**Centre/School/Special Centre: School of Studies of Engineering & technology**

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**Dr. Sumit Kumar Gupta**

**Assistant Professor (EE)**

**Qualifications: Ph.D., M. Tech., B.E.**

**Area of Interest/Specialization: Microwave Structures, Metamaterial, Power Circuits.**

**Experience: 12 Years**

**Awards and Honors:**

Received CERTIFICATE OF APPRECIATION: BEST INNOVATIVE PAPER AWARD, in conference entitled Trends in Electronics and Healthcare informatics (TEHI) with Paper ID# 384 authored by Manish Deshmukh, **Sumit Kumar Gupta** and Akansha Chandravanshi for the paper entitled ‘Isolation Enhancement using PRSR Technique for Wireless Applications

**Research Projects: NIL**

**International Collaboration/Consultancy**

**Best Peer Reviewed Publication (up-to 10):**

**i.** Krishna, M.D.V., Rakesh, P.M., Harshavardhan, C. **Gupta S.K**. & Das S. “Improved Cryptography System Using Modified Vigenère and Polybius Cipher. ***Trans Indian Natl. Acad. Eng***. 10, 543–550 (2025). https://doi.org/10.1007/s41403-025-00535-5

**ii.** **Sumit Kumar Gupta**, Ullas Kumar Agrawal, Soma Das, "Polarization Reconfigurable Circular Patch MIMO Antenna with Improved Isolation,” ***Advanced Engineering Forum***, (Accepted January, 2025)

**iii.** Aditi Sharma, **Sumit Kumar Gupta,** D. venkata Shiva Kumar, Shrivishal tripathi, Soma Das, “Tightly coupled MIMO with internal self-decoupled E-shaped design arms for 5G mobile hand-set”, ***Microwave and Optical Technology Letters***, (Accepted, 2024)

**iv.** **Sumit Kumar Gupta**, Aditi Sharma, Soma Das, “Quad Element Metamaterial based Antenna for C and X band Application with Improved Diversity Characteristics” ***Gazi Journal of Science,*** (Accepted, 2024) (in Production)

**v.** **Gupta, S. K**., Mark, R., & Das, S. (2024). Triple notched MIMO antenna for S and C band applications. ***International Journal of Electronics Letters***, *13*(1), 11–23. https://doi.org/10.1080/21681724.2024.2372733.

**vi.** **Sumit Kumar Gupta,** Robert Mark, Kaushik Mandal, Soma Das, "Four Element UWB MIMO Antenna with Improved Isolation Using Resistance Loaded Stub for S, C and X Band Applications," ***Progress In Electromagnetics Research C,*** Vol. 131, 73-87, 2023

**vii. Gupta, S. K**., Shukla, B., & Das, S, “A Frequency Reconfigurable Fractal UWB Antenna Using Ground Stub and PIN”, ***Advanced Engineering Forum*,** Vol. 48, pp. 67–79, 2023. Trans Tech Publications, Ltd. https://doi.org/10.4028/p-20um91

**viii.** Aditi Sharma, **Sumit Kumar Gupta,** Robert Mark, Bhawna Shukla, Soma Das, "Resistance Loaded UWB MIMO with Enhanced Isolation for S and C Band Applications", ***Progress In Electromagnetics Research C,*** Vol. 134, 197-209, 2023

**ix.** Deshmukh, M., Agrawal, A., **Gupta, S. K**., & Das, S. (2023). Two Elements Orthogonally Placed UWB-MIMO for RADAR, Satellite and Terrestrial Communications. In **Advanced Engineering Forum** (Vol. 50, pp. 89–99). Trans Tech Publications, Ltd. https://doi.org/10.4028/p-gcwz1f

x. **Sumit Kumar Gupta**, Shashi Bhushan Singh, Pradeep Kumar, “FPGA Based Improved Vector Control of Three-Phase Induction Motor,” **Journal of the Maharaja Sayajirao University of Baroda: Science & Technology**, Vol. 57, 2023, pp. 14-22

**xi. Sumit Kumar Gupta**, Modelling and Simulation of Multi Pulse AC to DC Converter Feeding To Different Reactive Power Loads and their THD Analysis”, Volume 5, Issue 1 (February, 2018) | E-ISSN: 2348-2273 | P-ISSN : 2454-1222.

