



2022-23 ANNUAL REPORT

**TECHNOLOGY INFORMATION, FORECASTING
AND ASSESSMENT COUNCIL**

(An Autonomous Body of Department of Science and Technology, Govt. of India)



**TECHNOLOGY INFORMATION,
FORECASTING AND ASSESSMENT COUNCIL
(TIFAC)**

AN AUTONOMOUS BODY OF DEPARTMENT OF SCIENCE & TECHNOLOGY,
GOVERNMENT OF INDIA



**ANNUAL REPORT
2022-23**

TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL

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Nominee of Secretary, DST	Member
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EXECUTIVE SUMMARY

TIFAC exhibits ubiquity in its offered services and has been pioneering in mapping future technology trajectories for the nation; came up with a variety of foresight reports comprising short, medium and long term time scale. TIFAC continues to demonstrate some unique models of innovation support and technology development, is deeply engaged in research, technology development & advocacy on a range of S&T domain interfacing society wide technology development through various programmes.

TIFAC took up several initiatives on climate change associated activities. In response to the Hon'ble PM's commitment at Glasgow (COP 26) in 2021, TIFAC prepared a decarbonization roadmap for Industries which covers sectors mainly, Energy, and Industry (Steel, Cement, Aluminium) through large scale interactions with Industry groups. In addition, TIFAC participated in the COP 27 side events of India at Sharm-El-Shaikh, Egypt where their report *"Decarbonization Roadmap for Indian Industries – A Journey Towards Net Zero Ensuring Sustainability"* was released. TIFAC also hosted a Panel discussion in partnership with DST on *"Technology Needs Assessment for Sustainable Life"* during the side event which highlighted the concept of sustainable living that demands judicious use of natural resources without compromising with the needs for future generations.

TIFAC also felt a need to make Indian MSMEs a Carbon Neutral, which contributes 30% to India's GDP. Without decarbonizing the energy intensive MSME cluster, achieving India's commitment to become a carbon-neutral economy by 2030, and subsequently net-zero emissions by 2070, is quite difficult. TIFAC's initiative would help / support the gradual shifting of the MSMEs towards decarbonizing their production and supply chain. TIFAC partnered with SIDBI to identify scalable green and clean technologies, where TIFAC will support SIDBI through the assessment of technologies.

Under Transport & Energy Division a project on *'Estimation of Real-Life Fuel Economy of Indian Vehicles by a Data Driven Approach'* was taken up with the objectives to develop a dataset of representative real-life fuel economies of vehicles for use in lifecycle analysis (LCA) tools for the Indian transport sector based on a reconciliation of top down and bottom-up analysis considering factors such as mileage, loading factor, impacts of age etc.

TIFAC has initiated the project on preparing the Technology Vision 2047 document. It would envisage the rapid technological development and geo political changes across the globe coupled with India's mandate for technology supremacy and Atma Nirbharta. The overall objective would be to delineate developmental path for New India to achieve independence in true spirits, technologically and strategically in line with the Vision of the Hon'ble Prime Minister and therefore, the narrative of this vision document is "Striding towards Technology Independence a self-reliant and climate resilient developed India".

Translating the foresight action on the ground, TIFAC in coordination with NECTAR and CSIR-CFTRI has taken an initiative to establish a mobile fruits & vegetables processing unit for the North Eastern Region. It is expected to make value addition to local produce which would reduce wastage and enhance income of farmers to facilitate the Food Processing sector in the NER.

Under the IPR division of TIFAC, 28 Indian patents and two European and one US patents were granted. TIFAC IP Protection and Commercialization Cell (TIPCC) was initiated which would primarily work for IP Protection and Commercialization. It would offer a complete package for IP management and technology transfer in India and abroad through a single platform for maximizing the benefits of R&D and appropriately harnessing the IP potential of institutions and innovators. Under the KIRAN IPR (WOS-C) 12th Batch, TIFAC imparted one-year training to 87 women scientists successfully. To encourage women from the North-East so as to take benefit of the one-

year programme, a new Coordination Centre under WISE IPR Programme was opened at Assam Science Technology & Environment Council (ASTEC), Guwahati.

