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Dr. RAJESH K. SINGH (Assistant Professor, Department of Electronics Engineering, DIAT Pune, Maharashtra)
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EDUCATIONAL QUALIFICATION

Course/Examination/ Stream	Institute/University	Year	Performance
Ph.D. (Reconfigurable Active and Passive Printed Antennas)	Indian Institute of Technology Delhi	2018	CGPA 8.77
M. Tech (Microwave Electronics)	Department of Electronic Science (DOES), University of Delhi South Campus (UDSC)	2013	77.5%

RESEARCH/INDUSTRIAL EXPERIENCE

- Assistant Professor at the Department of Electronics Engineering, DIAT Pune, India (Jan 2022 - till date).
- Postdoctoral Researcher at the Department of Information Engineering, University of Pisa, Italy (Feb 2019 – Dec 2021)
- Visiting Researcher, Calearo Antenne, Isola, Vicentina, Italy (Feb 2019 - Aug 2021)
- RF Consultant, Eron Energy Pvt. Ltd. New Delhi, India (Oct 2018 - Dec 2018)

RESEARCH INTEREST

- Radio Frequency Identification (RFID)
- Smart Gloves
- Wearable textile-based/Conformal Antennas
- Wireless power transfer and active antennas
- Antenna modules for automotive
- Reconfigurable active and passive antennas
- Wideband passive components and antennas for medical and Defence applications
- Spoof Surface Plasmon Polariton (SSPP)

TECHNICAL SKILL

- Microwave Simulators: - ADS, CST, Microwave Office, SERENADE.
- Programming Language: - C, FORTRAN, MATLAB.

ACHIEVEMENT & CERTIFICATION

- Recipient of Postdoctoral Research Grant for the year 2021.
- Recipient of the "Young Scientist Award" for the URSI GASS 2020.
- Recipient of Postdoctoral Research Grant for the year 2020.
- Recipient of the "Distinguished Service Award" in RFID-TA 2019, Pisa, Italy.
- Recipient of Postdoctoral Research Grant for the year 2019.
- Recipient of a travel grant for presenting a paper in EuCAP 2017 by the Council of Scientific & Industrial Research (CSIR), during the Ph.D. degree.
- Recipient of the Institute Fellowship Award for the year 2013-2018.
- Served as a Chairman for IEEE MTT-S IITD Student Branch Chapter (2016, 17).
- Served as a Treasurer for IEEE MTT-S IITD Student Branch Chapter (2014, 15).
- Served as a volunteer at IEEE MTT-S Booth, International RF and Microwave Conference 2017 Ahmedabad, India.
- Served as a volunteer for the Asia Pacific Microwave Conference 2016, New Delhi.
- Served as a coordinator for the Open House event (IIT Delhi) for the years 2014, and 15.
- Served as a volunteer for the International RF and Microwave Conference 2013, New Delhi.

LABORATORY AND COURSES TAUGHT

1. RF and Microwave Passive Circuit
2. Microwave Measurement Laboratory
3. Antenna
4. EMI/EMC Design
5. RF and Microwave Active Circuit
6. Introduction to Basic Electronics
7. Cellular and Wireless Communication

MEMBERSHIP

- IEEE Senior Member
- IEEE Microwave Theory and Technique Society Member
- IEEE Antenna and Propagation Society Member
- Young Professional Society Member
- IEEE SIGHT Member

REVIEWER

- Reviewer of various journals including IEEE Transactions on Antennas and Propagation, IEEE Antenna Wireless Propagation Letters (AWPL), IEEE Journal of Radio Frequency Identification (JRFID), IEEE Access, Applied Sciences, Microwave optical Technology Letters (MOTL), International Journal of Microwave and Wireless Technologies, International Journal of RF and Microwave Computer-Aided Engineering (RF CAD), Journal of Electromagnetic Waves and Applications, Advances in Science Technology and Engineering Systems Journal (ASTESJ), IETE Journal of Research, URSI Radio Science Letters, Symmetry (MDPI) and various International conferences of IEEE.

