



**TECHNOLOGY INFORMATION, FORECASTING AND
ASSESSMENT COUNCIL (TIFAC)**
(AN AUTONOMOUS BODY OF DEPARTMENT OF SCIENCE & TECHNOLOGY, GOVT. OF INDIA)



**ANNUAL REPORT
2018-19**



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The Governing Council (2018-19)

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EXECUTIVE SUMMARY



Carrying out technology assessment and foresight studies covering a wide spectrum in sectors crucial to Indian economy, has been the main thrust of broad based activities of TIFAC. Most notably, TIFAC has brought out Technology Vision documents for the country which capture the aspirations of Indians, technology trajectory and associated roadmaps for achieving it. TIFAC also has been actively supporting innovations and innovative technologies through patent support or extending soft loan towards commercialization. A glimpse of activities of TIFAC during the year is captured below.

Follow up activities under Technology Vision 2035 continued in liaison with Government Departments/Ministries, NITI Aayog and other agencies. Two important climate change projects comprising Technology Needs Assessment (TNA) study supported by MoEF&CC and Global Technology Watch Group (GTWG) project, supported by DST, were completed. The executive summary document of GTWG project portraying environment friendly technologies of select six sectors including sustainable agriculture, habitat, water & enhanced energy efficiency was released by Hon'ble Union Minister for Science & Technology & Earth Sciences and Ministry of Environment, Forest & Climate Change in COP 24 in Poland during December, 2018.

In the automotive sector, TIFAC made significant contribution through preparation of Detailed Project Report (DPR) for National Mission for Electric Vehicles, with support from Department of Heavy Industry (DHI). As a follow up, TIFAC is assisting the Office of Principal Scientific Adviser and Department of Science and Technology in nucleating collaborative technology development efforts in the field of battery, electric motors etc. besides providing valuable inputs in different aspects associated with electric mobility such as impacts of electric mobility, smart poles etc.

TIFAC continued to expand its footprint in patenting support with grant of 16 Indian patents and filing of more than 50 new patent/IP applications on behalf of researchers from academic and R&D institutions. Ninety four (94) candidates cleared patent agent examinations which is an indicator of success of KIRAN IPR program. A workshop was also organized in collaboration with World Intellectual Property Organization (WIPO) highlighting potential usage of inventions in public domain.

TIFAC reports highlighted huge latent potential for value addition and revenue generation for our country in raw materials like seaweeds, castor and bauxite. Seaweed can be utilized for manufacturing various value-added products and can also be a source of nutritious food besides creating substantial employment.

TIFAC also brought out a very useful report '*Estimating generation and surplus amounts of crop residues in India*' mapping district wise available residual biomass. The report is being utilized by MoPNG and Oil PSUs in planning to set up lignocellulosic bioethanol plants across the country.

In the innovation space, TIFAC made significant contribution through the TIFAC-SIDBI Technology Innovation Programme (Srijan) by way of facilitating scaling up of four innovative technologies in National priority areas including that of waste heat recovery in industrial applications and ultra filtration technology for sewage and industrial waste water treatment.

TIFAC is a National Member Organization of International Institute for Applied Systems Analysis (IIASA), Austria and facilitates synergizing the insights of Indian researchers with IIASA's analytical strength through suitable collaborative projects and activities in areas of mutual interests. TIFAC is actively pursuing renewal of its membership at IIASA which had been at pause for some time.

Under the TIFAC MSME program, six more clusters including apparel cluster at 24 North Parganas-West Bengal, food and spices & fisheries cluster at Manipur,



toys clusters at Channapatana, Karnataka were taken up towards mapping of the technology status, needs and formulating cluster specific intervention plans. Studies are underway in these clusters.

TIFAC also undertook Technology Foresight studies on security technology in three diverse areas viz. securing societies and infrastructures, cyber security for digital economy and natural resources and environment security wherein malicious threats & vulnerabilities were identified, global & national scenarios of countermeasures were assessed to bring out technology and policy recommendation.

In the coming years, I foresee TIFAC, as a vibrant body looking at upcoming cutting edge technologies and prioritizing R&D areas which are important in our Country's perspective, while simultaneously augmenting the core strengths of TIFAC Scientists.

V.K. Saraswat
Chairman
TIFAC Governing Council

1.0 TECHNOLOGY FORESIGHT

1.1 TECHNOLOGY VISION 2035

The activities towards dissemination of Technology Vision 2035 were continued during the period which included lectures, workshops and training on foresight techniques.

1.1.1 TECHNOLOGY ROADMAPS

The preparation of sectoral technology roadmaps was initiated by TIFAC with an aim to realise the vision captured in the Technology Vision 2035 documents. So far, six technology roadmaps have been released. Of the remaining 6 sectors, draft reports of three sectors namely habitat, water and energy have reached to advanced stage and expected to be completed by end 2019.

1.1.2 DISSEMINATION OF TECHNOLOGY ROADMAP ON EDUCATION SECTOR

TIFAC was invited to conduct a panel discussion on 'Role of technologies in Reshaping Education System in India' by Difficult Dialogue for its fourth edition of event on 'Education- Illuminating Myriad Facets' during 31st January - 2nd February, 2019 at Goa. The panel focused on issues such as key future technologies which may put significant dent in our education system; *key components of current education system which need changes in order to embrace with the fast technological developments paradigm; whether our institutions equipped to face these challenge; is our education policy sound enough to absorb these technological changes; what possible policy changes are required to raise our education standard up to the global level.*

The panel of eminent experts included Dr. G.P. Phondke, Former Director, NISCAIR, Prof. Varun Sahni, Vice Chancellor-Goa University, Prof. Ashok Misra, Distinguished Professor, IISc-Bangalore, Dr Gautam Goswami, Head TV 2035-TIFAC, Prof. Rajive Kumar, AICTE, Dr. Sita Naik, PGIMSR-Chandigarh, Dr. Sangeeta Saranathan, Chennai and also several other eminent professionals from Academia and Industry.



Panel discussion on Education Technologies in Goa

1.1.3 TECHNOLOGY FORESIGHT REPORT ON BIO-PRINTING TECHNOLOGY

The proposal for preparing technology foresight report on 'Bio-printing Technology' was presented in the 50th Governing Council meeting of TIFAC and was approved in-principle. The broad coverage planned to be part of the study includes technology status (global vs India), demand and supply side scenario, input availability and policy issues. The report intends to provide the recommendations focussing on actions to be taken in the area of research, policy making and governance with an aim to adopt

the technology at larger scale for making the healthcare more affordable, safe and of better quality. A brainstorming session was held on 20th February, 2019 under the

Chairmanship of Dr VM Katoch, Former DG, ICMR wherein relevant experts were invited to have their feedback on the technology.

1.2 CLIMATE CHANGE ACTIVITIES

1.2.1 CONFERENCE OF PARTIES (COP) 24, KATOWICE

TIFAC successfully completed a Global Technology Watch Group (GTWG) project, supported by the Department of Science & Technology, Govt. of India which identified global technologies in the field of Climate Change Mitigation and Adaptation for six (6) sectors: Sustainable Agriculture, Sustainable Habitat, Water, Manufacturing, Green Forestry and Enhanced Energy Efficiency. An executive summary report comprising the outcome all the sectors was released in COP24 at Katowice, Poland on 3rd December, 2018, by Dr. Harsh Vardhan, Hon'ble Minister for Science & Technology and Earth Sciences, Ministry of Environment Forest & Climate Change. Subsequently, a panel discussion was organised in the side events of India Pavilion, COP 24. Shri Sanjay Singh, Executive Director (Officiating) gave a brief introduction about TIFAC and the GTWG. Dr Gautam Goswami, PI, GTWG project made a presentation on 'Technology Needs Assessment and Global Technology Watch Group'.



Release of GTWG Executive Summary report at COP 24, Katowice, Poland



Talk by Dr. Gautam Goswami in COP24, Katowice, Poland

1.2.2 TECHNOLOGY NEEDS ASSESSMENT (TNA) PROJECT

The Technology Needs Assessment Project towards preparation of 'Biennial Updated Report (BUR-II) and Third National Communication (TNC) under the obligation of the UNFCCC started in August 2016 and continued till October 2018 under the financial assistance from MOEF&CC. The objectives of the project is to identify the technology needs for India, their prioritisation and finally preparation of technology action plan sector-wise for 10 sectors in the context of climate change mitigation and adaptation. The sectors are Coal & Energy, Transport, Industrial Processes and Product Uses (IPPU), Forestry, Agriculture, Habitat, Renewable, Water resources, Health and Waste. The key findings in the ten sectors are detailed below:

A) COAL & ENERGY

Coal is the main fuel used for power generation in India. In India, out of total installed power generation capacity as reported by Central Electricity Authority on 31.06.2018, around 57.3% is sourced from

coal, 7.2% from gas, 0.2% from oil, 13.2% from hydro, 2% from nuclear and 20% from other renewable energy sources.

As per one of NDC commitments made to UNFCCC, India is to reduce the emissions intensity of its GDP by 33 to 35% by 2030 from 2005 level. To meet this commitment, TIFAC under the supervision and guidance of a National Steering Committee, has identified the following technology needs for the coal sector:

Ultra-Supercritical (USC) /Advanced Ultra Supercritical (AUSC) technology, Underground Coal Gasification Technology (UCG), Advanced Coal Beneficiation technologies, Carbon Capture and transport and storage technologies, Advanced Nuclear Technologies

B) RENEWABLES

The share of renewable energy in India's total energy mix is growing. Govt. of India aims to achieve the target of 175 GW installed capacity from renewable source by the year 2022. Initial high cost of installation continues to remain as the biggest challenge for large scale renewable energy technology deployment. Lack of technology and manufacturing facility for solar grade poly silicon, ingots and wafers is another concern for large scale adoption of renewable technologies in India. Further, the R&D efforts in solar cell development technology are limited in the country.

Some of the major technology needs identified for the Renewable sector are: Solar (Solar PV - PV technology based on n-type silicon wafers, PV technology based on p-type silicon wafers; Silicon based - Mono Ingots - Cz Process (p and n-types), Wafer Slicing Technology; CSP; Wind (Blade, Gearbox, Generator, Bearing); Storage - Li-ion (LIB), Sodium-sulphur (NaS); Biomass (Biomass-to-liquid Drop-in fuels and ethanol, Cellulosic bio-ethanol (2G).

C) TRANSPORT

Keeping in mind of India's unique demand for transport as well as the challenges faced by all the four modes of it, the technology needs identified under TNA project are grouped in the broad three categories a) Power train (Engine & Transmission) technologies, b) Vehicle technologies, c) Alternate propulsion including hybrids, plug-in hybrids, battery electrics, followed by alternative fuels including renewable such as biofuels, solar energy, hydrogen etc. The technology needs identified are: Roadways (Advanced Internal Combustion Engine (ICE) Development, setting up a centre in India for Combustion research in the area of LTC, HCCI, RCCI, cycle changes to Miller/Atkinson etc., Light weighting – Development of ultra-high strength steel, Development of Low cost EV charging infrastructure and advanced battery technology, Fuel Cell Development); Railways (High reach Pantograph, Fuel Cell PEM technology for traction, Coal to methanol technology, Methanol engine technology, Hybrid Engine Technology, Emissions reduction technology, Engine high efficiency technology)

D) WASTE SECTOR

Unplanned urbanization is the one of the major problem faced in waste management sector in India. The increased waste generation due to urbanization leads to inefficient waste collection, segregation, treatment and disposal by local authorities. There are many problems with respect to handling and management of both liquid and solid waste (Industry, community, house hold etc.). A large quantity of waste goes untreated, causing contamination to soil, air and water. TIFAC has identified the following technology needs to address the gainful utilisation of wastes in climate change perspective:

Municipal Solid Waste (Mechanical Extrusion Press, Biogas to Bio-CNG:

Compressor & bottling units, Waste to energy - thermal technologies, Hydrothermal Carbonization, Mechanical Separation Technologies, Geo-membrane Liners and Geo-synthetic Clay Liners /Geo-textile for Landfill Liner/Cover Applications)

Industrial Wastewater (ZLD - Anaerobic digester, RO & Evaporation), Mechanical Vapor Compression, Electric Arc)

Plastic Waste (Biodegradable polymers, thermoplastic polymers, Edible films using edible biopolymer ingredients like protein, polysaccharides and lipids, isolation of different microbes and consortia of microbes for rapid degradation of different biodegradable polymers)

E-Waste (Recycling of Li-ion batteries)

Biomass (Fiber extraction and utilization of biomass by contact bed/leach-bed treatment followed by aerobic composting, conversion of biomass to fuel like drop-in -fuel and ethanol, decentralized treatment of animal wastes)

E) IPPU SECTOR

In India, energy efficient technology and sustainable production is projected to expand exponentially in the near future to energize new industrial development, along with easing the GHG emissions scenario throughout the country. There is a growing need for diverse, accessible and promising technologies for manufacturing sector, with near and long term GHG reduction potential worldwide that could potentially be useful for the Indian manufacturing sector.

Many advanced and sustainable technologies are under consideration in Indian manufacturing sector; including coke dry quenching and dry gas cleaning technology in steel industry; pre neutralizer/ pipe reactor process technology in fertilizer production; sand casting and metal cutting in metal fabrication area; gasification and

carbon capture technology in cement sector. There are few technologies which are in pilot stage in India and many more are under consideration. The technologies identified include subsectors such as Iron & Steel, Fertilisers, Textiles, Chemicals, Cement, Leather, Paper & Pulp and Engineering.

F) FORESTRY SECTOR

India is one of the few countries where forest and tree cover has increased in recent years, transforming country's forests into a net sink. As per the Nationally Determined Contributions (NDCs), India is committed to create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.

To achieve this goal, TIFAC has identified major technology needs for the forestry sector which include genetics and tree breeding research to develop salinity and drought resistant clones, simplified clonal technology for developing short rotation clones and varieties for production of plywood, pulpwood, biofuel and biomass, models to prevent, predict, detect and control forest fires, controlling invasion of alien species, development of indigenous prediction models to assess and forecast impact on vegetation and forest types, physical and chemical control of invasive plant species, genetic diversity adaptation through genetic resource management

G) AGRICULTURE

Agriculture contributes substantially to global climate change. Globally, the agriculture sector contributes one fifth of total greenhouse gas (GHG) emissions considering the full production cycle including deforestation. Indian agriculture is dependent on many climatic factors such as temperature, rainfall, humidity, and sunshine duration. Climatic variations may impact crops both positively and negatively depending on the nature of crop and the ecosystems they are grown.

Agriculture has the potential to mitigate GHGs cost-effectively through the adoption of changes in agricultural technologies and management practices. Towards this, technology needs identified for the agricultural mitigation and adaptation perspective are: Multiple stress tolerant crop varieties suitable for present and future cropping systems, Advanced genome editing technology (CRISPR-Cas9) for greater genetic gains, Controlled nitrogen fertilizer application, Alternate wetting and drying in rice (AWD) technology, Zero Tillage/strip tillage/reduced tillage technology, Precision farming, Livestock waste management, Renewable Energy driven Agro-Machinery (Rotary tiller, Bed former-cum-seeder/planter, Laser land leveller), Aeroponics etc. In addition a few Non-Conventional Innovative Technologies and Non-Conventional Disruptive Technologies are also identified.

H) WATER

The climate change has detrimental impact on water availability, quality and access. Appropriate technology intervention is required for augmentation, conservation and management of water resources. Therefore, the technologies which will help in augmenting water availability, quality improvement and also efficient water supply network (safe and leak proof) have been captured as mentioned below:

Desalination technologies: Reverse Osmosis (RO), Capacitive Desalination (CD), Freeze-thaw/evaporation (FTE), Electro dialysis reversal (EDR), Multi stage flash distillation (MSF), Multiple-effect Evaporation (MEE), Biometric membrane

New Water sources: Gas Hydrate, Dew water harvesting, Mine water treatment, harvesting water from atmosphere and sea agriculture

Recycling and reuse of wastewater: Zero Liquid Discharge (ZLD) for industry

Aquifer Recharge: Rain water harvesting (rooftop and surface), Enhanced filtration, induced bank filtration (IBF), well injection and village level gravity injection well

Evaporation and Leakage control: Seepage loss from canal and its prevention, application of sensors for leak detection, lining of canal in live condition, software based leak detection system and water sensitive urban planning

Modelling Tool: Models to study the impact of climate change on all river basins and to arrive at adaptive responses for uncertainties in the projections and use of remote sensing methods for water resources mapping and assessment

I) HABITAT

India along with most other populous countries, is witnessing a considerable rise in population as well as urbanisation. This makes the impact of climate change more significant for the country. While climate change happens partly owing to human activities and also partly as a natural phenomenon, the consequences are ultimately borne by the human beings, more particularly, the weaker segments of the society. It is, therefore, necessary to identify appropriate technologies to create a sustainable Habitat under climate change regime.

TIFAC under the supervision of National Steering Committee has identified a total of 107 technologies for the Habitat sector. Some of the indicative technologies are:

Energy efficient production of bricks moving from BTKs to VSBKs or zig-zag processes, Low carbon calcined cement and low carbon concrete, Recycling debris for construction, structure, infill and finishes, Rooftop and building-integrated solar PV and wind systems, Increasing use of free energy for air-conditioning, Durable low emissivity paints and coatings, Carbon Absorbing

Concrete, Early warning system for natural calamity, AI based control and management of appliances and building systems & services, Sustainable plastic recycling technologies.

J) HEALTH SECTOR

Climate change and weather has been adversely influencing the human health in a significant way. The precise extent of the impact of climate change is difficult to quantify owing to different factors at play. Some of the factors that intensify the problem are shifting in weather pattern, rising population, rapid urbanization and industrialization, high energy consumption, vector borne diseases, potable water supply, sewage & waste management issues etc.

The areas where these interventions would bring out a positive change and lessen the climate change impacts in a long run includes Hydro-meteorological hazards, Water borne and food borne diseases, Air Borne, Cardio-pulmonary & Respiratory Allergic Diseases, Vector-borne and Zoonotic diseases, Agriculture and nutrition, Non-communicable (NCD) & Mental illnesses, Waste management, Health information infrastructure and Occupational Health. The technology interventions are mentioned below:

Flood real time Early Warning System (EWS), Global Positioning System (GPS), mobile communication networks, Bioremediation for waste water treatment, Immunological-based methods for the detection of food borne bacterial pathogens, Incorporation of real-time surveillance, evaluation and monitoring in the planning to prevent outbreaks in mass gatherings, Point of care detection tests, Fogging technique & Indoor Residual Spraying (IRS), Nutrition surveillance system, Medical data collation and communication system etc.

1.2.3 SUBMISSION OF BUR II

TIFAC submitted the technology needs assessment inputs for the final version of Chapter 5 on '*Finance, Technology and Capacity Building Needs and Support Received*' of BUR II in end October 2018 to MOEF&CC. The Completed BUR II was submitted by MOEF&CC to UNFCCC in December 2018 in a timely manner. Inputs from TIFAC pertaining to sectors such as Coal & Energy, Renewables, Transport, Waste, Industrial Processes and Product Use have been included in the BUR II report and role of TIFAC has been duly acknowledged. The report can be accessed through UNFCCC website.

1.2.4 GLOBAL TECHNOLOGY WATCH GROUP (GTWG)

The National Mission on Sustainable Knowledge for Climate Change (NMSKCC) is one of the NAPCC Missions being implemented by Department of Science & Technology, Govt. of India. One of the important components of this mission is preparation of Global Technology Watch Group reports for nine sectors. TIFAC, being a technology think tank was assigned a project to prepare global technology watch report of six sectors- Sustainable Agriculture, Manufacturing, Water, Enhanced Energy Efficiency, Sustainable Habitat and Green Forestry.

The aim of the project is to keep a watch on the state-of-the-art technologies emerging globally in the key sectors of economy and prioritise them for India. The major activities under GTWG include technology mapping and technology prioritization with relevance to mitigation & adaptation to climate change.

To achieve the aims and objectives of the Global Technology Watch Group Project, TIFAC followed a 3-tier approach. Tier 1 comprises National Steering Committee

(NSC) which was primarily responsible for setting the entire process of implementation of the project, review of project progress periodically, suggest midterm corrections and finally deciding the project structure. The NSC was headed by the-then Chairman, TIFAC- Dr. Anil Kakodkar. This Committee is composed of Mission Directors from NAPCC missions, distinguished scientists and domain experts of the select 6 sectors. Actual implementation of the project was bestowed on to Tier 2 structure which is a Global Technology Watch Group, formed drawing eminent experts from different sub-groups of the respective sector and the Tier -3 comprises of stakeholders (Industry, Government, Academia and Research Institutions) .

The sector-wise progress is detailed below:

A) SUSTAINABLE AGRICULTURE

The GTWG Sustainable Agriculture group comprised of experts/ scientists from different sub-sectors of agriculture and allied areas and the group was chaired by Dr. H. Pathak, Director, ICAR-National Rice Research Institute (NRRI), Cuttack, Odisha.

The GTWG Sustainable Agriculture group scouted around 745 technologies from different sub-sectors of agriculture. Technologies scouted under different sub-sectors are: Crop Improvement (86), Land and Water Management (115), Soil and Nutrient Management (30), Microbial Technology (13), Geo-ICT (15), Crop Protection (35)

Mechanization(17) Horticulture & Post-Harvest Technology (23) Agro-forestry (10) Protected Cultivation, Vertical Farming and Hydroponics (28) Animal Husbandry and Livestock (14) Fisheries (17) and through horizon scanning in TIFAC secretariat & Stakeholder meetings (342).

Technologies identified by the GTWG in agriculture sector include, technologies available in research farm or in laboratory need to be extended to farmer's field. Apart from these technologies, few emerging technologies that have the potential to transform agriculture and allied sectors have also been identified. They range from specific technical tools to new ways of implementing the existing system. The technologies identified were prioritised following Multi Criteria Decision Analysis (MCDA) technique. Finally, prioritised technologies were validated in a workshop organised at NAAS, New Delhi

The GTWG Sustainable Agriculture report also recommends that it is essential to develop a portfolio of strategies that includes adaptation, mitigation, technological development and research (climate science, impacts, adaptation and mitigation) to combat climate change. Integration of mitigation and adaptation frameworks into sustainable development planning is an urgent need, especially keeping in view the diverse agro-climatic zones of our country.



Validation workshop at NAAS, New Delhi

B) MANUFACTURING

Manufacturing sector contributes significantly in GHG emission of the country. Mineral industries consisting of Cement Production, Lime Production, Glass and Ceramics dominate the GHG emissions totalling to 63%, followed by Metal production with a share of 14% and Chemicals 11% and others amounting to 13% of the manufacturing sector.

The prime focus of GTWG of this sector was to delineate the technologies, concepts and approaches in manufacturing sector, and sub-sector which are available globally. The subsectors identified were Iron & Steel, Chemicals, Leather, Textiles, Cement, Paper & Pulp, Fertilizers and Engineering. The selection of technologies was based on their emission reduction potential, energy savings, end uses, accessibility and cost benefits. The foresight techniques which were adopted include horizon scanning, stakeholder's consultation, expert's consultation, literature survey. The number of sector-wise technologies scouted is as given below:

Fertilizers - 46; Iron & Steel – 22; Paper & Pulp- 52; Chemicals – 31, Cement – 30; Textile- 54; Leather- 40; Engineering- 38

The GTWG sectoral report highlights that large reductions in GHG emissions are achievable, if right policies are put in place. There is a need to incentivise technologies which upon adoption would reduce emission. A clear cut action plan for implementing the selected technologies has to be drawn mentioning agencies to be involved, quantum of funds to be allocated etc. It is a known fact that natural resources are fast depleting. It is, therefore, imperative for future citizens to be conscious about the need for frugal usage of resources - be it, water, energy or raw materials. It should be ensured that concepts of lean manufacturing and production process management based on permanent focus on removing all types of wastes, is included in the school/higher education curriculum.