Under Srijan programme, 19 new project proposals were identified and technically assessed in terms of innovation content, techno economic feasibility, readiness level, market potential, business plan etc. and recommended 03 project proposals for financial appraisal by SIDBI towards providing support for scaling up. Through the ATMA program which started during the last financial year, identified over 80 patented technologies and assessed them for providing handholding support. Under the support of A2K+ program of the Department of Scientific and Industrial Research (DSIR), TIFAC identified approximately 100 indigenous technologies spanning in the range of TRL4-6. The list of technologies is being collated in the form of a compendium to address the challenges of technology commercialization.

Under the MSME clusters programme, TIFAC started nine Technology Gap Analysis Study for MSME clusters across the country. Through the TAP program, TIFAC has long term vision to support and handhold MSME clusters by technology mapping & gap analysis, TIFAC has established five (05) TAPs in different regions of the country.

TIFAC launched a tele digital health pilot demonstration project, as an initiative towards 'Swasth Bharat', in collaboration with IITM Pravartak Technologies Foundation and CDAC- Mohali in March 2022. Three Outreach Academic Partners (OAPs) namely., DDUGU, BHU and NIT-Manipur were outreach partners to collect the Electronic Health Record (EHR), data which is being stored on cloud / portal created by CDAC. Through the project, a web based interface with Mobile Application (Android)– an integrated platform for tele -diagnosis has been developed by CDAC to capture different diagnostic parameters of patients/persons.

TIFAC in collaboration with CSIR-CSMCRI and ICCSIR, Mandvi-Kutch, Gujarat implemented a project 'Technology assessment for edible seaweed production (*Monostroma sp.*) and seedling production (*Gracilaria dura*)'. The project has established the feasibility of tank cultivation of *Monostroma sp.* and seedling production of *Gracilaria dura* under semi-controlled outdoor conditions along the Indian coast. The project can collectively contribute towards sustainable economic growth of the nation.

Strengthening the international outreach, several collaborative studies/projects are underway with IIASA, Luxemburg, Austria. TIFAC organized the International Conference on Systems Analysis for Enabling Integrated Policy Making in August at New Delhi to build on the expertise and interlinkages between the system analysts' communities in Asia. It was an event to mark the 75th Anniversary of India's Independence and the 50th Anniversary of IIASA, Austria.

TIFAC plays a vibrant knowledge partner role on emerging technologies and an important role in the country's technology space through technology foresight exercises, technology information services and demonstrating models of technology development through academia-R&D-industry interaction. It will continuously strive to fill critical gaps in the overall S&T system of India through required technology intervention, supporting innovation and decision support systems. TIFAC also endeavoured to work for Net Zero Emissions in tandem with Hon'ble PM Vision of Net Zero by 2070 with a special focus on MSME clusters through adopting required decarbonizing technology and policy intervention.

(Pradeep Srivastava)
Executive Director
TIFAC

ACRONYMS (For Annual Report 2022-2023)

ABHA: Ayushman Bharat Health Account
AES: Advanced Encryption Standard
AI: Artificial Intelligence
AICTE: All India Council for Technical Education
AIIMS: All India Institute of Medical Sciences
API: Active Pharmaceutical Ingredients
AQM: Air Quality Monitoring
ASSOCHAM: Associated Chambers of Commerce and Industry of India
ATMA: Assessment of Technology Maturity for AatmaNirbharta
AYUSH: Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BBCI: Bhubaneswar Borooah Cancer Institute
BPCL: Bharat Petro Chemical Limited
C-CAMP: Centre for Cellular and Molecular Platform
C-DAC: Centre for Development of Advanced Computing
CEO: Chief Executive Officer
COP: Conference of Parties
COVID-19: Coronavirus disease
CPCB: Central Pollution Control Board
CPR: Centre for Policy Research
CRISPR: Clustered regularly interspaced Short Palindromic Repeats
CDRI: Central Drug Research Institute
CFTRI: Central Food Technological Research Institute
CSMCRI: Central salt & marine Chemicals Research Institute
IICB: Indian Institute of Chemical Biology
IICT: Indian Institute of Chemical Technology
NIIST: National Institute for Interdisciplinary Science and Technology
CT ICD: Computed Tomography- International Classification of Disease
CTCN: Climate Technology centre and Networks
CVC: Central Vigilance Commission
DDUGU: Deen Dayal Upadhyaya Gorakhpur University
DICOM: Digital Imaging and Communications in Medicine
DNA: Deoxyribonucleic Acid

