

## Patents filed by the faculty during the financial year 2018-19

1. Designing Improvement and Implementing New Features to Conventional RO (Reverse Osmosis) Water Purifier Systems
2. Nano-hydroxyapatite Based Porous Polymer Composite Scaffolds for Bioactive Molecule Delivery in Musculoskeletal Regeneration
3. An Organic Thermistor
4. Apparatus for Finishing of Ball using Abrasive Flow Finishing
5. Automated Subglottic Aspiration Device
6. A Method for Synthesis of Metal Nanoparticle encapsulated with a Plurality of Shells of Zeolite
7. A Method for Synthesis of N-type Oxide-based Nanocomposite with Graphite for Thermoelectric Application
8. Process for the Synthesis of 3-spiropiperidino Indolenines
9. Bionikli: Affordable Bionic Prosthetic Hand for Transradial Amputee
10. Peptide Encapsulated Biodegradable Nanoparticles for Treatment of Neurodegenerative Diseases and Preparation Method Thereof
11. Control Device
12. Electrospun Fibrous Nanomat Composition and a Method of Synthesizing the Same for Cancer Cell Detection
13. Method and System for Dehazing Videos and Images in Real-time
14. A Voltage Measurement Circuit and Method Thereof
15. A Flow Cell and Method Thereof for Optical Measurement of Micro/nano Structure
16. A Neighborhood Search Based Large Multiple Input Multiple Output Detector and a Method Thereof
17. Low Complexity Detection in Multiple Input Multiple Output Systems and A detector Thereof
18. Antibacterial Nano Breathing Nasal Filter
19. Process for Modifying Neddylation Site of an AAV Vector and Product Thereof
20. A Process of Synthesizing a Composite of Aniline, Nphenylglycine and Graphene Oxide and Product Thereof for Sensing of Metal Ions
21. Glycoengineered Adeno-associated Virus Vectors for Hepatic and Ocular Gene Therapy
22. Controlled Micro-texturing of Transparent Conducting Oxide Thin Films for Uniform Transparency
23. A Microwave Absorbing Metamaterial Based Wearable and a Preparation Method Thereof
24. Alumni Association, IIT Kanpur logo Trademark
25. Social Entrepreneurs & enterprises, an Alumni Association IITK Initiative
26. Startup Master Class, Alumni Association, IIT Kanpur
27. SMC Logo
28. Process of Preparing Metal Nanoparticle Clicked Zeolite
29. A Process for Dispersing Metallic Nanoparticles on a Template Surface
30. A Wireless Pressure Sensor Node for an Inflatable Structure
31. Sumoylation Target-site Modified AAV Vector, Methods and Sequence for Gene Therapy
32. Nickel-vanadium Nitride Hydrophobic Alloy Powder
33. The Synthesis of Tolterodine from Activated Azetidine

34. A Sensing-Based Guidance Device for Endotracheal Intubation and a Method for Operating the Same
35. Identification of Micro-RNA and Methods to Improve Gene Expression from AAV Vector
36. A Method of Manufacturing an Organic Semiconductor Film having Improved Conductivity
37. A Multicomponent High-entropy Alloy Composite, a Preparation Method and Characterization Thereof
38. Mn-Al-Fe Impregnated RGO Hybrid Composite for Arsenic Adsorption and its Sludge as Super-capacitor
39. A Method for Coating on Lignocellulosic Fibrous Material Substrate to Facilitate Building Electronics
40. A Sensor System and Method Thereof
41. Development of A-IGZO Based Dual Gate ISFET using Al<sub>2</sub>O<sub>3</sub> as Top Gate/sensing Dielectric
42. A Spatially Resolved Reflectance Based Bevelled Optical Fibre Probe for Epithelium Layer Diagnostics
43. Novel Spring Induced Ornithopter Wing Design with a Bent Bar
44. A Non-invasive Nanoparticle Based Sustained Release Ocular Drug Delivery System for the Treatment of Anterior and/or Posterior Eye Diseases
45. Process for Synthesis of Polydimethylsiloxane (PDMS) Nanoparticles
46. A Traverse System and Method Thereof
47. A Mechanical Scriber to Isolate Solar Cells During Monolithic Fabrication of Organic Solar Cell Modules on Substrates

#### **Patents granted during the financial year 2018-19**

1. Air Sampler
2. Convergent Monotonic Matrix Factorization Based Entire Frame Image Processing
3. A Method for Creation of 2 and 3-dimensional Micro Channels of Varied Dimensions using Replication and Molding Around a Wire
4. Aligno, a Multi Layered Physical Map (Copyright)
5. Trademark
6. Air Sampler
7. Two Dimensional Nano Positioner
8. Hand Pump
9. Multiple Criteria Decision Analysis
10. Hydroxyapatite Poly (Etheretherketone) Nanocomposites and Method of Manufacturing Same
11. An Improved Lateral Bipolar Junction Transistor (BJT) on Selective Buried Oxide (selbox) and a Method for Manufacturing the Same
12. Multiple Criteria Decision Analysis in Distributed Databases
13. A Process for Compression of Surveillance Video Data for Long Storage in Smaller Storage Medium
14. Interactive Board Game
15. Packaging System for Large Caliber Ammunition

16. Advanced Sintering System
17. Tubular Microwave Sintering Furnace
18. A System for Generating Crystal of Desired Size and Number Density of a Biomolecule, and Process Thereof
19. An Improved Organic Light Emitting Diode, and Improved Light Emitting Diode for Tuning the White Emission and Process for Fabrication Thereof
20. Piston Based Resistor
21. Multiple Criteria Decision Analysis in Distributed Databases
22. Fabrication of Jute Fiber Sandwich Composites
23. Process for Drilling Contoured Deep Hole in Super Alloys using Sted to Enhance Cooling in Turbine Blades
24. Photovoltaic Inverter System
25. Process for Preparation of Chiral  $\alpha$  Lactams
26. Designing Improvement and Implementing New Features to Conventional Reverse Osmosis Water Purifier Systems

### **Technology Licensed during the financial year 2018-19**

1. School Bag Convertible to Study Table
2. Intelligent Tutor System

### **Memorandum of Understanding:**

During the year 2018-19, IIT Kanpur strengthened its relations with many National and International institutes and organizations through research collaborations and signed several Memorandum of Understanding. During the year, the following institutes/universities/organizations have joined hands with IIT Kanpur for the purpose of research work in the diverse fields of science and technology. Some of such organizations are:

1. CSIR-National Metallurgical Laboratory, Jamshedpur, to promote cooperative research and to facilitate the exchange of ideas to enhance high quality research
2. Indian Gold Policy Centre (IGPC) @ India Institute of Management, Ahmedabad, for the project titled 'A Study of Artisanal Entrepreneurship, Skill Development, and Network among Goldsmiths in Contemporary India'
3. CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), New Delhi, to promote cooperative research and to facilitate exchange of ideas, development of new knowledge, and to enhance high quality research acumen mainly in Environmental Science and Engineering
4. Department of Biotechnology (DBT), New Delhi, to collaborate for the project titled 'Bioactive molecule (TGF  $\beta$ 1 and Wnt/ $\beta$ -catenin inhibitor) presenting injectable double network hydrogels for cartilage regeneration'
5. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, to Collaborate for the project titled 'Remote Metrology of Hexagonal Wrapper Tube through Glass Medium'

6. University of Leicester, UK, Kings College London, UK, The Energy Resource Institute, New Delhi & Earthlinks UK, UK, to collaborate for the project titled 'Thermal infrared technologies for supporting environmental assessment and decision making in the Ganges Basin'
7. Interuniversitair Micro-Electronica Centrum vzw, Belgium, to collaborate for the project titled 'Compact modelling of Gallium Nitride based power components'
8. NASA, USA, Amendment and Extension of the Agreement up to January 30, 2031 for a detailed understanding of global atmospheric change
9. Hanyang University, Korea, to collaborate for the project titled 'Development of Optimal Eco Driving System in HEV/PHEV Based on Vehicle Environment'
10. Centre National de la Recherche Scientifique acting behalf of Laboratoire de chimie de Coordination (LCC-CNRS), France, to collaborate for the research project titled 'Novel Chiral First row Transition Complexes for Asymmetric Catalysis via Activation of inert C-H and C-Heteroatom bonds'
11. Department of Biotechnology (DBT), New Delhi, to collaborate for the project titled 'Developmental Biology Inspired Tissue Engineering Protocol for Articular Cartilage'
12. Department of Biotechnology, New Delhi, to collaborate for the project titled 'Functional Characterization of Metabolism Related Genes (MRGs) with Restricted Expression in the Developing Vertebrate Nervous System'
13. Department of Biotechnology, New Delhi, for the project titled 'Investigating the role of BMP signaling in pathogenesis of osteoarthritis'
14. Department of Biotechnology, New Delhi, for the project titled 'MUSTER-Musculoskeletal stem cells targeting'
15. Pranveer Singh Institute of Technology (PSIT), Kanpur, to collaborate in the area of academics to promote education, research and incubation activities in the areas of mutual interest
16. Central Pollution Control Board (CPCB), Delhi, To collaborate for the study titled 'Apportionment of Air Pollution Sources at Taj Mahal, Agra'
17. Onkolyze Pte Limited, Singapore, to collaborate for a proposed research in the field of 'Computational fluid dynamics modelling & image processing'
18. Commonwealth of Learning, Canada, Amendment to an agreement with Commonwealth of Learning for collaboration of applied research in online learning technology of COL's MOOC4DEV portal
19. Commonwealth of Learning, Canada, To continue the collaboration for applied research in online learning technology of COL's MOOC4DEV Portal
20. The Centre National de la Recherche Scientifique, France, University of Grenoble Alpes, France, The Institut polytechnique de Grenoble, France, to collaborate for the research project titled 'Formal Verification of Autopilot Software for Unmanned Aerial Vehicles (UAVs)'
21. All India Institutes of Medical Sciences (AIIMS), Bhubaneswar, Collaborative Research Agreement for the project titled "In-vivo detection of cervical pre-cancer/ cancer with polarized fluorescence based portable device"
22. Uttar Pradesh Pollution Control Board (UPPCB), Lucknow, to collaborate for the project titled "Implementation of measures for measurement and mitigation of noise pollution"

23. CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), New Delhi, to collaborate for exchange of scholars, students, academic information and materials for the further advancement of research and development
24. Indian Institute of Science (IISc), Bangalore, To collaborate for setting up of state-of-the-art 650TF/1.3PF HPC facility and datacenter ecosystem under the National Supercomputing Mission (NSM) for the research and development activities
25. Petroleum Conservation Research Association (PCRA), New Delhi, to collaborate in research work/study/survey in the areas of mutual interest that would benefit the public/private entities and the Government and Society in general
26. Naval Physical and Oceanographic Laboratory, Kochi, for development of "Flexible Thin Film Transistor Circuit for Acoustic Sensors"
27. Police Reforms Madhya Pradesh (PRMP), Bhopal, to collaborate mutually in finding solutions via research and development for various challenges faced in policing and investigation using Communication, IT tools, Artificial Intelligence and Machine Learning
28. Department of Biotechnology, New Delhi, to collaborate for the project titled "Deciphering the Roles of Mycobacterial SOS Response Regulated Toxin-Antitoxin (VapBC40) Module in persistence and antibiotic resistance"
29. Eastern Railway, Kolkata, Consultancy Services for "Continuous Monitoring of Sampreeti Setu (New Jubilee Bridge): Instrumentation, Design and Health Assessment"
30. Bharat Heavy Electricals Limited, New Delhi, to collaborate for the project titled "Development of soft-coating for minimization of erosion of LPST blades via chemical route"
31. Department of Biotechnology (DBT), New Delhi, to collaborate for the project titled "Formate/Nitrite transport channel family: Evolution, selectivity and transport mechanism using computational approach"
32. TrojanUV, Canada, to collaborate on research for the project titled "Disinfection of municipal sewage produced by urban centres across the Indian subcontinent"
33. VIB vzw, Belgium, to collaborate for generating nanobodies as crystallization chaperones for the research related to the determination of high-resolution crystal structures of selected GPCRs including C5aR1 and ACKR2
34. University of Leicester, UK, Addendum-Contract change notice to the agreement for "Thermal infrared technologies for supporting environmental assessment and decision making in the Ganges Basin"
35. Indian Institute of Information Technology (IIIT), Allahabad, Norwegian University of Science and Technology (NTNU), Norway, Institute of Energy Technology (IFE), Norway, for Consortium Agreement to collaborate for the project titled "Cyber-Physical Security in Energy Infrastructure of Smart Cities (CPSEC)"
36. Florence School of Regulation (FSR), Italy, to collaborate in key areas of energy regulation, capacity building, research and in many other overall objectives
37. Semiconductor Research Corporation, Durham, Contract for Research Services for the project titled "Formal Methods for Security Validation of Trustworthy SoC Platforms"
38. Semiconductor Research Corporation (SRC), Durham, Contract for Research Services for the research proposal titled "Time for Secure Memory Hierarchies" under the SRC India Program

