

List of running sponsored Research Project/Schemes till 31.03.2023

Sl. No	Project Title
1	DST-INSPIRE Fellow
2	Development of Microfluidic tools for neuromuscular synatogenesis and nanotoxicological studies
3	Development and evaluation of an innovative poly herbal Bi layer wound dressing material
4	DST/INSPIRE Faculty Award (IFA-12-PH-21)
5	IFA-12-Ph-22 DST/INSPIRE FACULTY Award/2012 INPIRE FACULTY AWARD
6	Study of Magnetospheric Wave-Particle interaction, Aurora, Airglow and Conductivities on Planets and their Satellites
7	Study of tool wear in Diamond turn Machining & Micro Machining Process
8	Development of Sheet Hydro-forming Process for missile Components
9	Technology and Fabrication of Tabletop CNC Machine for Micro-Tubular Hydro forming Setup
10	Assessment of residual stress upon friction stir welding of steel
11	Cognitive Linguistic study of perception verbs in Hindi and English: In the context of machine translation
12	Development & evaluation of nanocarrier for enhanced anti-microbai activity of anacrdoc acid against human and plant pathogens
13	J.C. Bose Fellowship
14	Evaluation and Optimisation of Biodiesel Production from Microalgae
15	Electromagnetic Analysis, Design and simulation of an X-band Gyro-Twystron Amplifier
16	NO _x Removal from Diesel Exhaust by combined NO _x storage Reduction and NH ₃ SCR System
17	Development of Electropulsing Facility for Synthesis of Bulk Nanostructured Materials
18	Development & Evaluation of Infrared Nanoparticles for Cellular-wide sensitive E-field Mapping
19	Pyrolysis of Biomass for the Production of Bio-oil: Experimental and Computational Study

20	Observations and Modeling of solar transients & space weather candidates
21	Polymeric Nanobiohybrids for Tissue Engineering and Drug Delivery
22	Development of a Rubber based sheet Hydro forming setup
23	Evaluation of some compounds in experimental Alzheimer Disease
24	Design Investigations of High Power MM Wave W Band Gyatron
25	Development of high Through put Processing route for CIGS PV absorber films by spray pyrolysis of Pre-synthesised Nanoparticle Ink
26	Development of low voltage, low power, colloidal quantum dot light-emitting transistors for next generation display technology
27	Pharmacological Effect of novel formulation in experimental allergic encephalomyelitis rodent model
28	Fabrication of low-cost High-through out Flow Cytometer using tunable nanolenses.
29	Development of solution methods for Abel's integral equations and generalized Abel's integral equation
30	On characterizing and Obtaining the Complete Efficient Solution Set of an Interval Optimization Problem under a D-Dominance and a variable Dominance Structure
31	"Design and development of miniaturized pattern/frequency reconfigurable MIMO antennas and its performance improvement using artificial electromagnetic material"
32	DST-INSPIRE Faculty Award (IFA-13 PH 54) understanding structure and dynamics of the Interstellar medium
33	Construction of Cold Inducible Expression System
34	Enhancement of Lipid Content in Microalga <i>Scenedesmus Obliquus</i> Using Genetic Engineering Tool: a step towards biodiesel
35	Characterization and validation of Schlieren Technique for Capturing Shock Wave
36	Combined effect of dynamic electrical stimulation and surface charge on cellular functionality of electrovector and piezoelectrically toughened bioceramics
37	Development of Polymer and Quantum Dots Blended Tandem Solar Cells Using Low Cost Solution Processed Method
38	Screening of Novel Psychrophilic alkaline Protase from the metagenome of Antarctic soil

39	Development of an energy -efficient wireless sensor networks for precision agriculture
40	Development and structural characterization of $\text{Bi}_{2-x}\text{M}_x\text{V}_{3+(y-3)/2}$ coating for protection against coolant & sensors
41	Development of portable electrochemical sensor hydrogen peroxide
42	Propagation & Mitigation model of mixed road traffic noise for planning of mid-sized Indian Cities
43	Physical Layer Security for LTE based Wireless Networks to increase Jamming Margins
44	Identification of Gene Responsible for Degradation of Poly (ethylene terephthalate) in <i>Ideonellasakalensis</i>
45	Neem seed based nanocapsules and nanomedicine for targeted drug delivery and cancer therapy
46	Functional-hollow-porous-bipolymer based Nanoformulations and Interventions for treatment of Cancer and prevention of Tuberculosis, concept of nanomedicine with multiple drugs for multiple diseases.
47	Incorporating Intelligence in Email System
48	Studying few aspects of soil behavior and In-corporation them in Limit Analysis
49	Design & Development of Combined Cooling and Power Generation system
50	Smart & Integrated Pedestrian System Design
51	Flow and segregation of granular materials out of hoppers and two & three dimensional devices
52	Electronic Structure evolution across quantum critical point in $\text{Li}(\text{Ti}_{1-x}\text{V}_x)_2\text{O}_4$ $\text{Li}_{1-x}\text{Zn}_x\text{V}_2\text{O}_4$
53	Robust Adaptive Mesh Methods for Singularly Perturbed Problems in Ordinary and Partial Differential Equations
54	Development of low cost sodium ion battery: Fabrication and application of NASICON based electrodes

