Information on JKSTIC Project

S.no	Name of the PI	Designation	Department	Title of project	Objective of Sanctioned Project
1	**Dr Kafeel Ahmed**	Assistant professor	Management studies	Assessing the vulnerability of farmers to climate change hazards and promoting climate smart agriculture strategies in pir panjal region of jammu and Kashmir	To study agriculture strategies for farmers in pir panjal region affected due to climate change.
2	**Dr.Mohd Naseem**	Assistant Professor	Department of Computer Sciences	Design and Implementation of Virtual Security Systems in Remotely Located Educational Institutions using Internet of Things (IoT)"	i.Field Survey of various institutes situated at remotely located mountainous areas in Jammu & Kashmir. ii.A thorough study of data collected from the various institutions for the various hypothesis in research work and identification of the various problem faced by these educational institutions. iii.To conduct an in-depth study of the existing solutions used by the institute's administration to address some or all of the problems iv.Deployment of IoT devices and collection of data at the identified locations in Baba Gulam Shah Badshah University, Rajouri for monitoring purpose to collect the data related to 1.Movement of wilding animals. 2. Areas more prone to fire. 3. v.Application of Optimization Algorithms, for identification of various objects, to identify security threats. vi.Comparative analysis through simulation and hardware implementation Simulation of the proposed optimization techniques using simulators (like NS2, NetSim, MATLAB, and Arduino).

3	**Dr. Mohd Asgher**	Assisntant Professor	Botany	Developing techniques for tolerance against low temperature stress in Triticum aestivum cultivated in Rajouri district of Jammu and Kashmir	1.Screening of Triticum aestivum cultivars against low temperature stress to find out the cultivars with high and low tolerance potential 2.Investigating the individual and coordinated role of H2O2 and H2S on growth and metabolism of Triticum aestivum under low temperature stress 3.Study aimed at understanding and identifying the photosynthetic genes to study the coordinated role of H2O2 and H2S under low temperature stress
4	**Dr. Ram Singh**	Assistant Professor	Mathematical Sciences	Mathematical Modeling of Mosquitos Borne Diseases with Control Strategy in Jammu Region of UT of J & K.	The main objectives of the search are: 1. To develop new and more efficient mathematical models in the forms of differential equations to study. 2. To analyze the existing models of epidemiology and get insight about the transmission dynamics of Malaria and Dengue Fever in population of Jammu Province of J&K. 3. To estimate the rate of spread of infection among population, the effects of treatment and vaccination and controlling parameters etc.
5	**Dr. Vinod Puri**	Assistant Professor	Electrical Engineering Department	Design Analysis and Development of Directly Driven Permanent Magnet Synchronous Generator for Vertical Axis Wind Turbine in Wind Prone/Hilly Areas of Jammu and Kashmir	i. Locate the specific area of wind energy generation depend up on the wind speed on hilly areas of Jammu and Kashmir. Depending up on the wind speed choose the generator rating with pheasible swept area of the wind turbine. ii. Optimum design of PMSG for VAWT using proposed modified optimization approach for improved performance and reduced weight. iii. Analysis of PMSM regarding Transient, dynamic, magnetic, electric, and thermal model using simulation software like ANSYS MAXWELL, COMSOL etc. iv. Design Implementation of PMSG used with VAWT.

6	**Dr Tanvir Ul Hassan Dar**	Assistant Professor	Biotechnology	DNA barcoding of some endemic medicinal plants of Kashmir Himalaya and its use in assessing adulteration in their trade	1.Development of DNA barcodes for the selected endemic medicinal plant species of Kashmir Himalaya for use in their reliable identification 2.Development of DNA barcodes for plant parts/ingredients used in trade for the selected endemic medicinal plant species. 3.Detection of adulteration in market samples of the selected endemic medicinal plant species.
7	**Dr Raja Amir Hassan**	Assistant Professor	Biotechnology	Genomics of selected neurodevelopmental disorders in consanguinous populations of J&K	1. Collection of patient medical history (including MRIs, CT scans). 2. Karyotyping and MS PCR for chromosomal abnormalities and Fragile X. 3. Chromosomal Microarray for deletions and duplications.
8	**Dr.Farkhanda Ana**	Assistant Professor	ECE	Design and development of a compact DC model for short channel organic thin-film transistors for integrated circuit design	Modeling and analysis of Organic TFTs for IC design
9	**Dr. Haider mehraj**	Assistant Professor	ECE	Hybrid Multimodal Biometric Recognition System using Handcrafted and CNN Features.	The multimodal systems based on the fusion of physical (face) and behavioural (gait) traits is proposed to implemented in four strategies: fine-tuned pre-trained CNNs, end to end CNN networks, handcrafted features and hybrid handcrafted-CNN features.

10	**Er. Ameer Ullah Ganai**	Assistant Professor	Civil Engineering	"Soil Erosion Assessment on Hill Slope of Jammu Srinagar National Highway using RUSLE Model"	1. Incorporating soil loss equation model (RUSLE), remote sensing, and the geographic information system (GIS)to estimate soil erosion potential and potential area in the along NH-44. 2. The work will focus on the merging of remote sensing techniques, GIS, and the Revised Universal Soil Loss (RUSLE) Equation to quantitatively evaluate soil erosion severity as well as highlight the most erosion-prone areas. 3. Detailed geological, meteorological, and remote sensing investigations will be carried out on the extreme rainfall landslide events that occurred along NH-44 during the recent years accordingly remedial measures will be provided.