39. Defense Research and Development Organization (DRDO), New Delhi, to collaborate for the project titled 'Automated Synthesis of Motion Plans for Large Scale Multi-Robot Systems for Complex Specifications'
40. Reserve Bank of India, Patna, to collaborate for the project titled 'Assessment of Structural Deficiency and Retrofitting Methodology for Seismic Strengthening of Residential Buildings at Lohia Nagar Officers' Colony at Patna'
41. Vikram Sarabhai Space Centre, Bangalore, to collaborate for the project titled 'Generation of aerodynamic data for various launch vehicle models through wind tunnel testing at NWTF-IITK'
42. Indian Institute of Technology Madras, Chennai, to collaborate for the project titled 'Development of a National Blockchain and demonstrate for two strategic applications' funded by National Security Council Secretariat
43. Ministry of Railways-Research Designs & Standards Organization , Lucknow, Amendment of the MoU dated 22/12/2015 for setting up of Centre for Railway Research (CRR) in order to develop a long-term frame work for research collaboration
44. Department of Biotechnology, New Delhi, to collaborate for the project titled 'Development of Biodegradable Polymer based Controlled Release Fertilizers and Pesticides for Sustainable Agro-economy BioPolyCRF'
45. Defence Metallurgical Research Laboratory (DMRL), Hyderabad, to collaborate for research in the field of Integrated Computational Materials Engineering (ICME)
46. Department of Biotechnology, New Delhi, to collaborate for the project titled 'Nucleus specific delivery of anticancer via ligand-free PDMS nano particles'
47. National Stock Exchange of India Limited, Mumbai, to collaborate in Cyber Security Research in financial markets
48. London South Bank University, UK, The Chancellor, Masters and Scholars of the University of Oxford, UK, Imperial College of Science, Technology and Medicine, UK, Indian Institute of Delhi, New-Delhi, Indian Institute of Science Education and Research, Pune, Indian Institute of Chemical Technology, Hyderabad, National Physical Laboratory, New-Delhi, Indian Institute of Science, Bangalore, Jawaharlal Nehru Centre for Advanced Scientific Research, Karnataka to collaborate for the project titled 'Advancing the Efficiency and Production Potential of Excitonic Solar Cells (APEX), II (2017 NEWTON PRIZE: India Winning Project'
49. Max-Planck Gesellschaft (MPG), Germany, for collaborative research activities with the Software Engineering Group at Max-Planck Institute for Software Systems (MPI-SWS)
50. National Chiao Tung University (NCTU), Taiwan, to collaborate for research activities in the academic areas of mutual interests like teaching, research, development, consultancy studies, promotion of dual degree program, etc.
51. Max-Planck Institute for Gravitational Physics (MPG), Germany, to collaborate for scientifically promising and innovative research in the areas of mutual interests
52. Swansea University, UK, Imperial College, London, Brunel University, London, The Chancellor, Masters and Scholars of the University of Cambridge, UK, The Chancellor, masters and Scholars of the University of Oxford, UK, Indian Institute of Science Education and Research (IISER), Pune, Indian Institute of Technology, New Delhi, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, Indian Institute of Science,

Bangalore, London South Bank University, London, Indian Institute of Technology (IIT) Bombay, Mumbai, Amendment Agreement to the collaboration Agreement titled 'Strategic University Network to Revolutionise Indian Solar Energy (SUNRISE)'

53. Executive Agency for Small and Medium-sized Enterprises (EASME) under European Commission, Vlaamse Instelling Voor Technologisch Onderzoek N. V (VITO), Belgium, Fachhochschule Nordwestschweiz (FHNW), Switzerland, Stichting IHE Delft Institute for Water Education (IHE Delft), Netherlands, Technische Universiteit Delft (TU Delft), Netherlands, Consiglio Nazionale Delle Ricerche (CNR), Italy, Aquafin N. V (Aquafin N. V), Belgium, Stichting AKVO (AKVO), Netherlands, AQUA-Q AB (AQUA-Q AB), Sweden, The Energy and Resources Institute (TERI), New Delhi, Indian Institute of Technology Delhi (IITD), New Delhi, ION Exchange (India) Limited (IEI), Mumbai, Institute for Resource Analysis and Policy (IRAP), Hyderabad, Progressive Water Engineering Private Limited (PWE), New Delhi, Hochschule Bochum (HBO), Germany, Grant Agreement for research and innovation for multi-national collaboration projects as well as for individual researchers

During the year 2018-19, Memorandum of Understanding have also been signed with many companies such as:

1. Tata Steel Limited, Mumbai, Addendum to the agreement for the project titled 'Characterization of Particle Size and Shape Factor Distribution of the Blast Furnace Feed and Simulation of the Flow and Packing of the Components'
2. BP India Services Private Limited, Mumbai, for the project titled 'India Air Pollution Study for BP'
3. Ritusha Consultants Private Limited, Kanpur, collaboration Agreement to offer industry focused and industry driven courses in electronics and ICT
4. Tata Consultancy Services Limited, Chennai, to collaborate for the project titled 'Modeling the mechanical properties of AHSS steels using advanced characterization tools'
5. Society for All Round Development (SARD), New Delhi, to collaborate for the 'Preparation of English remediation material for Grade IX'
6. Cosmic Discoveries Pvt. Ltd., Hyderabad, to collaborate for research in the areas of 'Peptide Synthesis and Testing, Nanotechnology Approaches to Treating Human Disease'
7. Nokia, Bangalore, to collaborate for the work titled 'Physical Layer Design Techniques for Next Generation Cellular Technologies'
8. Shell India Markets Pvt. Ltd., Bangalore, Second Amendment for the project titled 'Deactivation and regeneration study of the prepared Cu-PhB-CNF-K catalyst for the catalytic wet air oxidation (CWAO) of SMPO wastewater under gas-liquid flow conditions'
9. InfoSec Ventures Pvt. Ltd., Gurgaon, to co-operate in bringing real-world industry exposure to students of IITK and joint research initiative to develop an environment to deal with Cyber Security Challenges and Crowd-sourcing
10. Ortho Regenics Private Limited, Hydernagar, for the UAY project titled 'Fabrication of new generation of self-resorbing implants and devices from bioactive and biodegradable materials for orthopedic applications'
11. Hindustan Unilever Limited, Mumbai, for the UAY project titled 'Biodegradable polymers for packaging applications'

12. Unilever Industries Private Limited, Mumbai, for the UAY project titled 'Development of adhesion capability with simulated invitro perspiration and building design rules based on adhesive energies'
13. Samsung India Electronics Private Limited, New Delhi, to collaborate for the project titled 'Efficient Activity Recognition'
14. IMC Worldwide Limited, UK, First Amendment to the Subcontract Agreement titled 'Frontier Technology Livestreaming'
15. The Boeing Company, USA, Addendum A for the project titled 'Computational Studies of Plasma Treated Polymers'
16. Mitsubishi Heavy Industries Ltd, Japan, for the project titled 'Scheduling algorithms for large-scale and complex job-shops'
17. E-Spin Nanotech Private Ltd, Kanpur, for the UAY Project titled 'Design and synthesis of electrospun peptide-polymer nanofibers for disease diagnostics and biomedical applications'
18. Intel Technology India Private Limited, Bengaluru, for 'Intel India Faculty Excellence Program' with the objective to strength the academic collaborations with focus on latest technology trends, trainings, student internships, faculty sabbatical and participation in top conference/ workshops
19. InMobi Technology Services Pvt. Ltd, Bangalore, Collaboration for creating reports after analyzing the data provided by InMobi for research purposes
20. Hitachi India Private Limited, Bangalore, to collaborate for the research project titled 'Validation of Bayesian based Vulnerability Prediction Method'
21. Intercooperation Social Development India (ICSD India), Secunderabad, to provide consultancy services for the project titled 'Sectoral expert on water and climate change adaptation to support development of climate resilient water management strategies and policies in ACT locations'
22. Ramaiah Indic Specialty Ayurveda, Bengaluru, to establish a collaborative relationship for the betterment of the society in advanced treatment of oncological conditions through Ayurveda and Bio-Medical Sciences
23. Cieba Incorporation, Morbi, to collaborate for the project titled 'Evaluation of Chemical A and Chemical C required for Polishing and Enhancing Durability of Ceramic Tiles'
24. S C Johnson & Son, Inc., USA, to provide consultancy services and render advice to Johnson with respect to Johnson's products and development, manufacturing, marketing, sales and other business activities
25. Boeing Company, USA, Supplier Statement of Work developed for 'Joining of thermoplastic and thermoset composites for Polymers Research and Development'
26. Nutanix Inc., USA, to collaborate for 'Joint Development Programs'
27. Saint-Gobain India Private Limited, Chennai, Services Agreement for the project titled "Finite Element Modeling for Seismic Analysis of Non-Structural Plasterboard Suspended Ceiling Systems"
28. Bioklone Biotech Private Limited, Chennai, Consultancy Project Agreement for Outsourcing work related to the project titled "Quantitation of protein digests by antibodies"
29. Trilok Corporation, Mumbai, to collaborate in the areas of research and development and exchange academic materials & publications



30. DMIC-IITGNL, Grater Noida, VAM Consulting Engineers & Architects (P) Ltd, Kanpur, Consultancy Agreement to collaborate for preparation and vetting of DPR as per plans of DMIC, Scrutiny and vetting of all designs and drawings, Evaluation and vetting of technical and financial offers and Technical audit of works during execution
31. Tata Advanced Systems Limited, New Delhi, Extension and amendment to a contract for consultancy regarding Design work on projects related to aerodynamics of UAV
32. GE India Industrial Private Limited, Bangalore, to collaborate for the UAY project titled "Aircraft engine combustor design for improved operability, durability, pattern factor and emissions"
33. Intercooperation Social Development India (ICSD), Secunderabad, Amendment to the Consultancy Agreement to provide consultancy services for the project titled "Sectoral expert on water and climate change adaptation to support development of climate resilient water management strategies and policies in ACT locations"
34. Narayana Nethralaya Foundation, Bangalore, to collaborate in the areas of research and development, exchange of academic materials including publications and co-supervising post-graduate and graduate students
35. Invictus Oncology Private Limited, New Delhi, Consultancy Project Agreement to collaborate for the project titled "Martinizing anti-cancer drugs and optimizing multi-component supramolecular formulations"
36. Mecon Limited, Ranchi, to collaborate on non-exclusive basis in order to design development in the area of steel making & casting with an objective of import substitution and maximizing manufacturing in India
37. The Regents of the University of California on behalf of Berkeley Campus, USA, Extension and Amendment 2 to Subcontract Agreement SA9233 for Consultancy with The Regents of University of California on behalf of Berkeley Campus
38. Saint-Gobain India Private Limited, Chennai, to collaborate for the project titled 'Numerical Modeling study of Float Glass Manufacturing Process and CVD Coating'
39. World Wide Fund for Nature-India (WWF-India), New-Delhi, to collaborate for the project titled 'Cross Section Surveys at identified locations in Bijnor-Kanpur stretch of Ganga and sharing generated Hydraulic Modeling outputs'
40. Tata Consultancy Services Limited, Pune, Research Advisory Services Agreement to support the activities related to Integrated Computational Materials Engineering Research and Innovation Program (ICME R&I Program)
41. Center for Study of Science Technology and Policy (CSTEP), Bangalore, to collaborate for the project titled 'Source Apportionment Studies-Analysis of Samples'
42. Tata Steel Limited (TSL), Jamshedpur, Addendum to the Agreement for the collaborative project titled 'Synthesis of Fe based metallic glass from HPPI (Original and Selected modified compositions) through rapid solidification'
43. Hector Beverages Private Limited, Haryana, to collaborate for the consultancy project for improvement in pouch filling, carton pack filling and allied process improvements thereof, including but not limited to capping process, efficiency increases, cost reduction, etc.
44. Bloom Combustion (I) Pvt. Ltd, Pune, to collaborate for the consultancy project titled 'Development of Low Pressure HFO Atomizer'

45. Center for Study of Science and Technology and Policy (CSTEP), Bangalore, to collaborate for programmes and prototype demonstration units in the area of air pollution, transportation, technology, health and any other areas of science and policy
46. Sunmoksha Power Pvt Ltd, Bangalore, to collaborate for activities in setting up smart villages, smart green campus and living laboratories, development of course curriculum and content, etc.
47. Eco Friends Society, Kanpur, Akvo Development Tools and Services Pvt Ltd, New Delhi, Foundation for Environment Monitoring, Bangalore, Addendum to an IMPRINT project titled 'Development of a smartphone camera-based sensor for detection and remediation of chromium pollution in water'
48. Tata Steel Limited, Jamshedpur, Addendum 2 to the agreement titled "Characterization of Particle Size and Shape Factor Distribution of the Blast Furnace Feed and Simulation of the Flow and Packing of the Components"
49. Unilever Industries Private Limited, Mumbai, to collaborate for the project titled 'Predict long term stability of creams and liquid compositions'
50. Fresh Gravity, Inc., USA, to collaborate for the consultancy projects titled 'Document Table Extraction and Interpretation' and '2D to 3D reconstruction and apparel rendering'
51. Mitsubishi Heavy Industries Ltd, Japan, First Addendum to the Research Agreement for the project titled 'Scheduling algorithms for large-scale and complex job-shop'
52. Nutanix, Inc., USA, Statement of work #1 for joint development project titled 'Auto Scaling of a Distributed Cloud Database Service'
53. MaxLinear, Inc., USA, to collaborate for the project titled 'GaN HEMT Characterization and modeling for RF power amplifier design'
54. India-EU Water Partnership (IEWP), New Delhi, Water Supply and Sanitation Technology Platform (WssTP), Belgium, VITO, Belgium, to collaborate on EU Business Cooperation in India with support of the National Mission Clean Ganga (NMCG) and the Embassy of India to the EU, Belgium and Luxembourg in order to contribute to restoring and conserving river Ganga and to improve river basin management in a harmonized way
55. Center For Curiosity, New York, Extension of the MoU for the consultancy project titled 'Investigating the scope of knowledge-based services in the social enterprise ecosystem'
56. Pilkington Technology Management Limited, England, to collaborate for the project titled 'Porous glass paper as support for supercapacitor applications'
57. Pilkington Technology Management Limited, England, to collaborate for the project titled 'Development of Ta-doped TiO<sub>2</sub> film over silica coated glass substrate'
58. Tagore Technology Inc., USA, to collaborate for the project titled 'GaN based High Power LNA for 5G Applications' funded by India-Us Technology Innovation Fund (IUSSTF)

A list of a major sponsored and consultancy projects sanctioned during the financial year 2018-19 is provided below.