55	Collection of self-propelled particles in inhomogeneous environment : numerical & analytical Studies
56	Understanding the mechanism of action through cell biology and upgradation of herbal drug in solution and biodegradable patch for the treatment of diabetic foot ulcer
57	In situ electron microscopy at atomic scale for understanding nucleation growth and interfaces of omega phase
58	Elastocaloric effect measurement setup to study caloric effect in shape memory alloys
59	The sun under the microscope - An integrated research activity to maximize the science return from a new generation of missions to study the sun
60	Schwarz waveform relaxation methods for singularly Perturbed Parabolic Problems
61	Pharmacology of Natural drugs in obesity and eating disorders
62	Novel Electrode Materials for Reversible alkali -ion (Li+/Na+) capacitors and Pseudocapacitors
63	Mix energy Source Electric Vehicle Charging System Design and its Impact on Indian Smart -distribution - grid
64	Meter Scale Granite block Sematic clay barriers experiment and associated TMH modeling for Indian Pit mode reference geological Disposal System
65	Development and validation of coupled Thermo-Hydro-Mechanical (THM) models for radioactive waste repositories in fractured rocks
66	Development of anticorrosive paints
67	Dissecting brain reward circuitry and CNS comorbidities in chronic neuropathic pain
68	Detailed lecture based curriculum development for science subjects as part of Induction Programme in AICTE COLLEGES
69	Landslide stability analysis in subzero environment around Kinnaur district of Himachal Pradesh, India
70	A Robust medical image forensics system for smart healthcare
71	Mott transistors based Neuromorphic memory device
72	Minimizing hysteresis in magnetic shape memory Heusler alloys for reversible magnetocaloric effect

73	Investigation on dynamic response analysis of shallow foundation resting on pond ash deposits
74	Phytochemical and pharmacological evaluations of bioactivity guided fractions of medicinal plants of Tripura
75	Development of an intelligent evaporative cooler for composite climate
76	Targeted drug delivery of methotrexate/gallic acid- folate conjugated Poly L-Lysine nanoparticles
77	Modeling self assembly and phase separation kinetics in the complex soft materials
78	Ramanujan Fellowship
79	Design Modelling and simulation of linear Induction Drive for Propulsion Applications
80	Low cost ammonia gas sensor based on polymer/polymer nanocomposite device formed by novel floating film transfer (FTM) technique
81	Metal hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides
82	Development and assessment of asphalt mastic from typical Indian and Austrian filler materials with a new test method
83	Nanoscale interfacial magnetic skyrmions and its applications in memory devices
84	Study and analysis of Mathematical Models of Moving Boundry Problems
85	Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications
86	Development of Hgh Alumina(Al_2O_3) & DOPED High Alumina materials for Ceramic Catridge Applications
87	River Aquifer exchanges & hydrogeological study for watershed management of betwa river basin
88	Photonic radative cooler for passive sub-ambient cooling
89	Investigations of new lead free perovskite materials for solar cells
90	Applications of Spectral graph theory in analyzing the structural properties of large scale networks
91	Controlled synthesis of MoO_3 nanoparticles inside mesoporous materials for oxidative dehydrogenation of organic moleciles with CO_2
92	Construction of Non-monotonic Lyapunov Function for the Dynamical Systems governed by differential inclusions
93	RKVY-RAFTAAR, Agribusiness Incubators (R-ABI) under RKVY-RAFTAAR Scheme
94	Direct cooling of the Silicon Photovoltaic Module Enabled by an Array of Micro channel built in the backside EVA -Layer
95	Approximation methods for problems in fractional calculus of variations
96	Table Top Sem for CIF(One Time Support Grant)
97	NRDC Innovation Facilitation Centre
98	Chemical modification of Gaur Gum to improve its properties
99	Design and development of Micro Seismic based technique for monitoring and