ACADEMIC/PROFESSIONAL ACTIVITIES

- Serving as a PG coordinator for MTech in Signal Processing & Communication, Radar & Communication, and Defence Electronics Systems), DIAT Pune since July 2022.
- Serving as a member of the Institute Innovation Council (IIC), DIAT Pune since Jan 2023.
- Serving as a member of the Placement Task Force, DIAT Pune.
- Serving as member secretary for Doctoral Research Committee, DIAT Pune.
- Serving as a member of the NSS Team at DIAT Pune.
- Serving as a member of IQAC at DIAT Pune.
- Serving as a BOS Member for ECE dept., PES's Modern College of Engineering Pune.
- Serving as a BOS Member in ECE dept., Aditya University, Hyderabad.
- Served as a member of the Technical Program Committee of MAPCON2023, Bangalore, India.
- Served as a member of the Technical Program Committee of MAPCON2022, Bangalore, India.
- Served as a member of the Invited Talks and Special Sessions committee at InCAP 2021, Jaipur India.
- Served as a co-chair for Special Sessions at IEEE RFID-TA 2021, New Delhi, India.
- Served as a member of the advisory committee of ICVMWT-2021, India.
- Served as a member of the Technical Program Committee of ICVMWT-2021, India.

WEBINAR/INVITED TALK/ORGANIZED EVENT

- Organized a Six-day IIC-sponsored Workshop on "Design and Implementation of Prototype Sensors/Antennas" at the Electronics Engineering Department, DIAT Pune from 03-08 June 2023.
- Delivered a talk on "Introduction to Antennas and their Development" organized by IIC, DIAT Pune from 03-08 June 2024.
- Delivered an invited talk on 'Textile Antennas for RFID" organized by IEEE AP-S Student Branch Chapter AP-03 (SBC99082A), Indian Institute of Technology Palakkad on 12 August, 2023.
- Delivered an invited talk on 'Textile Antennas for RFID Applications" in a one-week SERB sponsored High-end Workshop 'Karyashala' on "Recent Trends and Future Prospects for Beyond 5G in RF, Microwave, and Millimeter Wave Technologies" organized by ECE Department, NIT Trichy during 23-29 July, 2023.
- Delivered an invited talk on 'Beamforming: Analog, Digital, and Hybrid" in a one-week SERB sponsored High-end Workshop 'Karyashala' on "Design, Analysis, and Simulation of 5G and 6G communication System using Python" organized by the ECE Department, IIITPune during 19-27 June 2023.
- Delivered an invited talk on "Basics of Transmission lines, S-Parameters, and feed mechanism of antennas" in a SERB-sponsored High-end Workshop organized by the Electronics Engineering Department, DIAT Pune from 28 June-06 July, 2023.
- Organized a Nine-day SERB-sponsored High-end Workshop 'Karyashala' on **"**Wearable and Flexible Antennas for Defence and Medical Applications" at the Electronics Engineering Department, DIAT Pune from 28 June-06 July, 2023.
- Organized a Two-week AICTE sponsored ATAL Faculty Development Program on "Recent Innovations and Challenges in Antenna Technology" at the Electronics Engineering Department, DIAT Pune from 10-21 October 2022.
- Delivered an invited talk on "Smart Gloves for RFID" organized by IEEE Microwave Theory & Techniques Society (MTT-S) Student Branch Chapter, Jadavpur University, India on 14th August 2021.
- Delivered an invited talk on "Wireless Smart Gloves for UHF RFID" at IEEE AP-S Summer School and 2nd International Metamaterial Workshop 2021, Jaipur, India on 22nd July 2021.