#### SPONSORED PROJECTS:

##### A. NATIONAL PROJECTS:

1. DELHI AIR QUALITY EXPERIMENT:A PARADIGM SHIFT IN SOURCE APPORTIONMENT (PART C: PRL PART), FUNDED BY CENTRAL POLLUTION CONTROL BOARD, SANCTIONED AMOUNT 9067179
2. XACT 625I AMBIENT METALS MONITORING SYSTEMS, FUNDED BY CENTRAL POLLUTION CONTROL BOARD, SANCTIONED AMOUNT 18872757
3. DELHI AIR QUALITY EXPERIMENT:A PARADIGM SHIFT IN SOURCE APPORTIONMENT (IIT KANPUR PART), FUNDED BY CENTRAL POLLUTION CONTROL BOARD, SANCTIONED AMOUNT 17483411
4. SPECTRUM UTILIZATION POLICIES AND TECHNIQUES FOR MILLIMETER WAVE (MMWAVE) MIMO-BASED INTERNET OF THINGS (IOT) IN 5G WIRELESS NETWORKS, FUNDED BY IIMA-IDEA TELECOM CENTER OF EXCELLENCE (IITCOE), SANCTIONED AMOUNT 3392736
5. UNIFIED SOFTWARE DEFINED ARCHITECTURE FOR INDUSTRIAL INTERNET OF THINGS), FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 2408588
6. HDFC BANK CSR, FUNDED BY HDFC BANK, SANCTIONED AMOUNT 6000000
7. TEACHERS ASSOCIATESHIP FOR RESEARCH EXCELLENCE (TARE), FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 1830000
8. CONCURRENT MULTISCALE METHOD FOR MICRO-CRACK PROPAGATION IN POLYCRYSTALLINE ALLOYS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 2590000
9. DEVELOPMENT AND DEMONSTRATION OF FIBRE-OPTIC SENSOR-BASED SYSTEM FOR AIRCRAFT LOADS AND USAGE MONITORING, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 14978725
10. ELECTRICAL TREEING IN NANODIELECTRICS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4751065
11. DIRECT 3D BIOPRINTING STRATEGIES TO STUDY ARTICULAR CARTILAGE DEVELOPMENT AND REGENERATIVE THERAPY FOR OSTEOARTHRITIS, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 7621800
12. FUNCTIONAL RECONSTITUTION OF C5AR-1-BETA-ARRESTIN COMPLEX FOR CRYO-EM BASED STRUCTURAL ANALYSIS, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 1500000
13. NON-COMMUTATIVE LACUNARY SETS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
14. UNDERSTANDING THE ROLE OF SOS-REGULATED HNH NUCLEASES OF MYCOBACTERIUM TUBERCULOSIS IN LATENCY AND REACTIVATION), FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 3130000
15. PASSIVE STALL CONTROL OF TURBO MACHINERY BLADES USING LEADING EDGE TUBERCLES, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 5042633
16. BRIHASPATI AT CUO, ORRISA, FUNDED BY CENTRAL UNIVERSITY OF ORRISA, SANCTIONED AMOUNT 1800000

17. EPITAXIAL GROWTH OF WIDE-BANDGAP BETA-GALLIUM(III) TRIOXIDE THIN FILMS FOR HIGH POWER SWITCHING APPLICATIONS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4379720
18. SUSTAINABLE SYNTHESIS VALUE ADDED CHEMICALS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4426400
19. HYDRO-MECHANICAL BEHAVIOR OF COMPACTED SOILS UNDER VARIED STRESS STATE AND SATURATION CONDITIONS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 3229441
20. DEVELOPMENT OF AMORPHOUS METAL OXY-NITRIDE SEMICONDUCTORS FOR TFTS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 6208400
21. DESIGN AND DEVELOPMENT OF TEXTILE BASED METAMATERIAL ABSORBER FOR RADAR STEALTH, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 11685080
22. MICHAEL INITIATED RING CLOSING REACTIONS:ENANTIOSELECTIVE SYNTHESIS OF HIGHLY SUBSTITUTED SPIRO-CYCLOPROPANES, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 6463775
23. SPARC: TOPOLOGY, INTERACTION AND ENVIRONMENTAL CONTROL OF QUANTUM INFORMATION PROCESSING, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 3510450
24. SPARC: DEVELOPMENT OF PRECISE GRAVIMETRIC GEOID MODEL FOR INDIA USING TERRESTRIAL, AIRBORNE AND SATELLITE GRAVITY DATA, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 4353775
25. SPARC: MACHINE LEARNING FOR LATTICE QUANTUM CHROMODYNAMICS, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 6093360
26. TORUS QUOTIENTS OF HOMOGENEOUS SPACES, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
27. TECHNOLOGY DEMONSTRATOR OF AN INFRA-RED CAMOUFLAGE SCREEN BASED ON LARGE AREA METAMATERIALS, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 13371985
28. TOWARDS REALIZATION OF ADDITIVE MANUFACTURING OF AEROSPACE STRUCTURAL COMPONENT IN INDIA, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 12239040
29. DEVELOPMENT OF A NON-INVASIVE DRUG DELIVERY SYSTEM FOR THE TREATMENT OF POSTERIOR EYE DISEASES, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 5850240
30. KRITSNAM TECHNOLOGIES PRIVATE LIMITED, FUNDED BY VILLGRO, SANCTIONED AMOUNT 3000000
31. MICROMECHANICS OF DEFECTS IN THIN ELASTIC STRUCTURES, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 2359500

32. DEVELOPMENT OF ENERGY HARVESTING DEVICE WITH GIANT POWER DENSITY (~10 MW/SCM) USING THIN FILM MULTIFERROIC COMPOSITES, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 10886700
33. DEVELOPMENT OF SOLID-STATE THERMOELECTRIC POWER GENERATOR FOR ELECTRICITY GENERATION FROM WASTE HEAT IN STEEL PLANT, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 19500000
34. FDDL-FRACTURE AND DELAMINATION UNDER DYNAMIC LOADING, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 4974640
35. SPARC: DEPLOYMENT OF LOW-COST MULTI-ROTOR MINI-UAVS FOR EARLY DETECTION OF CROP DISEASES AND DEVELOPMENT OF AN OPTIMAL SYSTEM FOR MANAGEMENT OF FARMING ACTIVITIES, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 7773513
36. SPARC: VIBRATION ABSORPTION USING METAMATERIAL BASED COMPOSITES, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 9723515
37. SPARC: LEAN PREMIXED PREVAPORIZED COMBUSTION OF DIESEL AND BIOFUELS IN A LABORATORY-SCALE GAS TURBINE COMBUSTOR, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 4798775
38. SPARC: PARK-IT: ADVANCED PARKING INFORMATION AND MANAGEMENT FOR INDIAN TRAFFIC, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 4982420
39. SPARC: OBSERVATION AND PHENOMENOLOGY OF ULTRA HIGH ENERGY COSMIC RAY NEUTRINOS AT ANITA, ARA AND ARIANNA AND OTHER DETECTORS, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 3116740
40. SPARC: DEVELOPMENT OF 3D PRINTABLE BONE AND NERVE GUIDING DRUG ELUTING COMPOSITE IMPLANTS FOR VERTEBRAL/SPINE TRAUMA IN INFECTION/TUBERCULOSIS AND CANCER, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 6466355
41. JC BOSE FELLOWSHIP, FUNDED BY SCIENCE AND ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 9500000
42. STRUCTURAL BASIS OF ACTIVATION, SIGNALING AND REGULATION OF THE HUMAN COMPLEMENT RECEPTOR, C5AR1: A GPCR DRUG TARGET IN SEPSIS AND INFLAMMATION, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 13543360
43. UNDERSTANDING THE STRUCTURAL BASIS OF BIASED GPCR SIGNALING TO DEVELOP NOVEL THERAPEUTICS WITH MINIMIZED SIDE-EFFECTS, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 3947360
44. KANPUR FLOWERCYCLING PRIVATE LIMITED, FUNDED BY BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL, SANCTIONED AMOUNT 3000000
45. EXPERIMENTAL AND THEORETICAL INVESTIGATIONS OF COMPLEX RHEOLOGICAL BEHAVIORS IN TIME DEPENDENT (AGING) SOFT MATERIALS,

FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 6053546

46. METAL-COORDINATED LIGAND RADICALS, MOLECULAR AND ELECTRONIC STRUCTURE AND REACTIVITY, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 1991000
47. DEFORMATION THEORY OF ALGEBRAIC STRUCTURES AND HOM-ALGEBRAS IN GEOMETRY, FUNDED BY SCIENCE& ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
48. DOUBLE SN2 CASCADE FOR BIOMIMETIC TOTAL SYNTHESIS OF ANTI-DIABETIC NATURAL PRODUCTS CHLORABIETOL A-C AND CALLISTRILONES A,B, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 6450400
49. AUTOMATED SYNTHESIS OF HOT ION PLANS FOR LARGE SCALE MULTI-ROBOT SYSTEMS FROM COMPLEX SPECIFICATIONS, FUNDED BY DEFENCE R&D ORGANIZATION, SANCTIONED AMOUNT 11242600
50. NON-LOCAL QUANTUM TRANSPORT, CONFINEMENT AND CORRELATION IN WEYL SEMIMETALS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 2458642
51. BIFURCATION OF VARIOUS SPATIO-TEMPORAL PATTERNS IN INTEGRO-DIFFERENTIAL EQUATIONS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
52. PREPARATION OF COST-EFFECTIVE TRANSITION METAL OXIDES-DISPERSED GRAPHITIC NANOCOMPOSITE-BASED ELECTRODES OF A MICROBIAL FUEL CELL FOR SIMULTANEOUS BIOELECTRICITY GENERATION AND COD REDUCTION IN WASTEW, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 6595116
53. IMPROVEMENT DYNAMICS IN GAMES AND ASYNCHRONOUS SYSTEMS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
54. ANALYSIS OF STATISTICAL SIGNAL PROCESSING MODELS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
55. SKIN-FRICTION DRAG REDUCTION THROUGH CONTROL OF THE TURBULENT BOUNDARY LAYER ON AXISYMMETRIC BODIES, FUNDED BY NAVAL RESEARCH BOARD, SANCTIONED AMOUNT 7434200
56. DEVELOPMENT AND ASSESSMENT OF HYBRID RANS/LES MODELS FOR PREDICTING FLOW PHYSICS IN AN AIRFOIL WITH LEADING EDGE TUBERCLES, FUNDED BY AERONAUTICS R & D BOARD, SANCTIONED AMOUNT 2120000
57. TARAL ENGINEERING SOLUTIONS PRIVATE LIMITED, FUNDED BY VILGRO, SANCTIONED AMOUNT 500000
58. M3 TOILET RESOURCES INDIA PRIVATE LIMITED, FUNDED BY VILGRO, SANCTIONED AMOUNT 4999950
59. NOCCA ROBOTICS PRIVATE LIMITED, FUNDED BY VILGRO, SANCTIONED AMOUNT 3000000
60. AARNA BIOMEDICAL PRODUCTS PRIVATE LIMITED, FUNDED BY VIILGRO, SANCTIONED AMOUNT 2499498