C) WATER

With a mammoth increase in population over the last several decades in India, the per capita availability of water in the country is continuously decreasing and the country is already in a water stressed state, and stares at an impending water crisis. Climate change will most likely put a significant additional stress to such crisis.

Almost all aspects of water – from supply aspects in terms of availability, demand aspect from different end uses and also quality aspects for all sorts of application which will be affected by climate change at different spatial and time scales, have been considered within the GTWG-Water sector report. It was very important that emphasis should be given to technologies that will enhance water availability, ensure water conservation and maintain quality and improve the water use management.

The technologies are, therefore, considered under three broad themes in this report: Water Augmentation, Water Conservation and Water Use Management. Under each of these themes, the existing technologies are identified and the relevance of those technologies to climate change is provided, along with an informed assessment of the technology gaps. Some technologies though may not be linked directly with the climate change issues, but those have been included if those are even connected indirectly with Climate Change. These three themes are in fact overlapping, hence to some extent many technologies listed under one theme may also fit well into the other themes.

D) ENHANCED ENERGY EFFICIENCY

India's energy sector is poised at a juncture wherein it still needs to increase both the total and per capita levels of energy provisioning in order to improve the level of services, infrastructure and total economic output. At the same time, the country faces the challenge of achieving this growth while maximizing resource efficiency and thereby containing the environmental implications

to the maximum level possible. The energy efficiency can play a significant role in India's energy transition story. Energy efficiency can be described as a "win-win" option that can contribute positively to India's sustainable development path from multiple dimensions.

The report on GTWG-EEE sector discusses various sector and sub sectors where the energy consumption is very high and potential to increase energy efficiency through best and alternate technology intervention is quite high. The most relevant end-uses and sub-sectors that indicate potential for energy efficiency include the following:

- Iron & Steel, Cement, Bricks, and other industries including MSMEs
- Improvement in power generation & supply efficiency
- Energy efficiency in transport through improvements in the aviation sector, switch towards rail-based movement and electric vehicles and improvement in vehicle efficiencies
- Efficient buildings for shops/malls, hotels and offices and Various appliances in the residential sector especially lighting and space conditioning appliances
- Improvement in irrigation efficiencies in agriculture sector and efficiency improvement in municipal service sector
- In the residential sector, the main end-uses in which energy efficiency seems to have a significant potential is space conditioning and lighting.
- In the commercial sector savings could accrue by energy efficiency in commercial buildings as well as efficiency improvements in end-uses such as street lighting.
- In the transport sector, efficiency improvements are expected to accrue on account of shifts from road to rail based movement, road-based vehicles as well as in the aviation sector.

- Due to efficiency improvements largely on the end use demand side, but also with regard to some improvements in T&D losses, the level of electricity generation required would also reduce, leading to the need for a lower power generation capacity as well.

e) Sustainable habitat

The Global Technology Watch Group on Sustainable Habitat (GTWG-SH) comprised of experts/ scientists from different fields of Housing / Habitat and the group was chaired by Dr. Jagan Shah, Director, National Institute of Urban Affairs, New Delhi. The report encompasses issues related to good governance, competitive economy, high quality life and environmental sustainability leveraging the technology. This is being done through identification of issues & assessing technology needs under various sub-sectors through technology scouting & prioritization. The main purpose of the GTWH-SH report is to lay down technology path for making the Habitat climate resilient that is socially acceptable and economically feasible.

Technology scouting & prioritization was done in two stages, first where a broad list of technologies was prepared and classified, and then they were assessed according to a series of feasibility parameters and normalized for decision making. A gamut of technologies / approaches were identified by deliberations and through stakeholder meetings, they were categorized, prioritized and ranked based on the set parameters viz., technological feasibility, ecological or environmental, economic, social and policy.

Some of the key technologies identified are enlisted below:

- Smart tagging for resource information
- Warning announcement (real time data access to people using open-source platforms through maps and other visualisation techniques)

- Zero waste, zero discharge technology integration
- Affordable Desalination
- Energy efficient production of bricks moving from BTKs to VSBKs or zig-zag processes (Burnt clay bricks with hollow-core)
- Rooftop and building-integrated solar PV and wind systems, - specifically, window, wall and railings integrated PV, micro-wind
- RFID (Radio Frequency Identification) technology (between garbage truck & waste collection bins at the time of collection)
- Affordable and low energy space cooling/ventilation systems
- Increasing use of free energy for air-conditioning
- Artificial lighting by using absorbed energy
- Intelligent Buildings (IBMS using extensive sensors).
- Specialized centres for e-waste disposal and heat pumps in buildings

F) GREEN FORESTRY

The role of forests is pivotal in the context of global climate change for mitigation and its inextricable welfare linkage to human

survival. Forests have the unique ability to simultaneously reduce greenhouse gas emissions by capturing and storing carbon, and also reduce the vulnerability of people and other ecosystems to climate change.

The major challenges the Indian forests sector faced with are many but how to increase the productivity of the forest areas, how to reduce the dependence of local community on forests, lack of appropriate technologies to measure CO₂ sequestration in a cost and time efficient manner and saving India's forests from the adverse impact of climate change are some of the serious concern.

The existing management approaches and current practices are not sufficiently enough to combat with adverse and unforeseen consequences of the climate change. Therefore, the report on GTWG-Green Forestry provides list of upcoming and current best practiced technologies in eight major sub-areas (Forest Productivity, Climate Change and its Impacts, Forest Protection and Conservation, Biodiversity Conservation, Carbon Service, Forest Measurement, and Livelihood Improvement) within forestry sector.

1.3 TECHNOLOGY FORESIGHT FOR AUTOMOTIVE R&D (TFAR)

Under the TFAR programme, TIFAC studies emerging technologies in the automotive sector, aiming at catalyzing and nucleating technology development efforts. The activities under this programme have been expanded to address broader issues of transportation, including development of models for transport sector taking into account cross-sectoral influences. Activities under this programme involved the following:

1.3.1 DETAILED PROJECT REPORT (DPR) AND R&D PROGRAMME ON NATIONAL MISSION FOR ELECTRIC MOBILITY

The DPR and R&D Programme on National Mission for Electric Mobility was released on 31st October, 2018. This report was prepared with support from the Department of Heavy Industry and was result of extensive consultations with industry, academia, R&D labs and Government. The report discusses technology trends in electric mobility and

suggests technology development strategies for India. It also suggests R&D initiatives that can be undertaken.



Release of the R&D Plan for the Technology Platform on Electric Mobility

1.3.2 TECHNOLOGY FORESIGHT STUDY ON ELECTRIC MOBILITY

This study focuses on various potential impacts of electric mobility, such as impacts on the electricity distribution grid, requirement of critical materials and infrastructure as well as environmental, economic and societal benefits of electric mobility. Earlier, a model has been developed to estimate the optimum location of charging stations for electric public transport buses and size of the energy storage system in the vehicles. Work has been carried out to study the impacts on distribution grid for various charging strategies. During 2018-19, development of algorithm for an agent based model for estimating future penetration of electric vehicles has been completed. Based on possible future scenarios of penetration of electric vehicles, analysis of its potential impacts will be completed shortly. Following issues have also been studied:

(i) Permanent magnet synchronous motor for electric vehicles

TIFAC has been assisting the Office of the Principal Scientific Adviser (PSA) to the Government of India for the initiative on development of permanent magnet based electric motors for electric vehicles. The effort is targeted at addressing entire supply

chain for this technology including rare earth processing, manufacture of magnets, and manufacture of motors. TIFAC has been associated with nucleation of this programme and prepared concept note on this topic for the office of the PSA. Further, TIFAC participated in the sub-group constituted for working out the details of the programme on development of the motor and controllers.

(ii) Comparative analysis of emerging vehicle technologies in Indian Context

The study will focus on comparative analysis of benefits and impacts of four emerging alternative brainpower technologies: Battery Electric Vehicle (BEV), Fuel Cell Electric Vehicle (FCEV), hydrogen powered IC engine vehicle, and methanol powered IC engine vehicle under Indian conditions. In the first part, work has been carried out on comparative analysis of lifecycle energy consumption of battery electric vehicle (BEV) and fuel cell electric vehicle (FCEV).

(iii) Future energy storage technologies

A model has been developed to study the potential impact of emerging energy storage technologies on future electric vehicles.

1.3.3 TECHNOLOGY FORESIGHT STUDY ON ELECTRIC AIRCRAFT

This study covers emerging trends in electric passenger aircrafts as well as drones (unmanned aerial vehicles) and analysis of their impacts. Preliminary reports with the help of student interns have been completed. Further, technology forecasting exercise has been undertaken on probable future developments in various component technologies and their impacts on the viability of electric air-crafts for passenger transport.

1.3.4 TECHNOLOGY FORESIGHT STUDY: SMART POLES AS CONNECTED INFRASTRUCTURE

The study aims at identification of opportunities for various applications of

smart poles including charging of electric vehicles, and also opportunities for better functional integration. First meeting involving

stakeholders was held during this period to initiate the study.

1.4 THEMATIC FORESIGHT STUDIES

1.4.1 SECURITY TECHNOLOGIES

Technology foresight studies on security technology have been implemented wherein malicious threats & vulnerabilities were identified and global & national scenarios of counter measures were assessed. The studies bring out technology and policy recommendations in terms of three different time frames i.e. actionable, strategic and visionary.

The following three studies have been undertaken:

i) **Natural resources and environment security**

The study covers subsectors namely forest & wildlife resources, agriculture & allied resources, mineral resources, water resources, air & atmosphere and marine resources. This has been carried out in association with The Energy and Resources Institute (TERI), New Delhi.

ii) **Cyber security for digital economy...a roadmap**

The study encompasses key technology areas such as Internet of Things, Cloud & Virtualization, Big Data, SCADA and Financial Sector and is carried out in partnership with Centre for Development of Advanced Computing (CDAC), Pune and Data Security Council of India, Noida.

iii) **Technology foresight for securing society and infrastructure**

The study encompasses security of individuals, mass gatherings, and critical infrastructure like transport (road, railways, shipping, and aviation), chemical industries and telecommunication and is being carried out in association with Sardar Vallabhbhai Patel National Police Academy, Hyderabad and International Institute of Information Technology (IIIT), Hyderabad.

1.4.2 FOOD PROCESSING

Prepared concept document/ approach paper on 'Technology Foresight Study for Food Processing Industries in India' and in-principle approval from the Ministry of Food Processing Industries (MoFPI) was obtained. Subsequently, TIFAC Governing Council advised to conduct the study with focus on North Eastern & Himalayan region of India. A Steering Committee was constituted involving the line Ministries of Government of India for providing overall guidance and steer the study. The study would broadly identify technologies ready for deployment along with the likely investment scenario at the first level, take up technologies from laboratory scale to field trials for proving their viability and mobilise resources & marshal research policies for targeted, desirable and aspirational technologies in the long term horizon.

1.5 HORIZON SCANNING

TIFAC is following developments, breakthroughs and upheavals on the global technology landscape on a regular and continuous basis. Horizon Scanning is carried out routinely for feeding forward

technology intelligence in foresight activities for India and generating thematic reports assessing potential opportunities and threats linked with technologies showing up on the horizon.

2.0 NURTURING INNOVATION

2.1 PATENT FACILITATING CENTRE (PFC)

PFC at TIFAC has been mandated to create IPR awareness and deeper understanding of patents and IPR in the country, facilitating filing, obtaining and maintaining patents on sustained basis, providing patent information as an input to R&D and handling IPR policy matters. In addition to awareness and training, PFC is also handling major scheme of DST's Women Scientist Scheme C (WOS-C) popularly known as KIRAN-IPR. It is actively engaged in the implementation of the National IPR Policy, especially action points of DST.

2.1.1 IP/PATENT FACILITATION

PFC helps in filing and prosecuting patents and other IPR applications in India and in other countries on behalf of academic institutions and government R&D institutions. These patent and IP applications are drafted and filed through patent attorneys on the panel of PFC, TIFAC. The cost of filing these patents is borne by PFC, TIFAC and patent/

IP applications are filed in the name of inventing institute/s. PFC conducts thorough patentability assessment in-house for all the invention disclosure received by it.

j) Filing of patent and other IPR applications

PFC has assessed the patentability of about 114 new cases for filing of patents on behalf of academic and government R&D institutions. Out of which 49 cases were found suitable and have been sent to attorneys for filing of new patent applications along with one National Phase application (in persuasion to PCT application filed earlier) and one copyright application. One case for National Phase Filing was considered following filing PCT application earlier and three design registrations were also examined.

ii) Grant of patents

During the period, 16 Indian patents have been granted.

S.No.	Patent No.	Grant Date	Applicant	Title
1	296215	26/04/2018	University of Hyderabad, Hyderabad	A polymeric film embedded with silver nano particles and a method for preparing the same
2	296175	26/04/2018	Sardar Patel University And Gujarat Council On Science & Technology (Gujcost), Gujarat	Smectite clay from naturally occurring clay
3	296326	27/04/2018	Sardar Patel University, Gujarat	Substituted carbazole based dyes for dye solar cells and other optoelectronic device
4	298220	28/06/2018	Banaras Hindu University, Varanasi	A composition for controlling pests infesting grains, comprising an effective amount of melaleuca leucadendron and carumcarvi

5	298981	19/07/2018	Centre For Earth Science Studies, Thiruvananthapuram	A low cost device for detecting neoplastic changes in tissue
6	299760	07/08/2018	Institute of Chemical Technology, Mumbai	Novel pyrimidone compounds
7	300279	24/08/2018	G.B. Pant University of Agriculture & Technology, Pant Nagar, Uttarakhand	Decontaminant formulation for farm-gate vegetables and process for preparing the same
8	300838	07/09/2018	Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab	Erosion-corrosion resistant coating for power plant boilers
9	302643	30/10/2018	Pondicherry University, Puducherry	The inclined parallel stack continuously operable vermireactor
10	303292	20/11/2018	Indian Institute of Technology, Kharagpur	A spindle assembly for micro-electrochemical/micro-electro-discharge machining set up
11	305383	04/01/2019	Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab	Erosion corrosion resistant cold spray coatings for boilers Ni-20 Cr Ti C Re
12	305849	18/01/2019	Indian Institute of Technology, Delhi	A novel phase change material composition and a process for preparing same thereof
13.	306804	04/02/2019	Panjab University, Chandigarh, Punjab	A radioactive trimer complex for the detection of tumors
14.	308621	06/03/2019	Dayalbagh Educational Institute, Agra, UP	Continuous gas fired annealing furnace
15.	309209	14/03/2019	Visva-Bharati University, Bolpur, West Bengal	Improved method of extracting humic acids
16.	309461	19/03/2019	Guru Nanak Dev Engineering College, Ludhiana, Punjab	Cryogenic Treatment of Brass Wire for Improved Machining Characteristics

2.1.2 NATIONAL IPR POLICY

PFC is assisting ED-TIFAC who is Nodal Officer for implementation of the National IPR Policy specially DST action points. Meeting of Task Force 1, was held and the task force reviewed response to the questionnaire from 39 institutions including IITs, Central and State Universities. It was decided that before any policy recommendations are made, more response is required and follow-up work in that direction is underway. This Task Force 1 has been entrusted the responsibility of follow-up action with regards to DST action points 2.4, 2.5 and 2.6 of the National IPR

Policy aimed towards improving IP out-put by encouraging innovators and creators in these institutions.

2.1.3 AWARENESS ON IPR

PFC conducted three IPR awareness workshops during the period. The first workshop was held at LMS Govt PG College, Pithoragarh on April 18, 2018 in association with Uttarakhand State Council for Science & Technology. The second workshop was organised in association with Indian Institute of Technology, Jodhpur on AI and IPR issues on March 11-12, 2019. The third

workshop at Maulana Abdul Kalam Azad University Technology (MAKAUT), Kolkata was organized on March 15, 2019 and was attended by participants from affiliated colleges of the University from West Bengal. In total, around 400 scientists, technologists, academicians and industry people attended the workshops.

2.1.4 TRAINING PROGRAMME

A 'Two Weeks Training Programme on IPR and Patents' for officials of Patent Information Centers (PICs) at State Councils of Science and Technology and University IPR Cell (IPCU) was held from April 23, 2018 to May 2, 2018 at Chennai in association with PIC, Tamil Nadu State Council for Science & Technology. Mostly PICs and IPCUs from South India attended this programme. Beside updating them with domestic and international developments in the area of

IPR, hands on training was also given for patent searching, analytics and drafting. In addition, a two-day workshop was held on December 3-4, 2018 on 'The Guides for Identifying and Using Inventions in the Public Domain' conducted jointly by PFC, CIPAM, DIPP and World Intellectual Property Organisation (WIPO). This workshop was organized with support of WIPO of Swiss Franc 3000 (INR 2,15,000/-) and was attended by about 100 participants from PICs, IP Cells in Government Organizations, TISCS, IP Law Firms and R&D Institutions.

Subsequently, a three-day Advanced Workshop on IPR management from December 5-7, 2018 was organised for scientists of DRDO, PIC officials and scientists from other Government departments in collaboration with DRDO. This was attended by 70 IPR professionals working in above mentioned organizations.



Workshop in association with WIPO Dec 3-4, 2018

2.1.5 TRAINING TO WOMEN SCIENTISTS IN IPR (KIRAN-IPR)

A large number of women in India are highly qualified in science. Many of them are not able to pursue career in science due to domestic and social reasons. India cannot afford to miss out the skills and talent of such highly educated women. If she aspires to remain competitive in the knowledge society, S&T as a development indicator cannot be identified only with laboratory research. The Women Scientists Scheme

(WOS-C) popularly known as KIRAN IPR has been evolved by the Government of India, Department of Science & Technology (DST) for providing opportunities to women scientists who desire to return to mainstream science and work in the area of Intellectual Property Rights (IPR). WOS-C scheme aims to train women having qualifications in science/ engineering / medicine or allied areas in the area of IPR and their management for a period of one year and is being implemented by PFC TIFAC.

The training to women scientists in IPR for the 9th batch which was started from May 1, 2017 continued in all the four Coordination Centres and mid-term workshops were held. The training for most of the interns of 9th batch concluded in April 2018 and the remaining trainees completed their course in September 2018.

An All-India exam was conducted on March 25, 2018 and out of 3000 plus aspirants, 1704 appeared for the online examination. Out

of them, 104 women joined the 10th batch training. The one-month duration orientation programme was organized from June 01-30, 2018 at New Delhi. The lectures were shared on online course management system (moodle) for access throughout the year. Later, the trainees have taken up on-the-job training (11 months) in different agencies. Regular interactions through google hangout are being carried out with the trainees.



Xth Batch of KIRAN-IPR, June 2018

2.1.6 PATENT AGENT EXAMINATION

A total of 94 women scientists from 9th and 10th batches (37 from 9th Batch and 57 from 10th batch) have cleared the Patent Agent Examination held on October 28, 2018 which was conducted by the Patent Office of India. All these women scientists have received the prize money from DST amounting to Rs. 10,000/- each from 9th batch and Rs. 25,000/- each to women scientists from 10th batch. The total number of women scientists from WOS-C scheme clearing the patent agent examination has hence gone up to 260. With the clearing of this exam, the job prospects and other future avenues have increased manifold for the women scientists.

2.1.7 CERTIFICATE DISTRIBUTION TO 9TH BATCH OF WOS-C

The training of women scientists of 9th batch completed in 2018. The training completion certificates were distributed to 95 women of 9th batch by Secretary DST and Chairman TIFAC on the occasion of 31st TIFAC Foundation Day celebrations.



Certificate distribution for IXth Batch of KIRAN-IPR on 31st TIFAC Foundation Day

2.1.8 ACTIVITIES OF ONGOING 10TH BATCH OF WOS-C

Patent drafting workshop for the women scientists of Delhi and Kharagpur Centres was held on October 3-5, 2018 at TIFAC, New Delhi. The workshop on "Patent Drafting, Copyrights, Trademarks, GI and Industrial Designs" was held from March 12-15, 2019 at CCSTDS, Chennai for the women scientists of Chennai Centre. The workshop was inaugurated by Dr. T. Ramasami, former Secretary-DST.

The Women Scientists of Delhi centre participated in the 4th International Conference on Ease of Doing IP Intensive Business in India on 8-9 October, 2018, Hotel Le-Meridien, New Delhi and also in the 2-day workshop on “The Guides for Identifying and Using Inventions in the Public Domain” conducted by WIPO in December 2018.

2.1.9 PREPARATIONS FOR 11TH BATCH OF WOS-C

A new Steering and Advisory Committee has been constituted under the Chairmanship of Dr. Anil Kakodkar. The first meeting of the

Committee was held on September 24, 2018 which recommended the training of 11th batch of WOS-C. Subsequently, call for applications for the 11th batch has been done and 3976 applications have been received. The training is likely to start in June, 2019.

2.1.10 TV PROGRAMME ON WOMEN SCIENTISTS INDD INDIA SCIENCE OF VIGYAN PRASAR

Programmes on WOS-C were made by Vigyan Prasar covering the success stories of WOS-C alumni for DD Science channel.

2.2 TIFAC-SIDBI TECHNOLOGY INNOVATION PROGRAMME (SRIJAN)

The programme has been catalyzing scaling up of technology innovations in the country for bringing innovations from laboratory / prototype scale to field level for proving techno-economic viability. Role of TIFAC includes assessment, peer review, appraisal of technology innovations and review and technical monitoring of project implementation whereas role of SIDBI includes financial

appraisal of project proposals, providing part financial support to industries as term loan and its recovery. TIFAC has so far released Rs.12.50 crores to the revolving fund being managed by SIDBI.

Summary of projects completed, new projects sanctioned, ongoing projects during the period are as follows:

2.2.1 PROJECTS SUCCESSFULLY COMPLETED DURING THE FINANCIAL YEAR

S. No.	Title	Implementing Industry	Project cost (Rs. In lakhs)		Innovation	Likely Impact
			Total	Srijan Contribution		
1	Production of low lactose milk	M/s. Madhumita Dairy Products, Bengaluru	210.00	100.00	Indigenous process developed for producing low lactose cattle with lactose content below 0.1%	For consumption by a large fraction of lactose intolerant population particularly kids and elderly people.

S. No.	Title	Implementing Industry	Project cost (Rs. In lakhs)		Innovation	Likely Impact
			Total	Srijan Contribution		
2	Chiller Mate De-super heater Unit for industrial and commercial operations	M/s. Promethean Energy Pvt. Ltd., Mumbai	68.00	42.00	Recovery of waste heat from industrial air compressors for converting it into useful energy towards generating hot water and giving better energy efficiency	Piloted in 8 locations e.g. TVS, Kwality dairy, Honda motorbike, Raymonds, Mother Dairy, Ashok Leyland etc. Reducing hot water cost by 75% and improving chiller performance by 20%
3	Hollow fiber UF membranes of Poly Acrylo Nitrile for sewage and waste water treatment	M/s. Technorbital Advanced Materials Pvt. Ltd., Kanpur	100.00	80.00	Ultra Filtration membrane technology with low maintenance and higher shelf life for treatment of sewage and industrial waste water	Piloted in a housing society in Kanpur for treatment of sewage water and treated water used for gardening purpose
4	Design and Development of hydraulic Directional Control valve	M/s. Shivam Hydraulics, Ahmedabad	140.00	100.00	The mono block directional control valve with symmetric spool to provide more options for standardization and flexibility for various configurations towards wide range of applications.	The new design of hydraulic parts will make the product to be of low cost, better quality and efficient performance and would be an import substitute.