	prediction of slope failure in Pandoh, Himachal Pradesh, India
100	Virtual synchronous generator for microgrid applications
101	Whole body Vibration Exposure on HEMM Operators in Surface Coal Mines - An Assessment of Various Contributing Factors
102	Removal of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) using Adsorption and Bioremediation
103	Harnessing the synergy of low band gap organic semiconductor and highly facile floating film transfer method for low cost efficient organic electronic devices
104	Strategies towards generation of functional tissue engineered construct for orthopedic application
105	National Geotechnical Conclave on "Development of Early warning system (EAWS) for Landslide Hazard Mitigation on 21-22 March, 2019
106	Role of short range ordering in designing high entropy alloys
107	Natural Template Based Novel Neuroprotective Molecules for the management of Alzheimer's Disease
108	Cyclic thermochemical fuel generation
109	Design and Development of Affordable Myoelectric Prosthetic Hand
110	Aging studies and estimation of thermal properties of Liner Materials
111	Development of complex Aluminium Shell Part High pressure die-casting
112	Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics
113	Output feed back controller design for linear parameter varying systems
114	Modelling & simulation of ultra-high temperature coating on substrate using CVD/CVI Process
115	Pharmacological evaluation of anti-diabetic effects of some natural drugs
116	How Beclin 1 mediates cross-talk between apoptosis and autophagy via ITS C-Terminal Fragment?
117	Development of novel near infrared fluorescence imaging probes for detecting amyloid beta species in eyes of Alzheimer's disease animal model

118	Development of magnetically recyclable visible light photocatalysts for H ₂ O ₂ Production
119	Impact of Carbon Nanomaterial based Photocatalyst on Microalgae Growth and Lipid for improved Biodiesel
120	Electromagnetic Analysis, Design and Simulation of Dual Frequency (S- and C-band) Relativistic Backward wave Oscillator - A HPM Source
121	Development of high strength ceramic magnet for rotating machine applications
122	Rheophysics of semi-rigid road building materials and optimization of their composites for the perception of heavy transport load
123	Development of a unified physical model for hot deformation and creep to support the development of high temperature materials
124	Detailed study on the effect of mining as well as Thermal Power Stations on Natural water bodies in Singrauli Region and Recommendation Thereof
125	Optimization Of capacity utilization of draglines deployed in NCL through Big data Analytics
126	Study for impact assessment of back filling of fly ash in abandoned gorbi mine and treatment/management of acidic water to avoid contamination of ground water and soil
127	Contribution of Neighboring Industries over the air quality of mining area
128	Evaluation of ground behaviour in open cart and underground excavations using TDR
129	Development of transition metal based nanocatalysts for bioinspired water oxidation
130	Stability Evaluation of dump slopes & developing slope stability model for design of Long Term Stable Dump Slopes through proper benching & vegetation : Part A
131	Developing Superior Nobel Metal free Oxygen Evolution Catalyst for Electrochemical Water oxidation and Metal -Air Battery
132	Stability Evaluation of Dump Slopes and Developing Slope Stability Models for Design of Long Term Stable Sump Slopes through Proper Benching and Vegetation - Part B
133	Promoting water Oxidation Reaction with Electrochemically Synthesized ultrathin Layered double Hydroxide Nanosheets
134	Novel Milk Exosomes for the combination therapy by using selected natural medicine (Paclitaxel & Colchicine) for the efficient management of breast cancer
135	Prospects of power converters for integration of electric vehicle charging stations witj the existing distribution system in India
136	Targeting kinesins Mediated regulation of nociceptors for the Treatment of Neuropathic Pain

137	Safer Roads: Development of Mix Design Methodology for OGFC Mixes
138	Development of Simulation Software for Spintronic Device & Circuit Simulation
139	Life cycle and performance of Waste Plastic roads
140	Life Cycle and performance assessment of cold mix roads
141	Wearer corrosion and biocompatibility of Tantalum (Ta) coated 316 L, Stainless steel for Orthopedic Applications
142	Slope stability monitoring and analysis using hyperspectral imaging
143	Tuning self assembly of fluorescent Protein Nanodots for Melanoma Skin Cancer
144	Understanding the engineering behavior of unsaturated geomaterials and implementing it in limit analysis for solving geotechnical problems
145	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway
146	Development of Functionally Graded Armour Composites (FGACs) Materials
147	Regional characterization of atmospheric aerosols at Varanasi Region
148	Development of ORC technology for waste heat utilization for the generation of electricity
149	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site
150	Research & Experiment in the area of advanced data structures and methodologies to represent and process large terrain datasets for efficient rendering
151	On understanding the solar activity and preparing for space weather prediction using a state of the art dynamo model
152	Metal Nanostructure assisted plasmonic hot electron induced phase transformation in 2D- Transition metal dichalcogenides for hydrogen evolution reaction
153	Synthesis and evaluation of diverse N- functionalized heterocyclic hybrids as multi target directed ligands for neuroprotective neurorestorative therapies
154	Development of high performance, CMOS compatible and color selective narrow-band photodetector for high resolution imaging application
155	Design development and characterization of Low loss frequency selective metamaterial waveguide coupler and antenna for 5 G Applications
156	Mechanical behaviour of advanced high strength steel processed by additive manufacturing
157	Tunable surface plasmon optical sensing behaviour of M-MoS ₂ (M=Cu, Ag, Au) Alloy Nanostructures
158	Creep and corrosion behaviour of Novel MRI2300 Magnesium Alloy with Nanoparticles Addition
159	Development of low cost β -Ti alloy for biomedical applications
160	In-situ microscopy study of age hardening in dispersion strengthened cast magnesium alloys and its ex-situ correlation with mechanical properties