61. ICME NATIONAL HUB-TCS GRANT PROJECT, FUNDED BY TATA CONSULTANCY SERVICES, SANCTIONED AMOUNT 13000000
62. FUNDAMENTAL UNDERSTANDING OF THE REACTION KINETICS OF THE CHEMICAL VAPOUR DEPOSITION PROCESS, FUNDED BY SAINT GOBAIN RESEARCH INDIA, SANCTIONED AMOUNT 1146960
63. DEVELOPMENT OF THEORETICAL MODEL FOR DROPLET DYNAMICS OF ANTI-CORROSION TREATMENT ON HOT FLOAT GLASS, FUNDED BY SAINT GOBAIN RESEARCH INDIA, SANCTIONED AMOUNT 722160
64. DEVELOPMENT OF COMPACT MODEL FOR SSPL'S GAN-HEMTS, FUNDED BY DEFENCE RESEARCH AND DEVELOPMENT ORGANIZATION, SANCTIONED AMOUNT 2310000
65. CONDUCTIVE CARBON PASTE/PAINT, FUNDED BY MANIPAL TECHNOLOGIES LIMITED, SANCTIONED AMOUNT 311520
66. CENTER OF EXCELLENCE FOR DEFENCE CORRIDOR, FUNDED BY UTTAR PRADESH EXPRESSWAYS INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT 50000000
67. MECHANICAL DESIGN, DEVELOPMENT AND CONTROL OF A SERIAL SIX AXIS MANIPULATOR ARM FOR INTELLIGENCE AND COMPLEX MANIPULATION TASKS, FUNDED BY BHARAT ELECTRONICS LIMITED, SANCTIONED AMOUNT 3993000
68. DEVELOPMENT OF AN AXIAL FLOW TURBINE TEST RIG, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 2362718
69. WIND TUNNEL MODEL DESIGN, FABRICATION & TESTING OF FLYING WING CONFIGURATION, FUNDED BY AERONAUTICAL DEVELOPMENT ESTABLISHMENT, SANCTIONED AMOUNT 11760000
70. DEVELOPING A COMPACT GRAPHENE BASED HALL SENSOR FOR MONITORING STEEL STRUCTURES UNDER STRESS IN ADVANCED MATERIALS, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 5952719
71. NANO UAVS (LIKE INSECT COPTER) FOR VIDEO CAPTURE, FUNDED BY BHARAT ELECTRICAL LIMITED, SANCTIONED AMOUNT 3964800
72. AIKYA ORGANICS PRIVATE LTD., FUNDED BY VILLGRO, SANCTIONED AMOUNT 3000000
73. DOORASTHA ANALYTICS PVT LTD, FUNDED BY VILLGRO, SANCTIONED AMOUNT 1800000
74. HIGH TEMPERATURE MATERIALS FOR THERMAL PROTECTION SYSTEMS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4448796
75. RU AND OS COMPLEX CATALYZED ACTIVATION AND FUNCTIONALIZATION OF ALKANE C-H BONDS, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 2863680
76. ELECTRIC FIELD CONTROLLED SPIN DYNAMICS IN NANOMAGNETS, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 6628840
77. FINITE ELEMENT MODELLING FOR SEISMIC ANALYSIS OF NON-STRUCTURAL PLASTER BOARD SUSPENDED CEILING SYSTEMS, FUNDED BY SAINT GOBAIN RESEARCH INDIA, SANCTIONED AMOUNT 2124000

78. ADVANCED CONTROL AND PROTECTION OF INTELLIGENT DC MICROGRIDS, FUNDED BY SCIENCE AND ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 8947830
79. JC BOSE FELLOWSHIP, FUNDED BY SCIENCE AND ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 9500000
80. DST INSPIRE FACULTY GRANT, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 1059940
81. THERMODYNAMICS OF MICRO-DROPLETS INTERACTING WITH ENGINEERED SURFACES, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 1860400
82. DEVELOPMENT OF PROCESS FOR MAKING REWRITABLE AND RE-PRINTABLE PAPER MATERIAL, FUNDED BY SCIENCE AND ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4425520
83. IDENTIFICATION OF THE MOLECULAR MECHANISM (S) BY WHICH BMP SIGNALING REGULATES THE MIGRATION OF MOUSE CORTICAL NEURONS, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 6017000
84. NATIONAL RESOURCE CENTRE-SWAYAM, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 1470000
85. DEVELOPMENT OF A PORTABLE AND NON-CONTACT TYPE INTRAOCULAR (IOP) PRESSURE MEASUREMENT DEVICE, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4660480
86. TESTING THE EXPLANATORY LIMITS OF LIMITED VALUE REPRESENTATIONS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2620000
87. UNDERSTANDING THE ROLE OF ANDROGEN SUPPRESSED FACTORS IN CASTRATION RESISTANT PROSTATE CANCER, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 1065000
88. IMPRINT CELL, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 13999970
89. AIRCRAFT ENGINE COMBUSTOR DESIGN FOR IMPROVED OPERABILITY, DURABILITY, PATTERN FACTOR AND EMISSIONS, FUNDED BY GE INDIA TECHNOLOGY CENTRE PVT. LTD., SANCTIONED AMOUNT 18500000
90. AIRCRAFT ENGINE COMBUSTOR DESIGN FOR IMPROVED OPERABILITY, DURABILITY, PATTERN FACTOR AND EMISSIONS, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 37470000
91. FEMTOSECOND LASER APPROACHES TO QUANTUM INFORMATION AND COMPUTATION TOWARDS A PERFECTLY SECURE CHANNEL FOR ROBUST AND SCALABLE INFORMATION PROCESSING, FUNDED BY MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY, SANCTIONED AMOUNT 25280000
92. DEVELOPMENT OF FLEXIBLE THIN FILM TRANSISTOR CIRCUIT FOR ACOUSTIC SENSORS, FUNDED BY NAVAL PHYSICAL & OCEANOGRAPHIC LABORATORY, SANCTIONED AMOUNT 2500000
93. SOFTWARE DESIGN FOR AUTONOMOUS QUADRATOR, FUNDED BY BHARAT ELECTRICAL LIMITED, SANCTIONED AMOUNT 3596640



94. JC BOSE FELLOWSHIP, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 9500000
95. ARBITRARY LANGRANGIAN-EULERIAN FINITE ELEMENT METHOD FOR COMPUTATION OF MULTIPHASE FLOW WITH SURFACTANTS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2885000
96. CONTINUOUS MONITORING OF SAMPRETI SETU (NEW JUBILEE BRIDGE): INSTRUMENTATION, DESIGN AND HEALTH ASSESSMENT), FUNDED BY EASTERN RAILWAY-INDIAN RAILWAY, SANCTIONED AMOUNT 46977216
97. THEORETICAL STUDIES OF HYDROGEN BOND FLUCTUATION AND TIME DEPENDENT INFRARED AND TERAHERTZ SPECTROSCOPY OF AQUEOUS SOLUTIONS OF COMPLEX MOLECULAR SOLUTES, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 5500000
98. FORMAL METHODS FOR PROVABLY SECURE ENCLAVE PLATFORMS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 3800000
99. STEREOSELECTIVE SYNTHESIS OF NITROGEN CONTAINING NATURAL PRODUCTS THROUGH ORGANOCATALYSIS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 3104200
100. FORMAL VERIFICATION OF AUTOPILOT SOFTWARE FOR UAVS, FUNDED BY INDO FRENCH CENTRE FOR THE PROMOTION OF ADVANCED RESEARCH, SANCTIONED AMOUNT 3700803
101. EIL-ENGSUI/SIIC, FUNDED BY ENGINEERS INDIA LIMITED, SANCTIONED AMOUNT 10000000
102. INTELLIGENT CONTROL OF MULTI ROBOT SYSTEMS BASED ON SERIAL AND PARALLEL MANIPULATORS IN CYBER PHYSICAL, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 2404400
103. NATIONAL ENTREPRENEURSHIP AWARDS SCHEME, FUNDED BY XAVIER SCHOOL OF MANAGEMENT (XLRI) JAMSHEDPUR, SANCTIONED AMOUNT 3022000
104. THERAPEUTIC EVALUATION OF ORGANOMETALLIC COMPOUNDS AS POTENT ANTIBACTERIAL AGENTS, FUNDED BY SCIENCE AND ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 440000
105. PHYSICAL LAYER DESIGN TECHNIQUES FOR NEXT GENERATION CELLULAR TECHNOLOGIES, FUNDED BY NOKIA, SANCTIONED AMOUNT 831284
106. MITACS GLOBALINK RESEARCH AWARD, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 283950
107. SCIENCE BUS OPERATION/RUNNING, FUNDED BY COUNCIL OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 1797000
108. RECTIFICATION OF ADIPOSE STEM CELL DYSFUNCTION IN OSTEOARTHRITIS FOR AUTOLOGOUS STEM CELL THERAPY, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 3178125
109. RURAL TECHNOLOGY ACTION GROUP (RUTAG), FUNDED BY OFFICE OF THE PRINCIPAL SCIENTIFIC ADVISER OF THE GOVERNMENT OF INDIA, SANCTIONED AMOUNT 14103840
110. STRUCTURAL IDENTIFICATION FROM INCOMPLETE AND UNCERTAIN INFORMATION: IDENTIFIABILITY, OPTIMAL EXPERIMENT DESIGN AND

- PROBABILISTIC CONDITION ASSESSMENT, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4548600
111. IMPROVED DESCRIPTION OF THE WATER CYCLE IN THE UPPER GANGA CATCHMENT USING ISOTOPIC, GEOCHEMICAL DATA AND MODEL SIMULATIONS, FUNDED BY MINISTRY OF EARTH SCIENCES, SANCTIONED AMOUNT 6719368
  112. 2D MATERIALS BEYOND GRAPHENE: A COMPUTATIONAL STUDY OF VAN DER WAALS HETEROSTRUCTURES, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 1697520
  113. FUNDAMENTAL PROCESS ENGINEERING TO MINIMIZE RE-OXIDATION OF STEEL DURING TEEMING VIA A LADLE SHROUD LEADING TO IMPROVED CASTABILITY AND CLEANLINESS, FUNDED BY MINISTRY OF STEEL, SANCTIONED AMOUNT 13025000
  114. SCIENTIFIC VALIDATION OF AYURVEDIC FORMULATION MEDICINES RECOMMENDED FOR MITIGATION OF CANCER ANOREXIA CACHEXIA SYNDROME (CACS) IN THE DROSOPHILA TUMOUR MODEL, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 5124432
  115. UNDERSTANDING THE STRUCTURAL BASIS OF GPCR-BITA ARRESTIN INTERACTION AND SIGNALING FOR DESIGNING PATHWAY SELECTIVE DRUGS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 2585000
  116. CONSTRUCTION OF A COMBINED RECOIL ION MOMENTUM AND ELECTRON ENERGY SPECTROMETER TO STUDY COLLISION INDUCED EXCITATION AND FRAGMENTATION OF MOLECULES AND CLUSTERS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 5280000
  117. DEVELOPMENT OF PROCESS MAP FOR ADDITIVE MANUFACTURING OF Ti6Al4V AND INCONEL ALLOYS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4745000
  118. FLIGHT DEMONSTRATION AND FLIGHT DATA COLLECTION FOR LATEST GHATAK CONFIGURATION IRC 2.3 RD, FUNDED BY AERONAUTICAL DEVELOPMENT AGENCY , SANCTIONED AMOUNT 2922150
  119. SEQUESTRATION AND ACTIVATION OF CO<sub>2</sub> USING NEWLY EMERGING WEAK INTERACTIONS: LONE PAIR-PI INTERACTIONS AT WORK, FUNDED BY MINISTRY OF EARTH SCIENCES, SANCTIONED AMOUNT 4200000
  120. MATHEMATICS OLYMPIAD PROGRAM, FUNDED BY NATIONAL BOARD OF HIGHER MATHS, SANCTIONED AMOUNT 110000
  121. DEVELOPMENT OF NON-IVASIVE TECHNIQUES FOR NANOSCALE SURFACE METROLOGY, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4884400
  122. LOCAL STRUCTURE AND DYNAMICS OF HYDROGEN BONDS IN WATER: SUPER COOLED WATER AND BINARY MIXTURE, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY
  123. INCREDIBLE DEVICES PRIVATE LIMITED, FUNDED BY VILLGRO, SANCTIONED AMOUNT 1500000

124. DST INSPIRE FACULTY AWARD, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 700000
125. NEURO-COGNITIVE INSTRUMENTATION OF VALIDATED HUMAN-ROBOT INTERACTIONS TO ENHANCE LEARNING AND DEVELOPMENTAL PROCESSES IN CHILDREN, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 628000
126. "INTEL INDIA FACULTY EXCELLENCE PROGRAM", FUNDED BY INTEL TECHNOLOGY INDIA PVT.LTD, SANCTIONED AMOUNT 1200000
127. ECONOMIC GROWTH, INEQUALITY AND POVERTY ALLEVIATIONS IN INDIA: THE IMPLICATIONS OF NIGHTLIGHT (EGA), FUNDED BY INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH, SANCTIONED AMOUNT 129150
128. DESIGNING AND DEVELOPING A DESKTOP MICRO WIRE ECM MACHINE, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4035744
129. WIND TUNNEL STUDY FOR TORPEDO MODEL, FUNDED BY AERIAL DELIVERY RESEARCH AND DEVELOPMENT ESTABLISHMENT, SANCTIONED AMOUNT 996000
130. RESEARCH & DEVELOPMENT OF SMART, SECURE, SCALABLE, RESILIENT AND ADAPTIVE CYBER-PHYSICAL POWER SYSTEM (S3RA-CPPS), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2193200
131. MACROSCOPIC HYDRAULIC MODELLING OF URBAN FLOOD INUNDATION, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 3500000
132. DESIGN AND PROTOTYPING OF MACHINERY FOR ACHIEVING CLEANER HABITAT ENVIRONMENT, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2220328
133. MODELLING SQUAMOUS CELL CARCINOMA (SCC) IN DROSOPHILA MALE ACCESSORY GLAND (MAG), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 3390450
134. ADDRESSABLE PEPTIDE-POLYMER ELECTROSPUN NANOFIBRES FOR CELL SORTING DIAGNOSIS AND DELIVERY, FUNDED BY E-SPIN NANOTECH PRIVATE LIMITED, SANCTIONED AMOUNT 3700000
135. ADDREESSABLE PEPTIDE-POLYMER-ELECTROSPUN NANOFIBERS FOR CELL SORTING DIAGNOSTICS AND DELIVERY, FUNDED BY ICMR, SANCTIONED AMOUNT 4560000
136. ADDRESSABLE PEPTIDE-POLYMER-ELECTROSPUN NANOFIBERS FOR CELL SORTING DIAGNOSTICS AND DELIVERY, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 10000000
137. THE DEVELOPMENT OF VERY HIGH RESOLUTION CFS MODEL BASED ON ICOSHEDRAL GRID, FUNDED BY INDIAN INSTITUTE OF TROPICAL METEOROLOGY , SANCTIONED AMOUNT 18380000
138. OPERATOR-VALUED MULTISHIFTS ASSOCIATED WITH DIRECTED GRAPHS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 1900000

