



PROFESSOR

DR. KOUSIK ROY

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RESEARCH INTERESTS:

Astronomy, Astrophysics, Deep Learning, Medical Image Processing, IoT, Robotics, Soft Computing, VLSI, Wireless Sensor Network, 5G and 6G Communication

EXPERIENCE:

Academics: 19 YRS

Industry: ---

EDUCATION:

Ph.D in Computer Science and Engineering,
Kalyani University

M.Tech from Burdwan University.

B.E from Burdwan University.

Courses Taught:

Digital Electronics, Communication Engineering, Digital signal Processing, Computer Network, Computer Architecture, Image Processing, Human computer Interaction, Information Theory and Coding, Soft Computing, Neural Networks and Deep Learning, Machine Learning

Projects Handled:

1. A novel technique for robot vehicle control by using speech recognition
2. Autonomous Line-follower Robot by using Arduino
3. A novel technique for robot vehicle control by using speech recognition
4. Modified Critical Point – A Bug Algorithm for Path Planning and Obstacle Avoiding of Mobile Robot
5. Optimization of Microstrip Antenna Using Selective Particle Swarm Optimization (PSO) Algorithm
6. Common user Password Management System: A New Technique
7. Design Methodology of a Sensor Based Robotic Wheelchair for Physically Disabled Community
7. Economic Load dispatch model optimization using Fuzzy optimization technique

8. A Novel Design of Automatic Grass Cutter Machine
9. A case study of RF Energy Harvesting for Wireless Sensor Network
10. A novel low power RF to DC Converter for wireless sensor network
11. A novel inset fed Rectangular patch antenna using DGS
12. A Novel Dual Band Antenna Array for Wi-Fi Communication
13. A novel inset fed patch antenna with defecting ground plane
14. Dual Band Antenna for C and X band Satellite Communication

Research Publications:

1. Ayan Chatterjee, Pratik Dey, Kousik Roy, Susanta Kumar Parui, “A Monolayer Frequency-Selective Surface for Wideband Shielding Application with Adequate Out-of-Band Separation and Angular Stability”, International Journal of Antennas and Propagation, Wiley, 2024
2. Kousik Roy, Naimul Hasan , Pratik Dey and Susanta Kumar Parui , “Design and analysis of a novel multiband rectifying circuit for RF energy harvesting,” ICTACT Journal on Microelectronics, Vol.-8, Issue-3, pp.1388-1393, 2022
3. Kousik Roy, Pratik Dey and Susanta Kumar Parui, “Electromagnetic radiation Exposure of a base station antenna under various atmospheric condition of super cyclone storm Yaas”, Vol.-13, Issue-3, pp.2741-2747
4. Kousik Roy, Pratik Dey and Susanta Kumar Parui, “Atmospheric effects on electromagnetic radiation exposures from base station antenna throughout a single year – a case study,” Vol.-13, Issue-2, pp.2677-2682, June 2022
5. Kousik Roy, Pratik Dey and Susanta Kumar Parui, “Electromagnetic radiation Exposure of a base station antenna under various atmospheric condition of super cyclone storm Yaas, ICTACT Journal on Communication Technology, Vol.-13, Issue-1, pp.2621-2626, March 2022
6. Kousik Roy, Pratik Dey, Naimul Hasan and Susanta Kumar Parui, “A case study of electromagnetic exposure for high tension power lines and transformer with and without base station antenna,” ICTACT Journal on Communication Technology, Vol.-12, Issue-4, pp.2552-2556, December 2021
7. “A Novel Design of Automatic Grass Cutter Machine” by Kousik Roy, Deep Chatterjee, Ankit Sadhu, Dharmendra Kumar Rana, Madhurima Nandy and Divya Suman, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
8. “Dual Band Antenna for Satellite Communication” by Kousik Roy, Siddhartha Pal, Anu Sinha, Bhaskar Roy, A. Billaha, Bikash Mondal, Swasta Chakraborty and Prabhakar Ranjan,

