

## **Research**

### **Dr. Suman Pattnaik**

### **Ph.D. Guidance**

1. Development of Miniaturized Optically Transparent Antennas for WLAN Applications

### **PG Guidance**

2. A STUDY OF IMPROVEMENTS IN GNS PERFORMANCE APPLYING INTEROPERABILITY ASSOCIATED WITH RAIM AND PROPOSAL OF A GNSS BASED LANDING SYSTEM
3. Blue Color Frames based Robust Digital Video Watermarking using Wavelets and SVD
4. Mobile Sensor Nodes based Energy Efficient LEACH Protocol for WSN Systems (MEE-LEACH)
5. Analyzing Radio Frequency Exposed Electrocardiogram Signal Using Hilbert Huang Transform
6. Mobile Phone Handsets Radiation Impact Study on Brainwaves
7. Design and Performance Analysis of Dual Band Split Ring Fractal Antenna
8. RFID Based Smart Patient Cart with Obstacle Avoidance and Path Correction
9. Automatic Selection of Open Source Multimedia Softwares using Neural Network
10. Design and Development of Tri-band Triangular Parallelogram Shaped Fractal Antenna for Wireless System
11. Frequency Reconfigurable Microstrip Patch Antenna for Wideband Applications
12. Design and Analysis of Modified Peano-Gosper Fractal Geometry based Wideband Microstrip Patch Antenna
13. A Lossless Color Image Compression Using an Improved Reversible Color Transform with Hierarchical prediction and Modified Huffman Coding.
14. A Smiley Shaped Slotted Stacked Patch Antenna for Enhanced Bandwidth.
15. Coherence Analysis of ECE and Brain Waves in Deep Sleep and During Mobile Phone Interaction.
16. Design and Development of Oxygen Saturation Monitor Based on MSP430 Microcontroller.
17. Implementation of Binary Fixed point Multiplier and Divider with High Speed Adder/Subtractor Using VHDL.
18. Resilient Routing Through Redistributing Routing Protocols.
19. Swastika Shaped Fractal Antenna for Multiband Applications
20. Digital Video Water Marking Using 5-Level Discrete Wavelet Transform

**21. Heterogenous Fuzzy Based Mobile Sensor Node Clustering Protocol for Wireless Sensor Network Systems**