139. TECHNOLOGY DEVELOPMENT & DISSEMINATION OF IMPROVED HORSESHOES IN UTTAR PRADESH, FUNDED BY OFFICE OF THE PRINCIPAL SCIENTIFIC ADVISER, GOVERNMENT OF INDIA, SANCTIONED AMOUNT 963160
140. AN EXPERIMENTAL STUDY TO INVESTIGATE THE EFFECT OF SHEARS ON THE STABILITY AND TRANSITION OF THE BOUNDARY LAYERS TRENDS, FUNDED BY AERONAUTICS R&D BOARD, SANCTIONED AMOUNT 2163750
141. DESIGN AND DEVELOPMENT OF REHABILITATION AND MONITORING TOOL FOR NEUROLOGICAL MOVEMENT DISORDER, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 185000
142. LABEL-FREE TRACKING OF ANTIBIOTICS ACROSS DUAL-MEMBRANE ENVELOPE OF LIVE GRAM-NEGATIVE BACTERIA USING SECOND-HARMONIC LIGHT SCATTERING TECHNIQUE, FUNDED BY DEPARTMENT OF SCIENCE AND TECHNOLOGY, SANCTIONED AMOUNT 3177000
143. STRING THEORY AT VERY HIGH ENERGIES, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
144. DEVELOPMENT OF NOVEL COOLING SYSTEMS FOR HIGH POWER LEDS FOR ENHANCED RELIABILITY AND LIFETIME, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 3745840
145. AN EXPERIMENTAL STUDY OF THE BLOCKAGE AND 3-D EFFECT IN THE WAKE STRUCTURE OF A ROTATIONALLY OSCILLATING CIRCULAR CYLINDER, FUNDED BY AERONAUTICS R&D BOARD, SANCTIONED AMOUNT 2510850
146. SYNERGISTICALLY COUPLED CATALYTIC SYSTEMS FOR SUSTAINABLE PROCESSES AND PRODUCTS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 3630000
147. HIGH-ORDER NUMERICAL INTEGRATION SCHEME BASED ON FOURIER CONTINUATION APPROXIMATIONS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
148. INKJET PRINTED ELECTRODES OF GRAPHENE OXIDE-METAL OXIDE HIERARCHICAL NANOSTRUCTURED NANOCOMPOSITES FOR IMPROVED ENERGY DENSITY AND POWER DENSITY THIN FLEXIBLE SUPERCAPACITORS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2450360
149. "FOG CITY: QOS-AWARE RESOURCE MANAGEMENT FOR SMART CITIES", FUNDED BY IFCPAR , SANCTIONED AMOUNT 1924601
150. DESIGN AND CONTROL SYNTHESIS OF A TILT-ROTOR QUADCOPTER, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 4334700
151. 5TH PAMC OF SEISMOLOGY, FUNDED BY MINISTRY OF EARTH SCIENCE, SANCTIONED AMOUNT 878900
152. ELUCIDATION OF ACTIVE SITE DYNAMICS, FUNCTION AND RECEPTOR BINDING OF INSULIN AT THE SINGLE MOLECULAR LEVEL, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 5170000
153. J C BOSE FELLOWSHIP, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 9500000
154. MIX-ENERGY-SOURCE ELECTRIC VEHICLE CHARGING SYSTEM DESIGN, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 14178500

155. CONTACT PROBLEMS ON PLANAR HETEROGENEOUS ELASTIC MEDIA, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
156. ORDER ESTIMATION OF IMPORTANT SIGNAL PROCESSING MODELS METHODOLOGIES AND ASYMPTOTIC ANALYSIS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
157. DEVELOPMENT OF A NANOPARTICULATE DRUG (BEVACIZUMB) DELIVERY SYSTEM FOR THE NON-INVASIVE TREATMENT OF DIABETIC RETINOPATHY, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4357520
158. WAVE PROPAGATION IN LATTICE WAVEGUIDES WITH DEFECTS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 660000
159. TARGET SPECIFIC DUAL MODAL IMAGING PROBES, FUNDED BY COUNCIL OF SCIENCE&INDUSTRIAL RESEARCH, SANCTIONED AMOUNT 452000
160. PALEO-SEISMIC & PALEO-TSUNAMI INVESTIGATIOS ALONG SOUTH-MIDDLE ADAMAN & CAR NICOBAR ISLANDS TOWARDS EARTHQUAKE & TSUNAMI HAZARD ASSESSMENT OF A&N ISLAND, FUNDED BY INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES, SANCTIONED AMOUNT 439200
161. FABRICATION OF NEW GENERATION OF SELF RESORBIBF IMPLANTS AND DEVICES FROM BIOACTIVE AND BIODEGRADABLE MATERIALS FOR ORTHOPAEDIC APPLICATIONS, FUNDED BY INDIAN COUNCIL OF MEDICAL RESEARCH, SANCTIONED AMOUNT 5000000
162. FABRICATION OF NEW GENERATION OF SELF RESORBIBF IMPLANTS AND DEVICES FROM BIOACTIVE AND BIODEGRADABLE MATERIALS FOR ORTHOPAEDIC APPLICATIONS, FUNDED BY ORTHO REGENCIES PRIVATE LIMITED, SANCTIONED AMOUNT 5000000
163. FABRICATION OF NEW GENERATION OF SELF RESORBIBF IMPLANTS AND DEVICES FROM BIOACTIVE AND BIODEGRADABLE MATERIALS FOR ORTHOPAEDIC APPLICATIONS, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 10000000
164. STABILIZATION OF 3D PLATFORM FOR SPACE APLPLICATIONS AGAINST ROLLING AND PITCHING EXCITATIONS, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 4021500
165. INNOVATION ECOSYSTEM IN INDIA, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 1210000
166. A STUDY OF ARTISANAL ENTREPRENEURSHIP, SKILL DEVELOPMENT AND NETWORK AMONG GOLDSMITHS IN CONTEMPORARY INDIA, FUNDED BY INDIAN INSTITUTE OF MANAGEMENT, SANCTIONED AMOUNT 690000
167. (UAY)-BIODEGRADABLE POLYMERS FOR PACKING APPLICATIONS, FUNDED BY HINDUSTAN UNILEVER LIMITED, SANCTIONED AMOUNT 2947000
168. (UAY)-BIODEGRADABLE POLYMERS FOR PACKING APPLICATIONS, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 5621000

169. TARGETING NEXUS OF METABOLIC AND NEURODEGENERATIVE DISORDERS: APPLICATION IN LAFORA DISEASE AND ISLET AMYLOID DEPOSITS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 8549200
170. NON CONTACT METROLOGY OF HEXAGONAL WRAPPER TUBE THROUGH GLASS MEDIUM, FUNDED BY INDIRA GANDHI CENTRE FOR ATOMIC RESEARCH, KALPAKKAM, SANCTIONED AMOUNT 2498950
171. CHEMICAL DYNAMICS IN ENZYME-WATER SYSTEMS THROUGH QUANTUM-CLASSICAL AND BIASED SIMULATIONS, FUNDED BY COUNCIL OF SC.& IND. RESEARCH, SANCTIONED AMOUNT 1746000
172. OFFCAMPUSTEST TECHNOLOGIES PRIVATE LIMITED, FUNDED BY INVENT PROGRAM (VILLGRO), SANCTIONED AMOUNT 1000000
173. DEVELOPMENT OF THERMOELECTRIC POWER SOURCE FOR SPACE APPLICATION, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2611000
174. DEVELOPMENT OF RAPID DECONTAMINATION MEMBRANE AND ITS REMOTE MONITORING, FUNDED BY DEFENCE MATERIALS AND STORES RESEARCH AND DEVELOPMENT ESTABLISHMENT, SANCTIONED AMOUNT 968000
175. VAJRA FACULTY SCHEME, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 1407000
176. TECHNOLOGICAL INNOVATIONS IN REGENERATIVE MEDICINE WITH NEW FUNCTIONAL BIOMATERIALS COMBATING INCREASED BACTERIAL RESISTANCE IN EMERGING BONE AND JOINT INFECTIONS, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 3257000
177. PRISM, FUNDED BY DEPARTMENT OF SCIENTIFIC & INDUSTRIAL RESEARCH , SANCTIONED AMOUNT 400000
178. DELMOS RESEARCH PRIVATE LIMITED, FUNDED BY INVENT PROGRAM (VILLGRO), SANCTIONED AMOUNT 2500000
179. VILLAMART PRIVATE LIMITED, FUNDED BY INVENT PROGRAM (VILLGRO), SANCTIONED AMOUNT 1000000
180. IITK KGMU CHEMICAL BIODESIGN IMMERSION PROGRAM, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 200000
181. LARGE AREA OPTO-ELECTRONICS FOR AUSTRALIA AND INDIA: FROM MATERIALS TO ADVANCED DEVICES, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 4350520
182. INDIA AIR POLLUTION STUDY FOR BP, FUNDED BY BP INDIA SERVICES PVT. LTD, SANCTIONED AMOUNT 2065000
183. IGNIS CAREERS PRIVATE LTD., FUNDED BY INVENT PROGRAM, SANCTIONED AMOUNT 2500000
184. RECONSTRUCTING THE GANGA OF THE PAST FROM CORONA ARCHIVAL IMAGERY, FUNDED BY MINISTRY OF WATER RESOURCES, SANCTIONED AMOUNT 4096800
185. VIRTUAL LAB PHASE III, FUNDED BY MINISTRY OF HUMAN RESOURCE DEVELOPMENT, SANCTIONED AMOUNT 11325000

186. INDO-ISRAEL COLLABORATIVE FOR INFRASTRUCTURE SECURITY WITH SECOND GENERATION ANOMALY DETECTION TECHNIQUES, FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 2597200
187. ESTIMATION OF RESERVOIR PROPERTIES OF HYDROCARBON BEARING SEDIMENTS USING FREQUENCY DEPENDENT AMPLITUDE VARIATION WITH OFFSET (FAVO) ANALYSIS), FUNDED BY OIL AND NATURAL GAS CORPORATION, SANCTIONED AMOUNT 4668080
188. PDK DEVELOPMENT AND MODELING SUPPORT FOR ISRO'S GAN HEMT TECHNOLOGY), FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 3200000
189. DETECTABILITY OF CRITICAL DELAMINATION IN COMPOSITE SPACE COMPONENTS: VIBRATION BASED APPROACH, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2997000
190. RCS REDUCTION OF A WINGED STORE USING METAMATERIALS AND ELECTROMAGNETIC SOFT SURFACES, FUNDED BY DEFENCE R&D ORGANISATION, SANCTIONED AMOUNT 2453200
191. A STUDY OF TIME EFFECTS ON BEHAVIOR OF PILE-RAFT FOUNDATIONS), FUNDED BY BOARD OF RESEARCH IN NUCLEAR SCIENCES, SANCTIONED AMOUNT 6205000
192. MODELING AND SIMULATION OF LOX-CH<sub>4</sub> (SEMI-CRYOGENIC) COMBUSTION, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2250000
193. MICROSTRUCTURE AND TEXTURE ANALYSIS OF HOT FORGED Ti-6Al-4V ALLOY, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2090000
194. INTEGRATING LITHIUM OXYCHLORIDE BASED SOLID STATE ELECTROLYTES WITH CARBON ENCAPSULATED Si/Ge ANODES AND LI-EXCESS NMC CATHODES FOR ADVANCED LITHIUM ION BATTERIES, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2256000
195. DEVELOPMENT OF ULTRASMALL BIMETALLIC OXIDE NANOCCLUSERS (E.G. NiO<sub>2</sub>, MnCO<sub>2</sub>O<sub>4</sub>, NiMOO<sub>4</sub> AND MnMOO<sub>4</sub>) FOR HIGH PERFORMANCE NON-AQUEOUS/AQUEOUS ASYMMETRIC ELECTROCHEMICAL SUPERCAPACITOR, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 1928000
196. SHAPE MEMORY ALLOYS ACTUATED MECHANICALLY ACTIVE RECONFIGURABLE LIGHTWEIGHT PEEK MATERIAL BASED PARABOLIC REFLECTOR FOR ACTIVE CONTROL ON RF PATTERNS FOR HIGH FREQUENCY MICRO/NANO SPACECRAFT APPLICATION, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 3678400
197. MIXED EXPLOSIVES BIODEGRADATION FOR REMEDIATION OF CONTAMINATED GROUND WATER, FUNDED BY UNIVERSITY GRANTS COMMISSION, SANCTIONED AMOUNT 14919840