International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019

- 9.** “A case study of RF Energy Harvesting for Wireless Sensor Network” by Kousik Roy,Prabhakar Ranjan,Bhaskar Roy,A.Billaha,Bikash Mondal and Anu Sinha, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
- 10.** “A novel low power RF to DC Converter for wireless sensor network”by Kousik Roy,ChiranjibGoswami,Naimul Hasan,Rasmi Priya and Saswata Chakraborty, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
- 11.** “Economic Load dispatch model optimization using Fuzzy optimization technique” by Samir Dey,AbhinabRay,Subhadip Goswami and Kousik Roy, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
- 12.** “Design Methodology of a Sensor Based Robotic Wheelchair for Physically Disabled Community” by AditiShriya,A.Billaha,B.Roy,B.Mondal and K. Roy, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
- 13.** “Dielectric properties of sodium silicate-An investigation report” by Sudhangshu Chakraborty, Kousik Roy, Md. Ayub Sheikh, International Journal of Computer Sciences and Engineering, Vol.-7, Special Issue-18, May 2019
- 14.** “A novel inset fed patch antenna with defecting ground plane” by Pratik Ghosh, KousikRoy,AtanuNag,Rasmi Priya and NaimulHasan, Intelligent Communication ,Control and Devices,Vol.989,pp.405-414,Springer book series (Advances in intelligent systems and computing), Springer
- 15.** “Comparison of different SRAM Cells Topologies using 180nm technology” by D. Chaudhuri, K. Roy, and A. Nag, Advances in Computer, Communication and Control , Vol.41, pp. 391-400, Springer Lecture notes in Network and System Book Series,2019, Springer.
- 16.** “Study of Inset Fed Rectangular Patch Antenna Using Partial Ground Plane” by Pratik Ghosh, Kousik Roy,Chiranjib Goswami , Naimul Hasan, Arup Chandra and Saswata Chakraborty, Advances in Computer, Communication and Control , Vol.41,pp 423-433, Springer Lecture notes in Network and System Book Series,2019
- 17.** “A Crown shaped microstrip patch antenna for wireless communication” by A.Nag,K.Roy,D.Chaudhuri, Advances in Electronics, Communication and Computing,Vol.443,pp.399- 405,Springer Lecture notes in Electrical Engineering Book Series,2017, Springer Nature

- 18.** “A novel dual band antenna for radar application” by Kousik Roy, Debika Chaudhuri, Sukanta Bose, and Atanu Nag, Proceedings of 3rd International Conference on Advanced Computing Networking and Informatics, vol. 2, Springer, India, vol. 44, pp. 643–650 (2015).
- 19.** A Novel Dual Band Antenna for C and X band Satellite Communication by K. Roy, A. Nag, D. Chaudhuri and S. Bose, International Conference on Electrical, Electronics, Signals, Communication and Optimization (EESCO) – 2015, January 24-25, pp 953-955, (2015)
- 20.** Common user Password Management System: A New Technique” by K. Roy, A. Nag, D. Chaudhuri, S. Chakraborty, B. Roy and P. Sidhanta, 1st International Conference on Emerging Trends on Engineering and Science (ETES 2018)
- 21.** “A Novel Dual Band Antenna Array for Wi-Fi Communication” by K. Roy, A. Nag, C. Goswami, P. Ghosh, S. Pal and N. Hasan, 1st International Conference on Emerging Trends on Engineering and Science (ETES 2018), Asansol Engineering College, Asansol, West Bengal, India
- 22.** “On the development of a solar radio spectrograph for control, acquisition and recording of solar radio bursts” by A. Nag, K. Roy and A. Dan., 1st International Conference on Emerging Trends on Engineering and Science (ETES 2018), Asansol Engineering College, Asansol, West Bengal, India
- 23.** “Implementation of low power RF to DC Converter for Wireless Sensor Network” by Kousik Roy, Chiranjib Goswami, Naimul Hasan and Rasmi Priya, IEEE International Conference on Computer, Electrical and Communication Engineering (ICCECE- 2019), Techno India University, Kolkata, India.
- 24.** “A novel inset fed Rectangular patch antenna using DGS” by Pratik Ghosh, Kousik Roy, Chiranjib Goswami, Rasmi Priya and Naimul Hasan, International Conference on Computer, Electrical and Communication Engineering (ICCECE-2019), Techno India University, Kolkata, India.
- 25.** “Modified Critical Point – A Bug Algorithm for Path Planning and Obstacle Avoiding of Mobile Robot” by Subir Kumar Das, Kousik Roy, Tanmay Pandey, Aniket Kumar, Ajoy Kumar Dutta and Subir Kumar Debnath, IEEE International Conference on Communication and Signal Processing, July 28-30, 2020, India
- 26.** “Implementation on Design of a Novel Frequency Selective Surface” by Kousik Roy, Pratik Dey, Naimul Hasan, Bhaskar Roy, Susanta Kumar Parui, International IOT, Electronics and Mechatronics Conference (IEMTRONICS) , 9-12 Sept. 2020
- 27.** “Implementation of a Dual Band Antenna for Satellite Communication” by Kousik Roy