161	High performance rare earth free nanocomposites permanent magnet for advanced motor and alternative energy applications
162	Pathology on a Spinning Disc
163	Design and development of a Membrane reformer prototype for production of ultra pure hydrogen from methanol for fuel cell based vehicle and power generators
164	Development of text based matching algorithms for bartering software
165	Design and analysis of linear induction moter drive for electromagnetic aircraft launching system
166	Intelligent system for computer assisted diagnosis (CAD) OF CANINE MAMMARY TUMORS
167	Strategic Planning for Water Resources and Implementation of Novel Biotechnical Treatment Solutions and Good Practices (SPRING)
168	Re-purposing of approved drugs from Drug Bank database for possible treatment for COVID-19 by targeting SARS-CoV-2 main purpose
169	Development of High Te Lead Free Piezoelectric Materials for Energy Harvesting
170	3 D Bio Steeolithography for Engineeringfunctional Tissues
171	Development of guidelines for use of waste reclaimed water in pavement construction
172	Investigation of Structural phase transformation in HfO ₂ thin films using X-ray absorption spectroscopy
173	Development of Performance based mix design process: A re-look at the Marshall Mix design process for the production of strong and durable
174	Multiple reversals of the Sun's polar- field and their physical causes
175	Biodegradable path for faster wound healing including diabetic ulcers using ayurvedic medicine
176	Forewarning System for Landslide Prediction along Mangan and Chungthang road, Sikkim India
177	Integrative Environment View (IEV) for Sustainable Hyper Local Temporal & Spatial Environmental Pollution Monitoring : Case of Air Quality in Varanasi City
178	AMWATCH: Defining the AMR Burden of Antimicorbial Manufacturing Waste in Puducherry and Chennai
179	Multilingual document summarization in quasi stationary environment
180	Investigation of two dimensional transition metal dichalogenides Nanostructure as Effective SERS Substrate
181	Development of Novel Therapeutics for the Redemption from Frostbite and Burn Injury induced Chronic Pain in Military Veterans
182	Stability of Nanostucture and Residual Stress Developed through Ultrasonic Shot Peening in Superalloy IN718 at Elevated Temp.
183	Scattering assisted imaging: Exploiting randomness of the light.
184	Study of Polarmetric parameters from laser speckle
185	Development of bi-functional electrochemical nanobiosensors for bacterial exotoxin detection: Implication towards screening of toxin producing bacterial isolates
186	Novel integrated engineering approch for effective tar decomposition and its last minuts removal to fuel gas reforming in biomass pyro-grasification
187	Developing Psyllium Husk Based Polysaccharide Hydrogel into Electrospinnable and

	3D Printable Materials : Towards Fabrication and Comparative Evaluation of Lyophilized, Electrospun and 3D Bioplotting Scaffolds for Liver Tissue Engineering
188	Resource-optimized fog computing for smart healthcare application in IoT-enable heterogeneous networks
189	Noble multimetallics/ZnO photocatalyst for hydrogen production from green sources
190	Impact of a microspray on a bio-mimicking surface
191	Effect of Jet Pulsation on Reacting Jet in Crossflow
192	Development of nanoink for anti-counterfeit products and solution
193	Factor affecting exhaust emissions of motorized two wheeler in an Indian Tier-II city: A case study of Varanasi
194	Existence and Stability analysis of periodic solution of variable time impulsive neural network
195	Validation of Glutathione synthetase from Leishmaniadonovani as new drug target or discovery of new drug candidate
196	Assessment of Vulnerability of structures in Regard to Cyclonic Wind loads
197	Life Line Security & System
198	Spatially resolved digital holography polarization microscope for diagnosis applications
199	Developing Improved Algorithms for Intelligent Video Surveillance
200	20.03.2021
201	Development of a standalone solar electric drive system for boats
202	Prototype development of fuel cell and photovoltaic based innovative hybrid DC power pack for remote application
203	Portable smart in vitro diagnostic platform for monitoring thyroid disorders
204	Investigation risk factors and predicting complications in COVID-19 patients with Machine Learning Algorithms
205	Analysis and design of sub-millimeter wave tuneable gyrotron for DNP- NMR Spectroscopy application
206	Improvement of delamination fracture toughness in nano-graphene particles reinforced polymer composite laminates: An experimental- numerical approach
207	Fabrication of Cathode materials and SOFC for energy application
208	Development of Cyber Resilient Protection scheme for AC Microgrid
209	Study the BioCNG production potential of different feedstocks
210	Design of Protective Barrier Pillar Against Large Water Head in Underground Coal Mines
211	Experimental and Numerical Investigation on Strength Behaviour of FRP Retrofitted Beam
212	A System for Quality Control and Certification of Geospatial Data for NSDI
213	Development of photoactivated transfer hydrogenation in catalysis for heat generation cancer transfer
214	Surface charge induced antibacterial and cellular response of Hydroxyapatite-preovskite composites for orthopedic implant application
215	Characterization of indigenous cow's dung and urine for scientific advancement and development of utility items
216	Tailoring correlations of light using plasmonic and nano structure