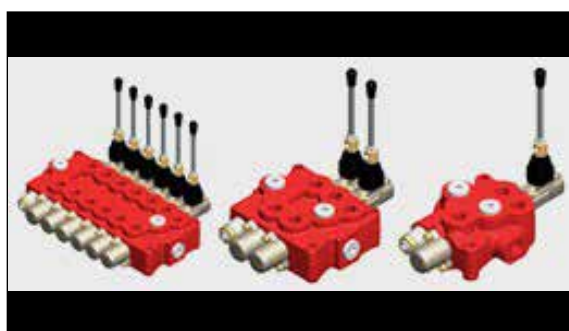
Low lactose milk in aseptic pouch



Waste heat recovery from industrial compressors



Sewage treatment plant based on UF Membrane of PAN



Hydraulic directional control valve

2.2.2 NEW PROJECTS SANCTIONED DURING THE FINANCIAL YEAR

S. No	Title	Implementing Industry	Loan Sanctioned (Rs. In lakhs)	Innovation
1.	Indigenous process for micro-encapsulation of probiotic products for enhanced functionality	M/s. Hitech Biosciences India Ltd (HTBS), Pune	100.00	Micro-encapsulation of probiotic cultures of microbial strains like Lactobacillus, Bifidobacterium, Streptococcus, Lactococcus and related species in order to enhance properties like stability, shelf life, resistance to gastric pH, etc. and make them more suitable for healthcare and dietary supplement application.
2.	UF Ceramic membrane with module/filter unit for fluid (water purification, oil, waste water, dairy etc.) filtration application	M/s Need Innovation, Kolkata	85.00	Innovative process for manufacturing ceramic filter, complemented with unique design of ceramic membrane to achieve equal surface area as that of the internationally available ceramic membrane at half the volume. The membrane can handle corrosive and non-corrosive liquids in wide range of pH.

S. No	Title	Implementing Industry	Loan Sanctioned (Rs. In lakhs)	Innovation
3.	Extraction of Green Silica from Rice Husk Ash	M/s. Brisil Technologies Private Limited, Vadodara	85.00	Processing technology to extract advanced dispersible grade silica from rice husk ash generated from biomass power plants. The high grade silica is used as filler in tyres to reduce the rolling resistance of vehicles resulting in improvement of fuel efficiency.
4.	CellBRx single use bioreactor for efficient and affordable production of biologics and vaccines	M/s. OmniBRx Technologies Pvt. Ltd., Ahmedabad	100.00	Innovative Dynamic Bed Reactor (DBR) technology is incorporated into the CellBRx bioreactors to give benefits like scalability, efficiency and affordability. It offers very large surface area for adherent cell growth in small culture volume and innovative design offers mixing to ensure homogenous nourishment and mass transfer while scaling up. The technology is expected to offer 90% cost reduction for the production of vaccines and biologics to meet current and increasing demand of bio-therapeutics.
5.	Manufacturing of electric vehicle e-Trike	M/s. ECOEV India Pvt. Ltd., Mumbai	90.00	An innovative design of spineless composite unibody of electric vehicle targeted for collection cum vending of milk and fish particularly by women community.

2.2.3 ONGOING PROJECT FROM PREVIOUS FINANCIAL YEAR

Implementations of following ongoing project continued from previous financial year:

S. No.	Title	Implementing Industry	Project cost (Rs. In lakhs)		Innovation
			Total	Srijan Contribution	
1	Portable Automatic Poori making machine	M/s. Mukunda Foods (P) Ltd., Bangalore	186.00	100.00	The innovative and compact design of equipment would make poori making and frying operations an integral part of machine which is missing in the conventional semi-automatic poori making machines

3.0 TECHNOLOGY SUPPORT

3.1 MSME CLUSTER PROGRAM

MSME Program of TIFAC, ongoing since 2006, aims to provide R&D and technical support to MSMEs, in select technologically homogenous clusters through a methodological approach based on establishing and leveraging academia-industry interaction. The program focuses on harnessing the knowledge and expert base available with the proximate academic and R&D Institutions which with some motivation can be leveraged to reach out and support the MSME industries.

The Program has covered more than forty clusters across the country and has further evolved to augment the innovation support to the MSMEs by linking engineering students also with the MSMEs through the MSME Internship Scheme.

Progress under the MSME Cluster Programme during the year is given as under:

3.1.1 EXPANDING THE REACH

With an objective of reaching out to more MSME clusters in the country and following a bottom-up approach, an all India advertisement was published in National Dailies, in the month of November 2018, inviting Expressions of Interest (Eols) from industry associations. Twenty Eols were received, out of which seventeen Eols were considered and assessed.

3.1.2 CLUSTERS SELECTED FOR CARRYING OUT TECHNOLOGY GAP STUDIES

Six MSME Clusters were identified across the country for taking up Technology Assessment Studies as follows:

- i. Channapatana Toys Cluster - Channapatana, Karnataka,
- ii. Arecanut/Sal Leaf Plate Manufacturing Cluster – Bishnupur, West Bengal,
- iii. Katkhal Sitalpatti Cluster - Katkhal, Hailakandi, Asaam,
- iv. Apparel Manufacturing Cluster - 24 North Parganas, West Bengal,
- v. Fisheries Cluster – Manipur
- vi. Food and Spices Cluster – Churanchandpur, Manipur

3.1.3 STATUS OF STUDIES

i) Completed study

The study focuses on the three clusters in Mizoram namely the Baktawng Wood Carpentry Cluster, and Bairabi and Seling Bamboo Cluster and covers industries/enterprises/units related to manufacturing/production of all type of wood and bamboo products. The study has brought out the existing technological gaps in the product as well as in the manufacturing processes in the cluster and also suggested the remedial measures and intervention plan to address it.

ii) Ongoing Studies

Seven studies on the MSME clusters of (i) Jhula cluster, Kanhaiyaganj, Bihar, (ii) Agricultural implements cluster, Noorsarai, Bihar, (iii) Utensil clusters, Bihar and West Bengal and (iv) Saree cluster in and around Varanasi, Uttar Pradesh (v) Surgical dressing manufacturers cluster, Chatrapatti, Tamil Nadu, and (vi) Textile and garment manufacturing cluster, Erode, Tamil Nadu (vii) General engineering cluster, Coimbatore, are ongoing and nearing completion.

3.1.4 VALIDATION WORKSHOP

A workshop was organized in home textile cluster, Karur, Tamil Nadu. This workshop

covered three clusters namely readymade garments cluster – Tirupur, home textile cluster – Karur and textile cluster – Erode.

3.2 MSME INTERNSHIP SCHEME

The MSME Internship Scheme has been structured to encourage enhanced and continued involvement of students and faculty of technical institutions with the industries and providing technical support to the otherwise technologically deficient MSMEs. The scheme also promotes and nurtures student and faculty driven innovation ecosystem for the Indian MSMEs. Such an approach also facilitates greater opportunities for students for hands-on practical experience of working in the industries and developing closer linkages.

The scheme is being implemented through four academia namely Pimpri Chinchwad College of Engineering (PCCoE) - Pune, Vellore Institute of Technology (VIT) – Vellore, M.S Ramaiah University of Applied Sciences (MSRUAS) - Bengaluru and PSG College of Technology – Coimbatore.

More than 280 students have completed technical internships in MSME industries so far and around 60 students have completed their internships in MSME enterprises this year only.

Development of nine technologies had been completed earlier and demonstrated and further seventeen project proposals have been assessed and following proposals have been considered for support:

- *Alternating current direct connected static pre-payment meter for active energy.*
- *Smart water meter.*
- *Internet of Things (IOT) based smart energy meter.*
- *Development of end effector for harvesting vegetables.*
- *Virtual robotic interface.*
- *Closed loop aeration with IOT.*
- *Automatic flood and drain controller with level sensing.*

Replication of MSME Internship Scheme

Support and implementation of the scheme through Rajiv Gandhi Commission for Science and Technology, Government of Maharashtra, is continuing in two Technical Institutes of Maharashtra.

3.3 ASSESSMENT OF RAW MATERIALS TOWARDS VALUE ADDITION AND EXPORTS

TIFAC undertook to explore and prepare preliminary assessment reports on the potential and possibilities of value addition in few identified raw materials (including agricultural crops, oils, minerals and others) being exported from our country in their raw form without much value addition or with little value addition. These raw materials have higher prospects towards value addition and

subsequent export of value added products/ derivatives.

The three raw materials identified towards need/feasibility assessment for further value addition and exports were Castor, Bauxite and Seaweed.

The reports were formally released in the symposium on *'Technology Roadmapping:*

From Insights to Actions’ held on 31st October, 2018.

3.3.1 CASTOR

A comprehensive report titled ‘Castor - Status, Challenges, Opportunities and Road Ahead’ was prepared in association with wide-ranging stakeholders i.e. Solvent Extractor’s Association (SEA), Castor Directorate of ICAR,-Indian Institute of Oilseeds Research (IIOR), CHEMEXIL-Ministry Of Commerce, Gujarat State Seed Producer’s Association, National Seed Association of India, Sardar Krushinagar Dantiwada Agriculture University (SDAU), Banaskantha, Gujarat, CSIR- IICT, National Institute of Agricultural Marketing (NIAM) - Jaipur, Indian Oil Corporation - Faridabad, IIT - Delhi, and other industries and experts.

The report had brought out the current status, challenges, opportunities and a road map for realizing the value addition potential of castor seed and oil within our country. The report also presents good source of information to R&D professionals and policy makers towards deciding future course of action.

3.3.2 BAUXITE

The report titled ‘*Bauxite – Status, Challenges, Opportunities and Road Ahead*’ highlights major issues and challenges and current trajectory of National level R&D efforts in the Bauxite area. It had also collated

data and information regarding the bauxite status in our country and identified key areas requiring interventions like: exploration, beneficiation and value addition and policy interventions needed for the growth of the sector. It is expected that the report would be beneficial in providing direction and prioritizing research and development efforts in the country related to bauxite and would serve as a useful resource for policy makers.

The report was prepared in association with major stakeholders like Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur and CSIR - Central Glass and Ceramics Research Institute (CGCRI), Kolkata. Organizations like CSIR-Institute of Minerals and Materials Technology (IMMT), Odisha, Indian Bureau of Mines – Ministry of Mines, Indian Refractory Maker’s Association, International Bauxite, Alumina and Aluminium Society (IBAAS), Geological Survey of India (GSI), Mineral Exploration Corporation Limited (MECL), Nagpur University. and domain industries were also involved in the preparation.

3.3.3 SEaweeds

India has a coastline of more than 7500 km long and an exclusive economic zone (EEZ) of 2.172 million Km² – equals to 66% of that of the mainland area. This area potentially provides substantial arable space for farming seaweeds which largely remain as underutilized resource.



Castor Report release function on October 31, 2018

In this context, TIFAC has prepared a comprehensive report titled '**Seaweeds Cultivation and Utilisation- Prospects in India**' in association and consultation with wide-ranging stakeholders. Seaweeds are exceptionally diverse in their form, function and composition, and therefore offer a very unique opportunity for their use in food,

feed, hydrocolloid, fertilizer, cosmetics, pharmaceutical, nutraceuticals, biofuel and agro-based industries. The present report gives a brief background of seaweeds and their distribution, production, markets, utilization at both international and national level.

3.4 BIOPROCESS & BIOPRODUCTS PROGRAMME

This programme, aims towards carrying out systems studies in the field of bioprocess & bioproducts and supporting R & D in specific niche areas. Under the Program, several specialized reports are being published and earlier technology development projects were also supported in the areas of biotransformation & enzymatic processes for Active Pharma Ingredients (API), nutraceuticals, phyto-chemicals, value-added bioproducts, bio-energy & biofuels, etc. The following technology assessment studies are completed/ nearing completion and ongoing:

3.4.1 Study titled '*Estimating generation and surplus amounts of crop residues in India*' with Indian Agricultural Research Institute (IARI), New Delhi was published and released on October 31, 2018. This study provides *district scale season-wise, crop-wise for crop area covered, crop dry biomass, surplus biomass and their bioethanol production potential in India (state-wise)*. The total annual surplus crop biomass is estimated to be ~ 179 MT which is ~26% of the total dry biomass generated and ethanol potential is 51.35 billion litres from eleven selected crops.



Biomass Assessment Report Release Function

3.4.2 Report on Seaweeds –titled '**Seaweeds Cultivation and Utilisation- Prospects in India**' was completed and published. The report was released on October 31, 2018 by Dr. V K Saraswat, Member- S & T, NITI Aayog. This report explored the economic potential of seaweeds. The report has highlighted the

fact that India has significant amount of coastal economic zone, and even if a small percentage of this is utilised for seaweed farming, the employment potential would be enormous. The report has also brought out potential value added options which can be produced from seaweeds.



Seaweed Report Release Function

3.4.3 The study titled '*Spatial Information System on Biomass Potential from crop residues over India using geospatial techniques*' with National Remote Sensing Centre, Hyderabad is nearing completion. The district wise estimated surplus biomass assessed by IARI would further be used to disaggregate at 1 km grid level to produce spatial map of surplus biomass and bioenergy potential. Further, spatial information system would cover many of the thematic layers such as land use land cover, waste land & transport network, water body information, petrol and gas pumps, gas pipe line information etc. to facilitate site suitability

of bioenergy plants. The study is expected to complete shortly.

3.4.4 The study titled '*Characterisation of major agro-residues biomass in India*' was initiated in December 2018 in association with CSIR-IIP-Dehradun & CSIR-NIIST-Thiruvananthapuram. Major objective is to collate information from secondary sources on the defined parameters for all the identified crops from each of the different agro-climatic zones of our country. Data would be catalogued, statistics would be analyzed and organised into a searchable database for each parameters.

4.0 INTERNATIONAL LINKAGES

4.1 INDIA-IIASA PROGRAMME

India-IIASA Programme focuses on undertaking collaborative research projects among scientists from Indian S&T organizations/academic institutions with IIASA researchers in the areas on mutual interests and organizing training workshops. The Programme also offers opportunities for young Indian researchers to work at IIASA under the 'Young Summer Scientist Programme (YSSP)' and Postdoctoral Programme, which help strengthen their skills in advanced systems analysis and research techniques.

4.1.1 CAPACITY BUILDING

This is a well acclaimed IIASA programme running since 1977. This provides an opportunity to young researchers from all National Member Organization countries to research on a theme related to IIASA's ongoing research on issues of environmental, economic and social change. Through this, any young scientist who joins an IIASA programme (June-August every year) gets exposure to interdisciplinary cooperation in an international setting.

4.1.2 COLLABORATIVE STUDIES

Under the India IIASA programme, the following 5 studies have been completed.

A cluster project on Sustaining and improving rural livelihoods through adaptive approaches to land, soil nutrient and water management with Institute of Rural Management Anand (IRMA)-Anand, Centre For Water Resources Development and Management (CWRDM)-Kozhikode, National Institute of Hydrology (NIH)-Roorkee and Gujarat

Institute of Development Research (GIDR)-Ahmedabad, the following three projects have been launched by TIFAC:

- a) Study on '*Climate change adaptation approaches for sustainable livelihoods*' by IRMA, Anand. The study looked at the spatial and temporal variability of climatic parameters by different RCPs such as historical and projected rainfall, temperature, and evapo-transpiration deficit. The AEZ methodology provided data on current and future agricultural production. The Sustainable Livelihood Security Index (SLSI) has been calculated with the support of IRMA and the database would be utilized for targeting the nutrient recommendations for improving the productivity and sustaining the livelihood of farmers.

IRMA has also prepared and submitted the combined report with inputs from other two organizations to give the realistic view of the work carried out at three different sites. The report highlights the methodology specifying the trans-disciplinary approach of combining the bio-physical, socio-economic and demographic factors. IIASA and Indian scholars have worked very intensively at IIASA to finalize the AEZ calculations for the three case study areas. The AEZ methodology provides data on current and future agricultural production. Based on the data on migration, the spatial pattern of future livelihoods could be analyzed which would help in climate change adaptation strategies.

b) Study on *'Integrating hydrology, climate change and IWRM with livelihood issues: Development of methodology and a DSS for water-scarce Bundelkhand region'* in India by NIH, Roorkee. The study developed water management tool (e.g. Decision Support System) to assist the local stakeholders in selecting and adopting appropriate water management practices on a sustainable basis. DSS model would create awareness on land & water productivity, water balance (with climate change impacts), livelihood options, technology options, institutional support, operational schemes, etc. Under capacity building initiatives, eight training modules were carried out by the three partner institutions including DA, MPCOST and NIH.

c) Study on *Evaluation of soil nutrient budgets at field, farm and regional level in humid tropics of Kerala and development of a model for management of soil health* by CWRDM, Kozhikode. The study quantified the nutrient in-flows and out-flows (viz., soil erosion and leaching) in different cropping systems at spatial scales in Kerala soils and validate the model at different spatial scales in Kerala soils with the help of Geographic Information System (GIS). The study was carried out in three phases. DSS structure and concepts were prepared with the help of IIASA.

The aforesaid studies under cluster project has developed scenarios and DSS methodologies on climate, land and water and preparing guidelines in sustenance and improvement in rural livelihoods. The findings would also work out a strategy for replication of solution and their scaling up in other parts of India. All these three studies have been published by TIFAC and

released on TIFAC Foundation Day celebrated on February 12, 2019.

d) Study on *'Development and application of GAINS-city model for Indian cities'* by National Environmental Engineering and Research Institute (NEERI), Nagpur aimed to develop a modified version of the GAINS-Asia model for major Indian urban areas such as Delhi and Kolkata. The work on Delhi and Kolkata using GAINS model has been completed. It included emission inventory by NEERI, data gathering and future projection of emission using GAINS model considering three different scenarios such as Business as Usual (BAU) based on current legislations, Advanced Control Technology (ACT) based on better efficiency equipments and Low Carbon Techniques (LCT) by use of cleaner fuel/technology.

The dispersion modeling was carried out by NEERI using American Meteorology Society–Environmental Protection Agency Regulatory Model (AERMOD) with primary aerosol. In addition, IIASA helped in carrying out the dispersion modelling for Delhi after inclusion of secondary aerosol data. Impact on the health and cost implication has also been carried out by IIASA.

Regarding the work for the Kolkata region, the primary data was collected for Kolkata for domestic and commercial sources. NEERI could not carry out air quality impact for Kolkata as they do not have the secondary aerosol data i.e emissions from other neighbouring cities of West Bengal. There is no separate 'GAINS Region' defined for Kolkata. Therefore, all the inventory work for Kolkata had to be done temporarily on Delhi region to develop a 'scenario' for Kolkata. It

was demonstrated that models could be effective tools for the regulators to consider proper controlled measures.

- e) Study on *'Agro-biodiversity conservation and ecosystem development– A Study in Indian agro-climatic sub-zones'* by Institute for Social and Economic Change (ISEC), Bangalore. The objectives of the study is to identify conceptual issues and gaps, to develop biodiversity indicators relevant for agricultural landscapes, to identify the ecosystem, to estimate the economic value of agro-biodiversity, social costs of their loss, as well as to assess the policy options to promote agro-biodiversity conservation.

ISEC has analyzed the crop concentration index, crop diversity index and crop combination for Karnataka. Similarly, for the primary data collected, ISEC have done detailed energy and economy analysis of various traditional and introduced crops along with regression analysis. Detailed land use land cover map of Hosadurga taluk for the year 2001 and 2015 were prepared with the help of satellite data. Accuracy assessment was done for the study regions using accuracy assessment tool in ERDAS software. To understand

future agriculture land use and drivers for the change, ISEC analysed Compound Annual Growth Rate (CAGR), Crop Concentration Index (CCI), Linear Regression Analysis and Auto-Regressive Integrated Moving Average (ARIMA) models in the study.

4.1.3 OTHER ACTIVITIES

The interaction with IIASA is helping India to build up national capability in applied systems analysis and development of integrated models, which can help in planning process and identification of technology priorities. In particular, IIASA's applied systems analysis has brought a global perspective, interdisciplinary research expertise, and policy relevance to issues ranging from the future of India's energy system to increasing the country's food production.

The India-IIASA collaboration has resulted in the publication of approximately 302 journal articles/reports on a diverse range of disciplines and issues, primarily on energy, biofuels, emissions (climate change), and forestry. IIASA's broader agenda also generates research of direct relevance to decision makers in India. IIASA's academic training programs have also been successfully building the next generation of systems analysts in India.

5.0 EVENTS

5.1 INDIA INTERNATIONAL SCIENCE FESTIVAL (IISF), 2018

The 4th India International Science Festival (IISF), 2018 was held in Lucknow, Uttar Pradesh during 5-8 October, 2018. It was organized by Ministry of Science and Technology, Ministry of Earth Sciences in association with Vijnana Bharati at Indira Gandhi Pratishthan, Lucknow and inaugurated by Hon'ble President Dr. Ramnath Kovind. Dr. Harsh Vardhan, Hon'ble Minister for Science and Technology, Ministry of Earth Science and Dept. of Biotechnology inaugurated major events at the four day science festival including the Young Scientists' Conference, Global Indian Science & Technology Stakeholders' Meet (GIST) and the Mega Science, Technology & Industry Expo with the focal theme 'Science for Transformation'.

TIFAC participated in the mega event and exhibited its potential and achievements

through poster and brochure during all the three days of the event. The stall was visited by various eminent experts.

More than 8,000 delegates from across the country took part in this mega science expo. About 800 women scientists and entrepreneurs also participated in the event as delegates and speakers. As part of the event, "science village" was set up at National Botanical Garden in Lucknow which is linked with the *Pradhan Manthri Sansad Adarsh Gram Yojana* to reach out to the rural masses and propagate science and for seeking scientific solutions to the diverse challenges faced by our society, particularly rural India. The stalls of various Departments DRDO, ISRO, ICAR, ICSR, Nuclear science, Biotechnology, Medical Health, Railways including others are center of attraction for people.

5.2 BRAINSTOR-MING SESSION ON TIFAC PRIORITIES

A brainstorming session was organized on 2nd January 2019 at TIFAC to identify future priorities for TIFAC. An eminent group comprising the following key luminaries of the S&T establishments in the country deliberated on potential thrust areas for TIFAC:

- Dr. Anil Kakodkar, Former Chairman, TIFAC Governing Council
- Dr. V.K Saraswat, Member, NITI Aayog and Chairman, TIFAC Governing Council
- Dr. K VijayRaghavan, Principal Scientific Adviser to the Government of India
- Dr. G. Satheesh Reddy, Secretary, Department of Defence Research and Development, and DG-DRDO

- Dr. Shekhar C Mande, Secretary, DSIR and DG,CSIR
- Shri Rajiv Aggarwal, Joint Secretary, DIPP
- Dr. Sudhir Gupta, DG (TM), DRDO
- Dr. Sanak Mishra, President, INAE

Major recommendations which emerged from the session are as given below:

- Supporting line Ministries with roadmaps, project formulation, review of status of technology towards technology projects implementation in an interfacing mechanism
- Critical assessment of technology readiness levels in India

- Identification of requirement of standards for emerging technologies and catalyzing setting up of standards
- Defining new Mission for DST in emerging technological areas.
- Providing inputs on policy issues and

defining implications on both qualitative and quantitative terms.

- During the discussions, it was also felt that TIFAC should identify topics from the Technology Vision 2035 and work out details to enable stakeholders take up implementation projects.



Brainstorming Session on TIFAC Priorities

5.3 106TH INDIAN SCIENCE CONGRESS

TIFAC participated in the 106th Indian Science Congress 2019 with the theme 'Future India : Science & Technology' held at Lovely Professional University, Jalandhar during January 3-7, 2019. Dr. Gautam Goswami, Head, Technology Vision 2035 and PI Climate change projects and Anil Kumar Rai, Scientific Assistant 'A' participated in the exhibition from TIFAC. Dr. Goswami delivered a talk on 'Impact of Climate Change on Health – Technology Perspective' in the Plenary Session entitled 'Climate Change and Health' on 5th January, 2019. The session was very interactive and the talk was appreciated by the participants.

by participants. More than 2000 visitors comprising academics, industry personnel, students and common people visited the stall, consulted and procured many TIFAC reports.

TIFAC documents were displayed in the exhibition under the Department of Science & Technology Pavilion which were appreciated



Prof. Ashutosh Sharma, Secretary-DST at TIFAC stall in ISC 2018, Jhalandhar (Panjab)

5.4 TIFAC FOUNDATION DAY

Since the inception, TIFAC has been celebrating its Foundation day every year wherein areas of socio-economic importance,

upcoming technologies etc. are highlighted and discussed. This year TIFAC focused on the theme – 'Industry 4.0 – Opportunities and

Challenges for India on its 32nd Foundation Day organized on 12th February 2019.