- Delivered an invited talk on “Antennas for RFID Applications” organized by Dept. of ECE, MNIT Jaipur in Association with IEEE RFID Council Student Chapter, MNIT Jaipur & IEEE Student Branch GWECA, Ajmer on 17th March 2021.
- Delivered an invited talk on “Antennas for Automotive Industry” organized by Graphic Era Hill University, Bhimtal Campus, Uttarakhand on 18 December 2020.
- Delivered an invited talk on "Antennas for 5G and Automotive Applications" in the webinar series ‘Modern Antenna Designs for 5G and related applications 14 - 18 Sept, 2020 organized by the Department of Electronic Science, University of Delhi South Campus.
- Delivered an invited talk on “Development of Body Worn Antennas and Their Challenges” organized by the Indian Institute of Technology Palakkad and IEEE APS Society Kerala Chapter on 30 August 2020.
- Delivered an invited talk on “Numerical and Experimental Characterization of Body Worn Antennas” in a one-week lecture series on “Recent Trends on RF & its applications” June 26-30, 2020 organized by IEEE APS Chapter - Jaipur & IEEE Rajasthan subsection in association with Dept. of ECE, MNIT Jaipur & GWEC, Ajmer.
- Delivered an invited talk on “Challenges in Developing Wearable Antennas” organized by IEEE MTT-S SBC IITD and IEEE MTT-S Delhi Chapter on 29 June 2020.

PUBLICATIONS

Journal Publications

1. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, “Spoof surface plasmon polariton based frequency scanning antennas,” IETE Journal of Research, vo. 69, no. 11, pp. 7787-7795, 2023; doi: 10.1080/03772063.2023.2252399.
2. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, “A Wide-band transition from Microstrip Line to Microstrip Spoof Surface Plasmon Polariton Line for Microwave/Millimeter wave Applications,” Int. J. RF Microw. Computer-Aided Engg. (RFCAD), vol. 2023, Article ID 6485834, 8 pages, Feb. 2023; doi: 10.1155/2023/6485834.
3. S. Shindalkar, M. Reddy, R. Singh, M Nainer and B. Kanasubramanian, “Polythiophene blends and composites as potential energy storage materials,” Synthetic Metals, vo. 299, 2023; doi: 10.1016/j.synthmet.2023.117467.
4. M. P. Yadav, Rajesh K. Singh and K. P. Ray, “A Comparative Investigation on Effect of Coupling in Aperture Coupled Microstrip Antennas,” Progress in Electromagnetics Research C, vol. 124, pp. 69-79, 2022; doi:10.2528/PIERC22063002.
5. A. Michel, R. K. Singh, P. Nepa and G. Manara, “A Smart Glove for Near-Field UHF RFID Applications,” URSI Radio Science Letters, vol. 3, 2021; doi: 10.46620/21-0046.
6. A. Michel and R. K. Singh, "On the use of power-transfer efficiency to analyze the performance of a 3D-printed wearable UHF-RFID antenna," URSI Radio Science Bulletin, vol. 2021, no. 377, pp. 38-45, June 2022; doi: 10.23919/URSIRSB.2021.9829346.
7. A. Michel; R. K. Singh; P. Nepa, “A Compact and Wideband Dashboard Antenna for Vehicular LTE/5G Wireless Communications,” Electronics, vol. 11, no. 13, pp. 1-11, 2022; doi: 10.3390/electronics11131923.
8. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, “A Wide-Angle Forward to Backward Scanning Wideband Leaky-Wave Antenna Based on Microstrip Spoof Surface Plasmon Polaritons,” IET Microw., Antennas & Propag., pp. 1-12, 2021; doi: 10.1049/mia2.12213.
9. R. K. Singh, A. Michel, P. Nepa, A. Salvatore, M. Terraroli and P. Perego, “Compact and Wearable Yagi-like Textile Antennas for Near-Field UHF-RFID Readers,” IEEE Trans. Antenna Propag., vol. 69, no. 3, pp. 1324-1333, Mar 2021; doi: 10.1109/TAP.2020.3030944.
10. S. Yadav, M. M. Sharma and R. K. Singh, “A Polarization Insensitive Tri-band Bandpass Frequency Selective Surface for Wi-MAX and WLAN Applications,” Progress in Electromagnetics Research Letters, vol. 101, pp. 127-136, 2021; doi: 10.2528/PIERL2109 1101.
11. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, “Wearable Dual-Band Quasi-Yagi Antenna for UHF-RFID and 2.4 GHz Applications,” IEEE Journal of Radio Frequency