217	Emergent phases in 2D quantum materials and Heterostructures
218	Defence analyses of Compound Semi-Conductor Wafer
219	Seasonal study on photocatalysis experiments in India environment
220	Design, development and demonstration of solar-IV integrated on board and off board electric rickshaw charging Infrastructure
221	Indo- South korea Joint Network Center for Environmental Cyber Physical Systems
222	Development of Nitride Ceramics thin-film for soft x-ray applications
223	Demonstrable Prototype of IoT enable DC/AC smart grid at Library Building, IIT(BHU), Varanasi with solar photovoltaic Integration
224	Data-driven battery sizing for standalone solar electric drive system for river boats
225	Integrated computational and experimental studies to potential therapy of kala-azar targeting Dephosphocoenzyme A Kinase (LdDPCK) of the pathogen as a target
226	Prediction of Dose- Volume Histograms of Organs-at-risk in Prostate Cancer Radiation Therapy using Machine Learning
227	Development of a scalable volatile organic compound (VOC) sensing based intelligent cyber physical system for near real-time vehicular pollution monitoring and recommendation for reduced emissions
228	Development of Optical Fibre Cable Coloring Machine
229	Art, science and technology of traditional "Koftgari" metal work in India
230	Bioengineering of living materials to fabricate functionalized bacterial nanocellulose for high performance applications
231	Analytical study of sansad adarsh gram yojana of Jayapur and Nagapur in Varanasi District
232	Study on effect of temperature and mean stress on fatigue strength of turbine aerofoil alloy
233	Development of perovskite oxides SrCeO ₃ and SrCeO ₄ as high temperature thermal barrier coating (TBC) material for aerospace application
234	Development of Friction Stir Welding for repair work of high temperature materials like EN-24 steel
235	Development of advanced nanocrystalline coatings and LASER cladding system for repair work related to HEMMS and other structural components
236	Design, Function, and Utilization of Multifunctional Surface Coatings for Next-Generation Lithiumion Batteries
237	Crystal Engineering of Dapagliflozin to improve its pharmaceutical properties
238	Discovery of novel selective inhibitors of choline acetyltransferase : Lead optimization and in vivo pharmacolinctic studies
239	Production of high-purity methane from renewable biomass through anaerobic digestion
240	Preparation of Dense Palladium/ Palladium-alloy Membranes and Optimization of Multi-pass Membrane Seprator to Generate Ultra-Pure Hydrogen for On-site Applications
241	Bioactivation of cyclopentadienyl rings in organometallic complexes
242	Localized Electricity generation through Modular Low Temperature ORC Units
243	An Artificial Intelligence supported Intrusion Detection & Behavior Monitoring System for Crucial Data Servers against Novel Cyber Attacks
244	Novel integrated engineering approach for effective carbon dioxide removal using