DoNER: Development of North Eastern Region
DRDO: Defence Research and Development Organisation
DST: Department of Science & Technology
EP: European patent
EU: European Union
FHIR: Fast Healthcare Interoperability Resources
FICCI: Federation of Indian Chambers of Commerce & Industry
FMCG: Fast-moving Consumer Goods
GAINS: Greenhouse Gas and Air Pollution Interactions and Synergies
GDP: Gross Domestic Product
GHG: Green House Gas
GI: Geo-Information
GIS: Geo-Information System
Gol: Government of India
GPS: Global Positioning System
HCG: Human chorionic gonadotropin
HINDALCO: Hindustan Aluminium Corporation Limited
HIV: Human Immunodeficiency Viruses
HMHDPE: High Molecular High-density Polyethylene
IC: Integrated Circuit
ICAR: Indian Council of Agricultural Research
ICRISAT: International Crops Research Institute for the Semi-Arid Tropics
ICU: Intensive care Unit
IGP: Indo-Gangatic Plane
IIASA: International Institute for Applied Systems Analysis
IIC: India International centre
IIIM-J: Indian Institute of Integrative Medicine- Jammu
IITM: Indian Institute of Technology madras
IIT: Indian Institute of Technology
IOMT: Internet of Medical Things
IOT: Internet of Things
IPR: Intellectual property Right
JCAPCPL: Jamshedpur Continuous Annealing & Processing Company limited
KL: Kilo Litter
KVK: Krishi Vigyan Kendra

LBSNAA: Lal Bahadur Shastri National Academy of Administration
LDPE: Low Density Polyethylene
LOINC: Logical Observation Identifiers Names and Codes
MANIT: Maulana Azad National Institute of Technology
MASTEC: Manipur Science & Technology Council
MEITy: Ministry of Electronics and Information Technology
ML: Machine Learning
MoEF&CC: Ministry of Environment Forest and Climate Change
MoU: Memorandum of Understanding
MPEDA: Marine Product Export Development Authority
MSMEs: Micro Small and Medium Enterprises
NASC: National Agricultural Science Complex
NECTAR: North East Centre for Technology Application & Reach
NER: North-eastern Region
NEIST: North East Institute of Science and Technology
NGO: Non-Governmental Organization
NIC: National Informatics Centre
NIPER: National Institute of Pharmaceutical Education and Research
NIT: National Institute of Technology
NITI: National Institution for Transforming India
NSSO: National Sample Survey Organisation
NTPC: National thermal Power Plant Corporation
PEDA: Punjab Energy Development Agency
PG: Public Grievances
PM: Particulate matter
POC: Point-of-care
PP: Polypropylene
PPG: Photoplethysmography
QCFI: Quality Circle Forum of India

R&D: Research & Development
RCC: Reinforced Concrete Cement
S&T: Science & Technology
SAIL: Steel authority of India Limited
SAKSHAM: Shramik Shakti Manch
SEED: Science for equity Empowerment and Development
SeHAT-OPD: Service eHealth and Teleconsultation-Outdoor Patient Department
SHA: Secure Hash Algorithm
SHWW: Sexual Harassment of Women at Workplace
SIDBI: Small Industries Development Bank
SIDCO: Small Industries Development Corporation
SKUAST-K: Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu
SNOMED-CT: Systematized Nomenclature of Medicine - Clinical Terms
SPCB: State Pollution Control Board
SSL: Secure Sockets layer
SWOT: Strength Weakness opportunities and Threats
TCIL: Telecommunications Consultants India Limited
TISCO: Tata Iron and Steel Company
TLS: Transport Layer security
TRL: Technology Readiness Level
TÜV: Technischer Überwachungsverein (Technical Inspection Association)
TV: Technology Vision
UN ESCAP: UN Economic and Social Commission for Asia and the Pacific
UNICEF: United Nation's Children Funds
UNIDO-FLCTD: United Nations Industrial Development Organizations- For Low Carbon Technology Deployment
URL: Uniform Resource Locator
USA: United State America
WHO: World Health Organization
WOS-C: Women Scientists Scheme