Industry 4.0 technologies help to manage and optimize all aspects of manufacturing processes and supply chain. Industry 4.0 enables automation which would shorten production cycle, reduce time-to-market and bring efficient utilisation of resources. It also enhances production capacity, quality, predicts and prevent defects through data analytics.

Dr. V K Saraswat, Member –NITI Aayog and Chairman – TIFAC was invited as the Guest of Honour on TIFAC foundation day. He mentioned that Industry 4.0 plays a vital role in improving the life of people with education, access to information and enhanced communication. There was a special talk by Shri Anup Wadhwa, Director- Automation Industry Association, New Delhi and Keynote Address on Smart Manufacturing: Global Revolution by Shri MS Unnikrishnan, CEO, Thermax, Pune.

Dr. Ashutosh Sharma, Secretary, DST in his address opined that access to information, education and global market places will

improve the living conditions and eradicate poverty. However, it is also imperative to assess the possible impacts of industry 4.0 in totality.

Experts delivered lectures on Smart Manufacturing: Global Revolution, 5G - An India centric perspective, 3D printing in Health Sector and also covered TIFAC interventions in MSME sector.

During the occasion, TIFAC released three IASA reports viz. *Development of methodology and DSS for water-scarce Bundelkhand region in India – NIH Roorkee*, *Evaluation of soil nutrients in humid tropics of Kerala-CWRDM, Kozhikode* and *Climate change adaption approach for sustaining and improving rural livelihoods – IRMA, Anand*.

TIFAC also acknowledged the incredible dedication and devotion of employees who have been serving TIFAC for the past 25 years by felicitating them with a token of appreciation. The programme was concluded with the distribution of certificates to 9th Batch of women scientists of KIRAN-IPR.

5.5 TIFAC VIGILANCE AWARENESS WEEK

TIFAC observed the Vigilance awareness week during October 29-November 03, 2018 as per the instructions of Central Vigilance Commission under theme '*Eradicate Corruption – Build a New India*'.

The organizational integrity pledge was administered and a lecture on CCS Conduct Rules was also organised for the employees during the vigilance awareness week.



Administering Integrity Pledge



Lecture on CCS Conduct Rules during Vigilance week 2018

5.6 SWACHHATA DAY

TIFAC had observed *Swachhata Pakhwada* during May 1-15, 2018. TIFAC had initiated various programme for spreading *Swachhata Pakhwada* as 'Jan ANDOLAN'. The *Swachhata Pakhwada* was formally launched by Shri. Sanjay Singh, Executive Director (Officiating) TIFAC. A film on '*Swachhata*' was screened for the employees of TIFAC. For inculcating innovative/ creative thinking in the school kids, TIFAC had organized 'Sit and Draw' competition on *Swachhata* for the student of SDMC Primary Boys School, Qutab Institutional Area, Katwaria Sarai. About 140 school kids had participated in the competition. The Committee members in TIFAC had visited workstations of each and every employees of TIFAC for inspection of cleanliness. TIFAC also organized panel discussion regarding challenges for TIFAC for achieving the target of Mission New India - How to use science to reach the grass root level etc. A debate competition was organized for the employees of TIFAC on

the topic 'Technology is essential to achieve Swachhata Pakhwada as Jan Andolan'.

TIFAC had also observed *Swachhata Hi Seva* during 15th September – 2nd October, 2018 and was formally launched by Shri Sanjay Singh, Executive Director (Officiating) TIFAC and the employees of TIFAC took pledge on *Swachhata*. As a part of S&T outreach programmes (Training) for Economically Weaker Sections, TIFAC had organized training programme on 'Utilization of Waste Material' for the students of SDMC Primary Boys School, Qutab Institutional Area, Katwaria Sarai. About 160 school kids had participated in the training programme. TIFAC also arranged a Lecture on '*Emerging Trends in Governance in India: Swachhata Hi Seva & other initiatives*' by Prof. Sujit Pruseth, Asst. Professor, IIPA. A debate competition was organized for the employees of TIFAC on the topic 'Technology is essential to achieve *Swachhata Hi Seva* as Jan Andolan'.

6.0 HUMAN RESOURCE DEVELOPMENT

6.1 TIFAC INTERNSHIP SCHEME

Towards strengthening technology foresight activities of TIFAC, enhancing linkages with academia and sensitizing the students about future technology priorities, TIFAC started the internship scheme in August 2013. During the current year, 15 students (including 10 students who joined earlier, and 5 who joined during the current year) went through internship under the guidance of different TIFAC scientists. 11 students completed their internship project during the year. Topics on which student internees worked during the year 2018-19 are:

6.1.1 COMPLETED INTERNSHIP STUDIES

- i. Technology foresight on electric aircraft
- ii. Energy storage technology for electric vehicle
- iii. Patent data based forecasting of future education systems and skills requirement for teachers
- iv. Nutraceuticals-A technology perspective
- v. Charging infrastructure for public transport buses
- vi. Essential oil (Flavours and Fragrances) and how to enhance export from India by technology infusion

- vii. Feasibility of air pollution or toxicant removal by identifying certain plant species in Delhi region
- viii. Augmentation of water resource through treatment of grey water using algal biomass
- ix. Identification and analysis of weak signals and their implications for science, technology and innovation policy
- x. Comparative analysis of emerging vehicle technologies in Indian context Part I
- xi. Three dimensional transportation: present trends, future scenarios and impacts

6.1.2 ONGOING INTERNSHIP STUDIES

- i. Traditional foods- technology perspective
- ii. Impact assessment of Mission REACH : A mission under umbrella scheme on Technology Vision 2020
- iii. Comparative analysis of emerging vehicle technologies in Indian context Part II
- iv. Assessment of biomass energy potential in India

6.2 PAPERS PUBLISHED/ PRESENTED

6.2.1 PAPERS PUBLISHED

- The role of technology in charting India's progress towards climate change goals – Shanal Pradhan and Gautam Goswami, TIFAC: Current Science, vol. 114, no. 8, 25 April 2018.
- Land-Use Change in Indian Tropical Agro-Ecosystems : Eco-Energy Estimation for Socio-Ecological Sustainability, Environ Monit Assess (2017) 189:168, March 2018- Sunil Nautiyal & Harald Kaechele

& M. S. Umesh Babu & Pavan Tikhile & Sangeeta Baksi.

- Technology foresight study on assistive technology for locomotor disability. Technology and Disability. 29. 163-171. 10.3233/TAD-170180 - Pant, Pushpesh & B. Gupta, V & Khanna, Achla & Saxena, Neeraj. (2018).

6.2.2 PAPERS IN REFEREED JOURNALS/ BOOKS/ BOOK CHAPTERS

- 'Capture and Use CO2 with Carbon Clean Solutions' by Sujatha Ramasamy, Pulak Ranjan Basak and Srikant Patra in International Journal of Chemical Synthesis and Chemical Reactions Vol 4 (Issue1), 5-10,2018/7.
- 'Gene Editing with CRISPR Technology to Combat for Healthier Future' by Sujatha Ramasamy, Srikant Patra and Neelam Sharma in International Journal of Genetic Engineering and Recombination Vol4 (Issue 1), 21-24,2018/8.
- 'Advanced technology on accuracy in detection of breast cancer' by Sujatha Ramasamy, Pulak Ranjan Basak and Srikant Patra in Pharma Tutor Vol6 (Issue7), 1-4,2018/6.

6.2.3 NUMBER OF POPULAR SCIENCES ARTICLES /BOOKS/BLOGS WRITTEN /

NUMBER OF TALKS ON RADIO AND TV / SCIENCE COMMUNICATION PROGRAMMES GENERATED ETC.

- 'India Supporting Development of Myo-Prosthetics' by Sujatha Ramasamy, Pulak Ranjan Basak and Srikant Patra in BioSpectrum Asia,38-41,9/2018.
- 'India Supporting Development of Myo-Prosthetics' by Sujatha Ramasamy, Pulak Ranjan Basak and Srikant Patra in BioSpectrum India,31-33,9/2018.
- 'Making Ink from Particulate Matter in vehicle emissions' by Sujatha Ramasamy, Pulak Ranjan Basak and Srikant Patra in Auto Tech Review Vol7 (Issue 6), 22-24,2018/6.
- Cellular Agriculture: The Future of Food (online) A Report by Technology Information, Forecasting and Assessment Council (TIFAC), Department of Science and Technology (DST), Govt. of India (2018) by Khanna A, Dhar PK, Deshpande V, Tiwary A, Sharma A. <https://tifac.org.in/images/pdf/pub/Cellular%20Agriculture.pdf>
- Ms.Sangeeta Nagar, Scientist-E took part in a talk show on Women Scientist Scheme (WOS-C) by Vigyan Prasar in December 2018. The programme titled, "Asha Ki Kiran: Women in Science" was telecasted on DD National under the DD Science Programme. (<https://www.indiascience.in/videos/asha-ki-kiran-women-in-science>)

6.3 PARTICIPATION IN NATIONAL AND INTERNATIONAL CONFERENCES/ SEMINARS/ SYMPOSIA

6.3.1 PARTICIPATION IN NATIONAL CONFERENCES

- Shri. Yashawant Dev Panwar, Scientist-E attended the National Conference 'To discuss the progress made in the past two years, as also the way forward' on May 16, 2018 at the Taj Mansingh, New Delhi organized by CIPAM, DIPP.
- Ms. Sangeeta Baksi, Scientist-E participated in ICC conference on Fibre Reinforced Plastics (GRP) Pipes - Addressing the Challenges and Growing Needs of India's Irrigation,

- Water & Sewerage Pipelines on August 21, 2018 and presented a paper on Filament Wound Composites Pipes for Oil & Gas.
- Shri. D. Majumder, Scientist-E participated in the Conference on New India- Working for 1.25 Billion Aspirations on August 23, 2018 by ASSOCHAM, New Delhi.
 - Ms. Jancy A, Scientist-E, Ms. Sangeeta Nagar, Scientist-E, Shri. Yashawant Panwar, Scientist-E and Dr. G. Goswami, Scientist-F participated in 'DST-CII India-Italy Technology Summit', jointly addressed by Hon'ble Prime Ministers of India and Italy on October 30, 2018 at Hotel Taj Palace, New Delhi.
 - Ms. Sangeeta Nagar, Scientist-E attended an event on 'Intellectual Property and the Fourth Industrial Revolution: Challenges and Opportunities' organized by FICCI on November 14, 2018.
 - Ms. Sangeeta Baksi, Scientist-E participated in the National Conference on Advanced Materials for Sustainable Growth of Champion Manufacturing Industries organized by CII on December 04, 2018 at India Habitat Centre, New Delhi.
 - Ms. Mukti Prasad, Scientist-C attended a three day National Conference on Annual Information Security Summit(AISS), 2018, held during December 04-06, 2018 organized by Data Security Council of India (DSCI), NASSCOM, Gurugram.
 - Shri. Yashawant Dev Panwar, Scientist-E attended a National workshop entitled 'The Scientist's Role in Technology Commercialization' from January 16-18, 2019 in Delhi organised by AGNI, PSA Office.
 - Ms. Sangeeta Nagar, Scientist-E attended the 'Women Conclave 2019' on March 08, 2019 organised by JNU at New Delhi.
 - Shri. D. Majumder, Scientist-E participated in the Conference on Nutrition & Food- Fortification, Regulation & Supply Chain on March 13, 2019 by ASSOCHAM, New Delhi.

6.3.2 WORKSHOPS/SEMINARS/ MEETINGS ORGANISED/PARTICIPATED IN 2018-2019

- Shri. Rahul Kumar, Scientist-D participated in the brainstorming workshop cum discussion meeting on April 09, 2018 at Nagpur on *Opportunities and Potential of Value Addition in Bauxite : Needs, Requirements and Way Forward.*
- Ms. Sangeeta Nagar, Scientist-E and Shri. Yashawant Dev Panwar, Scientist 'E' organised one month Orientation Programme from June 1-30, 2018 for women scientists of 10th Batch at TIFAC, New Delhi along with other PFC team members.
- Shri. Yashawant Dev Panwar, Scientist 'E' attended SFC meeting for Intellectual Property Unit IPU, CSIR on June 6, 2018 at CSIR headquarters.
- Shri. Yashawant Dev Panwar, Scientist 'E' attended the meeting on development of a Framework for ranking & rating of scientific institutions/ laboratories on July 20, 2018 at NITI Aayog, New Delhi.
- Shri. Yashawant Dev Panwar, Scientist 'E' attended workshop meeting to discuss the road-map for implementation of global cooling prize at Technology Bhavan, New Delhi on July 26, 2018.

- Shri. Yashawant Dev Panwar, Scientist 'E' attended the brainstorming meeting on harnessing Intellectual Property to stimulate agricultural growth scheduled to be held at IARI, Pusa Campus, New Delhi on July 27, 2018.
- Shri. Yashawant Dev Panwar, Scientist 'E' attended the meeting of National Committee on IP (2018-19), CII on August 01, 2018
- Ms. Nirmala Kaushik, Scientist 'E' participated in the meeting on 'National Biomass Repository' Chaired by Joint Secretary (Refineries) at MoPNG on July 11, 2018.
- Shri. D. Majumder, Scientist-E attended 28th Sectional Committee meeting for Quality Management Sectional Committee, MSD 2 as a Member on August 30, 2018 at Bureau of Indian Standard (BIS), New Delhi.
- Ms. Sangeeta Baksi, Scientist-E participated in the Awareness and Capacity Building Workshop on 'Recent Advances in CO2 Capture Technology and Its Sectoral Application' held at IIC, New Delhi during August 29-September 01, 2018
- Ms. Sangeeta Nagar, Scientist-E organised 'Patent Drafting Workshop' for women scientists of 10th Batch for Delhi and Kharagpur Centre from October 3-5, 2018 along with other PFC team members.
- Ms. Nirmala Kaushik, Scientist 'E' participated in workshop on 'Renewable Hydrogen for Industry and Beyond' organized by CEEW and IEA on November 14, 2018.
- TIFAC scientists participated in the workshop on Guides for identifying and Using Inventions in the Public Domain during December 03-04 2018 organised by WIPO & CIPAM and PFC TIFAC in New Delhi.
- Shri. Yashawant Dev Panwar, Scientist 'E' and Ms. Sangeeta Nagar, Scientist-E jointly organised 3 days workshop jointly with DRDO titled "Advanced Workshop on Identifying, Protecting and Managing Intellectual Properties in the Era of Industrial Revolution 4.0" on December 5-7, 2018 along with other PFC team members.
- Shri.P.R.Basak, Scientist-F participated in 'Reinventing CSR – 2019' organized by Ashden India Collective in Delhi on January 29, 2019 towards sensitization of corporations towards investment for development in India.
- Shri. Yashawant Dev Panwar, Scientist 'E' was the Judge of Chatra Vishwakarma Awards 2018 on January 20-21 2019 at AICTE, New Delhi.
- Shri. M.Thamarai Selvan, Scientist-E participated in the workshop on Disciplinary Rules and Procedures held during February 12-13, 2019 at Tirupati.
- Shri. Yashawant Dev Panwar, Scientist 'E' attended the state level Advisory committee meeting organised by Education Department, Government of Gujarat at Gandhinagar on March 2, 2019.

6.4 TRAINING PROGRAMMES

- Dr. Gautam Goswami, Scientist 'F' imparted two training sessions on Technology Foresight at Indian Institute of Mass Communication (IIMC) for the Indian Information Service Officers on September 12, 2018 and 4th October 2018.

- Shri. P. R. Basak, Scientist 'F' participated in the one week training programme on 'Policy for Science

and Science for Policies' at NIAS, Bengaluru during October 01-05, 2018 sponsored by DST.

6.5 INVITED LECTURES

Dr. Gautam Goswami, Scientist 'F'

- Presidential address focusing on Clean air & potable water prerogative at the Jadavpur University Refresher Course on 'Disaster Management : Water and Environmental Sanitation' on January 30, 2019.
- Attended a panel discussion on 'Low Carbon Technology for Indian Industry' at the Cleantech Environment 2019 at CII on February 04, 2019.
- Delivered a talk on 'Technology Vision for Agro Food Processing Sector' in the International Conference on 'Technological Innovations for Integration of Food and Health (TIIFH 2019)' at Tezpur University on February 14, 2019.
- Delivered a talk on 'Clay Minerals : An Indicator of Climate Change' in the 21st Annual Convention of the Clay Minerals Society of India during September 14-15, 2018.
- Gave a talk on 'Technology Needs of Efficient Waste Management' in the Brainstorming Meeting on 'Industrial By-products for Sustainable Development' at IIT-Bombay on August 22, 2018.
- Participated in the panel discussion on the topic 'Role of Technologies in Reshaping Education System in India' at the panel discussion in Difficult Dialogues at Goa University on February 02, 2019.

Shri.P.R.Basak, Scientist 'F'

- Delivered an invited lecture on 'Technology and Innovation towards enhancing Competitiveness of MSMEs'

in the MSME Summit 'Building MSMEs: Potential & Possibilities' organized by FICCI, Rajasthan Chapter in Jaipur on January 18, 2019.

Shri. Arghya Sardar, Scientist-E

- Presentation on 'Electric Vehicle Charging – Future Perspectives' at the EV.Tech Workshop, organized by Auto tech Review on September 19, 2018 at New Delhi.
- Presentation on 'Energy Modelling for Policy Making' at the First India Energy Modelling Forum Workshop organized by NITI Aayog in March 2019.
- Presentation on 'Electric Mobility in India – R&D Perspectives' at the AICTE-ISTE Sponsored Programme on Energy Conversion at the Hindustan College of Science & Technology, Farah, Mathura on December 08, 2018.
- Presentation on 'Electric Vehicle Component Choices – Future Scenarios from Resource Efficiency Perspectives', at the Electric Vehicle Technology Seminar organized by PWSIM at Bangalore on February 27-28, 2019.
- Presentation on 'Integrating Electric Vehicle in Transportation System' at the Workshop on Indo German Center for Intelligent Mobility at IIT Kharagpur, on October 29, 2018.
- Presentation on 'R&D Plan for Technology Platform on Electric Mobility – Highlights' at the Symposium on "Technology Foresight: From Insights to Actions" organized by TIFAC in New Delhi on October 31, 2018.

- Participated in a panel discussion on the theme 'Short and Long Term Challenges of Electric Mobility in India', at the Integer Emission Summit held in New Delhi on September 27, 2019.

Ms. Nirmala Kaushik, Scientist 'E'

- Presented a paper titled 'Utilization of seaweeds: Opportunities and challenges for India' at India International Seaweed Expo & Summit at Mumbai on January 22- 24, 2019.
- Presented a paper titled 'Assessment of Biomass Availability for Biofuels Production in India' on March 12, 2019 during EU-India Conference on Advanced biofuels, New Delhi.

Shri. Yashawant Dev Panwar, Scientist 'E'

- Delivered a talk at the India-UK Industry-Academia Symposium, entitled, 'Working in Systems not Silos: Driving Growth and Innovation through Industry-Academia Partnerships' at Panjab University Chandigarh on April 16 - 17, 2018.
- Delivered a talk on IPR Management in academic Institutions in IPR Seminar at RTU Kota in collaboration with DST Rajasthan on September 28-29, 2018.
- Delivered a talk in the 2nd World Conference on Access to Medical Products-Achieving the SDGs 2030, October 9-11, 2018, New Delhi in parallel session on Intellectual

Property Rights and Standards in Trade for Medical Products.

- Delivered a talk on 'Developing research vistas in Universities using patent information' in workshop on IPR at MDU Rohtak on November 3, 2018.
- Delivered a talk on IP Management at DAVV, Indore in IPR workshop on December 1, 2018.
- Delivered a talk on 'Action plan for PIC to achieve the objectives of National IPR Policy' on January 28, 2019 at Gandhinagar.
- Panel member in NRDC Innovate India 2019 on March, 30-31, 2019 at EDII Auditorium, Ahmedabad.

Ms. Sangeeta Nagar, Scientist-E

- On the invitation of Gujarat State Council for Science & Technology (GUJCOST) delivered a lecture on 'Creative India; Innovative India: Brief about National IPR Policy, Vision, Mission and Implementation' on July 26, 2018.

Ms. Mukti Prasad, Scientist 'C'

- Delivered a lecture on 'Technology Vision 2035 and Future Technologies', during the 7th Bhopal Vigyan Mela (BVM), 2018 held during February 9-12, 2018 organized by Madhya Pradesh Council of Science and Technology (MPCST) at Bhopal.

7.0 INFRASTRUCTURE AND RESOURCES

7.1 LIBRARY

TIFAC Library, a knowledge centre facilitates and fosters the flow of the scientific and technical information. During the period, TIFAC Library continued to strengthen its holdings by procuring scientific books, reports and journals, magazines as per the requirement of TIFAC.

Eleven scientific/technical books, reports were procured during the year, raising the

total holding of TIFAC Library to 2512. In addition,

13 Nos. of scientific/technical journals, magazines were subscribed in TIFAC Library. Various relevant scientific and technical information published in the newspaper/magazines were also provided to the scientists during the year.

7.2 NATIONAL KNOWLEDGE NETWORK (NKN)

During the year, TIFAC continued to make use of the connectivity to the National Knowledge Network (NKN). This provides

TIFAC a 100 mbps line for internet connectivity by NKN.

7.3 E-RESOURCES

TIFAC continued subscribing to E-resources, including Emerald, IEEE, J-Gate, Nature Publishing Group, Oxford University Press, Royal Society of Chemistry, Taylor and Francis, Thomson Innovation, Web of Science & Wiley during the year and online desktop computer access was facilitated. The e-resources are subscribed through the

National Knowledge Network Consortium (NKRC), a joint consortium of DST and CSIR.

Grammarly, an online tool for correcting grammar mistake and other writing errors along with plagiarism check facility was provided to all scientists.

7.4 TIFAC INFORMATION INTERFACES

The Resource Cell continued maintaining the in-house TIFAC Website (<https://tifac.org.in>). TIFAC website has been shifted to Meghraj cloud server of NIC. Introduced the accessibility feature for differently abled persons and Hindi translation tool for entire selection of the website. Home page has been redesigned and around

70 articles created and published during this period. New TIFAC publication section is also uploaded and reports published during the period are made available on TIFAC website. The website has served as interfaces for servicing queries received by some users.

TIFAC is now active on social media through Facebook and Twitter with the following URLs

- www.facebook.com/tifac.dst.16
- www.twitter.com/TIFAC4

These are being used to reach out to people for sharing TIFAC events, activities, advertisements, schemes and opportunities. TIFAC is actively scanning

latest technologies reported at various sources across the globe. Such technology information has an important role in horizon scanning, future technoscape, covered in TIFAC Facebook & Twitter account. This has been liked, commented and discussed by a large number of users. Web statistics data of TIFAC website (<https://tifac.org.in>) was more than 6 lakhs.

7.5 IMPLEMENTATION OF OFFICIAL LANGUAGE POLICY

The implementation of Official Language Policy is done under the guidance of Official Language Implementation Committee and was continued during this year as well. Four Hindi workshops were organised for the

benefit of employees. The Hindi Pakhwada was organised in September 2018. TIFAC employees participated in eight different competitions and were given certificates and cash prizes.