	biphasic amine blends for coal-based thermal power plant
245	Implementation of Terahertz Band Communication for Next generation wireless Networks
246	Development of Mesoscale models to describe hot deformation and creep of low SFE materials
247	New "metabolite-amyloids" hypothesis for the origin of life
248	Design and development of Cybersecured Smart Power interface for Energy-Local Area Network (ELAN)
249	Development of a multiplex portable spinning disc for effective monitoring of women's health during different stages of pregnancy
250	Design and development of Molecular hybrids on a multifunctional framework for regulating Cholinesterases, β -secretase 1, Amyloid- β , and Oxidative Stress Against Alzheimer's Disease
251	Investigation on Hydrogels and Development of Multi-Responsive Polymers for Healthcare Applications
252	Complex of online and onsite lectures on materials for hydrogen generation by solar water splitting
253	Chemical recycling of electronic waste for sustainable livelihoods and material consumption in India
254	Effect of composition and microstructure on mechanical properties of 7-9%NI steel for LNG tanker and Naval application
255	Microstructure tailoring to develop biocompatible Cr-Fe-Mo-Nb-Ti based high entropy alloys for medical applications
256	Development of Cardiac Model for Prediction of Human Heart Failure using Noninvasive medical imaging and Computational Fluid Dynamic techniques
257	Development of Sparse Inverse Co-variance based functional brain connectivity scheme for the assessment of shared autistic traits in autism and typical development
258	Self-assembled smart nano medicine for targeted therapy of advanced non-small cell lung cancer
259	Design and development of potential multifunctional molecular hybrid for the treatment of Alzheimer's disease
260	Investigation and development of mobile sink based intelligent data routing scheme for IoT-enabled wireless sensor networks
261	Design and development of cognitive small-world LPWAN for Internet of things towards health monitoring
262	3D Computational and experimental study on layer dynamics and prediction of critical power law scales in double-diffusive finger convection
263	Reactivity controlled compression ignition (RCCI) combustion engine for methanol utilization and its feasibility analysis to be adopted in hybrid electric vehicles (HEVs)
264	Human IL-2 fused leishmanial trypanothione synthesis (TS) as protein vaccine candidates
265	Development of Hand Telerehabilitation Platform for Diagnostic and Therapeutic Purposes in Physiotherapy
266	Metasurface-based Sensor devices for mm-wave and sub-terahertz Applications
267	Safety & Efficacy of the "PL05" capsule/tablet in Animal in the treatment of gastric acidity

268	Utilization of Industrial Wastes in Dense and Gap Graded Asphalt Mixes as Fillers
269	Exploring Anti-infective potential of Panchagavya : Metabolomics and Proteomics Approaches
270	Fabrication of low power consuming inverted near-infra red AMOLED
271	Development of toolkit for prediction of blood brain-barrier permeability using deep learning to expedite CNS drug discovery
272	Design and Validation of field deployable miniaturized Nano-Bio-Sensing System for Detection of the Parasitic liver fluke fasciolagigantica
273	Technology intervention for creative economy
274	Study and analysis of interfacial cracks in composite media
275	Development of a real-time cyber-attack detection module and its hardware-in-loop testing for an integrated power network
276	Development of energy efficient and compact electric drive train for fuel cell electric vehicle
277	Pseudo-differential operators in partial differential equations, distribution and machine learning?
278	Analytical study of hydrodynamic theory of wet active fluid
279	Hybrid EEG-EMG based Prosthetic hand for transradial amputees to perform reach and grasp tasks
280	Design and Development of High Gain, Wide Bandwidth Beam Steered Reconfigurable Reflectarray Antennas for 5Gmm Wave Applications
281	Experimental study of anisotropy in nuclear charge and current distribution that results in interplay of electric and magnetic rotation in Xe nuclei
282	Design and Development of Composition engineered toxic free organic inorganic Perovskite Quantum Dots Based Flexible Spectrum Tunable Photodetectors
283	Towards alkaline aqueous battery and fuel cell application: Synthesis, kinetics and Operando spectroelectrochemical studies of mixed metal selenide and polypyrrole composites as potential oxygen electrocatalysts
284	Reliability evaluation and performance enhancement of grid integrated wind-solar-EV hybrid renewable energy systems
285	Optimal transport derivations in regularized Wasserstein space for non-linear & linear transformations of deep neural networks
286	Active polar flock in quasi two-dimensional geometry: role of confinement and boundary condition
287	Study of quantum chaos and multipartite entanglement using quantum circuits
288	Multifunctional Nanostructured Mn/Fe doped CeCrO ₃ for Photocatalyst and Magnetic Switching
289	Tailoring properties by altering long and short-range structures in eco-friendly, Pb-free ferroelectric perovskite oxides for energy harvesting
290	Li-ion based inverter for household appliances
291	Development of Laboratory Scale Bio-Grout Technology for Landslide Mitigation
292	Language Communicator Tool for End Users
293	Development of prototype of early warning systems on impending goaf for underground coal mining.
294	Investigation of Anomalous Nernst Effect in Shape Memory Heusler Alloys