1. TECHNOLOGY FORESIGHT & ASSESSMENT

Foresight and Vision division is actively involved in preparing long term, short term foresight reports, technology vision documents, and technology roadmaps on diverse topics. During the year, several foresight studies were completed and reports finalized. Under climate change initiatives, TIFAC organized two COP-27 side events at India Pavilion in partnership with DST, GOI. Further, DST sanctioned one new project on Technology Needs Assessment for climate change mitigation and adaptation purposes. A brief account is mentioned below:

1.1 Foresight Studies

During the year, the details of the completed foresight studies are given below:

1.1.1 Study on Climate Smart Agriculture (CSA)

The Foresight Study on “Climate Smart Agriculture (CSA)” was completed during the year. The draft report was validated in the “Stakeholders’ Consultation Workshop” organized jointly by TIFAC and National Academy of Agricultural Sciences (NAAS), at NAAS, NASC Complex New Delhi on May 11, 2022. In this workshop around 70 stakeholders participated including 30 NAAS Fellows and also experts from various agencies like ICRISAT, Mahalanobis National Crop Forecast Centre (MNCFC), Borlaug Institute for South Asia (BISA) etc. The findings of study on CSA were discussed and feedback / inputs of stakeholders captured in the workshop which were incorporated in the draft document.

The report captures the latest advances and innovations in climate-smart agriculture and their potential applications for reducing risk and vulnerability in agriculture. It entails the need of next-generation agro advisories with fleshing out the application of latest technologies like, AI, ML and data analytics which would provide improved and relevant advisories on time. The report describes detection and management of climate change induced biotic and biotic stresses in plants through effective use of satellite remote sensing, GIS and drones. Developing crop varieties to cope with climate change variability is an important adaptation strategy. The chapter on the use of new tools like gene editing, and CRISPR – Cas in crop improvement guides plant breeders on how climate-ready crop varieties and disease detection systems can be developed rapidly with a more targeted approach.

The chapter on water management outlines not only how new methods of irrigation can save water but also how renewable energy can be used in irrigation thereby reducing the energy footprint in agriculture. Advances in fertilizer application and nutrient management technologies will have a positive impact on mitigation. It lowers nitrous oxide emissions while conservation agriculture with no-till farming conserves carbon and energy input in agriculture. The chapter on Hi-tech agriculture lists all possible options of greenhouse cultivation for high-value crops. In the livestock sector many technologies are described which helps in minimizing methane emission from livestock through feed manipulation and dietary supplements besides how adaptation in milch animals can be improved through shelter management.

Adoption of CSA not only involves additional investments but also knowledge transfer. Better synergy among ongoing development schemes related to adaptation, inter-ministerial coordination, strengthening KVKs for grass root level knowledge transfer and support to the start-up ecosystem are some steps needed to promote CSA at the farm level.

1.1.2 Technology Foresight studies on Food Processing for North Eastern Region (NER) of India

TIFAC initiated six technology foresight studies for the food processing sectors focusing on the NER. The following two sectors were completed during this year as mentioned below:

i) Opportunities for Poultry and Meat Processing in North Eastern Region of India

Meat, Fish and Poultry are the major sources of animal protein in the NER of India. As per NSSO survey data on household consumption expenditure in 2009-10, it is assessed that in the eight States of NER, the amount spent on meat and poultry is about 15% in rural areas and 18% in urban areas of the total expenditure on food items. The study showed that average household consumption of meat in NER is almost two to three times more than the national average. The livestock rearing and poultry farming are the most important farm activities performed in almost all the states of NER. Backyard rearing of poultry and other meat animals is common among village households. However, a substantial gap exists between production of meat animals and the actual demand of meat in the region.