8. AUDITOR'S REPORT

S. K. JUNEJA & ASSOCIATES
CHARTERED ACCOUNTANTS

4704, Ashoka Enclave, Plot No. 8A
Sector-11, Dwarka, Delhi-110075
Phone: 9810331588, 9810641785
E-mail: madhujun94@gmail.com

INDEPENDENT AUDITOR'S REPORT

The Members

The Governing Council

Technology Information, Forecasting and Assessment Council (TIFAC)

New Delhi

REPORT ON THE FINANCIAL STATEMENTS

1. We have audited the accompanying financial statements of M/s Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi, (hereinafter referred to as 'Society') which comprise the Balance Sheet as at March 31, 2019 and the Statement of Income and Expenditure Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

2. The management of the Society is responsible for the preparation of these financial statements that give a true and fair view of the financial position and financial performance of the Society in accordance with the accounting principles generally accepted in India including Accounting Standards issued by the Institute of Chartered Accountants of India. Their responsibility includes

maintenance of adequate accounting records for safeguarding the assets of the Society and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; design, implementation and maintenance of adequate internal financial controls, that are operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY

3. Our responsibility is to express an opinion on these financial statements based on our audit. We have conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of

India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

4. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial control relevant to the Society's preparation of the financial statements, that give a true and fair view, in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on whether the Society has in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by the Society's management, as well as evaluating the overall presentation of the financial statements.
5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

OPINION

6. In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required and give a true and fair view in conformity with the accounting principles generally accepted in India of the state

of affairs of the Society as at 31st March 2019 and Excess of Expenditure over Income for the year ended on that date subject however to:

- a) Non recognition of various loans, amounting to Rs. 43.45 crores, given to various parties under various projects from the year 1992 to 2005 as Assets of the society in the Balance Sheet (Note No. 10 of Notes on Accounts of the Balance Sheet)
- b) Non allocation of housekeeping, electricity, security services, water and horticulture expenditure between NECTAR and TDB for which the amount is unascertained. (Note No.6 of Notes on Accounts of the Balance Sheet).
- c) Non recognition of an amount of Rs. 7,40,000/- recoverable from Mr. Sanjay Singh (ED of the Society) towards excess Transport Allowance paid to him, as per Para 10 of the Audit Report dated 06/07/2018 of office of the Directorate General of Audit, Scientific Departments, A.G.C.R. Building, I. P. estate, New Delhi-110092 read with Para No. 3 of the Internal Audit Report from 04/02/2019 to 08/02/2019 of Internal Audit Wing, Ministry of Science & Technology, New Delhi.
- d) Non recognition of an amount of Rs. 48,067/- recoverable from Smt. Sangeeta Nagar (Scientist E) as per Para 17 of the Audit Report dated 06/07/2018 of office of the Directorate General of Audit, Scientific Departments, A.G.C.R. Building, I. P. estate, New Delhi-110092 and corresponding rectification of Schedule of Fixed Assets.
- e) Non recognition of excess payment of hospitalisation expenses paid to Crosslay Remedies Ltd. (Max Healthcare) at the request of Mr. T. Chandrasekhar (Scientist E) against Bill No. VAIC74338 dated 22/11/2018 amounting to Rs. 14,090/- in the books of accounts of the society.

- f) Women Scientist Scholarship Scheme had released an amount of Rs.2,00,000/- to an institute "Pune Centre KIRAN IPR" as advance on 11.07.2018, but the grantee has not submitted Utilisation Certificate till the date of audit.
- g) Non recognition of Rs. 2.85 lakhs as delegation fees recoverable from the delegates of workshop organized by PFC division of the society from 12th January, 2017 to 14th January, 2017 as per our statutory audit report for the financial year 2016-17.
- h) The society is not maintaining fixed assets register in proper format so as to show inventory of individual fixed assets items. Physical verification of fixed assets items has not been done by the society.
- i) The society is not maintaining inventories of publication of its reports.
- j) No provision for the full and final settlement of Executive Director Prof. Prabhat Ranjan has been made in the books of Accounts of the society after his completion of tenure on 24th April 2018.
- k) There is lapse of internal control system in deposit of sale proceed of published reports as the proceeds are not being deposited in timely manner in the funds of the society. In stances are given below :
- | Date of sale | Receipt No. | Date of Receipt by Account Section |
|--------------|-------------|------------------------------------|
| 07.06.18 | 5465 | 07.08.2018 |
| 28.02.19 | 5471 | 05.03.2019 |
- l) As per quarterly progress reports and fund status of Revolving Fund Technology Innovation Program provided by the SIDBI, we have observed that SIDBI is charging processing fee much higher than 1% of amount invested, against the terms of MOU signed between SIDBI and the society on 01.11.2010.
- m) During the year an amount of Rs.16,41,634/- has been incurred for advertisement on account of DAVP for all the three units of TIFAC. Unit wise (TIFAC, PFC and WSSS) bifurcation of expenditure has not been provided.
- n) An amount of Rs. 48.69 lakhs has been shown as expenditure on Filing of Patent Fees by PFC division for the F.Y 2018-19, it was observed that out of the total expenditure of Rs.48.69 lakhs, an amount of Rs.13.73 lakhs pertains to Filing the Patents between 2011 to 2018.
- o) As per previous audited balance sheet as at 31.03.2018 an amount of Rs.2,53,36,010/- was shown as payable to Department of Science and Technology, which has not been paid till the close of the financial year under Audit.
- p) As per the agreed schedule of fees payable to local attorneys for their affiliation with foreign attorneys, the local attorneys are eligible to be paid 20% of professional fees only of foreign attorneys. Whereas society has paid 20% of professional fees of foreign attorneys plus their filing/government fees.
- q) Non recognition of an amount yet to be ascertained by the management, recoverable from Mr. Suresh Kumar K, Scientist against excess salary paid to him from 31.07.1998 to 30.06.2011, as per Para no. 8 of Part 1 of Internal Audit Report of DST for the period 1.4.2012 to 31.03.2014 which has been reiterated by DST in its Audit report for the period from 1-4-2016 to 31-3-2018.
- r) Non recognition of an amount of Rs. 69,730/- recoverable from Mr. Vibhu Mushran, Scientist G, against excess transport allowance paid to him from 1.03.2014 to 30.11.2014, as per Para no. 8 of Part 1 of Internal Audit Report of DST for the period 1-4-2016 to 31-3-2018.

- s) It has been observed that "IPIRTI, Bangalore", an institute to whom a grant of Rs.1,84,000/- was released on 11.08.2017, has not submitted Utilisation Certificate of this grant till the date of audit.
7. We further report that:
- a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;
- b) In our opinion proper books of account as required by law have been kept by the Society so far as appears from our examination of those books;
- c) The Balance Sheet and Statement of Income & Expenditure Account dealt with by this Report are in agreement with the books of account;
- d) In our opinion, the aforesaid financial statements comply with the applicable Accounting Standards issued by the Institute of Chartered Accountants of India except where disclosed otherwise.
- e) In our opinion and to the best of our information and according to the explanations given to us, we report as under with respect to other matters to be included in the Auditor's Report
- i. The society does not have any pending litigations which would impact its financial position.
- ii. The Society did not have any long-term contracts including derivative contracts; as such the question of commenting on any material foreseeable losses thereon does not arise.

Date: 06-09-2019

Place: Delhi

For S K Juneja & Associates
Chartered Accountants
Firm Registration No. 012484N
Sd/-

(Madhu Juneja)
Partner
M. No. 089326
UDIN: 19089326AAAAAAB9228

TECHNOLOGY INFORMATION, FORECASTING & ASSESSMENT COUNCIL REPLIES TO AUDIT QUERY "ANNEXURE AR1"

The reply to the observation of Auditors are as given below :

- 6(a) The observations have been noted. This is due to the accounting procedure followed during the F.Y 1992-2005. However, the matter is being examined for making the required correction.
- 6(b) Action regarding recovery of dues from NECTAR and Technology Development Board (TDB) is ongoing. Opinion noted for compliance in future
- 6(c) The Audit para vide report dated 06/07/2018, has been responded to. The matter related to payment of transport allowance to Scientist-G promoted under FCS (including Shri Sanjay Singh) has been referred to DST for opinion/decision.
- The matter is under consideration at DST during F.Y 2019-20 has initiated process of collating information from all autonomous bodies of DST pertaining to transport allowance payable to Scientist G who have been promoted under FCS. Decision of DST is awaited.
- 6(d) The matter in under examination.
- 6(e) Noted for compliance and action in this regard is initiated.
- 6(f) The UC till the time of audit has not been received. UC is being followed up.
- 6(g) The matter is being followed up for recovery of due amount.
- 6(h) Noted for compliance as per instruction contained in Rule 215(3) of GFRs.
- 6(i) Noted for future compliance. Matter is being taken up.
- 6(j) Necessary action in this regard is being taken.
- 6(k) According to the report submitted by the division, the sale of TIFAC report vide receipt no.5465 was actually done on 7th August 2018. The date of sale on challan was inadvertently written as 7th June 2018. This was a typographical mistake. Similarly, in regard to the receipt no.5471 there is a gap of only 4 days as 2nd & 3rd March 2019 were Saturday and Sunday and 4th March 2019 was Gazetted holiday.
- 6(l) As per the reply received from SIDBI, management fee is being charged on quarterly basis (for applicable no. of days). Further, applicable taxes are also charged over and above the management fee.
- 6(m) Noted for future compliance and the matter is being taken up with DAVP.
- 6(n) The bills of attorneys could not be processed earlier. Now, these are being taken up for processing and payment.

- 6(o) A letter has been sent to DST, informing it about the unspent balance of Rs.2,53,36,010/- pertaining to some very old projects available with TIFAC and requesting its advice about the process for return of this amount (as many of those divisions of DST have been closed and there is no clarity about to whom this payment is to be returned so that proper accounting of this is ensured). The advice of DST is still awaited.
- 6(p) This is as per the approval schedule of Rates. However it has been noted and would be examined when the Approval Schedule of Rates are taken up for revision.
- 6(q) The Audit para has been responded to. The present employment of Sh Suresh Kumar K as Scientist/Engineer D in the pay scale of Rs.10000-325-15200 (as per 5th CPC) has been done vide office order dated 07.08.1998 at the minimum of pay scale.
- 6(r) As given at para 6(c), the matter related to payment of transport allowance to Scientist-G promoted under FCS has been referred to DST for opinion / decision.
- The matter is under consideration at DST and DST during F.Y 2019-20 has initiated process of collating information from all autonomous bodies of DST pertaining to transport allowance payable to Scientist Gs who have been promoted under FCS. Decision of DST is awaited.
- 6(s) UC is being Followed up.

**Technology Information Forecasting And Assessment Council, (TIFAC)
Balance Sheet as at 31.03.2019**

Schedule	Current Year			Previous Year			
	TIFAC	PFC	WSS	TIFAC	PFC	WSSS	TOTAL
CORPUS / CAPITAL FUND AND LIABILITIES							
1	347412364.17	6,027,990.15	(2,329,554.73)	352635845.06	-650,604.16	1,480,861.91	353,466,102.81
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	220731860.78	4,262,838.00	5,280,871.00	146953119.88	1,590,371.00	2,416,256.00	150,959,746.88
Total	568144224.95	10290828.15	2951316.27	499,588,964.94	939,766.84	3,897,117.91	504,425,849.69
Assets							
8	48473951.97	467673.00	223035.40	51409559.47	263278.00	288731.00	51961568.47
9	136634800.00	0.00	0.00	134920000.00	0.00	0.00	134920000.00
10	-	-	-	-	-	-	-
11	363035472.98	9623155.15	2728280.87	313259405.47	676488.84	3608386.91	317544281.22
Miscellaneous Expenditure							
(to the extent not written off or adjusted)							
Total	568,144,224.95	10,290,828.15	2,951,316.27	499,588,964.94	939,766.84	3,897,117.91	504,425,849.69
Significant Accounting Policies and Notes on Accounts							
Contingent Liabilities							

Subject to Schedule -1 to 24, forming part of the Balance Sheet
As per our report of even date Attached
For S.K. Juneja & Associates (FRN : 012484N)
Chartered Accountants

Sd/-
Accounts Officer
TIFAC

Sd/-
Incharge(Fin.&Admin.)
TIFAC

Sd/-
Executive Director (Officiating)
TIFAC

Sd/-
CA Madhu Juneja (MRN : 089326)
Partner
Date : 06-09-2019
Place : New Delhi

**Technology Information Forecasting And Assessment Council, (TIFAC)
Income & Expenditure Account for the Year Ended 31.03.2019**

Income	Schedule	Current Year				Previous Year			
		TIFAC	PFC	WSSS	Total	TIFAC	PFC	WSSS	Total
Income from Sales / Services	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grants / Subsidies	13	170923000.00	20000000.00	30000000.00	220923000.00	160,000,000.00	7,000,000.00	48,076,415.00	215,076,415.00
Fees / Subscriptions	14	240.00	0.00	0.00	240.00	70.00	0.00	0.00	70.00
Income from Investments	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Income from Royalty, Publication etc	16	21640.00	0.00	0.00	21640.00	18,425.00	0.00	0.00	18,425.00
Interest Earned	17	0.00	0.00	0.00	0.00	17,109,450.00	120,510.00	332,917.00	17,562,877.00
Other Income	18	1809907.00	163602.00	1331465.00	3304974.00	5,845,049.00	395,717.00	0.00	6,240,766.00
Increased/(Decrease) in stock of Finished Goods and Works-in-Progress	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Refund from Projects	20	7067326.64	0.00	0.00	7067326.64	4,971,546.00	0.00	0.00	4,971,546.00
Total (A)		179822113.64	20163602.00	31331465.00	231317180.64	187,944,540.00	7,516,227.00	48,409,332.00	243,870,099.00
Expenditure					0.00				
Establishment & Other Administrative Expenses	21	166768158.03	12871766.69	34664752.04	214304676.76	124241151.45	13348758.89	40156807.33	177746717.67
Expenditure on Grant, Subsidies etc	22	12197877.00	412697.00	333688.00	12944262.00	18723835.00	3209005.00	435620.00	22368460.00
Interest	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation (Net Total at the Year end)	8	6079559.50	200544.00	143441.60	6423545.10	6383541.00	25122.00	113096.00	6521759.00
Provision for Bad and Doubtful Debts			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (B)		185,045,594.53	13,485,007.69	35,141,881.64	233,672,483.86	149,348,527.45	16,582,885.89	40,705,523.33	206,636,936.67
Balance being excess of Income over Expenditure (Expenditure over Income)		(5,223,480.89)	6,678,594.31	(3,810,416.64)	(2,355,303.22)	38,596,012.55	(9,066,658.89)	7,703,808.67	37,233,162.33
Transfer to Special Reserve (Specify each)									
Contingent Liabilities									

Subject to Schedule -1 to 24, forming part of the Balance Sheet
As per our report of even date Attached

Sd/-
For S K Juneja & Associates (FRN : 012484N)
Chartered Accountants

Sd/-
Accounts Officer
TIFAC

Sd/-
Incharge(Fin.&Admin.)
TIFAC

Sd/-
Executive Director (Officiating)
TIFAC

Sd/-
CA Madhu Juneja (MRN : 089326)
Partner
Date : 06-09-2019
Place : New Delhi

**Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2019**

Schedule 1 - Corpus / Capital Fund									
	Current year					Previous Year			
	TIFAC	PFC	WSSS	Total		TIFAC	PFC	WSSS	Total
Opening Balance (General)	182,635,845.06	(650,604.16)	1,480,861.91	183,466,102.81		144,039,832.51	8,416,054.73	(6,222,946.76)	146,232,940.48
Opening Balance (SIDBI Revolving Fund)	170,000,000.00	-	-	170,000,000.00		170,000,000.00	-	-	170,000,000.00
Total Opening Balance (A)	352,635,845.06	(650,604.16)	1,480,861.91	353,466,102.81		314,039,832.51	8,416,054.73	(6,222,946.76)	316,232,940.48
Amount Given to SIDBI in 2010-2011 (B)	-	-	-	-		-	-	-	-
Excess of Income over Expenditure (Expenditure over Income)(C)	(5,223,480.89)	6,678,594.31	(3,810,416.64)	(2,355,303.22)		38,596,012.55	(9,066,658.89)	7,703,808.67	37,233,162.33
Total Closing Balance (A)+(B)+(C)	347,412,364.17	6,027,990.15	(2,329,554.73)	351,110,799.59		352,635,845.06	(650,604.16)	1,480,861.91	353,466,102.81

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2019

Particulars	Current Year		Previous Year		TOTAL	WSSS	PFC	TOTAL	WSSS	TOTAL
	TIFAC		TIFAC							
Schedule 2 - Reserve and Surplus : NIL										
Schedule 3 - Earmarked/Endowment Funds : NIL										
Schedule 4 - Secured Loans and Borrowings : NIL										
Schedule 5 - Unsecured Loans and Borrowings : NIL										
Schedule 6 - Deferred Credit Liabilities : NIL										
Schedule 7 - Current Liabilities And Provisions :										
A) Current Liabilities										
1. Sundry Creditors :										
CGHS (Sh. Rajani Kanth Gupta) Ex. Registrar	2,550.00	-	2,550.00	-	2,550.00	-	-	-	-	2,550.00
Permail Wallae Pvt. Ltd.	-	-	-	-	3,000.00	-	-	-	-	3,000.00
URDIP Pune (WSSS)	-	-	-	-	11,164.00	11,164.00	-	-	11,164.00	11,164.00
Alaka Chakraborty	46,648.00	-	46,648.00	-	46,648.00	-	-	-	-	46,648.00
2. Statutory Liabilities										
a) Others : TDS Payable (Sub Total (B) of Annexure -8)	824,707.00	119,965.00	944,672.00	737,158.00	1,681,830.00	613.00	171,380.00	613.00	909,151.00	-
3. Other Current Liabilities										
Stale Cheque	159,600.00	25,000.00	184,600.00	271,164.00	455,764.00	21,246.00	22,500.00	21,246.00	314,910.00	15,104,464.00
IIT-TIFAC Maintenance (Provisions)	6,379,785.00	-	6,379,785.00	15,104,464.00	21,484,249.00	-	-	-	-	3,415,050.00
Grant : Global Technology Watch Groupup (GTWG) (Annexure 10)	2,056,432.00	-	2,056,432.00	3,415,050.00	5,471,482.00	-	-	-	-	3,589,703.00
Grant : Interdisciplinary Cyber Physical Systems (ICPS) (Annexure 10)	1,260,904.00	-	1,260,904.00	3,589,703.00	4,850,607.00	-	-	-	-	609,540.00
National Steering Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)	386,255.70	-	386,255.70	609,540.00	995,795.70	-	-	-	-	421,537.00
Grant : Technology Assessment of Start ups for Tax Exemption (Annexure 10)	609,478.00	-	609,478.00	421,537.00	1,031,015.00	-	-	-	-	20,000.00
Grant : CV Raman International Fellowship (DST FICC) (Annexure 10)	-	-	-	20,000.00	20,000.00	-	-	-	-	-
Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science (Annexure 10)	1,433,300.00	-	1,433,300.00	-	1,433,300.00	-	-	-	-	-
Bharat Kosh (Govt.)	40,009,775.00	383,974.00	40,393,749.00	618,433.00	41,012,182.00	618,433.00	-	-	-	-
DRDO's Workshop Expenses	-	331,823.00	331,823.00	-	331,823.00	-	-	-	-	-
WIPO's Workshop Expenses	-	14,728.00	14,728.00	-	14,728.00	-	-	-	-	-
Training of Trainers Programme	-	15,714.00	15,714.00	-	15,714.00	-	-	-	-	-
UNIDO Workshop	-	694,288.00	694,288.00	-	694,288.00	-	-	-	-	-
Expenses Payable (Sub Total (A) of Annexure - 8)	26,621,297.15	2,566,388.00	29,187,685.15	4,578,667.00	33,766,352.15	4,578,667.00	1,296,674.00	2,333,233.00	10,168,502.00	1,382,475.95
CPF Trust	21,320.00	33,641.00	54,961.00	1,359,975.95	1,382,475.95	-	22,500.00	-	-	22,436.00
GSLIS	19,673.00	1,063.00	20,736.00	21,373.00	42,109.00	-	1,063.00	-	-	-
Database of Technologies for Management of Municipal Solid Waste (Annexure 10)	275,000.00	-	275,000.00	275,000.00	550,000.00	-	-	-	-	-
4 (a) Uspent Balance of Running Projects	534,149.00	76,254.00	610,403.00	817,872.00	1,428,275.00	-	76,254.00	-	-	894,126.00
4. (b) Due to DST (Uspent Balance Amount In Respect of Old Projects) (List enclosed in Notes to Accounts at S.No7)	25,336,009.93	-	25,336,009.93	25,731,754.93	51,067,764.86	-	-	-	-	25,731,754.93
5. EMD/ Security Deposit (TIFAC) of (Annexure - 9)	693,784.00	-	693,784.00	638,784.00	1,332,568.00	50,000.00	-	50,000.00	-	688,784.00
6. Superannuation / Pension/Gratuity	63,734,895.00	-	63,734,895.00	40,189,141.00	1,039,034,036.00	-	-	-	-	40,189,141.00
7. Accumulated Leave Encashment	50,326,298.00	-	50,326,298.00	47,159,810.00	97,486,108.00	-	-	-	-	47,159,810.00
Total (A+B)	220,731,860.78	4,262,838.00	225,000,000.00	1,46,953,119.88	471,716,147.88	5,280,871.00	1,590,371.00	2,416,256.00	-	150,959,746.88

**TECHNOLOGY INFORMATION FORECASTING AND ASSESSMENT COUNCIL (TIFAC) (REGULAR)
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2019**

SCHEDULE 8-FIXED ASSETS	Rate of Depreciation	GROSS BLOCK				DEPRECIATION			NET BLOCK	
		Cost / valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end
A. FIXED ASSETS										
1. LAND										
a) Freehold		-	-	-	-	-	-	-	-	-
b) Leasehold		-	-	-	-	-	-	-	-	-
2. BUILDING										
a) On Freehold Land		-	-	-	-	-	-	-	-	-
b) On Leasehold Land		-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity	10.00	117,850,000.00	-	-	117,850,000.00	90,889,700.13	2,696,030.00	93,585,730.13	24,264,269.87	26,960,299.87
e) Interior work of TIFAC Building	10.00	52,568,157.00	-	-	52,568,157.00	33,861,748.58	1,870,643.00	35,732,391.58	16,835,765.42	18,706,408.42
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	1,222,121.00	-	-	1,222,121.00	830,018.54	58,816.00	888,834.54	333,286.46	392,102.46
4. VEHICLES										
5. FURNITURE & FIXTURES	10.00	2,916,338.60	21,537.00	-	2,937,875.60	1,660,947.92	127,532.00	1,768,479.92	1,149,395.68	1,255,390.68
6. OFFICE EQUIPMENT	15.00	24,711,116.58	2,728,152.00	-	27,439,268.58	21,722,801.25	690,543.50	22,413,344.75	5,025,923.83	2,988,315.33
7. COMPUTER/PERIPHERALS	40.00	11,115,476.28	265,952.00	-	11,381,428.28	10,725,120.57	262,523.00	10,987,643.57	393,784.71	390,355.71
7 (A) COMPUTER/PERIPHERALS (Ext. Proj)	40.00	1,052,213.00	86,700.00	-	1,138,913.00	366,885.00	308,812.00	675,697.00	463,216.00	685,328.00
8. ELECTRIC INSTALLATIONS										
9. LIBRARY BOOKS	100.00	5,763,355.55	41,611.00	-	5,804,966.55	5,731,996.55	64,660.00	5,796,656.55	8,310.00	31,359.00
10. TUBEWELL & W.SUPPLY										
11. OTHER FIXED ASSETS										
TOTAL OF CURRENT YEAR		217,198,778.01	3,143,952.00	-	220,342,730.01	165,789,218.54	6,079,559.50	171,868,778.04	48,473,951.97	51,409,559.47
PREVIOUS YEAR		214,348,409.01	2,919,393.00	69,024.00	217,198,778.01	159,405,677.54	6,383,541.00	165,789,218.54	51,409,559.47	61,332,405.47
B. CAPITAL WORK IN PROGRESS										
Note : For the assets which have been put to use after 30th September 50% of the prescribed depreciation has been charged.										
		F.Y 2017-2018	F.Y 2018-2019							
Project wise details of COMPUTERS/PERIPHERALS of EXT.PROJECT (S.No.7(A))										
Under GTWG Project		324,000.00								
Under ICPS Project		94,913.00								
Under INSPIRE Project		363,300.00	86,700.00							
Under DIPP Project		270,000.00								
Total		1,052,213.00								

TECHNOLOGY INFORMATION FORECASTING AND ASSESSMENT COUNCIL (TIFAC)
PATENT FACILITATING CENTER (PFC)
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2019

SCHEDULE 8-FIXED ASSETS	GROSS BLOCK						DEPRECIATION			NET BLOCK	
	Rate of Depreciation	Cost / valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end	
A. FIXED ASSETS											
1. LAND											
a) Freehold		-	-	-	-	-	-	-	-	-	
b) Leasehold		-	-	-	-	-	-	-	-	-	
2. BUILDING											
a) On Freehold Land		-	-	-	-	-	-	-	-	-	
b) On Leasehold Land		-	-	-	-	-	-	-	-	-	
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-	
d) Superstructures on Land not belonging to the entity	10.00	-	-	-	-	-	-	-	-	-	
e) Interior work of TIFAC Building	10.00	-	-	-	-	-	-	-	-	-	
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	-	-	-	-	-	-	-	-	-	
4. VEHICLES											
5. FURNITURE & FIXTURES											
6. OFFICE EQUIPMENT	10.00	48,000.00	-	-	48,000.00	2,400.00	4,560.00	6,960.00	41,040.00	45,600.00	
7. COMPUTER/PERIPHERALS	15.00	225,380.00	3,779.00	-	229,159.00	16,904.00	31,839.00	48,743.00	180,416.00	208,476.00	
8. ELECTRIC INSTALLATIONS	40.00	15,020.00	401,160.00	-	416,180.00	5,818.00	164,145.00	169,963.00	246,217.00	9,202.00	
9. LIBRARY BOOKS	100.00	-	-	-	-	-	-	-	-	-	
10. TUBEWELL & W.SUPPLY											
11. OTHER FIXED ASSETS											
TOTAL OF CURRENT YEAR		288,400.00	404,939.00	-	693,339.00	25,122.00	200,544.00	225,666.00	467,673.00	263,278.00	
PREVIOUS YEAR		-	288,400.00	-	288,400.00	-	25,122.00	25,122.00	263,278.00	-	
B. CAPITAL WORK IN PROGRESS											

Note : For the assets which have been put to use after 30st September 50% of the prescribed depreciation has been charged.