198. DEVELOPMENT OF HIGH ENTROPY METAL DIBORIDE FOR ULTRAHIGH TEMPERATURE APPLICATION, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2840000
199. MOLECULAR SIZE AND MASS SENSITIVE ULTRASENSITIVE THERMAL SPECTROMETER APPLICATIONS, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2450000
200. IMPACT MELT COVER ON CENTRAL PEAKS OF LUNAR IMPACT CRATERS: EVALUATING ITS IMPLICATIONS FOR DERIVING SUB-SURFACE MINERALOGY USING DATA FROM CHANDRAYAAN-1 & OTHER RECENT LUNAR MISSIONS, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2861000
201. INTEGRATION OF SPECTRAL AND SPATIAL INFORMATION FOR HYPERSPECTRAL IMAGE CLASSIFICATION, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2235000
202. PARALLEL ELECTRO-MAGNETIC SOLVER FOR MICROWAVE, INFRARED, AND OPTICAL APPLICATIONS (MIO-PEMS), FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2490000
203. NUMERICAL STUDY OF FLOW-THERMAL RESPONSE OF A HIGH SPEED VEHICLE WITH ABLATIVE/NON-ABLATIVE THERMAL PROTECTION SYSTEM, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2199000
204. OPTICAL CHARACTERIZATION OF WETLANDS FROM EARTH OBSERVATION), FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2812800
205. DESIGN OF POLYMER NANOCOMPOSITES BASED WIDEBAND MICROWAVE ABSORBERS FOR STEALTH AND ELECTROMAGNETIC SHIELDING APPLICATIONS, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2492000
206. NUMERICAL INVESTIGATION OF A KEROSENE-FUELLED SCRAMJET COMBUSTOR USING RANS BASED FLAMELET MODEL, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 1013000
207. NUMERICAL AND EXPERIMENTAL FRAMEWORK FOR LASER BASED ADDITIVE MANUFACTURING OF HIGH PERFORMANCE PARTS OF TITANIUM ALLOY, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 3000000
208. CHARACTERIZATION AND MODELING OF MEMBERANCES FOR INFLATABLE SPACE STRUCTURES, FUNDED BY INDIAN SPACE RESEARCH ORGANISATION, SANCTIONED AMOUNT 2339000
209. COMBINATION OF EGFR TARGETING APTAMERS AND CHEMOTHERAPEUTIC AGENT IN A SINGLE STIMULI-RESPONSIVE DRUG DELIVERY SYSTEM FOR IMPROVED TREATMENT OF TRIPLE NEGATIVE BREAST CANCER, FUNDED BY DEPARTMENT OF BIOTECHNOLOGY, SANCTIONED AMOUNT 6545600
210. MECHANICAL AND ADHESION CHARACTERIZATION OF RADAR ABSORBING PAINT COATINGS, FUNDED BY DEFENCE R&D ORGANISATION, SANCTIONED AMOUNT 984000



211. MANIPULATION OF STRUCTURE, COMPOSITION AND PROPERTIES OF CUO CERAMICS AND THIN FILMS TO ACHIEVE NEAR ROOM TEMPERATURE MULTIFERROISM FOR DEVICE APPLICATIONS, FUNDED BY SCIENCE & ENGINEERING RESEARCH BOARD, SANCTIONED AMOUNT 7709460
212. PRABANDHAN 2017, FUNDED BY MISCELLANEOUS
213. INTEGRATION OF RTK-GPS HAVING TEMPERATURE CALIBRATED DGPS SENSOR, GROUND DESIGNATION UNIT, COMM LINK, AP MODIFICATION, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 680000
214. RANGE ENHANCEMENT TO 20KM RANGE WITH INTEGRATION OF AMPLIFIERS (GROUND AND AIRBORN), OMNI AND MULTI DIRECTIONAL TRACKING ANTENNAS, FAILSAFE LOGIC UPDATE ON AP, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 920000
215. DESIGN AND DEVELOPMENT OF NEW GIMBAL WITH BRUSHLESS DC SERVO WITH FEEDBACK TO CARRY AND EXCHANGE GAS LEAK DETECTION PAYLOADS, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 980000
216. AIRFRAME RE-DESIGN, MODIFICATION, TESTING, PROTOTYPING, MOLD DEVELOPMENT, JIGS & FIXTURES, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 1060000
217. QUALITY CONTROL (QC) SYSTEMS, PERFORMANCE TESTING AND BENCHMARKING SYSTEMS, MAINTENANCE AND ASSEMBLY MANUALS, INTEGRATION OF HEALTH MONITORING SYSTEMS, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 650000
218. FLIGHT TRIAL, RANGE TEST, TRAVEL AND TRANSPORTATION, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 800000
219. TRAINING CHARGES FOR GAIL, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 1000000
220. GAS LEAKAGE DETECTION CAMERAS, HIGH DEFINITION VIDEO CAMERAS, SENSORS, BRUSHLESS DC MOTORS, AND RTK-GPS SENSORS, FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 6700000
221. ACCOUNT FOR GENERAL EXPENSES (SALARY, TEMPORARY MANPOER, CONTINGENCY, CONSUMABLES), FUNDED BY GAS AUTHORITY OF INDIA LTD, SANCTIONED AMOUNT 4588000
222. STABILITY ANALYSIS, PROTECTION AND COORDINATED CONTROL OF NETWORKED MICROGRIDS (PART D), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 975000
223. STABILITY ANALYSIS, PROTECTION AND COORDINATED CONTROL OF NETWORKED MICROGRIDS (PART A), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 975000
224. STABILITY ANALYSIS, PROTECTION AND COORDINATED CONTROL OF NETWORKED MICROGRIDS (PART B), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 975000
225. STABILITY ANALYSIS, PROTECTION AND COORDINATED CONTROL OF NETWORKED MICROGRIDS (PART C), FUNDED BY DEPARTMENT OF SCIENCE & TECHNOLOGY, SANCTIONED AMOUNT 975000

226. UNMANNED AIRCRAFT VEHICLES), FUNDED BY UTTAR PRADESH EXPRESSWAYS INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT 160000000
227. CENTER OF EXCELLENCE FOR DEFENCE CORRIDOR - ADVANCED MATERIALS, FUNDED BY UTTAR PRADESH EXPRESSWAYS INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT 130000000
228. CYBER SECURITY, FUNDED BY UTTAR PRADESH EXPRESSWAYS INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT 60000000
229. ELECTRONICS AND COMMUNICATION, FUNDED BY UTTAR PRADESH EXPRESSWAYS INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT 110000000

#### B. INTERNATIONAL PROJECTS

1. THERMAL INFRARED TECHNOLOGIES FOR SUPPORTING ENVIRONMENTAL ASSESSMENT AND DECISION MAKING IN THE GANGES BASIN (PART-B), FUNDED BY SCIENCE AND TECHNOLOGY FACILITIES COUNCIL, UK, SANCTIONED AMOUNT 2682188
2. THERMAL INFRARED TECHNOLOGIES FOR SUPPORTING ENVIRONMENTAL ASSESSMENT AND DECISION MAKING IN THE GANGES BASIN (PART-A), FUNDED BY SCIENCE AND TECHNOLOGY FACILITIES COUNCIL, UK, SANCTIONED AMOUNT 4737799
3. MAX-PLANCK PARTNER GROUP PROJECT, FUNDED BY MAX PLANCK GESELLSCHAFT, SANCTIONED AMOUNT 4700000
4. NEWTON APEX II, FUNDED BY UK GOVERNMENT, SANCTIONED AMOUNT 1090562
5. FORMAL METHOD FOR SECURITY VALIDATION OF TRUSTWORTHY HARDWARE PLATFORMS, FUNDED BY SEMICONDUCTOR RESEARCH CORPORATION, USA, SANCTIONED AMOUNT 217000
6. TIME FOR SECURE MEMORY HIERARCHIES, FUNDED BY SEMICONDUCTOR RESEARCH CORPORATION, USA, SANCTIONED AMOUNT 872280
7. JOINING OF THERMOPLASTIC AND THERMOSET COMPOSITE, FUNDED BY BOEING CORPORATION, SANCTIONED AMOUNT 2490734
8. FORMAL METHODS FOR SECURITY VALIDATION OF TRUSTWORTHY SOC PLATFORMS, FUNDED BY SEMICONDUCTOR RESEARCH CORPORATION, USA, SANCTIONED AMOUNT 2520630
9. A DEVELOPMENT OF OPTIMAL ECO DRIVING SYSTEM IN HEV/PHEV BASED ON CONNECTED VEHICLE ENVIRONMENT, FUNDED BY KOREAN EVALUATION INSTITUTE OF INDUSTRIAL TECHNOLOGY, SANCTIONED AMOUNT 904288
10. DESIGN OF ANTENNA ELEMENT AND ARRAY, FUNDED BY UNIVERSITY OF ALABAMA, TUSCALOOSA, ALABAMA, SANCTIONED AMOUNT 1309000
11. SUNRISE, FUNDED BY ENGINEERING AND PHYSICAL SCIENCES RESEARCH COUNCIL (EPSRC), UK, SANCTIONED AMOUNT 10107400

#### **CONSULTANCY PROJECTS:**

## A. NATIONAL PROJECTS:

1. EXPLORING THE FEASIBILITY OF USING HIGH PHOSPHORUS CAST IRON AS SACRIFICIAL ANODE MATERIAL, FUNDED BY TATA STEEL LIMITED, SANCTIONED AMOUNT RS. 1253750
2. FLEXIBLE HEADS WITH SALARY, CONSUMABLE, CONTINGENCY, EQUIPMENT AND TA, FUNDED BY MISCELLANEOUS, SANCTIONED AMOUNT RS. 5614672
3. OMEGA: ETP ADEQUACY REPORT, FUNDED BY OMEGA INTERNATIONAL, SANCTIONED AMOUNT RS. 59000
4. SEWERAGE NETWORK: NONE 4, FUNDED BY SHRISTI SAM LAIN-YOGI JV, SANCTIONED AMOUNT RS. 354000
5. ENGLISH REMEDIATION MATERIAL FOR GRADE IX, FUNDED BY SOCIETY FOR ALL ROUND DEVELOPMENT (SARD), SANCTIONED AMOUNT RS. 120000
6. WATER QUALITY ASSESSMENT, FUNDED BY MISCELLANEOUS, SANCTIONED AMOUNT RS. 1919559
7. TUAV-L&T WIND TUNNEL MODEL DESIGN, FABRICATION & TESTING, FUNDED BY LARSEN & TOUBRO HEAVY ENGINEERING, SANCTIONED AMOUNT RS. 5752500
8. INSPECTION OF PREFABRICATED BIO SAFETY (LEVEL-3) LAB IN MICROBIOLOGY DEPARTMENT OF MEDICAL COLLEGE ALLAHABAD, FUNDED BY U.P. AWAS VIKAS PARISHAD, SANCTIONED AMOUNT RS. 236000
9. THE WORK FOR SCANNING & 3D MODELING FOR PASTIC PRODUCT FOR DEFENCE, FUNDED BY CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY, SANCTIONED AMOUNT RS. 130000
10. AIR POLLUTION EMISSION INVENTORY AND CONTROL PLAN FOR BHIWADI CITY, FUNDED BY RAJASTHAN STATE POLLUTION CONTROL BOARD (RSPCB), SANCTIONED AMOUNT RS. 1128375
11. SITE VISIT OF RETAINING WALL ON LUCKNOW-AGRA EXPRESSWAY, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 103250
12. SITE VISITS OF IIT KANPUR TEAMS TO THE RIHAND DAM, FUNDED BY IRRIGATION WORKS CIRCLE OBRA, DEPARTMENT OF IRRIGATION, SANCTIONED AMOUNT RS. 590000
13. MORTH, FUNDED BY QUALITY COUNCIL OF INDIA, SANCTIONED AMOUNT RS. 200000
14. DESIGN OF SRS FOR 30 MM GUN, FUNDED BY ORDNANCE FACTORY MEDAK, SANCTIONED AMOUNT RS. 3629688
15. DEACTIVATION OF CU-PHB-CNF-K CATALYST DURING CWAO OF SMPO WATER AND REGENERATION, FUNDED BY SHELL INDIA MARKET PVT LTD, SANCTIONED AMOUNT RS. 1047250
16. AIR QUALITY MONITORING OF TWELVE NOTIFIED AIR POLLUTANT, FUNDED BY CENTRAL POLLUTION CONTROL BOARD, SANCTIONED AMOUNT RS. 8481250
17. WIND TUNNEL TESTING OF LX2600 PANTOGRAPH, FUNDED BY FAIVELEY TRANSPORT RAIL TECHNOLOGIES INDIA LIMITED, SANCTIONED AMOUNT RS. 619500