;Debika Chaudhuri ; Atanu Nag ; Bhaskar Roy ; Soham Kanti Bishnu ; SutapaRay, IEEE 2020 4th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech), 2-4 Oct. 2020

28. S. Paul, S. Bhattacharjee, A. K Tiwari, K. Roy, B. Bhowmik, A. Billaha, B. Mondal, "Analysis of star - geometry Microstrip Antenna Using IE3D", Proceedings of the First National Conference on Emerging Trends in Engineering and Sciences (ETES 2014) : pp. 233 –239

29. K. Roy, S. Pal, S. Bhattacharjee, A. K Tiwari, A. Nag, B. Bhowmik, "Optimization of Microstrip Antenna Using Selective Particle Swarm Optimization (PSO) Algorithm" National Conference on Emerging Technology and Applied Sciences-2014 (NCETAS 2014), Modern Institute of Engineering and Technology, pp. 222 – 226

30. K. Roy, S. Pal, B. Bhowmik, N. Hasan, S. Laik, S. Datta, S. Roy, S. Pan, S. Maiti, R. Rajgund "A novel technique for robot vehicle control by using speech recognition", Proceedings of the First National Conference on Emerging Trends in Engineering and Sciences ETES-2015

31. K. Roy, S. Pal, N. Hassan, C. Goswami, B. Bhowmik, B. Mondal, R. Kumar, Megha and K. Sinha "Autonomous Line-follower Robot by using Arduino", Proceedings of the First National Conference on Emerging Trends in Engineering and Sciences ETES-2015

32. B. Roy, A. Ghosh, A. Choudhury, K. Roy "Modelling and control of a brushless D.C motor", Proceedings of the First National Conference on Emerging Trends in Engineering and Sciences ETES-2015

33. M. Nandi, S. Pal, S. Pramanik, B. Roy, K. Roy, "Analysis and simulation of a typical two winding transformer", Proceedings of the First National Conference on Emerging Trends in Engineering and Sciences ETES-2015

34. Sudhangshu Chakraborty, Kousik Roy And Md Ayub Sheikh, "A brief study on dielectric permittivity of Na_2SiO_3 ", National Seminar on Recent Trends in Condensed Matter Physics including Laser Applications (NSCMPLA-2019).

35. Kousik Roy, Naimul Hasan, Partha Pratim Bhattacharya, Susanta Kumar Parui, "A novel Design of low power Rectifier circuit in RF Energy Harvesting", Proceedings of JIS University National Conference on Multidisciplinary Research 2019

36. Subir Kumar Das, Kousik Roy, Aniket Kumar, Tanmoy Pandey, Partha Pratim Bhattacharya, "Mobile Robot Loco Motion Avoiding Obstacles," Proceedings of JIS University National Conference on Multidisciplinary Research 2019

37. Kousik Roy, Naimul Hasan, Pratik Dey and Susanta Kumar Parui, "Design and

Simulation of a novel multiband rectifier circuit for RF energy harvesting," Proceedings of JIS University National Conference on Multidisciplinary Research 2020

38. Subir Kr. Das, Koushik Roy, Aniket Kumar and Tanmay Pandey, "A study for detecting motion based on fuzzy logic in image processing," Proceedings of JIS University National Conference on Multidisciplinary Research 2020

Additional Responsibilities:

NBA

Awards Obtained:

Best Paper Award in JIS University

