

List of Completed RESPOND Projects

Sr No.	Research Title
1	3D reconstruction and software development for city model generation from satellite images
2	A cost-effective smart antenna for mobile broadband applications
3	A local short term model for forecasting Ionospheric Scintillations for GNSS applications over Indian Region
4	A Remote Sensing and Rock Magnetic Based Integrated Tectonic Study in parts of South Eastern Rajasthan
5	Active vibration control of laminated shells
6	Analysis and design of Wide band Microstrip Antenna
7	Analysis and development of Matched Feed for offset parabolic antenna system
8	Analysis of Dielectric Resonator Antenna Array
9	Analysis of Microstrip Radiator using Particle Swarm optimization technique
10	Analysis of Radiation from Multidevice High Gain Amplifier and Interaction of Active MMIC with Package / Housing - Theory, Analysis and Measurement
11	Analysis of Satellite Derived wind and wave parameters for Coastal Waters off Karnataka
12	Antipodal Linear Tapered Slot Antenna (AL TSA) array design and development for Inter-satellite communication at 60 GHz
13	Application of Remote sensing techniques in assessment of landscape dynamics along the Indo-Myanmar Ranges.
14	Applications of Chaos Theory to 2-D Interpolation of Irregular Data set and Image Compression
15	Archaeological Investigations using remote sensing techniques
16	Assessment of the Zooplankton community structure and secondary productivity in the Chennai and Portonovo, Northern coast of Tamil Nadu
17	Assessment of Vegetation Phenology with Optical and Microwave data
18	Bay of Bengal Tropical Cyclone Movement and Intensity Estimation Using Numerical Model and Satellite Data
19	Capacity, Bit Error rate and performance evaluation of MIMO based communication system on minimized Multipath environment
20	CDMA code design, Link-level simulation, and Interference analysis for IRNSS-based SatNav receivers
21	Characterization of Aerosols, Black Carbon and Radiative Forcing over Urban Environment of Ahmedabad and Gandhinagar City, Gujarat India
22	Classification of hyperspectral Remote Sensing Data to discriminate between crop condition variety and stage
23	Conformal array synthesis using evolutionary algorithms for the generation of a shape beam antenna for data transmission
24	Control of flexible and reconfigurable Parabolic Antenna using SMA based smart actuators
25	Cotton Growth and Yield Modeling Using Spectral Agromet Observation and GIS
26	Crown counts of Trees growing in Shoolpaneshwar Sanctuary by using Hyperspectral Sensing
27	CRUSDE – Crustal deformation studies of parts of South India using RS & GPS

28	Design & Demonstration of a set of algorithm for High Reliability Wireless Data Acquisition & Control
29	Design & Development of a Proof-of-Concept Model of an Adaptive Membrane
30	Design and Analysis of Frequency Selective Surface at Ka/Ku Band for Reflection and S Band for Transmission
31	Design and development of 32-bit RISC processor based IP Core for space applications
32	Design and development of a miniaturized Dual-Band / Tri-Band antenna using Negative Refraction Index technique
33	Design and Development of key exchange mechanism for High Security Applications
34	Design and development of Low insertion loss narrow band Surface Acoustic Wave (SAW) Filters on Quartz substrate at VHF & UHF for satellite communication
35	Design and Development of Scalable Data Mining Algorithms for Big Earth Data
36	Design and development of Spatio-Temporal data mining techniques and software framework for Earth observation data
37	Design and fabrication of large deflection MEMS Bimorph element for Tunable filters
38	Design and implementation of Dual blind detection Robust watermarking for multimedia security in FPGA
39	Design and implementation of security attributes driven energy-efficient link layer architecture for wireless sensor networks
40	Design and simulation of a new Energy Efficient ML-MAC Wireless Sensor Protocol
41	Design of Radiation Hardened by Design (RHBD) standard cell Library for 0.18 μ m technology
42	Design of Ultra Low-Power FHSS Transceiver for Wireless Communication Applications
43	Design optimization of Multilayer Microstrip Antennas using Artificial Neural Networks
44	Design, Development and Hardware implementation of BPSK, QPSK and other modulation schemes as part of Software Defined Radio (SDR)/Cognitive Radio (CR), for use in Satcom terminals
45	Designing of SLMs based on Nematic Liquid Crystals Doped with non-mesogenic molecules (Polymer, Nano-Particle and Dyes)
46	Detecting, locating, identifying and documentation of the monuments and cities of the Eastern Vindhyas using Remote Sensing
47	Developing an Adaptive Neuro-Fuzzy Inference System (ANFIS) based CAD Tool for Designing a Corrugated Horn Antenna
48	Development of a remote sensing and GIS based approach for flood forecasting and warning for Lower Tapi basin
49	Development of advanced Fractional Transform based algorithm for Satellite Image Compression, Encryption, Digital watermarking and Image Matching Applications
50	Development of advanced nano ZnO sensors for Atmospheric and Environmental monitoring
51	Development of algorithms for Narrow Band Interference reduction in IRNSS received signal.
52	Development of Approaches for Geometric, Radiometric and Atmospheric Correction of Remote Sensing Data Products for Multidate Data Analysis
53	Development of Early Warning System for Shallow Landslides-using Rainfall thresholds
54	Development of Image and Signal Processing Algorithms on leading DPS Processors and development of special purpose FPGA for co-processing