18. DEVELOPMENT OF ADHESION CAPABILITY WITH SIMULATED INVITRO PERSPIRATION AND BUILDING DESIGN RULES BASED ON ADHESIVE ENERGIES, FUNDED BY UNILEVER INDUSTRIES PVT LTD, SANCTIONED AMOUNT RS. 1430750
19. WIND TUNNEL TESTING OF GSLV MODEL, FUNDED BY VIKRAM SARABHAI SPACE CENTRE, SANCTIONED AMOUNT RS. 2080930
20. WIND TUNNEL TESTING WORKS AT CABLE STAYED BRIDGE, KARIMNAGAR, FUNDED BY TPL GULERMAK KAARIMNAGAR JVI, SANCTIONED AMOUNT RS. 1888000
21. SEWER DESIGN: SARASWATI HITECH CITY ALLAHABAD, FUNDED BY UP STATE INDUSTRIAL DEVELOPMENT CORPORATION LTD, SANCTIONED AMOUNT RS. 236000
22. THE EFFECT OF ULTRASONIC CLEANING ON THE METAL SURFACE OF BARREL OF 105/37 MM CANNON, FUNDED BY ORDNANCE FACTORY BAREILLY, SANCTIONED AMOUNT RS. 147500
23. WIND TUNNEL TEST FOR CHIMNEY FOR 2X660 MW ENNORE SEZ STPP, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1298000
24. WIND TUNNEL TESTING OF CES MODEL, FUNDED BY VIKRAM SARABHAI SPACE CENTRE, SANCTIONED AMOUNT RS. 1103890
25. WIND TUNNEL MODEL STUDY OF CHIMNEY FOR 2X660 MW JAWAHARPUR TPP, FUNDED BY SIMPLEX INFRASTRUCTURES LTD, SANCTIONED AMOUNT RS. 2124000
26. DESIGN AND ANALYSIS OF BREECH MECHANISM, FUNDED BY ORDINANCE FACTORY KANPUR, SANCTIONED AMOUNT RS. 2559125
27. WIND TUNNEL TESTING FOR CHIMNEY OF 2X490 MW NTPC DADRI STAGE-II FGD SYSTEM, GAUTAM BUDH NAGAR, DADRI, UTTAR PRADESH, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1829000
28. WIND TUNNEL TESTING FOR CHIMNEY OF 1X280 MW NSPCL, ROURKELA TPP STAGE -III, SUNDERGARH, ODISHA, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1593000
29. FEASIBILITY STUDY ON IMPLEMENTATION OF MEASURES FOR MANAGEMENT AND MITIGATION OF NOISE POLLUTION, FUNDED BY U.P. POLLUTION CONTROL BOARD, SANCTIONED AMOUNT RS. 958750
30. QUALITY CHECKING OF 33/11 KV SUBSTATION AT HARDOI, FUNDED BY UP STATE INDUSTRIAL DEVELOPMENT CORPORATION LTD, SANCTIONED AMOUNT RS. 157825
31. WIND TUNNEL TEST FOR CHIMNEY OF 3X800 MW PUVNL, PATRATU TPP PHASE-1, JHARKHAND, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1829000
32. CONSULTANCY REGARDING TESTING OF BOTTOM ASH, POND ASH AND MIXING OF BOTTOM ASH WITH SAND TO MAKE IT SUITABLE FOR FILTER MEDIA, FUNDED BY NTPC LTD, SANCTIONED AMOUNT RS. 221250
33. EFFICIENT ACTIVITY RECOGNITION, FUNDED BY SAMSUNG INDIA ELECTRONICS PVT LTD, SANCTIONED AMOUNT RS. 855500
34. THIRD PARTY QUALITY ASSURANCE SERVICES AS PER CPWD NORMS FOR PROPOSED CONSTRUCTION OF KENDRIYA VIDYALAYA, SHRAWASTI (U.P.),

FUNDED BY THE BRAITHWAITE BURN & JESSOP CONSTRUCTION COMPANY LTD,  
SANCTIONED AMOUNT RS. 1652000

35. LOAD TESTING OF SPAN P1-P2 OF FLYOVER (UNDER CONSTRUCTION) AT KM 428 ON NH-91 (GT ROAD) OVER RAILWAY CROSSING NO. 79D (COD CROSSING), FUNDED BY PWD KANPUR, SANCTIONED AMOUNT RS. 737500
36. WIND TUNNEL MODEL STUDY OF KOLKATA GATE, FUNDED BY WEST BENGAL HOUSING INFRASTRUCTURE DEVELOPMENT CORPORATION LTD, SANCTIONED AMOUNT RS. 3540000
37. STUDY OF SCOUR DUE TO INTERFERENCE EFFECT OF BRIDGE PIERS, FUNDED BY NORTH CENTRAL RAILWAY, SANCTIONED AMOUNT RS. 368750
38. ANALYSIS OF PGE SAMPLES, FUNDED BY MINERAL EXPROATION CORPORATION LIMITED, SANCTIONED AMOUNT RS. 141600
39. NDT TESTING & STRUCTURAL EVALUATION OF UNDER CONTRUCTION KHADI BHAWAN AT LUCKNOW, FUNDED BY U.P. RAJKIYA NIRMAN NIGAM, SANCTIONED AMOUNT RS. 737500
40. CONSULTANCY SERVICES FOR PREPARING FEASIBILITY AND DETAILED PROJECT REPORT FOR FLOOD MITIGATION AND COMPREHENSIVE RIVER MANAGEMENT MEASURES FOR TAWI BASIN,FUNDED BY TECHNOMECH OIL AND ENERGY PVT LTD, SANCTIONED AMOUNT RS. 3540000
41. SPARSE SIGNAL PROCESSING FOR 5G MM WAVE HYBRID MIMO TECHNOLOGY, FUNDED BY QUALCOMM, SANCTIONED AMOUNT RS. 1000000
42. ASSESSMENT OF SO2 EMISSION FROM ALUMUNIUUM PLANTS AND AIR QUALITY MODELLING, FUNDED BY ALUMUNIUUM ASSOCIATION OF INDIA, SANCTIONED AMOUNT RS. 2802500
43. VALIDATION OF BAYESIAN BASED VULNERABILITY, FUNDED BY HITACHI INDIA PVT. LTD, SANCTIONED AMOUNT RS. 1538125
44. WIND TUNNEL STUDY FOR 115M & 150M (2) CHIMNIES OF NTPC, JHAJJAR, HARYANA, FUNDED BY RELIANCE INDUSTRIES LTD., MUMBAI, SANCTIONED AMOUNT RS. 3658000
45. SILICON CARBIDE COATING ON CARBON FIBER FABRIC, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 354000
46. ASSESSMENT OF AIR POLLUTION SOURCE IN TTZ & ITS IMPACT ON TAJ MAHAL, FUNDED BY CENTRAL POLLUTION CONTROL BOARD, SANCTIONED AMOUNT RS. 2221350
47. EVALUATION OF CHEMICAL A AND CHEMICAL C REQUIRED FOR POLISHING AND ENHANCING DURABILITY OF CERAMIC TILES, FUNDED BY CIEBA INCORPORATION, SANCTIONED AMOUNT RS. 962601
48. SECTORAL EXPERT ON WATER AND CLIMATE CHANGE ADAPTATION TO SUPPORT DEVELOPMENT OF CLIMATE RESILIENT WATER MANAGEMENT STRATEGIES AND POLICIES IN ACT LOCATIONS, FUNDED BY INTERCORPORATION SOCIAL DEVELOPMENT INDIA, SANCTIONED AMOUNT RS. 1317400
49. NON DESTRUCTIVE TEST & CONDITION ASSESSMENT OF MAIN OFFICE BUILDING, RBI, KANPUR, FUNDED BY RESERVE BANK OF INDIA, KANPUR, SANCTIONED AMOUNT RS. 1180000

50. SITE VISIT OF MASONRY ARCH BRIDGE AT MAURANIPUR, UP ON NH-75/76, FUNDED BY PNC INFRATECH LTD AGRA, SANCTIONED AMOUNT RS. 472000
51. SAMAJVAADI LOHIYA ENCLAVE: SEWERS, FUNDED BY SINTEX PREFAB AND INFRA LTD, SANCTIONED AMOUNT RS. 177000
52. QUALITY CONTROL FOR CONSTRUCTION OF ENGINEERING CORE LAB, FUNDED BY CENTRAL PUBLIC WORKS DEPARTMENT, SANCTIONED AMOUNT RS. 4678280
53. MARTINIZING ANTI-CANCER DRUGS AND OPTIMIZING MULTI-COMPONENT SUPRAMOLECULAR FORMULATIONS, FUNDED BY INVICTUS ONCOLOGY PRIVATE LIMITED, SANCTIONED AMOUNT RS. 1032500
54. EVALUATION OF SPECIALIZED STRUCTURAL COMPONENTS/MATERIAL: ANALYSIS & DESIGN, FUNDED BY MISCELLANEOUS, SANCTIONED AMOUNT RS. 1000000
55. TECHNICAL INSPECTION OF KESCO UNDERGROUND CABLE NETWORK, FUNDED BY KESCO, KANPUR, SANCTIONED AMOUNT RS. 162000
56. CONSULTANCY FOR THE TESTING OF BORROW AREA SOIL SAMPLES FOR FOUR LANING OF JHANSI-KHAJURAHO SECTION (PKG-I) OF NH-75/76 IN THE STATE OF UP/MP UNDER NHDP PHASE-III ON HYBRID ANNUITY MODE, FUNDED BY PNC INFRATECH LTD AGRA, SANCTIONED AMOUNT RS. 166320
57. CONSULTANCY FOR THE TESTING OF BORROW AREA SOIL SAMPLES FOR FOUR LANING OF JHANSI-KHAJURAHO SECTION (PACKAGE II)FROM DESIGN CHAINAGE NEAR CHHATIPAHARI NEAR BAMITHA TOWN IN THE STATE OF UP & MP UNDER NHDP (PHASE III) ON HYBRID ANNUITY MODE, FUNDED BY PNC INFRATECH LTD AGRA, SANCTIONED AMOUNT RS. 201960
58. WIND TUNNEL STUDY FOR 150MHIGH RCC CHIMNEY OF FGD PROJECT OF 2X660MW KHARGONE STTP AT KHARGONE, MP, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 1416000
59. WIND TUNNEL STUDY FOR 150M HIGH RCC CHIMNEY OF FGD PROJECT OF 2X800MW LARA STTP AT LARA CHHATTISGARH, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 1416000
60. COMPUTER BASED TEST RECRUITMENT FOR UPPCL, FUNDED BY UTTAR PRADESH POWER CORPORATION LTD., SANCTIONED AMOUNT RS. 19002424
61. SITE VISIT REGARDING STUDY ON POSSIBILITY OF BUTTRESSING TO ENHANCE THE ASH DYKE LIFE AT NTPC RIHAND, FUNDED BY NTPC LIMITED, SANCTIONED AMOUNT RS. 92925
62. WIND TUNNEL TESTING OF HSP CREW MODEL, FUNDED BY VIKRAM SARABHAI SPACE CENTRE, SANCTIONED AMOUNT RS. 3613750
63. CASE STUDY ON PRACTICAL & THEORETICAL CALCULATION OF WIND LOAD ON SPV STRUCTURE, FUNDED BY STROLAR MOUNTING SYSTEMS PVT. LTD., GREATER NOIDA, SANCTIONED AMOUNT RS. 94400
64. STABLE ISOTOPE COMPOSITION OF AGRICULTURAL SOIL AND EVOLUTION OF NITROGEN FRACTIONATION, FUNDED BY BIDHAN CHANDRA KRISHI VISWAVIDYALAYA, SANCTIONED AMOUNT RS. 177000
65. SEM-EDS (WITH GOLD COATING) AND XRD ANALYSIS OF CERAMIC SAMPLES, FUNDED BY MKU LIMITED, SANCTIONED AMOUNT RS. 238950