295	Development of industrial waste as mold material for sustainable development of developing countries
296	Wavelets Adaptive Schemes for Singular Integral Equations
297	On Developing Polynomial-time Interior-Point Methods for Robust Multiobjective Convex Optimization Problems
298	Demonstration and reproduction with scientific validation of some Ceramic Materials Knowledge System of Ancient India
299	High proton conducting metal phosphonate electrolytes for fuel cell application
300	Design and development of next generation cost effective reconfigurable on-board battery charger with health and fault monitoring
301	Electrolytic capacitor less six pulse DC ling photovoltaic system connected to grid
302	IKS at IIT(BHU) Varanasi
303	Development of Cryptographically efficient lightweight MDS matrices and its extension to code-based PQC
304	Mineral Acids in India prior to 15th CE: A Revisit Exploring Arthasastra and other 15th CE Rasa Sastra texts
305	Development of an efficient module-integrated battery management system
306	NeetiShastras and Modernity : Understanding the reflective equilibrium between Hermeneutics of Normative Texts and Practice
307	Traditional Principles of settlement planning in heritage temple sites of Odisha/ erstwhile kalinga region
308	Development of advanced Medical Textiles
309	Correlation studies of copper artifacts (2500-200 BCE) from Varanasi region and copper mining and smelting in tribal areas of Singhbhum
310	TIFAC-MSME Program
311	On the augmentation of heat transfer from external downward facing Convex surface of Calendria v
312	Multi output hybrid solar inveter for low power applications
313	Study of some Two dimensional fractional order nonlinear transport phenomena problems in porous media
314	Developing novel therapeutic strategies for mitigating antimicrobial resistance
315	Effects of ceria support morphology for the synthesis of bimetallic catalysts for Nox reduction through H2-SCR
316	Crack modulation in dried colloidal films by soft additives
317	Modelling of advanced polycrystalline materials for crystal plasticity simulations of machining processes
318	Blowoff Dynamics of Afterburner Flame
319	Effect of composition and microstructural alteration on constant and dynamic

	loading response of Al-Mg-Si alloys for electric vehicle application
320	Development of stable and tethered Os(II)-based catalysts for reductive stress mediated photo-catalytic anticancer activity
321	Numerical modeling and optimization of isothermal chemical vapor infiltration (CVI) process for C/SiC composites using MTS/H ₂ mixture
322	Novel observations and modelling of the heating and dynamical plasma processes in the localized solar atmosphere
323	Development of Variable data rate CCSDS compliant direct digital demodulator
324	Development of wearable internet of medical things for continuous health monitoring of astronauts
325	Development of algorithms for water quality monitoring using ground instrumentation and optical sensors onboard unmanned airborne vehicle and satellite data
326	Development of graphene/CNT FET based sensors for space applications
327	Metasurface-based various components for applications in microwave and beyond
328	Design and development of reconfigurable reflect array antenna at X-band
329	Development of microwave scattering algorithms for retrieval of crop biophysical parameters and soil moisture using polarimetric SAR satellite data
330	Designing metallic glass composites with immiscible elements as alloying elements for improved plasticity
331	Design and development of kinetically stable electrolytes for next-gen Li-ion batteries (ElectroLion)
332	Thermo-catalytic conversion of carbon dioxide into ethanol and higher alcohols
333	Electronics repairing and E-waste collection system
334	Development and processing of magnetocaloric thin sheets for enhanced thermomagnetic energy harvesting applications
335	A Novel, Rapid, High-Throughput Characterization of Microbiome Dynamics through Cytomics and Machine Learning
336	Development of an inexpensive high-fidelity technique for the prediction of failure capacity of thin shell structures
337	Experimental investigation of stability limits, NO _x emissions and blowout phenomenon of ammonia - hydrogen-nitrogen air mixtures in a non-premixed swirl combustor
338	Design and analysis of adaptive tow-steered laminates
339	Investigation of processing techniques for the development of PEEK and Thermoplastic prepreg technologies
340	Design and development of machine learning based methods for plant disease detection
341	Development of high-strength vanadium microalloyed steels for heavy gauge plate
342	Graphite Aerosol studies in High Temperature Aerosol Facility for nuclear reactor applications
343	Development of an Intelligent Internet of Things (IIoT)-enabled Portable Device for Early Diagnosis of Foot and Mouth disease of Dairy Cows
344	Study of composition and thermo-mechanical processing of 4-8% Cu Al alloy for fabricating the fuselage skins and frames for aerospace application
345	Smart DC charging with integrated digital platform for CPOs and Power