55	Development of Land Cover Classification Methodology with Fusion of Data from Different sensors
56	Development of Microwave Dielectric Resonators and High K MIC Substrates
57	Development of Mutimodal interface for information retrieval in regional language from database
58	Development of passive damping surface coating for advanced materials based structural system using PZT (Piezo) powder
59	Development of Protocol for Vector borne Schistosomiasis using RS and GIS
60	Development of regional language interface for information retrieval from databases
61	Development of Reinforced Aerated blocks with innovative composite ingredients as compression members for structural applications with stringent design specifications
62	Development of Remote Sensing and GIS based decision support for mine closure in Singrauli coal fields
63	Development of Space Qualified High Temperature Super Conducting thin films Microwave Applications
64	Development of Texture based features for landuse classification
65	Development of tools for hybrid-Polarimetric SAR data analysis and applications
66	Development of Ultra Low Power and Low Voltage Time to Digital Converter (TDC) for Space Applications
67	Dimensionality reduction of Hyper-spectral remote sensing data
68	Dual Blind Detection Robust watermarking for Multimedia security
69	Dynamics of Urban Pollution : A Curative Strategy Using RS and GIS Techniques - A Case Study of Megacity Delhi
70	Earthquake Damage Scenario Analysis for Chennai city using Remote sensing & GIS techniques
71	Effect of different types of land use patterns on local scale meteorological phenomena with an emphasis on future projected scenario
72	Efficient Download Transmission, Error correction and Encryption techniques for IRNSS data
73	Electronically stitched large format cameras
74	Estimation and modeling of suspended sediments transport and coastal dynamics in the coastal waters of southern Karnataka
75	Estimation of Rain parameters from Doppler Radar
76	Extended Depth of Field Imaging using Coded Camera Architecture
77	Faradey rotation correction for MSMR 6 GHz data
78	Feasibility studies on development of surface integrity and strength characteristics of rapid prototyped components to enable their direct application in design and development activities of payload for spacecraft
79	Feasibility studies on enhancing detector efficiency with structured plasmonic films
80	Flood Risk Modelling Using Satellite Remote Sensing Data for Optimal Crop Planning
81	Fractal Image Compressing Using Neural Network
82	Friction Stir Welding (FSW) of Aluminum Alloys used in Space Application (6061 T6, 2195 & 7050)
83	Gated photodiodes for single photon detection in CMOS technology
84	Geospatial Technology for Mineral Exploration program in Singhbhum Shear Zone (SSZ) of Jharkhand

