may 2017.

3. Ashish Kumar Sharma, "MEMS Switches for RF Applications" at Modern Trends & Advances in Communication Systems & VLSI (MTACSV), Dept. of Electronics & Telecom VSSUT Burla 04-09 Jan 2016.

4. Ashish Kumar Sharma, "Earth Magnetic storm and Human Society" in All India Radio during Yuv-vani program at All India Radio at Faizabad (U.P.) Station on 12 march 2005.

Workshops/ Summer School Attended

i. Ashish Kumar Sharma "INUP Hands-on Training Workshop on "Nanofabrication Technologies", from 7th to 15th February2017.

ii. Ashish Kumar Sharma "Design and Analysis of Efficient Antennas and Guided Systems", at IIT, Kharagpur during 23 Feb 23-27 2016.

iii. Ashish Kumar Sharma, "Cognetive Radio: The Next Frontier in wireless communications" at Department of Electrical Engineering, IIT Kanpur during Nov 23-25, 2010.

Student Supervision

M. Tech. Students:

Completed

S. No.	Name of Student	Masters/PhD	Year of completion	Title of thesis
1	Nibash Kumar Sahu [14040250]	M.Tech	2016	A Study of Frequency Reconfigurable Microstrip Slot Antenna using PIN Diodes
2	Jugal Prasad [14040255]	M.Tech	2016	The Investigation of CPW FED Slot Patch Antenna for WLAN and Wideband Applications
3	Sweta sarangi [15040249]	M.Tech	2017	An Investigation of Reconfigurable Rectangular Microstrip Antennas using PIN Diode.
4	Smrutirekha Prusty [15040246]	M.Tech	2017	A Study of CPW Fed Annular Slot Antenna With PIN Diode and DC Bias Circuit.

5	Sarmistha Pradhan [15040248]	M.Tech	2017	An Investigation of Four Annular Microstrip Slot Based Reconfigurable Antenna For Wireless Communication
6	Pallavi Pradhan [1605070010]	M.Tech	2018	Investigation of Triangular Patch Based Reconfigurable Antenna using PIN Diode.
7	Kankana Mazumdar [1705070008]	M.Tech	2019	An Investigation of Right Angle Isosceles Triangular Microstrip Patch for Polarization Diversity
8	Pramodini Bidhar [1805070023]	M.Tech	2020	Exploring the digital circuits desig using perpendicular Nano magnetic logic architectures.

B.Tech Students:

S. No.	Name of Student	ID. No	Year of completion	Title of Dissertation
1 2	Prachi Pragyan Anjan Prakash	12010245 12010216	2016	Adaptive Beam Forming using Least Meansquare Algorithm
3 4 5 6	Shubam RadhaRani Sangeeta Sasmita	13010369 14020112 14020116 14020117	2017	Automatic Irrigation Technique
	1. Sriram Sritam 2. Somya Suvam pani 3. Aditya Mahapatra 4. Asmita Das	14010475 14010478 14010517 15020110	2018	Automatic Irrigation system\m by sensing soil moisture
	1. Saurav Kimar Panda 2. Christ L Ekka 3. Nikelesh Bal 4. Susmiat Tappo	15010559 15010501 15010528 1603070014	2019	Automatic fan controller using ardunio based micro controller and sensors
	1. Ashutosh Kaushil 2. Sampad K Satapathy 3. Shreemoy Nanda 4. Bibhash R Tripathy	1602070021 1602070084 1602070097 1602070026	2020	Vehicle detection and classification using digital image signal algorithm
	1. Rohit Nikhandia	1702070084 1702070090	2021	Home smart security system using ardunio

	2. Shad Zafar Azmi 3. Shivam Jaiswal	1702070094		
	1. Sk. Noor Mohmmad 2. Rajshree Malik 3. Siddhesh Roshan Sahu	1903070007 1903070009 1903070013	2022	Design and analysis of log periodic dipole array