**TECHNOLOGY INFORMATION FORECASTING AND ASSESSMENT COUNCIL (TIFAC)
WOMEN SCIENTIST SCHOLARSHIP SCHEME (WSSS)
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2019**

SCHEDULE 8-FIXED ASSETS	GROSS BLOCK						DEPRECIATION			NET BLOCK	
	Rate of Depreciation	Cost / v aluation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end	
A. FIXED ASSETS											
1. LAND											
a) Freehold		-	-	-	-	-	-	-	-	-	
b) Leasehold		-	-	-	-	-	-	-	-	-	
2. BUILDING											
a) On Freehold Land		-	-	-	-	-	-	-	-	-	
b) On Leasehold Land		-	-	-	-	-	-	-	-	-	
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-	
d) Superstructures on Land not belonging to the entity	10.00	-	-	-	-	-	-	-	-	-	
e) Interior work of TIFAC Building	10.00	-	-	-	-	-	-	-	-	-	
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	-	-	-	-	-	-	-	-	-	
4. VEHICLES											
5. FURNITURE & FIXTURES	10.00	-	-	-	-	-	-	-	-	-	
6. OFFICE EQUIPMENT	15.00	-	-	-	-	-	-	-	-	-	
7. COMPUTER/PERIPHERALS	40.00	401,827.00	77,746.00	-	479,573.00	113,096.00	143,441.60	256,537.60	223,035.40	288,731.00	
8. ELECTRIC INSTALLATIONS											
9. LIBRARY BOOKS	100.00	-	-	-	-	-	-	-	-	-	
10. TUBEWELL & W.SUPPLY											
11. OTHER FIXED ASSETS											
TOTAL OF CURRENT YEAR		401,827.00	77,746.00	-	479,573.00	113,096.00	143,441.60	256,537.60	223,035.40	288,731.00	
PREVIOUS YEAR		-	401,827.00	-	401,827.00	-	113,096.00	113,096.00	288,731.00	-	
B. CAPITAL WORK IN PROGRESS											

Note : For the assets which have been put to use after 30st September 50% of the prescribed depreciation has been charged.

**Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2019**

Particulars	Current Year			Previous Year			
	TIFAC	PFC	WSSS	TIFAC	PFC	WSSS	TOTAL
1. In Government Securities	-	-	-	-	-	-	-
2. Other approved Securities	-	-	-	-	-	-	-
3. Shares	-	-	-	-	-	-	-
4. Debentures and Bonds	-	-	-	-	-	-	-
5. Subsidiaries and Joint Ventures	-	-	-	-	-	-	-
6. Others (TIFAC-SIDBI Revolving Fund)	136,634,800.00	-	-	134,920,000.00	-	-	134,920,000.00
Total	136,634,800.00	-	-	134,920,000.00	-	-	134,920,000.00

**Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2019**

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Schedule 10 - Investments - Others : NIL								
Schedule 11 - Current Assets, Loans, Advances Etc								
1. Sundry Debtors :								
a) Debts outstanding for a period exceeding six months	270,000.00	222,775.00	-	492,775.00	270,000.00	222,775.00	-	492,775.00
2. Cash Balances in Hand (including Cheques / Drafts and Imprest) (Under TIFAC Account)	8,720.00	5,804.00	5,849.00	20,373.00	7,143.00	5,804.00	471.00	13,418.00
3. Bank Balances :								
Union Bank of India : Deposit Accounts (Short Term deposits) (Annex-7)	265,661,885.00	-	-	265,661,885.00	255,156,982.00	-	-	255,156,982.00
Union Bank of India : Flexi Deposit Account (Annex - 7)	2,000,000.00	-	-	2,000,000.00	6,000,000.00	-	-	6,000,000.00
Accrued Interest (Accrued Interest) (Annexure 7)	7,357,932.00	-	-	7,357,932.00	3,198,189.00	-	-	3,198,189.00
On Savings Accounts	103,760,963.98	9,332,235.15	197,699.87	113,290,899.00	45,610,668.47	303,561.84	3,457,906.91	49,372,137.22
B) Loans, Advances and Other Assets :-								
1. Loans:								
a) Staff Loan (Under TIFAC Account) (Annex-1)	564,314.00	102,825.00	-	667,139.00	1,301,177.00	131,925.00	31,928.00	1,465,030.00
2. Advances								
Franking Machine	10,359.00	-	-	10,359.00	10,359.00	-	-	10,359.00
DAVP	1,538,056.00	42,572.00	2,100,117.00	3,680,745.00	235,081.00	-	-	235,081.00
M/s Balmer Lawrie & Co. Ltd.	112,476.00	-	-	112,476.00	243,501.00	-	-	243,501.00
Jawaharlal Nehru Aluminium research Development	-	-	-	-	160,600.00	-	-	160,600.00
Akash Health Care Privat Limited	-	-	-	-	36,900.00	-	-	36,900.00
Shanti Gopal Hospital	-	-	-	-	-	-	-	-
Ishwar Charitable Trust (ICARE Eye Hospital)	-	-	-	-	18,053.00	-	-	18,053.00
Forest Research Institute, Dehradun	-	-	-	-	47,515.00	-	-	47,515.00
IPIRTI, Bangalore	-	-	-	-	184,000.00	-	-	184,000.00
Current Science Association, Bangalore	-	-	-	-	-	-	40,000.00	40,000.00
Chennai Centre-Kiran IPR	-	-	145,000.00	145,000.00	-	-	-	-
Pune Centre Kiran IPR	-	-	200,000.00	200,000.00	-	-	-	-

**Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2019**

3. Other Recoverables													
Security Deposit	9,203.00	-	-	9,203.00	44,403.00	-	-	-	-	-	-	-	44,403.00
CPF (Recovery from CPF Trust)	-	-	-	-	-	-	-	-	-	-	-	-	-
Prof. Prabath Ranjan	428,510.00	-	-	428,510.00	428,510.00	-	-	-	-	-	-	-	428,510.00
Salary Recoverable (Dr Atuna)		10,875.00	-	10,875.00	-	-	-	-	-	-	-	-	-
TDS Receivable from Income Tax Department (DIPP)	140,400.00	1,972.00	-	142,372.00	90,300.00	-	-	-	-	-	-	-	90,300.00
Interest Accrued from Union Bank of India (on Savings Bank Account)	1,172,654.00	104,097.00	79,615.00	1,356,366.00	216,024.00	12,423.00	78,081.00	-	-	-	-	-	306,528.00
Total (A) + (B)	383,035,472.98	9,823,155.15	2,728,280.87	395,586,909.00	313,259,405.47	676,488.84	3,608,386.91						317,544,281.22

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Schedule 12 - Income From Sales / Services : NIL									
Schedule 13 - Grants / Subsidies (TIFAC Regular)									
Particulars	Current Year					Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL	
1. From Central Government				-				-	
TIFAC Grant									
a) Grants in Aid (Plan)	53,962,000.00	20,000,000.00	30,000,000.00	103,962,000.00	47,830,000.00	7,000,000.00	48,076,415.00	102,906,415.00	
b) Grant in Aid (Non-Plan)	-	-	-	-	-	-	-	-	
c) Grant in Aid (Plan) Capital Assets	2,787,000.00	-	-	2,787,000.00	17,374,000.00	-	-	17,374,000.00	
d) Grant in Aid (Salary)	114,174,000.00	-	-	114,174,000.00	86,696,000.00	-	-	86,696,000.00	
e) Grant in Aid (Salary) Scheduled Castes	-	-	-	-	8,100,000.00	-	-	8,100,000.00	
Total	170,923,000.00	20,000,000.00	30,000,000.00	220,923,000.00	160,000,000.00	7,000,000.00	48,076,415.00	215,076,415.00	

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Schedule 14 - Fees / Subscriptions Particulars	Current Year			Previous Year		
	TIFAC	PFC	WSSS	TIFAC	PFC	WSSS
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
Award for Nari Shakti	-	-	-	-	-	-
RTIA Questions	240.00	-	-	70.00	-	-
Total	240.00	-	-	70.00	-	-

Schedule 15 - Income From Investments (Income on Invest. From Earmarked/Endowment Funds transferred to Funds) : NIL

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1) Income from Royalty	-	-	-	-	-	-	-	-
2) Sale of Publications	21,640.00	-	-	21,640.00	18,425.00	-	-	18,425.00
3) Other (Specify)	-	-	-	-	-	-	-	-
Total	21,640.00	-	-	21,640.00	18,425.00	-	-	18,425.00

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. On Term Deposits								
a) Union Bank of India, (Scheduled Banks)	-	-	-	-	11,466,197.00	-	-	11,466,197.00
2. On Savings Accounts								
Interest from Savings Bank (General)	-	-	-	-	1,097,430.00	110,262.00	332,917.00	1,540,609.00
Interest from Savings Bank Salary Account	-	-	-	-	561,484.00	-	-	561,484.00
Interest from Savings Bank Flexi Account	-	-	-	-	387,861.00	-	-	387,861.00
3. On Loans :								
a) Employees (LTA, Scooter, Car, tour, LTC, HBA and Computers)	-	-	-	-	206,546.00	10,248.00	-	216,794.00
b) Others (Interest from Income Tax and Projects)	-	-	-	-	922,932.00	-	-	922,932.00
4. Interest on Debtors and Other Receivables (TIFAC-SIDBI Revolving Fund)								
	-	-	-	-	2,467,000.00	-	-	2,467,000.00
Total	-	-	-	-	17,109,450.00	120,510.00	332,917.00	17,562,877.00

Note : Tax deducted at source to be indicated

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. Miscellaneous Income				-				
Other Receipts	381,824.00	-	-	381,824.00	4,100.00	395,717.00	-	399,817.00
Other Income (UNIDO's Workshop)	-	80,712.00	-	80,712.00	-	-	-	-
Other Income (TOT's Workshop)	-	82,890.00	-	82,890.00	-	-	-	-
Rent (SETS)	-	-	-	-	45,243.00	-	-	45,243.00
Rent (Technology Development Board)	-	-	-	-	2,849,593.00	-	-	2,849,593.00
Excess Provision in Advertisement Expenses (Written Back) DAVP	1,285,618.00	-	1,331,465.00	2,617,083.00	-	-	-	-
2. Income Accrued and Received on Running Projects				-				-
Overhead : WSSS	-	-	-	-	2,482,488.00	-	-	2,482,488.00
Overhead : Interdisciplinary Cyber Physical System	142,465.00	-	-	142,465.00	357,535.00	-	-	357,535.00
Overhead : Global Technology Watch Group	-	-	-	-	100,000.00	-	-	100,000.00
Overhead : Database of Technologies for Management of Municipal Solid Waste	-	-	-	-	6,090.00	-	-	6,090.00
Total	1,809,907.00	163,602.00	1,331,465.00	3,304,974.00	5,845,049.00	395,717.00	-	6,240,766.00
Schedule 19 - Increase / (Decrease) in stock of Finished Goods & Work in Progress : NIL								
Schedule 20 - Refund from Projects, (TIFAC Regular Account)								
Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Home Grown Technology (Annex-2)	3,127,530.64	-	-	3,127,530.64	2,000,000.00	-	-	2,000,000.00
Advanced Composites Programme (Annex-2)	3,500,326.00	-	-	3,500,326.00	2,971,546.00	-	-	2,971,546.00
Sugar Technology Mission (Annex-2)	439,470.00	-	-	439,470.00	-	-	-	-
Total	7,067,326.64	-	-	7,067,326.64	4,971,546.00	-	-	4,971,546.00

**Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2019**

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Establishment Expenditure(Annex 3)	133,768,161.15	7,536,614.00	1,493,064.00	142,797,839.15	103,814,696.95	5,635,221.00	1,359,375.00	110,809,292.95
Administrative Expenses (Annex 4)	32,999,996.88	5,335,152.69	33,171,688.04	71,506,837.61	20,426,454.50	7,713,537.89	38,797,432.33	66,937,424.72
Establishment & Administrative Expenditure (Vision 2020)(Annex-6)	-	-	-	-	-	-	-	-
Total	166,768,158.03	12,871,766.69	34,664,752.04	214,304,676.76	124,241,151.45	13,348,758.89	40,156,807.33	177,746,717.67
Schedule 22 - Expenditure on Grants, Subsidies Etc								
Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Grants given to Institutions/ Organisations								
Project Expenditure (Annex - 5)	9,550,449.00	412,697.00	333,688.00	10,296,834.00	15,497,788.00	3,209,005.00	435,620.00	19,142,413.00
Project Expenditure (Vision 2020) (Annex-6A)	2,214,012.00	-	-	2,214,012.00	661,184.00	-	-	661,184.00
Project Expenditure (Vision 2035) (Annex-6&6A)	433,416.00	-	-	433,416.00	2,564,863.00	-	-	2,564,863.00
Total	12,197,877.00	412,697.00	333,688.00	12,944,262.00	18,723,835.00	3,209,005.00	435,620.00	22,368,460.00

Schedule 23 - Interest : NIL

SCHEDULE FORMING PART OF THE ACCOUNTS FOR THE YEAR ENDED 31.03.2019

SCHEDULE 24

A. SIGNIFICANT ACCOUNTING POLICIES

1. The financial statements are prepared under the historical cost convention on going concern basis. The Society follows the mercantile system of accounting except receipt of Government grants, Royalty and sale of publications.
2. On the Grants on which Overhead @ 20% is granted to the society, they are taken as income in the year of receipt of grant irrespective of the fact whether the sanctioned grant is actually spent or not.
3. Fixed assets are stated at cost less accumulated depreciation. Cost comprises the purchase price and any attributable cost of bringing the asset to its working condition for its intended use.
4. Depreciation on fixed assets is computed on the written down value (WDV) method at the rates and in the manner prescribed under the provisions of Income Tax Act.
5. Amounts released as grants under various projects are accounted for as expenditure for the year in which the same are released, irrespective of the fact that the amounts so released may not have been fully utilized towards the projects during the year.
6. The repayment of Loans/assistance by the beneficiaries to the society as per the conditions stated in the respective agreements is accounted for on receipt basis.
7. In cases where the projects are executed by other institutions, all disbursement of grants irrespective of its utilization by them for projects are treated as expenditure during the Financial Year in which the grant is released.
8. Total expenditure is not bifurcated into plan and non-plan expenditure in the financial statements of the society.
9. Regular Grants in the form of General Grants, Salary Grants and Capital Assets Grants are treated as income of the society of the year in which it is received and regular expenditure are treated as expenditure during the year and unspent portion of the Grants received for specific projects are shown as liabilities.

B. Changes in accounting policies.

1. From the accounting policy no.7 referred above the following extracts have been deleted “and assets if any created/purchased by the beneficiaries, out of the said disbursements to the projects, are not accounted for as assets in the books of accounts of the society.” However, it does not have any impact on the financial results of the society.
2. In the accounting policy no.9, referred above, the following extracts“ and grants received for specific projects are shown as liabilities and amount spent against them are shown as Assets.”, will be substituted by the following extracts: “and unspent portion of the Grants received for specific projects are shown as liabilities.”With effect from dt.01.04.2018

As per our report of even date annexed herewith

For S K Juneja & Associates
Chartered Accountants
FRN: 012484N

Sd/-

CA. Madhu Juneja
(Partner)

Sd/-

Accounts Officer
TIFAC

Sd/-

Incharge
(Fin.&Admin.)
TIFAC

Sd/-

Executive Director
(Officiating)
TIFAC

MRN: 089326

Date: 06-09-2019

Place: New Delhi

SCHEDULE FORMING PART OF THE ACCOUNTS FOR THE YEAR ENDED 31.03.2018

SHCEDULE- 24 CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS

A. Contingent Liabilities **NIL**

B. Notes on Accounts

1. Though society runs various projects under the instructions and guidance of Department of Science and Technology (DST), Ministry of Science and Technology, separate accounts for these projects have not been maintained.
2. Other current liabilities include amount refundable to DST on account of unutilized balance under various projects which have since been closed the details of which is given as under :-

S. No.	Particulars - Current Liabilities (Schedule 7)	Amount (Rs.)
1.	Project (ICOSER)	1,32,02,152.00
2.	Indian-Myanmar S & T Friendship Library in Yangoon	9,59,659.00
3.	MSEB-Ash Utilisation/ Management	6,00,094.00
4.	FAM Large Scale Stowing of HWP Pond Ash into the Underground Mines of SCCL (M) Manugure	82,94,830.00
5.	Earth Quake Serving Nature's Fury	1,65,157.00
6.	MPSEB use of Fly Ash in Agriculture Development Thermal Power Plants, Sarni	3,56,825.00
7.	TIFAC-World Bank Project	13,39,747.93
8.	Training Progamme on IPR and WTO Issues for scientists/ technologists working in Government sector	2,02,549.00
9.	G.M.W Workshop (SRF)	1,00,170.00
10	STI Policy Fellowship	39,810.00
11	Science and Heritage Research Initiative (SHRI)	75,016.00
	Total	253,36,009.93

3. 'Sundry Debtors' under the head Current Assets, Loans and Advances include Rs. 2,70,000/- as amount recoverable from Shree Chitra Tribunal Institute for Medical Science and Technology, an Autonomous Institute under Ministry of Science and Technology which is outstanding since March 2011.
4. Stock of Publications and Studies, which are published and printed by the Society and distributed at a cost are not accounted for as Stock in hand at the end of the year.

5. 'Stale cheques' under 'Current liabilities and Provisions', amounting to Rs.2,05,846/- denote cheques issued to various parties which have not been presented for payment and have become obsolete being outstanding for more than three months.
6. NECTOR & TDB have been using approximately 10,000 Sq Ft. & 3,000 Sq Ft. respectively out of total useable area of 50,000 Sq Ft. available with TIFAC but no share of maintenance from NECTOR and TDB is being charged since the matter has not yet been decided by DST.
7. In the opinion of the Management, the current assets, loans and advances have a value on realization in the ordinary course of business, at least equal to the amount at which they are stated in the Balance Sheet.
8. In view of there being no taxable income under Income tax Act, 1961 no provision for Income Tax has been considered necessary.

9. FOREIGN CURRENCY TRANSACTIONS

(Amount Rs.)

9.1 Value of Imports Calculated on C.I.F. Basis:	Current Year	Previous Year
Purchase of finished Goods	Nil	Nil
Raw Materials & Components (Including in transit)	Nil	Nil
Capital Goods	Nil	Nil
Stores, Spares & Consumables	Nil	Nil

9.2 Expenditure in foreign currency:		
a) Travel	4,95,499/-	Rs.12,06,209/-
b) Remittances and Interest Payment to Financial Institutions/ Banks in Foreign Currency	Nil	Nil
c) Patents Filing abroad	2,38,574/-	30,04,353/-
d) Other expenditure:		
- Commission on Sale	Nil	Nil
- Legal and Professional Expenses	Nil	Nil
- Miscellaneous Expenses	Nil	Nil

9.3 Earning:		
Value of Exports on FOB basis	Nil	Nil

9.4 Remuneration to Auditors:		
(inclusive of applicable taxes)		
- Audit Fees	Rs.1,10,000/-	Rs. 1,00,000/-
- Taxation matters	Nil	Nil
- Consultancy Charges	Nil	Nil
- Certification	Nil	Nil
- GST Payable	Rs.19,800/-	Rs.18,000/-

10. The Society had given loans to various parties under various projects from the year 1992 to 2005 which were written off in the Financial Years in which they were given as per the then prevailing accounting policies of the society. At the time of their respective disbursements, these loans had not been recognized as loans and advances and hence do not reflect in the assets side of the balance sheet of the society. The details are given as follows :-

Name of the Project	Overdue upto 3 years	Overdue more than 3 years	Total
Home Grown Technology	0.00	161329922.36	161329922.36
Advanced Composite Programme	0.00	131045200.00	131045200.00
Sugar Technology Unit	0.00	26880588.00	26880588.00
Fly Ash Utilization	0.00	11834000.00	11834000.00
Agriculture and Agro Food Sector	0.00	10625000.00	10625000.00
Targeted Programme in other Important Areas	15677000.00	77088000.00	92765000.00
Total	15677000.00	418802710.36	434479710.36

11. TIFAC has incurred an expenditure of Rs.180.92 crores under Vision 2020 program and Rs.3.01 crores under Vision 2035 till date.
12. CPF Trust Account collects money from the staff of TIFAC as well as from TIFAC as employer and invests this amount in Fixed Deposits of Nationalized Banks on which interest is earned as per the prevailing bank rates. Similarly the trust provides interest to the staff at the rates prescribed in CPF Act from time to time. Which results in difference of interest earned & interest paid amount. During the Financial Year 2018-19 there was a deficit of Rs. 8,90,548.15 with the CPF Trust due to difference in interest provided on the balance of employees and interest earned on deposits with the Nationalised Banks and the same to be recovered from the TIFAC. During the Financial Year 2018-19 an amount of Rs. 2,53,200/- has already been paid by TIFAC on this account and balance Rs. 6,37,348.15 has been shown as Payable.
13. An amount of Rs.26,17,083/- shown excess against Advertisement Expenses on account of DAVP for the F.Y 2017-2018 has been written back during the F.Y 2018-2019.
14. An amount of Rs.48,059.44 has been shown as depreciation written back on the laptop misplaced by Scientist E, (Ms Sangeeta Nagar) in the F.Y 2009-2010 but the depreciation was being claimed till F.Y. 2017-18. The amount is now shown as recoverable from her.
15. An amount of Rs.410,12,182/- has been transferred to Bharat Kosh Account, earned as Interest against deposits with Nationalised banks for the years 2017-18 and 2018-19.

16. Previous year's figures have been regrouped/rearranged wherever found necessary to make them comparable with current year figures.
17. Schedules 1 to 24 are annexed to and form an integral part of the Balance Sheet as at 31.03.2019 and the Income and Expenditure Account for the year ended on that date.