85	Geotechnical investigation of land instability in Kohima Town and along N.H. 39, between Chumukedima and Kohima
86	GIS based Early warning landslide susceptibility model using data mining classification approach
87	Grid based application development for satellite image processing
88	Growth and characterization of pure & substituted Langasite crystals for development of high temperature SAW devices suitable for space applications
89	Habitat adaptability and habitat bio-diversity of malaria causing mosquito Anopheles culicifacies : Development of information retrieval protocol using satellite Data
90	Habitat Suitability and Corridor analysis for Sloth Bear in Gujarat using Remote Sensing and Ecological Modelling
91	High resolution Indian Ocean State estimation
92	Implications of Satellite Imagery on Cultural Heritage Resource Management
93	Improvement in size uniformity of self assembled InAs Quantum Dots on GaAs substrate by rapid thermal annealing
94	Information extraction from multi-polar radar data
95	Investigations on multi-band Fractal Antennas for satellite applications
96	Ku/Ka band channel modeling for SATCOM links over Indian Region
97	Land use Planning and Management of Natural Resources of Dhar District through Remote Sensing
98	LITHYPER – Lithological Discrimination using hyperspectral data and its comparative Evaluation with Satellite Data
99	Mathematical Modeling of Spectrum Sharing Techniques in Cognitive Radio Network
100	Micro level planning of Forest resources Development using high resolution IRS-1C/1D Satellite data
101	Modeling and Controller Design for Active Clamp Forward Converter with Multiple Outputs used as Electronic Power Conditioner (EPC)
102	Modeling of Rain Drop-Size Distribution and Attenuation at SHF/EHF Band for Indian Regions
103	Monitoring of Flamingo's Traditional Ground and Evaluation of Alternate Breeding Ground for their Conservation Through Remote Sensing
104	Monsoon onset over Kerala and its variabilities
105	Morphodynamic study of the Digha coast of West Bengal for sustainable development and erosion mitigation using remote sensing and GIS techniques
106	Morpho-tectonic evaluation of the KOSI river basin, Bihar using remote sensing data
107	Multi-criteria Spatial System for Evaluating Environmental Impacts of Land use change in Urban and Peri-urban limits using Remote Sensing and GIS
108	Oceanic Pollution and other ocean phenomenon monitoring using feature extraction from multi-polarized SAR data
109	Ontology-based semantic annotation generation and retrieval of images using multiple sub ontologies
110	Optical flow-based prediction of Visual storms from satellite image sequences
111	Optimal Cluster Detection over high resolution satellite Imagery and its application
112	Parallel data structure and algorithms for image processing Problems

113	Photonic Microwave Arbitrary Waveform Generation with Adjustable Chirp Parameter based on Remote Sensing Applications
114	Predicting Flood Inundation using Remote Sensing & GIS Techniques : A case Study of North Bengal
115	Prediction of offshore and Nearshore wave climate and sediment transport along the east coast of India Using MSMR
116	Process Development for minimization of spring back deformation and enhancement of Profile accuracy for Carbon Fiber Reinforced Polymers (CFRP) reflectors
117	Quantitative Study of the Evolution of Mesoscale Convective Systems by Doppler Weather Radar and its application in Precipitation nowcasting
118	Rain fade mitigation for Ka Band communication satellite
119	Reconstruction of 3D objects from stereo space Imagery for development of city models
120	Reliable and secured space communication based on fundamental cut-sets and fundamental circuits in Graphs
121	Robust Video Streaming using H.264 Scalable Video Coding over Mobile Broadband Networks
122	RS-GIS studies for Biodiversity Characterisation at Landuse level in Jharkhand Forests
123	Satellite based assessment of fire severity and validation in Uttarakhand
124	Satellite based study of coastal dynamics and its impact on Long term Shore line changes along the coast between Honnavar and Bhattcal, Uttar Karntaka
125	Scintillation effect on Navigation receivers and alleviation technique using Kalman filter based PLL (Phase Locked Loop)
126	Secured data transmission for space communication over Elliptical Curve Cryptography
127	Simulation and analysis of system design requirements for ground to satellite and inter satellite free space optical communication link
128	Simulations on Differential IRNSS and RTK receiver
129	Space education for school and communities
130	Study and Optimization of Microstrip Antenna System to receive satellite link from moving trains
131	Study of Radar Bright Band height
132	Study on Higher order modes of Microstrip Antennas
133	The feasibility of bandwidth enhancement of reflectarray antenna at Ku band for conventional and shaped beams
134	The Study of Pollution Mechanisms in Urban aquifers of Bruhat Bengaluru Mahanagara Paalike (BBMP) area by integrated Geophysical, Remote Sensing and GIS techniques
135	Ultra wide band Dielectric Resonators Antenna
136	Urban Disaster Management and Emergency Response
137	VHDL Implementation of Efficient Trelli's coded spatial modulation scheme for MIMO communication
138	Wave modelling for North Indian Ocean using SAR and MIKE-21
139	Wavelet based image compression / decompression with pipelined architecture on FPGA