	distribution companies
346	Study on therapeutic and preventive efficacies of linoleic acid in hamster model of vasceralleishmaniasis
347	Design and development of implantable and ingestible antennas for biomedical applications
348	L-functions associated to modular forms and non-vanishing of poincare series
349	Catalyst development for reforming of biomass tar model compounds for hydrogen and syngas production
350	Nanlocal elliptic equations with critical growth nonlinearities
351	A numerical study of some non-classical diffusion/heat equations with free boundaries
352	Algorithms with provable guarantees for dynamic social networks
353	Complete utilization of banana from farm till its disposal: A step towards the agricultural circular economy for the growth of agriculture and farmers in UP
354	Investigation of size effects on vibration and thermoelastic damping in nano-electro-mechanical systems of piezoelectric materials
355	Adaptive computational approach for riesz fractional advection dispersion wave equations
356	Isoperimetric bounds and obstacle placement problems for mixed steklov-Dirichleteigenvalues on Riemannian manifolds
357	Certain space of cusp forms spanned by eat quotients and application
358	Metabolic engineering of rapid growing cyanobacteria for farnesene production and its scaleup studies
359	Proof of concept of developing in-cell reductive stress by Ir(III) transfer hydrogenation catalysts
360	Artificial intelligence &IoT based smart vet ecosystem for animal health patient care & precision livestock farming
361	Novel and efficient hybrid material of CsPbBr ₃ , Nanocrystals and organic complexes for multi-stimuli and dynamic optical encryption and decryption
362	Development of rare-earth-free metal vanadate phosphors for latent fingerprint detection
363	Development of Brain/Liver-on-a-Chip Models for Understanding the Role of Liver in the Progression of Alzheimer's Disease during Diabetes
364	Hybrid Solar Wind Driven Combined Heat and Power System using Organic Rankine Cycle. (P.I.D.-1747
365	A new paradigm for flavour problems
366	Inverse estimation of uncertainty in intact rocks properties at meso-scale using full-field strain measurements
367	Silicon carbide devices based high voltage gain converter with novel current-source gate driver for electric vehicle powertrain
368	Development of peripherally acting Nanoformulation of opioids for the treatment of neuropathic pain
369	DNN- Derived Innovative Flexible Frequency Selective Surfaces for Stealth and 5G Electromagnetic Shielding Applications
370	Development of nano bonded alumina magnesium borate refractory castable

	application for Indian petrochemical industry
371	Assessment of Safe Parting Thickness and Optimum Goaf Edge Support Requirement for Extraction of Pillars under Soft Cover
372	Design, development and microstructural engineering of ultra-strong maraging medium entropy alloys
373	Enhancement of detection capability of Pyroelectric detectors in Infrared (IR) and Terahertz (THz) region
374	Manufacturing of complex titanium assembly part for missile using fabrication, simulation, testing & prototyping studies
375	Bringing global sustainable solutions for clean rivers in India through the concept of living lab
376	Pressure Assisted Flash Joining of Ceramic Materials
377	Cell laden 3-D bioprinted 2-dimensional (2-D) hydroxyapatite nanocrystals/alginate/collagen piezo-biocomposite scaffold for bone tissue engineering applications
378	Wafer-scale integration and interfacial engineering of 2D van der Waals superlattice for next-generation nano-scale devices
379	Data anomaly detection and mitigation for distributed control and optimization with inverter-based resources (IBR) in cyber-physical networked infrastructures (CPNI)
380	Nano-ion Chromatograph in Action - Sustainable and scalable quantum dots paves a Facile route for Rare Earth Ions Separation Through Advanced Hydrometallurgy
381	Assessment of Work Posture of Mine Equipment Operators in Relation to Whole-Body Vibration Exposure-Using RULA, REBA and Human Modelling Approach
382	LoRA-enable Indoor-Outdoor Long-Range Message Sharing System: from device design-to-deployment
383	Development of a Low-cost, Privacy-secured and vision-based divergent behavior prediction system for both individual and group
384	Center for development of drone related technologies
385	Production, characterization and combustion studies on sustainable aviation fuel
386	Preparation & characterization of natural products derived self-surface functionalized carbon dots for oral cancer theranostics
387	Animal studies to establish the efficacy of surface polarized sodium potassium niobates for orthopedic implant application
388	A data driven toolkit for enabling multimodal freight transportation in India and Austria
389	Making transit accessible to all : Ensuring fairness and equity in Data - Driven Transit Planning
390	Installation of PavanVruksh for harnessing wind energy at GTAC/Institute Library Premises of IIT(BHU)
391	Revisiting traditional Indian agriculture practices against climate change vulnerabilities using machine learning techniques
392	Development of paper-based analytical devices for molecular sensing
396	Development of disaster response system for collecting & disseminating information through social media text processing
397	Development of a lightweight Android mobile software powered by Deep Learning

for identification of plant leaf disease

List of closed/completed Sponsored projects/Schemes during F.Y. 2022-23

Sl. No	Project Title
1	Numerical methods for integral equations and differential equations by using Wavelets and operational matrix
2	Cold sintered ferroelectric polymer Ceramic Nano composites for Energy Storage
3	Nanoparticles supported self Assembled Conducting Polymer Monolayer Based Platform for Rapid Detection of Monosodium Glutamate in Food Products
4	Design Development & characterization of porous Ti/SiO ₂ composite with tailored microstructure fabricated by powder metallurgy using rice husk and sucrose as space holder for orthopaedic applications
5	Study, Design and Implementation of Frequency Selective Metasurfaces for Microwave Applications
6	Radionuclide sensing platform based on functionalized polymer having nanochannels using accelerator
7	Development of glasses as plant nutrients
8	A Stack development of utilized regenerative Proton Exchange Membrane Fuel Cell for Large Scale Production of Ultra Pure Hydrogen Fuel, Oxygen using Solar Energy & uninterrupted Power