Identification (RFID), vol. 4, no. 4, pp. 420-427, Dec. 2020; doi: 10.1109/JRFID.2020.3000298.
12. Ria, A. Michel, R. K. Singh, V. Franchina, P. Bruschi and P. Nepa "Performance Analysis of a Compact UHF RFID Ceramic Tag in High-Temperature Environments," IEEE Journal of Radio Frequency Identification (RFID), vol. 4, no. 4, pp. 461-467, Dec. 2020; doi: 10.1109/JRFID.2020.2998008.
13. R. K. Singh, A. Basu and S. K. Koul, "Reconfigurable Microstrip Patch Antenna with Polarization Switching in Three Switchable Frequency Bands," IEEE Access, vol. 8, pp. 119376-119386, June 2020; doi: 10.1109/ACCESS.2020.3005482.
14. R. K. Singh, A. Basu and S. K. Koul, "Reconfigurable Oscillating Active Integrated Antenna Using Two-Element Patch Array for Beam Switching Applications," Engineering Reports, vol. 1, no. 5, pp. 1-10, Dec. 2019; doi: 10.1002/eng2.12071.
15. R. K. Singh, A. Basu and S. K. Koul, "A Novel Reconfigurable Microstrip Patch Antenna with Polarization Agility in Two Switchable Frequency Bands," IEEE Trans. Antennas Propag., pp. 5608-5613, vol. 66, no. 10, Oct. 2018; doi: 10.1109/TAP.2018.2860118.
16. Rajesh K. Singh, Ananjan Basu & Shiban K. Koul, "Reconfigurable Microstrip Patch Antenna with Switchable Polarization," IETE Journal of Research, vol. 66, no. 5, pp. 1-10, Aug. 2018; doi: 10.1080/03772063.2018.1510346.
17. R. Paliwal, R. K. Singh and S. K. Koul, "An Experimental Investigation of Reconfigurable UWB Modified Octagonal Microstrip Monopole Patch Antenna with Switchable and Tunable Band-Notched Characteristic," Advances in Science, Technology and Engineering Systems Journal (ASTESJ), pp. 207-215, vol. 3, no. 5, 2018; doi: 10.25046/aj030525.
18. R. K. Singh, A. Basu and S. K. Koul, "A Novel Pattern-Reconfigurable Oscillating Active Integrated Antenna," IEEE Antennas Wireless Propag. Lett., pp. 3220-3223, vol. 16, 2017; doi: 10.1109/LAWP.2017.2769798.
19. Satish Singh, Rajesh Singh, Kushal Sen & Sneh Anand, "Microwave sensor for the investigation of glucose-dependent reflection properties in aqueous samples," Journal of Medical Engineering & Technology, pp. 217-222, vol. 43, no. 4, 2019; doi: 10.1080/03091902.2019.1653388.
20. Magray M., Muzaffar K., Wani Z., Singh R., G.S Karthikeya, & Koul S., "Compact frequency reconfigurable triple band notched monopole antenna for ultra-wideband applications," International Journal of RF and Microwave Computer-Aided Engineering, pp. 1-12, vol. 29, Aug. 2019; doi: 10.1002/mmce.21942.

International Conferences:

1. S. Muktadir, B. C. Mech and R. K. Singh, "Analytical investigation of the Drain Current and Surface Potential in NC- FETs considering the doping concentration and Interface Trap Charge Effect," 28th International Symposium on VLSI Design and Test (VDAT), 2024, Vellore, India.
2. S. Muktadir, B. C. Mech and R. K. Singh, "Analytical investigation of the Drain Current and Surface Potential in NC- FETs considering the doping concentration and Interface Trap Charge Effect," 5th IEEE India Council International Subsections Conference (INDISCON), 2024 Chandigarh, India, pp. 1-4.
3. D. Ravanth, S. Kalamkar and R. K. Singh, "Evaluation of Power Transfer Efficiency and Received Power for Near-Field UHF RFID System," IEEE SPACE 2024, Bangalore, India, pp. 1-4.
4. S. Kalamkar, R. K. Singh and K. P. Ray, "Polarization Switchable Compact Dual-Band Slot Antenna for Low-Cost RFID Reader," IEEE SPACE 2024, Bangalore, India, pp. 1-4.
5. P. Sital, S. Chavan, K. Borse, R. K. Singh, S. Shukla, T. Dhamale and K. Napte, "Compact and Planar Sinuous Antenna operating in the Wide Band Frequency Range," IEEE ASIANCON 2024, Pune, India, pp. 1-6.
6. Rajesh K. Singh, Sathishkannan P. and K. P. Ray, "Off-Band Harmonics Mitigation Techniques to Reduce Radiated EMI for a Dipole Antenna," 2023 Joint APEMC and INCEMIC, Bangalore, India, pp. 1-4.
7. Sathishkannan P., Rajesh K. Singh and K. P. Ray, "Multiband Microwave Metamaterial Absorber for EMI Reduction," 2023 Joint APEMC and INCEMIC, Bangalore, India, pp. 1-4.
8. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, "Spoof Surface Plasmon Polariton Transmission Lines for EMI Reduction," 2023 Joint APEMC and INCEMIC, Bangalore,

India, pp. 1-3.

9. A. Michel. R. K. Singh and P. Nepa, “A Low-Profile Cellular Antenna Module for Vehicular Applications,” URSI International Symposium on Electromagnetic Theory 2023**,** Vancouver Canada, pp. 1-1.
10. A. Michel. R. K. Singh and P. Nepa, “A Low-Profile Cellular Antenna Module for Vehicular Applications,” 17th European Conference on Antennas and Propagation (EUCAP), Florence, Italy, pp. 1-4.
11. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, “Capacitively Coupled Spoof Surface Plasmon Unit Cells Based Transmission Line with Band Rejection Capability,” IEEE Microwaves, Antennas and Propagation Conference (MAPCON) 2022, Bangalore, India.
12. S. Kannan, R. K. Singh, K. P. Ray and M. Singh, “A Compact and Flexible Dipole Antenna to Be Integrated into Military Berets,” IEEE Microwaves, Antennas and Propagation Conference (MAPCON) 2022, Bangalore, India.
13. S. Yadav, R. K. Singh, M. Abegaonkar, M. M. Sharma, “A Miniaturized Frequency Selective Rasorber Based on Meanderline and Square Slot Structure,” IEEE Microwaves, Antennas and Propagation Conference (MAPCON) 2022, Bangalore, India. (accepted)
14. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, “Leaky Wave Antenna Design by Loading Radiating Elements to An Asymmetrical SSPP Line,” The 2022 International Symposium on Antennas and Propagation (ISAP), Darling Harbor, Sydney, Australia, pp. 1-2.
15. A. Michel, R. K. Singh and P. Nepa, “A Compact Printed Antenna with Switchable Broadside and Conical Radiation Patterns for V2X Applications integrated into Vehicle Lateral Mirrors,” AT-AP-RASC, Gran Canaria, Spain, June, 2022.
16. S. Sharma, R. K. Singh, A. Basu and S. K. Koul, "Microstrip Spoof Surface Plasmon Polariton Based Leaky Wave Antenna," 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), 2021, pp. 897-900.
17. R. K. Singh, A. Michel and P. Nepa, "A Compact and Wideband Vehicular Antenna for LTE/5G Applications," 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), 2021, pp. 851-854.
18. S. Garg, R. Kumar Singh, R. Paliwal and S. Yadav, "Dual-Band FSS based Microwave Absorber for WiMAX & WLAN Band Applications," 2021 IEEE Indian Conference on Antennas and Propagation (InCAP), 2021, pp. 879-882.
19. P. Nepa, A. Buffi, A. Michel, A. Motroni, F. Bernardini, R. K. Singh and G. Manara, “Past, Present and Future of RFID Activities at the University of Pisa,” IEEE International Conference on RFID Technology and Applications (RFID-TA), New Delhi, India, 2021, pp. 1-3.
20. R. K. Singh, A. Michel and P. Nepa, “Wideband LTE/5G antenna for Automotive,” URSI General Assembly and Scientific Symposium, Rome, Italy, 2021, pp. 1-1.
21. Michel, R. K. Singh, P. Nepa and G. Manara, “Smart Glove for Near-Field UHF RFID Applications,” URSI General Assembly and Scientific Symposium, Rome, Italy, 2021, pp. 1-1.
22. R. K. Singh and A. Michel, “A novel radiation pattern reconfigurable antenna switchable among broadside or conical pattern,” RiNEm 2020, Roma, Italy, 2020.
23. A. Michel and R. K. Singh, “On the Use of Power Transfer Efficiency to Analyze the Performance of a 3D-Printed Wearable UHF RFID Antenna for Smart Gloves,” 2020 Annual Meeting of the URSI Italian National Committee, Rome, November 27th, 2020.
24. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, “Compact Quasi-Yagi Reader Antenna for UHF RFID Smart-Glove,” IEEE International conference on Smart and Sustainable Technologies, Croatia, September 23-26 2020.
25. R. K. Singh, A. Michel, P. Nepa and G. Manara, “A Wideband Low Profile Automotive Antenna for LTE/5G” URSI General Assembly and Scientific Symposium, pp. 1-3, Rome, Italy, 2020. (won award)
26. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, “Modified Yagi-Uda Reader Antenna for UHF RFID Smart-Glove,” 14th European Conference on Antennas and Propagation (EUCAP), pp. 1-4, Copenhagen, Denmark, 2020.
27. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, Glove Integrated Dual-Band Yagi Reader Antenna for UHF RFID and Bluetooth Application, International Workshop on Antenna Technology (iWAT), pp. 1-4, Bucharest, Romania, 2020.
28. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, “Glove Integrated Solenoid Antennas for Near-Field UHF RFID Applications,” IEEE Indian Conference on Antennas and Propagation