11	**Dr. Gulfam Ahamad**	Assistant Professor	Computer Science	Machine Learning based Design and Development of Apple disease Prediction and automatic Prescription Model	i. Review literatures on the proposed research problem and producing the research article on the literature review. This review process explore the existing models related to the apple diseases identifications and used techniques. It is also find the various types of apple's disease pertaining to leaves and fruits. ii. To design the intelligent knowledge database framework and a sophisticated recommender system for the farmers of apple crops and agriculture/ horticulture scientists who know about the diseases of apples and possible treatments. iii. To develop an auto upgraded way for recommender system as per utilization of all the stake holders with the help of unsupervised learning approach for automatic response to the farmers. After some times, this system will respond automatically without any intervention of agriculture/ horticulture scientists 24 X 7 to the farmers. iv. To decrease the risk of crop loss and financial loss for the farmers and to ensure high quality treatment/prescription along with name and feature of disease by the system. v. To ensure the revenue increment and also positive influence on GDP of UT of Jammu and Kashmir.

12	**Dr.Shoeb Ahmad**	Assistant Professor	Biotechnology	Bioprospection of phytochemicals derived from medicinal plants of Pir-Panjal Himalayan region as source of novel inhibitors effective against New Delhi metallo-beta-lactamase to combat antimicrobial resistance	To combat the threat posed by NDM-1 mediated antimicrobial resistance and the availability of vast and rich unexplored reservoir of plant resource offered by Pir-Panjal Himalayan region, this project is aimed to explore an array of phytochemicals in search of novel antimicrobials and antibiotic potentiating agents in order to combat antimicrobial resistance.
13	**Dr. Sajad Hussain Parey**	Assistant Professor	Zoology	Morphological & molecular diversity of caddisfly families Lepidostomatidae and Philopotamidae (Trichoptera: Insecta) of NorthWest Himalaya	To collect caddisflies belonging to the families Lepidostomatidae from North Himalayas 2. To identify the adults based on external morphological features upto species level 3. To perform DNA barcoding of all the identified species for studying phylogentic relationships 4. To describe new taxa (if any) based on morphological and molecular studies
14	**Er.Shahid ul Islam**	Assistant Professor	Civil Engineering	Modelling of Sediment Yield and Establishing Sediment Delivery Ration Relationships in Upper Jhelum Basin	1. Mapping of Rainfall erosivity of Upper Jhelum Basin using precipitation datasets. 2. Establishing sediment delivery ratio relationships for the catchment 3. Modelling of sediment yield by integrating GIS and MUSLE model

15	**Dr. Saima Aslam**	Assistant Professor	Biotechnology	Evaluation of Jasmonic acid mediated cold stress tolerance in Solanum lycopersicum	1. Screening of best dose of methyl-Jasmonates on Solanum lycopersicum under against low temperature by studying oxidative stress and antioxidants metabolism. 2. Study on the effect of Jasmonate (Best pick from objective 1) on structural attributes and calcium concentration. 3. Evaluation of protein profile of Solanum lycopersicum under cold stress and yield analysis.
16	**Dr. Pervez Alam**	Assistant Professor	Civil Engineering	Analysis of Solid Waste Management Systems and Impact of Non-Engineered Landfill Leachate on Ground Water quality of City Jammu, India	Following objectives have been identified. 1.To identify the MSWMS practices in city Jammu. 2.To analyze various MSW treatment techniques being practiced in the city. 3.Sampling, characterization and statistical analysis of solid waste, ground water and leachate in the proximity of non-engineered landfill leachate. 4.To analyze the leachate characteristics and its impact on ground water in proximity of non-engineered landfill. 5.To propose guidelines for improvement MSWM system of the city Jammu.
17	**Dr Sajad Ahmad Khan**	Assistant Professor	Zoology	Diversity and Ecological Studies of Butterflies (Lepidoptera: Insecta) of Rajouri and Poonch Districts of Jammu Division	1, Survey, collection, identification 2 Impact of varied Ecological factors on diversity 3: Species richness and Evenness of Butterflies in Study Area 4: Recording the Nectar Sources of Lepidopteran Fauna in Study Area

18	**Dr. Aadil Ahmad Lawaye**	Assistant Professor	Computer Science	Development of Accent Based Automatic Speech Recognition (ASR) for Kashmiri Language	1.To develop a primary speech dataset for the Kashmiri Language. 2.Provide a general framework capable of segmenting speech signals and extract features. 3.To Develop a Speech to Text (STT) Recognition System for Kashmiri Language using an end-to-end Speech Recognition approach. 4.Evaluate the performance of the proposed Speech Recognition System.
19	**Dr. Majid Bashir Malik**	Assistant professor	Computer Science	Realistic Healthcare Management System for Type-2 Diabetes Mellitus using Lifestyle/Biological Data for J&K- UT, India	1.The collection of lifestyle data from different demographic regions of J&K-UT, India. 2.Exploratory Data Analysis using various statistical/machine learning measurements. 3.To develop a framework for early prediction of the disease using machine learning techniques. 4.Reverse feature engineering process to calculate the probability of lifestyle parameters towards T2DM. 5.To develop a recommender system that will recommend the diet plans and physical exercise charts for different categories of patients. 6.To develop an android application that will help healthcare