xii. **Sumit Kumar Gupta**, M. Sunitha, K Sri Lakshmi, Power Quality enhancement using Multi Pulse AC to” DC Converter in Direct Torque Controlled Induction Motor Drive”, IJSART - Volume 4 Issue 1 – JANUARY 2018 ISSN [ONLINE]: 2395-1052.

xiii. **Sumit Kumar Gupta**, “Modeling and Simulation Of Hill Climb Search Method For Maximum Power Point Tracking As Applied To Wind Energy Conversion System”, IJTIMES, e-ISSN: 2455- 2585 Volume 4, Issue 02, February-2018

**University Journal Papers**

[1] A. Sharma, **S. K. Gupta** et al., “Characteristic mode analysis for design of a compact circularly polarized Antenna.” *Chhattisgarh Journal of science and Technology*, vol 19, issue 2, pp 180-183. Available: https://new.ggu.ac.in

[2] S. Sharma, **S. K. Gupta** et al., “Detection of Indian Science Language by modifying image classifier.” Chhattisgarh Journal of science and Technology, *Chhattisgarh Journal of science and Technology*, vol 19, issue 4, pp 49-52. Available: <https://new.ggu.ac.in>

[3]A. Pandey, P. Chandra, R. Mahule, S. Das, and **S. Gupta**, S. Prasad, “Web Testing and security audit of web application”, *Chhattisgarh Journal of science and Technology,* Vol 18 issue 2, pp 125-127, 2021. [Online]. Available: https://new.ggu.ac.in

[4] A. Pandey, P. Chandra, S. Soni, R. Raja, S. Das, and S. Gupta, “An Effective Method For Detecting Crop Disease Using Artificial Neural Network And Image Processing”, *Chhattisgarh Journal of science and Technology,* Vol-18, issue 2 pp 122-124, 2021. [Online]. Available: <https://new.ggu.ac.in>

[5] A. Agrawal, M. Deshmukh, A. Sharma, S. k. Gupta, B. Shukla, A. Pandey, and S. Das, , “Square Split Ring Unit Cell Metamaterial Structure for Wireless Applications of L, S and C Band”, *Chhattisgarh Journal of science and Technology,* Vol 18, issue 2, 52-54, 2021. [Online]. Available: https://new.ggu.ac.in

[6] A. Pandey, A. Kumar Khaskalam, R. Mahule, G. P. Shukla, and S. K. Gupta, “Helmet Detection For Two-Wheeler Riders Based On Image Processing and Machine Learning,” *Chhattisgarh Journal of science and Technology,* Vol 18, issue 1,pp 127-129, 2021. [Online]. Available: <https://new.ggu.ac.in>

[7] A. Pandey, A. Kumar Khaskalam, R. Mahule, P. Shukla, and S. K. Gupta, “Semantic Segmentation of IRIS by Deep Learning Techniques,” *Chhattisgarh Journal of science and Technology,* Vol 18, issue 1, 124-126, 2021. [Online]. Available: <https://new.ggu.ac.in>

[8] S. K. Gupta, V. K. Mamidi, B. Shukla, A. Pandey, and S. Das, “APPLICATION OF FRACTALS TO DESIGN MULTIBAND ANTENNA WITH ENHANCEMENT IN GAIN.”, *Chhattisgarh Journal of science and Technology,* Vol 18, issue 1, 1-3, 2021 [Online]. Available:

**Recent Books/Book Chapters/Monographs etc.:**

**i. S. K. Gupta**, A. Sharma and S. Das, "Gain and Isolation Enhancement of MIMO Antenna for WLAN Applications," *2022 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, Bangalore, India, 2022, pp. 692-697, doi: 10.1109/MAPCON56011.2022.10046894.