As per our report of even date annexed herewith

For S K Juneja & Associates
Chartered Accountants
FRN: 012484N

Sd/-
CA. Madhu Juneja
(Partner)

Sd/-
Accounts Officer
TIFAC

Sd/-
Incharge
(Fin.&Admin.)
TIFAC

Sd/-
Executive Director
(Officiating)
TIFAC

MRN: 089326

Date: 06-09-2019
Place: New Delhi

Staff Advances

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Staff Advances under TIFAC Account				-				
B) HBA Advance				-				-
Ms. Sangeeta Baksi	288,000.00	-	-	288,000.00	338,400.00	-	-	338,400.00
Dr. Debabrata Majumdar	-	-	-	-	285,000.00	-	-	285,000.00
C) Car Advance								
Sh. T. Chandrasekhar	71,100.00	-	-	71,100.00	81,900.00	-	-	81,900.00
Ms. Achla Khanna	-	-	-	-	33,000.00	-	-	33,000.00
Sh. Deep Prakash	70,000.00	-	-	70,000.00	124,000.00	-	-	124,000.00
Sh. N C Chauhan	-	-	-	-	-	-	-	-
Sh. Yashwant Dev Panwar	-	97,200.00	-	97,200.00	-	118,800.00	-	118,800.00
D) Leave Travel Concession								
Sh. Ujjwal Kumar	8,100.00	-	-	8,100.00	31,000.00	-	-	31,000.00
Sh. Vipin Shukla	-	-	-	-	121,363.00	-	-	121,363.00
E) Tour Advance								
Sh. Sajid Mubashir	81,042.00	-	-	81,042.00	81,042.00	-	-	81,042.00
Sh. Yashwant Dev Panwar	-	-	-	-	-	-	31,928.00	31,928.00
Dr. Gautam Goswami	822.00	-	-	822.00	822.00	-	-	822.00
F) Scooter Advance								
Ms. Anita Nair	-	-	-	-	11,000.00	-	-	11,000.00
Sh. Dalip Kumar	11,000.00	-	-	11,000.00	23,000.00	-	-	23,000.00
Ms. Ujjwal Kumar	-	-	-	-	-	-	-	-
Sh. Mahipal Singh Rawat	3,000.00	-	-	3,000.00	15,000.00	-	-	15,000.00
Sh. Surender Kumar	14,000.00	-	-	14,000.00	26,000.00	-	-	26,000.00
G) Computer Advance								
Sh. Sanjay Sundriyal	7,000.00	-	-	7,000.00	19,000.00	-	-	19,000.00
Sh. Anil Kumar Rai	5,000.00	-	-	5,000.00	17,000.00	-	-	17,000.00
Sh. Sushil Kumar Jha	-	-	-	-	3,000.00	-	-	3,000.00
Sh. Yashwant Dev Panwar	-	5,625.00	-	5,625.00	-	13,125.00	-	13,125.00
Ms. Mercy James	-	-	-	-	8,000.00	-	-	8,000.00
Sh. T. Adarsh Mayya	-	-	-	-	6,000.00	-	-	6,000.00
Sh. Ujjwal Kumar	-	-	-	-	9,000.00	-	-	9,000.00
Ms. Deepak Kumar	-	-	-	-	23,400.00	-	-	23,400.00
Sh. Kunwar Singh	1,250.00	-	-	1,250.00	16,250.00	-	-	16,250.00
Sh. Bishram Bhakta	1,000.00	-	-	1,000.00	13,000.00	-	-	13,000.00
Sh. Dalip Kumar	3,000.00	-	-	3,000.00	15,000.00	-	-	15,000.00
Total	564,314.00	102,825.00	-	667,139.00	1,301,177.00	131,925.00	31,928.00	1,465,030.00

Annexure -2
REFUND FROM PROJECTS FINANCED (TIFAC REGULAR ACCOUNT) - INCOME

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(A) Home Grown Technology :								
Manufacture of Nutan Himveer Bukhari	700,000.00	-	-	700,000.00	-	-	-	-
Recovery of Cobalt from Zinc Waste	450,000.00	-	-	450,000.00	-	-	-	-
Developing, Designing & Manufacture	644,306.00	-	-	644,306.00	-	-	-	-
Commercialisation of Xierconium Nitride Coating using PVD Technique	1,300,000.00	-	-	1,300,000.00	-	-	-	-
Development & Marketing of 64 bit Parallel Co	33,224.64	-	-	33,224.64	-	-	-	-
Development of Robots for Manufacturing					2,000,000.00	-	-	2,000,000.00
Sub Total (A)	3,127,530.64	-	-	3,127,530.64	2,000,000.00	-	-	2,000,000.00
(B) Advanced Composites Programme								
Development of Composite Modular Acoustic Enclosure	450,000.00	-	-	450,000.00	-	-	-	-
Development of Energy Efficient Axial Flow FRP Fans					239,417.00	-	-	239,417.00
Development of Composite Sky Bus Coaches	726,972.00	-	-	726,972.00	2,180,916.00	-	-	2,180,916.00
Jute Composite Coponents For Footwear	2,323,354.00	-	-	2,323,354.00	551,213.00	-	-	551,213.00
Sub Total (B)	3,500,326.00	-	-	3,500,326.00	2,971,546.00	-	-	2,971,546.00
(C) Sugar Technology Mission								
Cane Separation System	255,000.00	-	-	255,000.00	-	-	-	-
Short Retention Clarifier	184,470.00	-	-	184,470.00	-	-	-	-
Sub Total (D)	439,470.00	-	-	439,470.00	-	-	-	-
Total (A) + (B) + (C) + (D) + (E)	7,067,326.64	-	-	7,067,326.64	4,971,546.00	-	-	4,971,546.00

Annexure 3
Establishment Expenditure (TIFAC Regular)

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
a) Salaries	68,196,446.00	4,727,831.00	-	72,924,277.00	66,126,161.00	4,088,135.00	-	70,214,296.00
Salary - Consolidated	1,929,211.00	660,518.00	-	2,589,729.00	3,376,778.00	1,194,240.00	-	4,571,018.00
Salary Arrear (01.01.2016 to 30.09.2018)	17,421,813.00	1,715,462.00	-	19,137,275.00	-	-	-	-
Salary Arrear 30% (01.10.2018 to 31.03.2019)	1,182,419.00	133,488.00	-	1,315,907.00	-	-	-	-
Internship Scheme	599,679.00	-	-	599,679.00	836,370.00	-	-	836,370.00
Project Associates	361,226.00	-	-	361,226.00	330,516.00	-	-	330,516.00
b) TIFAC Contribution to New Pension Scheme	5,945,112.00	-	-	5,945,112.00	4,981,005.00	-	-	4,981,005.00
c) Contribution to Provident Fund	1,867,512.15	238,502.00	-	2,106,014.15	2,078,632.95	142,956.00	-	2,221,588.95
d) Others (Specify)	-	-	-	-	-	-	-	-
Consultancy Fee (Others)	702,070.00	-	-	702,070.00	684,057.00	106,200.00	-	790,257.00
Consultancy Fee (Legal)	1,459,150.00	-	-	1,459,150.00	539,370.00	-	-	539,370.00
Consultancy Fee (Est.)	1,034,107.00	-	-	1,034,107.00	111,429.00	-	-	111,429.00
Hospitalisation Expenses	1,039,381.00	-	-	1,039,381.00	1,852,078.00	-	-	1,852,078.00
Honorarium	-	-	-	-	28,500.00	-	-	28,500.00
Medical Expenses	1,393,329.00	47,313.00	-	1,440,642.00	1,772,865.00	49,690.00	-	1,822,555.00
Leave Travel Concession	1,541,673.00	-	-	1,541,673.00	755,823.00	-	-	755,823.00
Gratuity	24,334,016.00	-	-	24,334,016.00	2,133,612.00	-	-	2,133,612.00
Leave Encashment (TIFAC Employees)	481,014.00	-	-	481,014.00	16,889,797.00	-	-	16,889,797.00
Leave Encashment (Deputation)	-	-	-	-	204,093.00	-	-	204,093.00
Encashment of Leave (TIFAC Employees)	3,522,304.00	-	-	3,522,304.00	-	-	-	-
Tuition Fee/Children Education Allowance	757,699.00	13,500.00	-	771,199.00	1,113,610.00	54,000.00	-	1,167,610.00
Salary of Accounts Assistant	-	-	240,060.00	240,060.00	-	-	172,645.00	172,645.00
Salary of Data Entry Operator	-	-	299,184.00	299,184.00	-	-	233,090.00	233,090.00
Salary of Training Assistant	-	-	301,345.00	301,345.00	-	-	233,090.00	233,090.00
Salary of Training Coordinator	-	-	652,475.00	652,475.00	-	-	720,550.00	720,550.00
Total	133,768,161.15	7,536,614.00	1,493,064.00	142,797,839.15	103,814,696.95	5,635,221.00	1,359,375.00	110,809,292.95

**Annexure 4
Administrative Expenses (TIFAC Regular)**

PARTICULARS	Current Year				Previous Year				TOTAL
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL	
Repair and Maintenance	648,766.00	13,806.00	-	662,572.00	1,091,407.00	11,600.00	-	1,103,007.00	
Rent, Rates and Taxes	35,200.00	-	-	35,200.00	298,834.00	-	-	298,834.00	
Car hire Charges	862,301.00	163,579.00	-	1,025,880.00	1,878,994.00	80,609.00	-	1,959,603.00	
Postage, Telephone and Communication Charges	732,438.00	50,150.00	-	782,588.00	1,155,113.00	69,923.00	-	1,225,036.00	
Printing, Stationary & Printing of Publications	1,355,297.00	17,060.00	-	1,372,357.00	1,750,770.00	10,412.00	-	1,761,182.00	
Travelling and Conveyance Expenses	107,125.00	7,964.00	-	115,089.00	113,411.00	2,401.00	-	115,812.00	
Subscription Expenses	46,144.00	2,010.00	-	48,154.00	87,645.00	1,487.00	-	89,132.00	
Professional Charges	338,270.00	-	-	338,270.00	116,114.00	-	-	116,114.00	
Auditors Remuneration									
Audit Fee	110,000.00	-	-	110,000.00	100,000.00	-	-	100,000.00	
GST on Audit Fee	25,380.00	-	-	25,380.00	18,000.00	-	-	18,000.00	
Tea/Water/Opening and Closing of Office	689,270.00	-	-	689,270.00	892,493.00	-	-	892,493.00	
Advertisement and Publicity	780,875.00	-	2,829,297.00	3,610,172.00	1,285,618.00	-	3,399,088.00	4,684,706.00	
Others (Specify)									
Bank Charges	1,322.88	1,072.69	-	2,395.57	9,759.50	1,165.89	1,261.75	12,187.14	
Misc. Office Expenses	1,426,015.00	87,381.00	-	1,513,396.00	803,043.00	16,635.00	-	819,678.00	
Membership Fee	80,712.00	-	-	80,712.00	237,180.00	-	-	237,180.00	
Manpower (Service Provider Agencies)	1,032,992.00	-	-	1,032,992.00	-	-	-	-	
Yoga Day	-	-	-	-	72,000.00	-	-	72,000.00	
Maintenance of Vishwakarma Bhavan	5,492,259.00	-	-	5,492,259.00	7,500,000.00	-	-	7,500,000.00	
Legal Charges	454,966.00	-	-	454,966.00	1,053,221.00	-	-	1,053,221.00	
PM Relief Fund (M/s APL PolyFab)	-	-	-	-	9,000.00	-	-	9,000.00	
Rajabhasha Committee Meeting	86,012.00	-	-	86,012.00	175,841.00	-	-	175,841.00	
Swatch Bharat Mission	21,890.00	-	-	21,890.00	42,495.00	-	-	42,495.00	
Web Portal Service/Applications	11,800.00	-	-	11,800.00	804.00	-	-	804.00	
Filing of Patent	-	4,869,120.00	-	4,869,120.00	-	7,511,805.00	-	7,511,805.00	
Honorarium to Experts	51,500.00	2,500.00	318,960.00	372,960.00	-	7,500.00	559,467.00	566,967.00	
Housekeeping of TIFAC Building	1,500,012.00	-	-	1,500,012.00	1,734,712.00	-	-	1,734,712.00	
Scholarship for Women Scientist	-	-	2,820,031.00	2,820,031.00	-	-	28,845,856.00	28,845,856.00	
Scholarship for Women Scientist (10th Batch)	-	-	23,376,359.00	23,376,359.00	-	-	-	-	
Patent Agents Exam Price (10th Batch)	-	-	1,400,000.00	1,400,000.00	-	-	-	-	
TAYDA for attending Orientation Programme	-	-	317,285.00	317,285.00	-	-	400,523.00	400,523.00	
Orientation Programme	-	-	1,314,241.00	1,314,241.00	-	-	1,065,180.00	1,065,180.00	
Contingency, Refresher for Alumni	-	-	430,670.04	430,670.04	-	-	609,875.58	609,875.58	
Overhead	-	-	-	-	-	-	3,886,727.00	3,886,727.00	
Web Based ICT Modules	-	-	31,928.00	31,928.00	-	-	29,454.00	29,454.00	
Interest Earned (2017-2018) (Written Back)	17,109,450.00	120,510.00	332,917.00	17,562,877.00	-	-	-	-	
Total	32,999,996.88	5,335,152.69	33,171,688.04	71,506,837.61	20,426,454.50	7,713,537.89	38,797,432.33	66,937,424.72	

**Annexure-5
PROJECT EXPENSES (TIFAC Regular Account)**

PARTICULARS	Current Year			Previous Year			
	TIFAC	PFC	WSSS	TIFAC	PFC	WSSS	TOTAL
(a) Follow-Up Action/Special Initiatives							
Relationship between GDP Growth and Technology Cau	710,000.00	-	-	-	-	-	-
Information & Communication Security and Financial Sector Security	970,528.00	-	-	1,155,000.00	-	-	1,155,000.00
Characterisation of the major Agro-Residue Biomass	663,000.00	-	-	-	-	-	-
Securing Individuals, Society and Infrastructure	399,781.00	-	-	-	-	-	-
TIFAC Brainstroming Session on Seaweed Cultivation	-	-	-	300,000.00	-	-	300,000.00
Sub-Total (a)	2,743,309.00	-	-	1,455,000.00	-	-	1,455,000.00
(b) IIASA - TIFAC Projects/Study/Membership Fee							
IIASA - TIFAC joint Workshop (TIFAC)	67,383.00	-	-	421,606.00	-	-	421,606.00
IIASA-TIFAC : Conservation of Agro-Biodiversity and Ecosystem Management : A Study in Indian Agrilicmatic Condition	-	-	-	1,172,262.00	-	-	1,172,262.00
IIASA- TIFAC Study on Evaluation of Soil Nutrient Budgets	-	-	-	1,042,658.00	-	-	1,042,658.00
TIFAC-IIASA Integrated Water Resources Management	-	-	-	1,281,556.00	-	-	1,281,556.00
IIASA- TIFAC Study on Climate Change Adaptation App	2,172,994.00	-	-	-	-	-	-
TIFAC-IIASA Study on Development & Application of Gains-City Model for Indian Cities with Neeri Mumbai	-	-	-	1,489,079.00	-	-	1,489,079.00
Sub-Total (b)	2,240,377.00	-	-	5,407,161.00	-	-	5,407,161.00
(c) HOME GROWN TECHNOLOGIES							
Project related expenses	152,280.00	-	-	-	-	-	-
Sub-Total (c)	152,280.00	-	-	-	-	-	-
(d) Technology Foresight for Automotive Research							
Technology Foresight for Automotive Research (TFAR)	103,338.00	-	-	121,776.00	-	-	121,776.00
Sub-Total (d)	103,338.00	-	-	121,776.00	-	-	121,776.00
Sub-Total (e)	103,338.00	-	-	103,338.00	-	-	103,338.00

**Annexure-5
PROJECT EXPENSES (TIFAC Regular Account)**

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(e) Technology Foresight Study in Security Technology								
Technology Foresight study on Security Technologies	20,812.00	-	-	20,812.00	386,194.00	-	-	386,194.00
Technology Study on Individual & societal Security and Infrastructure and Physical Security	-	-	-	-	1,700,000.00	-	-	1,700,000.00
Sub-Total (e)	20,812.00	-	-	20,812.00	2,086,194.00	-	-	2,086,194.00
(f) Project Related Expenditure								
Meeting Expenditure, Meeting (Project Related), Meeting (NITI AAYOG) TIFAC, DST Review Committee Meeting	1,130,686.00	38,825.00	-	1,169,511.00	1,959,371.00	22,424.00	-	1,981,795.00
Travelling Expenditure, Travel Abroad, Travel Expenditure (Project Expenditure)	2,409,991.00	157,159.00	-	2,567,150.00	3,886,191.00	122,440.00	-	4,008,631.00
Workshop Expenditure, Workshop :TIFAC/DST ITS Canada), Workshop on CIPC 2016	749,656.00	216,713.00	333,688.00	1,300,057.00	582,095.00	3,064,141.00	435,620.00	4,081,856.00
Sub-Total (f)	4,290,333.00	412,697.00	333,688.00	5,036,718.00	6,427,657.00	3,209,005.00	435,620.00	10,072,282.00
Total (a) to (f)	9,550,449.00	412,697.00	333,688.00	10,296,834.00	15,497,788.00	3,209,005.00	435,620.00	19,142,413.00

**Annexure -6
EXPENDITURE OF VISION 2020 and Vision 2035**

PARTICULARS	Current Year		TOTAL	Previous Year		TOTAL
	V2020	Vision 2035		V2020	Vision 2035	
Establishment & Administrative Expenditure						-
Printing, Stationary & Printing of Publications	-	351,680.00	351,680.00	-	440,057.00	440,057.00
Honorarium paid to Expertes	-	-	-	-	262,500.00	262,500.00
Sub Total (A)	-	351,680.00	351,680.00	-	702,557.00	702,557.00
Total (A)	-	351,680.00	351,680.00	-	702,557.00	702,557.00

Annexure – 6A
PROJECT EXPENDITURE OF VISION 2020

PARTICULARS	Current Year		Previous Year	
	V2020	Vision 2035	V2020	Vision 2035
	TOTAL	TOTAL	TOTAL	TOTAL
(a) Targeted Programme in Other Important Area				
MSME Expenses	427,064.00	-	18,527.00	-
MSME : System Engineering Approach to Design Motion	-	-	57,015.00	-
MSME : Analysis of Flow of Hot Gases over clutch plate of 16MNCR5, and Design and Development of Palet	-	-	87,900.00	-
MSME : Automation & Control of Special Purpose Pack	-	-	59,012.00	-
MSME : Design and Development of Hydratolic Rotational Jib Crane	-	-	87,450.00	-
MSME : Design, Simulation and Development of Acqui	-	-	69,915.00	-
MSME : Four Layered Printing Circuit Board for RF	-	-	61,923.00	-
MSME : Design & Static Analysis of Special Purpose	-	-	61,136.00	-
MSME : Design Simulation & Development of Reconstruction	-	-	70,406.00	-
MSME : Internship Scheme Stakeholder Interaction Meeting	716,573.00	-	-	-
MSME : Study for the Banarasi Silk Saree, Cotton Saree	360,000.00	-	-	-
MSME : Baktawng Wood Carpentry Cluster and Bairabi	510,375.00	-	-	-
MSME : Study for the Home Textile Manufacturing Cluster	200,000.00	-	-	-
MSME : Automation in Wire Cutting Methodology for Themocouple Manufacturing Unit and Automation	-	-	87,900.00	-
	2,214,012.00	-	661,184.00	-
			2,214,012.00	661,184.00

Annexure – 6A
PROJECT EXPENDITURE OF VISION 2020

PARTICULARS	Current Year		Previous Year	
	V2020	Vision 2035	V2020	Vision 2035
(a) Targeted Programme in Other Important Area				
Brainstorming Meeting 2035	-	17,788.00	-	1,573,703.00
Sub-Total (a)	-	17,788.00	-	1,573,703.00
(b) Project Related Expenditure				
Travelling Expenditure, Travel Abroad, Travel Expenditure (Project Expenditure)	-	63,948.00	-	288,603.00
Workshop Expenditure, Workshop :TIFAC/DST ITS Canada), Workshop on CIPC 2016	-	-	-	-
Sub-Total (b)	-	63,948.00	-	288,603.00
TOTAL (a) to (b)	2,214,012.00	81,736.00	661,184.00	1,862,306.00
				2,523,490.00

Annexure 7
SHORT TERM DEPOSITS WITH BANKS

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Short Term Deposits								
TIFAC	265,661,885.00	-	-	265,661,885.00	255,156,982.00	-	-	255,156,982.00
Flexi Account	2,000,000.00	-	-	2,000,000.00	6,000,000.00	-	-	6,000,000.00
Accrued Interest	7,357,932.00	-	-	7,357,932.00	3,198,189.00	-	-	3,198,189.00
Total	275,019,817.00	-	-	275,019,817.00	264,355,171.00	-	-	264,355,171.00

**Annexure – 8
EXPENSES PAYABLE**

PARTICULARS	Current Year				Previous Year				TOTAL
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL	
Expenses Payables Under TIFAC									
Salary Payable	5,105,704.00	349,007.00	124,280.00	5,578,991.00	4,979,143.00	342,451.00	91,940.00	5,413,534.00	-
Salary Arrear Payable (01.01.2016 to 30.09.2018)	17,421,813.00	1,715,462.00	-	19,137,275.00	-	-	-	-	-
Salary Arrear 30% Payable (01.10.2018 to 31.03.2019)	1,182,419.00	133,488.00	-	1,315,907.00	-	-	-	-	-
Court Loan (Sh.Anil Kumar Rai)	8,000.00	-	-	8,000.00	6,297.00	-	-	6,297.00	6,297.00
Consultancy Fee	273,500.00	-	-	273,500.00	355,867.00	-	-	355,867.00	355,867.00
NPS Contribution (Employees)	321,034.00	-	-	321,034.00	288,231.00	-	-	288,231.00	288,231.00
NPS Contribution (Employers)	321,034.00	-	-	321,034.00	-	-	-	-	-
CPF Contribution (Employers)	776,441.15	29,916.00	-	806,357.15	-	-	-	-	-
Experts Members Payable (Outsiders)	55,700.00	-	-	55,700.00	-	-	-	-	-
IT Delhi (Auditorium & Computer Lab)	33,500.00	-	-	33,500.00	-	-	-	-	-
M/s Ramesh Sethi & Associates	-	-	-	-	25,875.00	-	-	25,875.00	25,875.00
M/s Bhagwati International	-	-	-	-	130,935.00	-	-	130,935.00	130,935.00
M/s Sarathi Enterprises, New Delhi	-	-	-	-	15,400.00	-	-	15,400.00	15,400.00
M/s Bagga Tours and Travels	-	-	-	-	170,268.00	-	-	170,268.00	170,268.00
M/s Himazine	-	-	-	-	17,260.00	-	-	17,260.00	17,260.00
M/s R G Catering Services	-	-	-	-	38,162.00	-	-	38,162.00	38,162.00
M/s Ashok Travels and Tours	465,947.00	61,048.00	-	526,995.00	241,489.00	41,305.00	-	282,794.00	282,794.00
M/s Omnitel Automations Pvt. Ltd.	-	-	-	-	41,817.00	-	-	41,817.00	41,817.00
M/s Gobind Computers Pvt. Ltd.	14,600.00	-	-	14,600.00	-	-	-	-	-
M/s S S Enterprises, New Delhi	40,150.00	-	-	40,150.00	-	-	-	-	-
M/s New VIP Tourist, New Delhi	10,261.00	5,978.00	-	16,239.00	-	-	-	-	-
M/s Vishal Taxi Services, New Delhi	68,139.00	4,219.00	-	72,358.00	-	-	-	-	-
M/s Lal Lahiri & Sahotra	-	3,474.00	-	3,474.00	-	-	-	-	-
M/s Holistic Food Centre	-	126,227.00	-	126,227.00	-	-	-	-	-
Sh Eshwar Vikas, Bangalore	14,057.00	-	-	14,057.00	-	-	-	-	-
M/s GMC Beverages Pvt. Ltd.	-	-	-	-	58,888.00	-	-	58,888.00	58,888.00
M/s S K Juneja & Associates	110,000.00	-	-	110,000.00	131,000.00	-	-	131,000.00	131,000.00
Income Tax on Audit & Return	31,000.00	-	-	31,000.00	-	-	-	-	-
GST on Audit Fee	25,380.00	-	-	25,380.00	-	-	-	-	-
M/s Director, New Delhi HPO, Delhi	2,069.00	-	-	2,069.00	11,775.00	-	-	13,844.00	13,844.00
M/s Unecops Technologies Limited, New Delhi	2,346.00	-	-	2,346.00	-	-	-	-	-
M/s Basavaraj Misranagi & Co.	14,160.00	-	-	14,160.00	-	-	-	-	-
M/s MTNL	-	-	-	-	2,618.00	378.00	-	3,000.00	3,000.00
M/s Perfect Traders	32,324.00	-	-	32,324.00	-	-	-	-	-
M/s VIBA Press Pvt. Ltd., New Delhi	16,800.00	-	-	16,800.00	-	-	-	-	-
M/s Lex Orbis Consulting Pvt. Ltd.	-	48,369.00	-	48,369.00	124,464.00	-	-	172,833.00	172,833.00
M/s Sunil Sharma	5,756.00	-	-	5,756.00	-	-	-	-	-
M/s Anand & Anand	-	-	-	-	629,550.00	-	-	629,550.00	629,550.00
M/s K&S Partners	-	-	-	-	450.00	-	-	450.00	450.00
M/s Sing & Associates	-	-	-	-	78,641.00	-	-	78,641.00	78,641.00
M/s Anjan Sen & Associates	-	-	-	-	79,435.00	-	-	79,435.00	79,435.00
Orientation Programme	-	-	-	-	-	-	-	-	-
Scholarship for Women Scientists	-	-	180,020.00	180,020.00	-	-	-	-	-
M/s Uma Dev & Sons	358,363.00	-	4,274,367.00	4,632,730.00	-	-	-	4,632,730.00	4,632,730.00
Sub Total (A)	26,621,297.15	2,866,388.00	4,578,667.00	33,735,352.15	6,538,895.00	1,296,674.00	2,335,233.00	10,166,502.00	10,166,502.00
TDS Payable	824,707.00	119,965.00	1,361.00	946,033.00	737,168.00	171,380.00	613.00	909,151.00	909,151.00
TDS Total (B)	824,707.00	119,965.00	1,361.00	946,033.00	737,168.00	171,380.00	613.00	909,151.00	909,151.00
Total A+B	27,446,004.15	2,886,353.00	4,580,028.00	34,681,385.15	7,275,753.00	1,468,054.00	2,335,846.00	11,077,653.00	11,077,653.00