(InCAP), pp. 1-4, Ahmedabad, India, 2019.

29. R. K. Singh, A. Michel, P. Nepa and A. Salvatore, "Design of a Compact Yagi-Uda Antenna for Near Field UHF RFID Smart gloves," IEEE International Conference on RFID Technology and Applications (RFID-TA), pp. 1-4, Pisa, Italy, 2019.
30. S. Yadav, R. K. Singh, M. P. Abegaonkar, and M. M. Sharma, "Stub Loaded Reconfigurable Microstrip Patch Antenna with Frequency Agility," IEEE Indian Conference on Antennas and Propagation (InCAP), pp. 1-4, Hyderabad, India, 2018.
31. Sravani, D. R. Krishna, R. K. Singh and S. K. Koul, "Reconfigurable Antenna with Frequency Switching Capability for C-band Application," IEEE iAIM, pp. 1-4, Bangalore, India, 2017.
32. R. Paliwal, R. K. Singh and S. K. Koul, "Reconfigurable UWB Monopole Antenna with Switchable Frequency Notched Bands," IEEE Applied Electromagnetics Conference (AEMC), pp. 1-2, Aurangabad, Maharashtra, 2017.
33. R. K. Singh, A. Basu and S. K. Koul, "Two-port reconfigurable passive radiator with switchable pattern for active antenna application," IEEE MTT-S International Microwave and RF Conference (IMaRC), pp. 1-4, Ahmedabad, 2017.
34. R. K. Singh, A. Basu and S. K. Koul, "Novel high gain polarization switchable rectangular slot antenna for L-band applications," 11th European Conference on Antennas and Propagation (EUCAP), pp. 3820-3824, Paris, 2017.
35. R. K. Singh, A. Basu and S. K. Koul, "Asymmetric coupled Polarization Switchable Oscillating Active Integrated Antenna," Asia-Pacific Microwave Conference (APMC), pp. 1-4, New Delhi, 2016.
36. R. K. Singh, A. Basu and S. K. Koul, "Efficient null broadening and steering using slot antenna array for radar applications," Asia-Pacific Microwave Conference (APMC), pp. 1-4, New Delhi, 2016.