**ii.** **S. K. Gupta**, Soma Das, “A Frequency Reconfigurable Hexagonal Shaped Fractal MIMO Antenna for LTE, WLAN and 5G applications”, International Conference on Systems, Control and Automation (ICSCA) 2023. Part of the book series: Lecture Notes in Electrical Engineering (LNEE, volume 1260) (in print)

iii. Deshmukh, M., **Gupta, S.K**., Chandravanshi, A. (2022). Isolation Enhancement Using PRSR Technique for Wireless Applications. In: Kaiser, M.S., Bandyopadhyay, A., Ray, K., Singh, R., Nagar, V. (eds) Proceedings of Trends in Electronics and Health Informatics. Lecture Notes in Networks and Systems, vol 376. Springer, Singapore. <https://doi.org/10.1007/978-981-16-8826-3_50>.

iv A. Sharma, M. Deshmukh, **S. K. Gupta**, B. Shukla and S. Das, "Isolation Improvement in MIMO Using PRSR with DGS for Wireless Applications," *2022 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*, Bangalore, India, 2022, pp. 698-701, doi: 10.1109/MAPCON56011.2022.10046901.

v. Agrawal, Abhijeet, Manish Deshmukh, **Sumit Kumar Gupta**, and Soma Das. "MIMO Two Dimensional Metamaterial Antenna for Wireless Communication and Radar Applications." Journal of Electrical Engineering and Automation 5, no. 3 (2023): 362-374.

vi. Gupta, S.K. (2022). Modeling and Simulation of FPGA-Based Vector-Controlled Induction Motor Drive Using Simulink. In: Kolhe, M.L., Jaju, S.B., Diagavane, P.M. (eds) Smart Technologies for Energy, Environment and Sustainable Development, Vol 2. Springer Proceedings in Energy. Springer, Singapore. <https://doi.org/10.1007/978-981-16-6879-1_54>

**Research Supervision:**

M. Tech. Dissertation Supervision: Manish Deshmukh (2021-2023) (Awarded)

Abhijeet Agrawal (Co-supervisor) (2021-2023) (awarded)

**Administrative Responsibilities:**

- Section Incharge of B. tech. first Year, section D, session 2013-14

- Co-coordinator for B. tech. first Year, session 2013-14

- member of anti-ragging committee during session 2013-14

- Assistant Coordinator for mid semester exam of B. Tech. first year for session 13-14.

- Mentor for 7 mechanical Engg. Students, session 2013-14

- Co-coordinator for B. tech. first Year 2014-15

- Member of document verification committee for B.Tech. Admission 2014-15.

- member of anti-ragging committee during session 2014-15

- Assistant Coordinator, B.Tech. Admission by CSAB session 15-16.

- member of committee formed for evaluation of electricity tariff paid by residents of university quarters

- Co-coordinator for B. tech. first Year 2015-16.

- Section Incharge for B. tech. first Year ECE Students 2015-16

- Assistant Coordinator B.Tech. Admission by JoSAA session 2015-16.

- Coordinator B. tech. First year from 01-12-2015 to 07-01-2016.

- Assistant coordinator for B. tech admission through CSAB/ JoSSA for session 2016-17

- Mentor for B. tech. 3rd Year Students.

- Section Incharge for B. tech. first Year ECE Students 2016-17.

- member of Discipline Cum anti ragging committee during session 2016-17

- Member of Registration committee for B. tech admission through Local/ Spot Counseling for session 2017-18

- Member of document verification committee for walk-in interview 2017-18 of adhoc teachers.

- Member of Discipline Cum anti ragging committee during session 2017-18.

- Section Incharge for B. tech. first Year ECE Students 2017-18

- Incharge for Mobile distribution under Chhattisgarh Sanchar kranti Yojna.

- Incharge of NAAC Criteria II for ECE department.

- Incharge for Library related Works for department.

- Member of departmental NAAC/ NIRF Committee for session 2019-20

- Member of departmental NAAC/ NIRF Committee for session 2020-21

- Incharge for Library related Works for department for session 2020-21

- Member of school level training and placement committee for conducting on campus placements, session 2021-22.