Annexure - 9
Earnest Money from Sugar Factories

PARTICULARS	Current Year			Previous Year			
	TIFAC	PFC	WSSS	TIFAC	PFC	WSSS	TOTAL
Earnest Money held from Sugar Factories							
Earnest Money : Sakthi Sugars Ltd	100,000.00	-	-	100,000.00	-	-	100,000.00
Earnest Money : Simbhaoli Sugar	300,000.00	-	-	300,000.00	-	-	300,000.00
Sub Total (A)	400,000.00	-	-	400,000.00	-	-	400,000.00
Earnest Money from Parties							
M/s Nimbus Harbour Pvt Ltd.	20,000.00	-	-	20,000.00	-	-	20,000.00
M/s Bhagwati International	-	-	-	50,000.00	-	-	50,000.00
M/s Jai Maa Durga Traders	-	-	-	25,000.00	-	-	25,000.00
M/s Perfect Traders	5,000.00	-	-	5,000.00	-	-	5,000.00
M/s Omitech Automations Pvt Ltd	5,000.00	-	-	5,000.00	-	-	5,000.00
M/s Deepak Tours & Travels	-	-	-	-	-	-	-
M/s Vishal Taxi Services, New Delhi	50,000.00	-	-	50,000.00	-	-	50,000.00
M/s Begga Tours and Travels	-	-	-	-	-	-	-
M/s Dip Technologies Pvt. Ltd.	5,000.00	-	-	5,000.00	-	-	5,000.00
M/s Asha Enterprises Pvt. Ltd.	50,000.00	-	-	50,000.00	-	-	50,000.00
M/s AFE Consultants Pvt. Ltd.	10,000.00	-	-	10,000.00	-	-	10,000.00
M/s GMC Beverages Pvt Ltd.	-	-	-	5,000.00	-	-	5,000.00
M/s Beltek Canadian Water Ltd. (Aquaflina)	5,000.00	-	-	5,000.00	-	-	5,000.00
New VIP Tourist, New Delhi	50,000.00	-	-	50,000.00	-	-	50,000.00
Sh Sai Aqua Logistics	5,000.00	-	-	5,000.00	-	-	5,000.00
M/s Uma Devi & Sons	50,000.00	-	-	50,000.00	-	-	50,000.00
M/s Pan Tech, New Delhi	20,000.00	-	-	20,000.00	-	-	20,000.00
Security Deposit : M/s Pink House Keeping	18,784.00	-	-	18,784.00	-	-	18,784.00
M/s NSE IT	-	-	50,000.00	50,000.00	-	50,000.00	50,000.00
Sum Total (B)	293,784.00	-	50,000.00	343,784.00	-	50,000.00	288,784.00
TOTAL A + B	693,784.00	-	50,000.00	743,784.00	-	50,000.00	688,784.00

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

	Receipts	Current Year	Previous Year
1	Opening Balances		
	Cash in hand	7,143.00	6,822.00
	Cash in Hand (Under PFC New Account)	5,804.00	4,789.00
	Cash in Hand (Under WSSS New Account)	471.00	4,764.00
	Bank balances		
	In Current Accounts		-
	In Deposit Accounts	258,355,171.00	246,510,511.00
	Short Term Deposite (Flexi Deposit Account)	6,000,000.00	
	Savings Accounts	45,610,668.47	21,895,984.97
	Savings Accounts (Under PFC New Account)	303,561.84	5,130,412.73
	Savings Accounts (Under WSSS New Account)	3,457,906.91	317,744.24
	Advance for Franking Machine	10,359.00	10,359.00
2	Grants Received		
	From Government of India - Plan (TIFAC)	170,923,000.00	160,000,000.00
	From Government of India - Non Plan (TIFAC)		-
3	Interest Received		
	On Bank Deposits (TIFAC)	-	11,466,197.00
	On Bank Savings (TIFAC)	-	2,046,775.00
	Loans Advances etc. (Staff advances)	-	206,546.00
	Interest from Income Tax/ Projects	-	922,932.00
	Interest on Debtors & other Receivable (TIFAC-SIDBI Revolving Fund)	-	2,467,000.00
4	Other Income (Specify)		
	Refund from HGT Project	3,127,530.64	2,000,000.00
	Refund from Advance Composite Programme	3,500,326.00	2,971,546.00
	Refund from Sugar Technology Mission	439,470.00	
	Other Income (Schedule 18)	1,809,907.00	5,845,049.00
	Refund from Fly Ash Utilization Programme		
5	Receipts fro Patent Facilitating Centre		
	Grant in Aid (Under PFC New Account)	20,000,000.00	7,000,000.00
	Ekaswa A&B CD RoM (Under PFC New Account)	163,602.00	395,717.00
	Interest from Bank (Savings) (Under PFC New Account)	-	120,510.00
6	Receipts for Women Scientist Scholourship Scheme		
	Grant in Aid (Under WSSS New Account)	30,000,000.00	48,076,415.00
	Other Income	1,331,465.00	
	Interest from Bank (Savings) (Under WSSS New Account)	-	332,917.00
7	Other Receits (Give Details)		
	Nominal Charges for Dissemination of TIFAC Reports		-
	Income from Royalty	21,640.00	18,425.00
	Tender for Housekeeping at TIFAC		-
	Security Deposit	35,200.00	
	RTIA Questions	240.00	70.00
	Grant Interdisciplinary Cyber Physical Systems (ICPS)		5,640,000.00
	Grant STI Policy Fellowship DST		-
	Grant for Science and Heritage Research Initiative (SHRI)		-
	Grant : Global Technology Watch Growup		-
	Technology Assessment of Start ups for Tax Exemption	501,000.00	903,000.00
	Grant CV Raman International Fellowship (DST FICCI)		180,000.00
	Grant Data Base of Technologies for Management of Muncipal Solid Waste		731,991.00

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

	DRDO's Workshop Expenses (PFC)	331,823.00	
	WIPO's Workshop Expenses (PFC)	14,728.00	
	Training of Trainers Programme	15,714.00	
	UNIDO Workshop	694,288.00	
	Advance : Balmar Lawrie & Co. Ltd.	131,025.00	
	Advance : Current Science Association, Bangalore	40,000.00	
		546,832,043.86	525,206,476.94

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

Receipts	Current Year	Previous Year
National Steering Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)	1,167,273.70	-
Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science	1,433,300.00	
Bharat Kosh (Govt.)	41,012,182.00	
CPF Trust (TIFAC)		1,356,375.95
GSLIS		21,373.00
Staff Loan	797,891.00	88,259.00
EMD/Security Deposit (TIFAC) of (Annexure - 9)	55,000.00	
URDIP Pune (SSWS)		-
Payable by SSWS to PFC (Contra)		-
Payable by SSWS to TIFAC (Contra)		-
Interest Accrued (Under WSSS New Account)		52,508.00
IIT-TIFAC Maintenance (Provision)		7,500,000.00
Advance DAVP		707,365.00
Advance : Jawaharlal Nehru Aluminium Research Development	160,600.00	
Advance : Akash Health Care Private Limited	36,900.00	
Advance : Ishwar Charitable Trust (ICARE Eye Hospital)	18,053.00	
Advance : Forest Research Institute, Dehradun	47,515.00	
Advance : IPIRTI, Bangalore	184,000.00	
House Rent Recoverable from Prof. Prabat Ranjan		17,500.00
Debts Outstanding for a period exceeding six months		415,439.00
Superannuation / Pension/ Gratuity (Provision)	23,545,754.00	1,133,612.00
Accumulated Leave Encashment	3,166,488.00	16,524,257.00
Recovery from Assets	-	69,024.00
Total (ii)	71,624,956.70	27,885,712.95
Total (i) + (ii)=(A)	618,457,000.56	553,092,189.89

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

	Particulars	Current Year		Previous Year	
1	Expenses				
a	Establishment Expenses (Schedule 21)	133,768,161.15		103,814,696.95	
	Add : Opening Expenses Payable	4,979,143.00		5,187,173.00	
	Less : Expenses Payable	23,709,936.00	115,037,368.15	4,979,143.00	104,022,726.95
b	Administrative Expenses (Schedule 21)	32,999,996.88		20,426,454.50	
	Add : Opening Expenses Payable	2,296,610.00		1,943,414.00	
	Add : Loss of sale of Fixed Assets	-		-	
	Less : Payables	3,736,068.15	31560538.73	2,296,610.00	20073258.50
	Less : Loss on Sale of Fixed Assets				
	(Previous year figure does not include obsolescence Expenses in it.)				
c	Expenditure on Grants, Subsidies etc. (As per Schedule 22)		9,550,449.00		15,497,788.00
2	Payments made against funds for various projects				
	Establishment Expenses (Under PFC New Account)	7,536,614.00		5,635,221.00	
	Add : Opening Expenses Payable	342,451.00		322,834.00	
	Less : Expenses Payable	2,197,957.00	5,681,108.00	342,451.00	5,615,604.00
	Administrative Expenses (Under PFC New Account)	5,747,849.69		10,922,542.89	
	Add : Opening Expenses Payable	1,125,603.00		670,131.00	
	Less : Expenses Payable	488,396.00	6,385,056.69	1,125,603.00	10,467,070.89
	Payments made against funds for various projects				
	Establishment Expenses (Under WSSS New Account)	1,493,064.00		1,359,375.00	
	Add : Opening Expenses Payable	91,940.00		83,345.00	
	Less : Expenses Payable	124,280.00	1,460,724.00	91,940.00	1,350,780.00
	Administrative Expenses (Under WSSS New Account)	33,505,376.04		39,233,052.33	
	Add : Opening Expenses Payable	2,241,906.00		2,699,014.00	
	Less : Expenses Payable	4,455,748.00	31,291,534.04	2,241,906.00	39,690,160.33
	Grant Utilisation - Vision 2020	2,214,012.00		661,184.00	
	Add : Opening Expenses Payable			-	
	Less : Expenses Payable		2,214,012.00	-	661,184.00
	Grant Utilisation - Technology Vision 2035		433,416.00		2,564,863.00
	Addition in Fixed Assets				
	Office Equipment		2,728,152.00		599,074.00
	Library Book		41,611.00		93,037.00
	Furniture & Fixtures		21,537.00		893,245.00
	Computer & Peripherals		265,952.00		133,156.00
	Interior Work of TIFAC Building		-		91,250.00
	Fire Alarm System at TIFAC Building & Fire Extinguishers		-		57,418.00
	Computer & Paripherals (Ext. Project)		86,700.00		1,052,213.00
	Furniture & Fixtures (PFC)				48,000.00
	Office Equipment (PFC)		3,779.00		225,380.00
	Computer & Paripherals (PFC)		401,160.00		15,020.00
	Computer & Paripherals (WSSS)		77,746.00		401,827.00
3	Other Payments (Specify)				
	Earnest Money /Security Deposit				15,000.00
	Stale Cheques (TIFAC)		109,064.00		288,290.00
	Advance DAVP		3,445,664.00		-
	Salary Recoverable (Dr Aruna)		10,875.00		

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

National Steering Committee on Tech Need Assessment (TNA) for Habitat Sector		1,390,558.00		1,702,008.00
Advance : Balmer Lawrie & Co Ltd.				243,501.00
Advance : Jawaharlal Nehru Aluminium Research Development				160,600.00
Advance : Akash Health Care Private Limited				36,900.00
Advance : Ishwar Charitable Trust (ICARE Eye Hospital)				18,053.00
Advance : Forest Research Institute, Dehradun				47,515.00
Advance : OPIRTI, Bangalore				184,000.00
Advance : Current Science Association, Bangalore				40,000.00
Advance : Shanti Gopal Hospital				
Advance : Chennai Centr - Kiran IPR		145,000.00		
Advance : Pune Centre Kiran IPR		200,000.00		
CV raman International Fellowship (DST FICCI)		20,000.00		160,000.00
Database of Technologies for Management of Muncipal Solid Waste				456,991.00
Global Tecnology Watch Group		1,358,618.00		4,692,150.00
Interdisciplinary Cyber Physical System (ICPS)		2,328,799.00		2,050,297.00
Technology Assessment of Start Ups for Tax Exemption		313,059.00		481,463.00
TIFAC-SIDBI Revolving Funds)		1,714,800.00		17,467,000.00
CPF Turst		1,327,514.95		
GSLIS		1,700.00		
Unspent Balance of Running Projects		283,723.00		
Due to DST (Unspent Balance Amount in respect of Old Projects)		395,745.00		
IIT-TIFAC Maintenance (Provisions)		8,724,679.00		7,604,464.00
Ms. Sangeeta Nagar : Recovery of Laptop		-		
Sh T Chandrasekhar (TDS Recovery)		-		
		229,010,642.56		239,201,287.67

Technology Information Forecasting & Assessment Council Receipts & Payments for the Period the Year Ended 31.03.2019

Particulars	Current Year	Previous Year
Sh Sanjay Singh (Transport Recovery)	-	
Depreciation (Written Back)	-	
TDS Receivable from Income Tax Department (DIPP)	52,072.00	90,300.00
Permal Wallage Pvt. Ltd	3,000.00	
Interest Accrued From Union Bank of India (PFC)	1,049,838.00	49,517.00
Closing Balance		
Cash in Hand	8,720.00	7,143.00
Cash in Hand(Under PFC New Account)	5,804.00	5,804.00
Cash in Hand(Under WSSS New Account)	5,849.00	471.00
Cash at Bank	103,760,963.98	45,610,668.47
Cash in Bank (Under PFC New Account)	9,332,235.15	303,561.84
Cash in Bank (Under WSSS New Account)	197,699.87	3,457,906.91
Short Term Deposite	273,019,817.00	258,355,171.00
Short Term Deposite (Flexi Deposit Account)	2,000,000.00	6,000,000.00
Franking Machine	10,359.00	10,359.00
Total (ii)	389,446,358.00	313,890,902.22
Total (i) + (ii) = (B)	618,457,000.56	553,092,189.89

S. K. JUNEJA & ASSOCIATES
CHARTERED ACCOUNTANTS

4704, Ashoka Enclave, Plot No. 8A
Sector-11, Dwarka, Delhi-110075
Phone: 9810331588, 9810641785
E-mail: madhujun94@gmail.com

INDEPENDENT AUDITOR'S REPORT

The Trustees
TIFAC Contributory Provident Fund Trust
New Delhi

REPORT ON THE FINANCIAL STATEMENTS

1. We have audited the accompanying financial statements of TIFAC Contributory Provident Fund Trust, New Delhi, (hereinafter referred to as 'Trust') which comprise the Statement of Affairs as at March 31, 2019.

MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

2. These financial statements are the responsibility of the management of TIFAC Contributory Provident Fund Trust with respect to the preparation of these financial statements that give a true and fair view of the financial position and financial performance of the Trust in accordance with the accounting principles generally accepted in India including Accounting Standards issued by the Institute of Chartered Accountants of India. This responsibility includes maintenance of adequate accounting records in accordance with the for safeguarding the assets of the Trust and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; design, implementation and maintenance of adequate internal financial controls, that are operating

effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY

3. Our responsibility is to express an opinion on these financial statements based on our audit. We have taken into account the accounting and auditing standards and matters which are required to be included in the audit report under the provisions of the Act and the Rules made thereunder. We conducted our audit in accordance with the Standards on Auditing. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.
4. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial

control relevant to the Trust's preparation of the financial statements, that give a true and fair view, in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on whether the Society has in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by the Society's management and Governing Council, as well as evaluating the overall presentation of the financial statements.

5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

OPINION

6. In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required by the Act in the manner so required and give a true and fair view in

conformity with the accounting principles generally accepted in India of the state of affairs of the Trust as at 31st March 2019 however subject to the following:

The Funds of the Trust should be invested as per the Investment Pattern laid in Government of India, Ministry of Finance (Department of Economic Affairs) Notification No. F.12(1)-DD/86 dated 17th March, 1986. But the above mentioned notification is not available with the Trust and the Funds are being invested into Fixed Deposits with the Nationalised Banks.

7. We Further state that

- a) we have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;
- b) in our opinion proper books of account as required by law have been kept by the Trust so far as appears from our examination of those books;
- c) the Statement of Affairs dealt with by this Report are in agreement with the books of account;

Date: 06-09-2019
Place: Delhi

For S K Juneja & Associates
Chartered Accountants
Firm Registration No. 012484N

Sd/-
(CA. Madhu Juneja)
(MRN:089326)
Partner
M. No. 091449

**Contributory Provident Fund of TIFAC
Statement of Affairs as on 31st March, 2019**

Previous Year as on 31.03.2018	Particulars	Current Year as on 31.03.2019	Previous Year as on 31.03.2018	Particulars	Current Year as on 31.03.2019
	Employees Contribution				
32,752,255.00	Opening Balance	31,792,235.00	2,887,088.02	Union Bank of India S/b A/C	2,852,495.41
3,408,782.00	Add: Received during the year	3,530,135.00	520,330.00	Special deposit with RBI	520,330.00
2,206,588.00	Add: Interest Accrued During the Year	2,552,203.00	40,972.06	Interest due on RBI Deposit	-
38,367,605.00		37,874,573.00	48,108,598.00	Short Term deposit with UBI including interest accrued thereon Less Bank Charges	54,219,457.44
6,575,370.00	Less: Paid during the year	2,109,161.00	632,126.00	Flexi Deposit- UBI	659,216.00
31,792,235.00		35,765,412.00		Loan/ Advances to staff members	
270,500.03	Add: Employees Subscription for the m/o March 2019	308,161.00	103,818.00	Shri Arghya Sardar	25,950.00
32,062,735.03	Total (A)	36,073,573.00	42,000.00	Sh. M Suresh Babu	-
	TIFAC Contribution		17,057.00	Ms. Mala Sarpal	-
20,214,285.00	Opening Balance	21,671,730.00			
1,160,280.00	Add: Received during the year	1,571,992.00	270,500.00	Receivable from TIFAC account of Employer	477,170.00
1,653,516.00	Add: Interest Accrued During the Year	1,765,189.00		& Employee Contribution for March '2019	
23,028,081.00		25,008,911.00			
1,356,351.00	Less: Paid during the year	1,859,526.00	1,111,975.95	Receivable from TIFAC account difference in	637,348.15
21,671,730.00		23,149,385.00		Interest earned & paid by the CPF Trust	
-	Add: Employer Subscription for the m/o March 2019	169,009.00			
21,671,730.00	Total (B)	23,318,394.00			
53,734,465.03	Total (A+B)	59,391,967.00	53,734,465.03	Total	59,391,967.00

Subject to Schedule-I, forming part of the Balance Sheet.
As per our report of even date attached herewith.

For S K Juneja & Associates
Chartered Accountants
FRN : 012484N

Sd/-
CA. MADHU JUNEJA
Partner
Membership No.089326
Date : 06-09-2019
Place : New Delhi

Sd/-
Mukesh Mathur
Chairman

Sd/-
Deep Prakash
Trustee

CONTRIBUTORY PROVIDENT FUND OF TIFAC

SCHEDULE FORMING PART OF ACCOUNTS FOR THE YEAR ENDED 31.03.2019

SCHEDULE – I

SIGNIFICANT ACCOUNTING POLICIES AND NOTES ON ACCOUNTS

1. The financial statements are prepared under the historical cost convention on going concern basis. The Trust follows the mercantile system of accounting except interest received on special deposit with Reserve Bank of India (RBI) thru Union Bank of India (UBI) on calendar year basis & hence accounted for on receipt basis.
2. The Trust follows the Rule as notified by Government of India, Ministry of Finance, Department of Expenditure under sub section (2) of section 8 of the Provident Funds Act, 1925 (19 or 1925), vide their notification no. 4(1)-EV/92 (II) dated 10th August, 1993 and have also added to the schedule to the said Act the name of Technology information, Forecasting and Assessment Council (TIFAC) under sub section (3) of Section 8 of the said Act, Vide Act, vide notification no. 4(1)-EV/92(I) dated 10th August, 1993.
3. CPF Trust Account collects money from the staff of TIFAC as well as from TIFAC as employer and invests this amount in Fixed Deposits of Nationalized Banks on which interest is earned as per the prevailing bank rates. Similarly the trust provides interest to the staff at the rates prescribed in CPF Act from time to time. Which results in difference of interest earned & interest paid amount. During the Financial Year 2018-19 there was a deficit of Rs. 8,90,548.15 with the CPF Trust due to difference in interest provided on the balance of employees and interest earned on deposits with the Nationalised Banks and the same to be recovered from the TIFAC. During the Financial Year 2018-19 an amount of Rs. 2,53,200/- has already been recovered from the TIFAC on this account and balance Rs. 6,37,348.15 has been shown as recoverable.

4. Rs. 40,972.06 Interest on RBI deposit wrongly shown as receivable as on 31.03.2018, rectified during the Financial Year 2018-19.
5. Previous year's figures have been regrouped / rearranged wherever found necessary to make them comparable with current year figures.

As per our report of even date attached herewith

For S K Juneja & Associates
Chartered Accountants
FRN: 012484N

Sd/-
CA. Madhu Juneja
(Partner)

MRN: 089326

Sd/-
Deep Prakash
Trustee

Sd/-
Mukesh Mathur
Chairman

Dated: 06-09-2019
Place: New Delhi



TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL (TIFAC)
(AN AUTONOMOUS BODY OF DEPARTMENT OF SCIENCE & TECHNOLOGY, GOVT. OF INDIA)

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