66. DEVELOPMENT OF SOFT-COATING FOR MINIMIZATION OF EROSION OF LPST BLADES VIA CHEMICAL ROUTE, FUNDED BY BHARAT HEAVY ELECTRICALS LTD. HYDERABAD, SANCTIONED AMOUNT RS. 1450000
67. CONSULTANCY FOR ONLINE TESTING & ASSESSMENT SERVICES FOR EDCIL (INDIA) LTD., FUNDED BY EDCIL (INDIA) LIMITED, SANCTIONED AMOUNT RS.590000
68. WIND TUNNEL TESTING OF SERVICE VESSEL LARGE, FUNDED BY GARDEN REACH SHIPBUILDERS & ENGINEERS LTD., SANCTIONED AMOUNT RS. 5550720
69. FINISH MACHINING OF HARDENED STEELS WITH LASER TEXTURED CBN TOOLS, FUNDED BY SECO TOOLS INDIA (P) LTD., SANCTIONED AMOUNT RS. 1106250
70. ADEQUACY CHECK OF ETP PLANT TO CPCB & UPPCB: OMEGA, FUNDED BY OMEGA INTERNATIONAL, JAJMAU, KANPUR, SANCTIONED AMOUNT RS. 118000
71. MISCELLANEOUS SITE VISIT, FUNDED BY MISCELLANEOUS, SANCTIONED AMOUNT RS. 88500
72. FEASIBILITY STUDY ON READY-MIX MORTAR, FUNDED BY ORGANO TECHNOLOGIES PVT. LTD., SANCTIONED AMOUNT RS. 885000
73. RAISING OF BRIDGE SUPERSTRUCTURE AT MAURANIPUR, JHANSI, FUNDED BY U.P. STATE BRIDGE CORPORATION, SANCTIONED AMOUNT RS. 944000
74. REVIEW OF MATERIAL QUALITY USED IN VARIOUS AGREEMENTS OF ERACH MULTIPURPOSE DAM, FUNDED BY IRRIGATION DEPARTMENT MAURANIPUR, SANCTIONED AMOUNT RS. 3746500
75. NUMERICAL MODELING AND ANALYSIS OF THE OVD PROCESS FOR OPTICAL FIBER MANUFACTURING, FUNDED BY STERLITE TECHONOLOGIES LTD, SANCTIONED AMOUNT RS. 3792000
76. TOPOGRAPHIC SURVEY OF PROPOSED 1X800 MW E TPP, ANPARA SITE, FUNDED BY UP RAJYA VIDYUT UTPADAN NIGAM LTD., SANCTIONED AMOUNT RS. 1416000
77. SITE VISIT & REVIEW OF DESIGN IN RINHAND NTPC PLANT, FUNDED BY NTPC, SANCTIONED AMOUNT RS. 365800
78. CONSULTANCY SERVICE AND SITE VISIT - RE WALL, FUNDED BY GEOSYS INDIA INFRASTRUCTURES PVT. LTD., SANCTIONED AMOUNT RS. 103250
79. DEVELOPMENT OF LOW PRESSURE HFO ATOMIZER, FUNDED BY BLOOM COMBUSTION INDIA PVT. LTD., SANCTIONED AMOUNT RS. 1770000
80. FRUGAL INNOVATION FOR I&T FELLOWS, FUNDED BY XYLEM INC., SANCTIONED AMOUNT RS. 250750
81. BEST AVAILABLE TECHNOLOGIES FOR SO<sub>2</sub>, NO<sub>x</sub> AND MERCURY CONTROL FOR CAPTIVE COAL-BASED THERMAL POWER PLANTS, FUNDED BY HINDALCO INDUSTRIES LTD., SANCTIONED AMOUNT RS. 1327500
82. UNDERSTANDING EFFECT OF COMPOSITION PROCESSING AND AGEING OF CLEANING COMPOSITIONS ON RHEOLOGY, FUNDED BY UNILEVER INDUSTRIES PRIVATE LIMITED, SANCTIONED AMOUNT RS. 1357000
83. NON DESTRUCTIVE TESTS (NDT) AT SUPERHOUSE LTD SITE KANPUR, FUNDED BY SUPER HOUSE LIMITED, SANCTIONED AMOUNT RS. 59000
84. KANPUR CANTONMENT DPR, FUNDED BY KANPUR CANTONMENT BOARD, SANCTIONED AMOUNT RS. 232000

85. SEISMIC SAFETY EVALUATION OF BUILDING OF NAVAL SAILORS MARRIED ACCOMODATION-2, NEW DELHI, FUNDED BY MES, NEW DELHI, SANCTIONED AMOUNT RS. 1143125
86. VETTING OF WATER/WASTE WATER RELATED WORKS, FUNDED BY GREATER NOIDA INDUSTRIAL DEVELOPMENT AUTHORITY, SANCTIONED AMOUNT RS. 1250000
87. THIRD PARTY INSPECTION OF THE UPGRADATION OF THE AC FACILITY AT SGPGI LUCKNOW, FUNDED BY U.P.RAJKIYA NIRMAN NIGAM, SANCTIONED AMOUNT RS. 236000
88. STABLE ISOTOPE COMPOSITION OF ARCHAEOLOGICAL SAMPLE & INTERPRETATION, FUNDED BY PUNJAB UNIVERSITY, SANCTIONED AMOUNT RS. 136800
89. WIND TUNNEL TESTING OF PANTOGRAPHS (RE-140E AND 140L), FUNDED BY RIVER ENGINEERING PVT. LTD., SANCTIONED AMOUNT RS. 1475000
90. WIND TUNNEL TESTING OF CHIMNEY OD 2 X 660 MW UDANGUDI SUPERCRITICAL STPP ST, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1829000
91. VETTING OF HYDRAULIC DESIGNS OF HYDRAULIC STRUCTURES, FUNDED BY TECHNO CARE (ENGINEERS & CONSULTANTS), SANCTIONED AMOUNT RS. 147500
92. WIND TUNNEL STUDY OF TWO CHIMNEYS FOR 2 X 660 MW SOLAPUR WFGD PROJECT, FUNDED BY GE POWER INDIA LIMITED NOIDA, SANCTIONED AMOUNT RS. 1416000
93. CONSULTANCY AND TESTING CHARGES FOR STUDY OF DRY DENSITY OF LOOSE SOIL SAMPLES WITH HEIGHT OF FALL 1 METER, FUNDED BY U.P.RAJKIYA NIRMAN NIGAM, SANCTIONED AMOUNT RS. 25075
94. ASSESSMENT OF STRUCTURAL DEFICIENCY AND RETROFITTING METHODOLOGY FOR SEISMIC STRENGTHENING OF RESIDENTIAL BUILDINGS AT LOHIA NAGAR OFFICERS COLONY PATNA, FUNDED BY RESERVE BANK OF INDIA, SANCTIONED AMOUNT RS. 6726000
95. WIND TUNNEL STUDY OF ONE CHIMNEY FOR 2X660MW TANA WFGD, FUNDED BY GE POWER INDIA LIMITED NOIDA, SANCTIONED AMOUNT RS. 1416000
96. WIND TUNNEL STUDY OF STCK/CHIMNEY FOR 1X500MW UNCHAHAR WFGD PROJECT, FUNDED BY GE POWER INDIA LIMITED NOIDA, SANCTIONED AMOUNT RS. 1416000
97. WIND TUNNEL STUDY FOR 150M HIGH RCC CHIMNEY OF FGD PROJECT OF DARLIPALI SUPER CRITICAL THERMAL POWER, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 1416000
98. WIND TUNNEL STUDY OF ONE CHIMNEY FOR 2X660MW MEJA WFGD, FUNDED BY GE POWER INDIA LIMITED NOIDA, SANCTIONED AMOUNT RS. 2596000
99. WIND TUNNEL STUDY FOR 150M HIGH RCC GHIMNEY OF FGD PROJECT OF VINDHYACHAL SUPER THERMAL POWER PROJECT, FUNDED BY LARSEN & TOUBRO LIMITED, SANCTIONED AMOUNT RS. 3894000
100. WIND TUNNEL TESTING OF CHIMNEY 1X660 MW BHUSAWAL TPS UNIT 6, FUNDED BY BHARAT HEAVY ELECTRICALS LTD, SANCTIONED AMOUNT RS. 1829000



101. SITE VISIT: REVIEW OF FOUNDATION DESIGN OF MAJOR BRIDGE NO.1301/1 IN CONNECTION WITH DOUBLING RAILWAY PROJECT BETWEEN USARGAON TO BHIMSEN, UP UNDER PKG-3, FUNDED BY RAIL VIKAS NIGAM LIMITED KANPUR, SANCTIONED AMOUNT RS. 76950
102. HIGH RESOLUTION CHARACTERIZATION OF NI SUPERALLOY, FUNDED BY GE INDIA TECHNOLOGY CENTRE PVT. LTD., SANCTIONED AMOUNT RS. 86250
103. CONSULTANCY REGARDING "STUDY OF SUBSOIL CHARACTERISTICS FOR RESIDENTIAL UNITS (STILT PLUS THREE STOREY) OFFICER'S QUARTERS AT MANSAROVAR LUCKNOW, FUNDED BY LIFE INSURANCE CORPORATION, SANCTIONED AMOUNT RS. 477000
104. UPPCL CBT RECRUITMENT TEST, FUNDED BY UTTAR PRADESH POWER CORPORATION LTD., SANCTIONED AMOUNT RS. 24973992
105. NUMERICAL MODELING STUDY OF FLOAT GLASS MANUFACTURING PROCESS AND CVD COATING, FUNDED BY SAINT GOBAIN RESEARCH INDIA, SANCTIONED AMOUNT RS. 1725750
106. IMPROVING RHEOLOGICAL BEHAVIOUR OF AGRO-PRODUCTS, FUNDED BY UNITED PHOSPHORUS LIMITED, SANCTIONED AMOUNT RS. 1416000
107. CONSULTANCY FOR THE TESTING OF BORROW AREA SOIL SAMPLES FOR DEVELOPMENT OF PURVANCHAL EXPRESSWAY (PACKAGE-III) FROM JARAIKALA (DISTT-AMETHI) TO SIDHI GANESHPUR (DISTT-SULTANPUR) IN THE STATE OF UP, FUNDED BY APCO INFRATECH PVT. LTD., SANCTIONED AMOUNT RS. 299700
108. PLATINUM GROUP METAL ANALYSIS USING ICP-MS, FUNDED BY MINERAL EXORATION CORPORATION LIMITED, SANCTIONED AMOUNT RS. 708000
109. SOURCE APPORTIONMENT STUDIES-ANALYSIS AND SAMPLES, FUNDED BY CENTER FOR STUDY OF SCIENCE TECHNOLOGY AND POLICY, SANCTIONED AMOUNT RS. 16950000
110. ACADEMIC CONSULTANCY, FUNDED BY SHIV NADAR UNIVERSITY, SANCTIONED AMOUNT RS. 1462500
111. THIRD PARTY QUALITY ASSURANCE OF CONSTRUCTION OF 800 CAPACITY STUDENT HOSTEL AT IIT ROORKEE, FUNDED BY INDIAN INSTITUTE OF TECHNOLOGY ROORKEE, UTTARAKHAND, SANCTIONED AMOUNT RS. 3726955
112. THIRD PARTY QUALITY ASSURANCE OF CONSTRUCTION OF FACULTY HOUSING AT IIT ROORKEE, FUNDED BY INDIAN INSTITUTE OF TECHNOLOGY ROORKEE, UTTARAKHAND, SANCTIONED AMOUNT RS. 5216870
113. CONSULTANCY FOR TESTING OF POND ASH SAMPLE, GANGA RIVER SAND SAMPLE AND SOIL SAMPLE FOLLOWED BY ANALYSIS OF FILTER CRITERIA AS PER IS-9429, FUNDED BY KANWAR ENTERPRISES PVT. LTD., SANCTIONED AMOUNT RS. 324500.
114. ENHANCING CARBON SAMPLE PURITY, FUNDED BY SARTHAK ENTERPRISES, SANCTIONED AMOUNT RS. 442500
115. COMPREHENSIVE AGRICULTURE INFORMATION SYSTEM, FUNDED BY UP GOVERNMENT, SANCTIONED AMOUNT RS. 200000

116. CONSULTANCY FOR TESTING OF SOIL SAMPLES FOR THE WORK OF EXTENSION AND RESURFACING OF RUNWAY AT AIR FORCE STATION BAKSHI KA TALAB LUCKNOW, FUNDED BY PNC INFRATECH LIMITED, SANCTIONED AMOUNT RS. 33925
117. CO<sub>2</sub> ABSORPTION (GV SECTION) ANALYSIS OF AMMONIA PLANTS OF KFCL, FUNDED BY KANPUR FERTILIZER AND CEMENT LIMITED, SANCTIONED AMOUNT RS. 472000
118. MATERIAL STRENGTH ASSESSMENT FOR FAILED BRIDGE ON NH-547, MP, FUNDED BY NATIONAL HIGHWAY AUTHORITY OF INDIA, SANCTIONED AMOUNT RS. 413000
119. PLATINUM GROUP METAL ANALYSIS USING ICP MS/M, FUNDED BY MINERAL EXPROATION CORPORATION LIMITED, SANCTIONED AMOUNT RS. 472000
120. NDT-RETROFITTING OF ARMY BUILDING, JODHPUR, FUNDED BY MADAN MOHAN JAIN & SONS, SANCTIONED AMOUNT RS. 653010
121. CONSULTANCY FOR TESTING OF SOIL SAMPLES FOR THE DEVELOPMENT OF PURVANCHAL EXPRESSWAY (PACKAGE-II) FROM SANSARA (DIST-BARABANKI) TO JARAIKALA (DIST-AMETHI) IN THE STATE OF U.P., FUNDED BY GAYATRI PROJECTS LIMITED, SANCTIONED AMOUNT RS. 423473
122. ASSESSMENT OF STRUCTURAL DEFICIENCY OF GFRP WATER PIPES AND RETROFITTING METHODOLOGY, FUNDED BY U.P. JAL NIGAM, SANCTIONED AMOUNT RS. 4941250

**B. INTERNATIONAL PROJECTS:**

1. SCHEDULING ALGORITHMS FOR LARGE-SCALE AND COMPLEX JOB-SHOPS, FUNDED BY MITSUBISHI HEAVY INDUSTRIES LTD, SANCTIONED AMOUNT RS. 6193780
2. DEVELOPMENT OF TA-DOPED TiO<sub>2</sub> FILM OVER SILICA COATED GLASS SUBSTRATE, FUNDED BY PILKINGTON TECHNOLOGY MANAGEMENT LIMITED UNITED KINGDOM, SANCTIONED AMOUNT RS. 1348000
3. POROUS GLASS PAPER AS SUPPORT FOR SUPERCAPACITOR APPLICATIONS, FUNDED BY PILKINGTON TECHNOLOGY MANAGEMENT LIMITED UNITED KINGDOM, SANCTIONED AMOUNT RS. 1420639