- Member of departmental write-off committee 2021-22

- Member of departmental library related works 2021-22

- Incharge for department faculty information for NBA 2022-23

- Departmental member for NAAC 2022-23

- Departmental member for NBA 2022-23

- Department placement Incharge & member of school level placement 2022-23

- Mentor of 20 students of department from 3rd year and 4th year. 2022-23

-Coordinator, M. Tech./ PhD Program 2022-23

- Member of departmental 360-degree feedback committee. 2022-23

- Coordinator, M. Tech. Program 2023-24

- Member of Discipline and Antiragging Committee in departmental level 2023-24, 2024-25

- Department Member of Criteria 3 of NBA 2023-24

- Member of department NAAC data preparation committee 2023-24

- Mentor of M. Tech Students 2023-24

- Department Placement incharge 2023-24, 2024-25

- Department Library Incharge 2023-24, 2024-25

- Member of department 360-degree feedback committee 2023-24, 2024-25, 2025-26

- Incharge department solar cell and BMS 2025-26

- Member, department NAAC/ AQAR/ AAA data preparation 2025-26

- Member of Discipline and Anti ragging Committee in departmental level 2025-26

- Lab incharge: Basic Electrical Engineering Lab & Electrical Machinery Lab 2025-26

**RESPONSIBILITIES GIVEN UNIVERSITY LEVEL**

- member of committee formed for repair and maintenance of AC water cooler and water purifier under GFR -155

- Member of the committee formed to make plan proposal and recommendation for running electrical equipment’s of different buildings by solar energy.

- member of technical committee for evaluation of open Tender under store for purchase of electrical and sanitary items

- member of committee formed for purchase of electrical items for maintenance of distribution box of VC Residence under GFR 146

- Member of the committee formed to make plan proposal and recommendation for establishment of smart classroom at certain places inside the university campus.

- Hostel warden responsibilities given on 7 March 2018 for Swami Vivekanand Boys Hostel. **(Continued)**

- Worked as polling officer for Student council election2017.

- Member of technical committee formed for repair and maintenance and purchase of AC water cooler and water purifier.

- Committee member for projects under HEFA Boys Hostel (G+4) (100 Rooms with 200 Capacity)

- Committee member for projects under HEFA, Installation of Solar Power Plant 2MW

- Worked as Election Officer for GGV Students Council Election 2019.

-Member, Technical committee, Mess for hostels in university, session 2020-21

- Coordinator for maintenance and shifting of DB panel at VC residence.2020-21

- Member of Technical Committee for 2MW solar power installation at University Campus 2021-22

- Member of selection committee for project assistant at CSIR-CIMFR 2021-22

- Coordinator of repair, shifting and maintenance of DB panel and related items at VC Residence 2021-22

-Member of scrutiny committee of non-teaching staff against positions of Sub Engineer, Sanitary Inspector, Tracer, and Plumber 2021-22

- -Member of Physical verification committee 2022-23

-Co-coordinator, University Engineering Section 2022-23

- Member of script writing committee of criteria 2 for preparation of video clipping for presentation of SSR by university during NAAC team visit 2022-23

- Member of school level placement committee 2022-23

- Member of scrutiny committee for recruitment of vacant position in Chemistry department 2023

-Member of document verification committee for recruitment of vacant position in ECE department 2023

- Member of Physical Verification Committee of ECE Building.

- Co-coordinator, University Engineering Section 2023-24

- Member of 2MW watt roof top solar plant to be installed by M/S Mecon in University Campus 2023-24, 2024-25.

- Member of Committee prepared for shifting of ECE, Mech and Civil Building 2023-24.

- Member of Admission Committee for central level and spot level counselling 2024-25

- Member of feedback collection and feedback analysis committee for SoS of Social Science and SoS of Commerce and Management Studies. 2024-25

- Member of CEC (Consultant Execution Committee / CMC (Consultant Monitoring Committee) 2024-25

- Member of organizing Committee for Youth Parliament at the university campus, 2024-25.

- Member of organizing committee, techfest EQUILIBRIO 2024-25

- Member Document verification committee, B. Tech. Admissions by JOSAA/CSAB 2025-26

- Member, Admission committee, Lateral admission to B. Tech 2nd year 2025-26

- Member of local purchase committee for purchase of Equipment’s 2025-26

- Member of Consultant Monitoring Committee (CMC), GGV, 2025-26

- Member of department research committee (DRC) 2025-26

**Additional Information: NIL**

**Sumit Kumar Gupta**