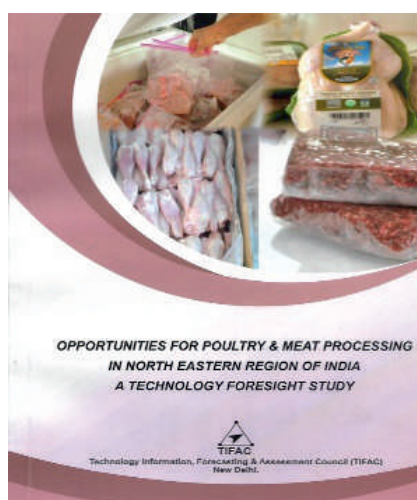


Fig.1.1 Report on Opportunities for Poultry and Meat Processing in NER of India

ii) Opportunities for Regional Cereal Processing in NER

The NER has the opportunity to process the surplus quantity of cereals for value addition, which in turn could fetch superior return to the farmers and address their woes of economic distress. The Food Processing industry benefits not only the farmers, but also helps in direct and indirect employment generation i.e. packaging industry, transportation, advertising and marketing etc. This report presents a detailed analysis of introducing modern technologies for the processing of cereals produced in NER. On the basis of this analysis, a detailed action plan proposed for undertaking short, medium, and long term strategy for the development of this sector in NER.

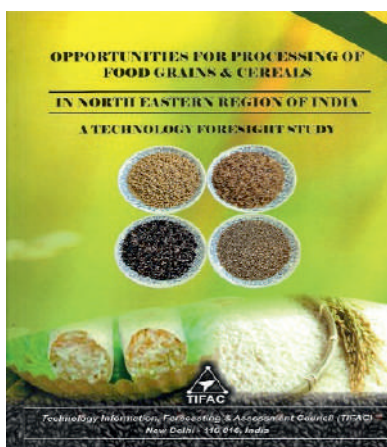


Fig.1.2 Report on Opportunities for Regional Cereal Processing in NER

1.1.3 Study on Current Trends in Telemedicine in India

The TIFAC initiated a study on ‘Current Trends in Telemedicine in India’ based on the recommendations of the White Paper titled “Focused Interventions for Make in India Post Covid-19”, published by TIFAC in July 2020, as a response to COVID-19 pandemic. The study was completed and the report was published during the year which mainly covers the current Telemedicine practices in India, Government programs, policies, and regulations. It also evaluates the technology platforms, the socio economic benefits, available infrastructure, current technological trends, major drivers of demand, and the challenges and issues in the large-scale implementation of telemedicine in India.

India is a large country with a population of more than 1.35 billion. About 70 % of healthcare infrastructure is in cities, which cater to ~30% of the country's population. Doctor to patient ratio in India is approximately 1:1500 which is lower than the WHO recommendation (1:1000). It poses a serious challenge in delivering healthcare services efficiently and uniformly throughout the country. Rising health care costs in India are another major concern (~ 60% of expenses are out of pocket).



Fig.1.3 Report on Current Trends in Telemedicine in India

Adoption of new and emerging Information and Communication Technologies (ICT) would help in bridging the gap by making the reach of healthcare services to unreachable in a cost effective and efficient manner and also empower doctors and researchers in this area to innovate new drugs/ vaccines, cells etc. Several telemedicine services in India have been launched by the government as well as by private agencies. Some of these are very recent ones like, eSanjeevni, Services eHealth Assistance and Teleconsultation - SeHATOPD, Swasth – app AYUSH Sanjivani’ App Tele- Mental Health: ABHA to name a few. Several start-ups started working in the area of Telemedicine like: Tata 1mg, NetMed, Pharomeasy -Medlife, CureFit, DocOnline , Netmeds , Lybrate to name a few.

To analyse the current technology trends in Telemedicine in India, a survey on start-ups working in the area of Telemedicine was conducted. Details of start-ups on various parameters were collected, for example, Business Verticals, Impact of COVID-19, Turnover, Technologies used, Remote Data Management, Challenges Faced, Future plans, Business started in the year etc. With respect to the technology adoption and usage trends, it was found that most of the companies are using the technologies like Artificial Intelligence/Machine learning, Big data Analytics just for commercial purposes i.e., to understand customer preferences, connect them with relevant doctors, forecast demand & procurement requirements and accordingly suggest the product of their choice. However, the companies that have started their business in the last 3-4 years, are using advanced technologies like Blockchain, Robotics, and Computer Vision.

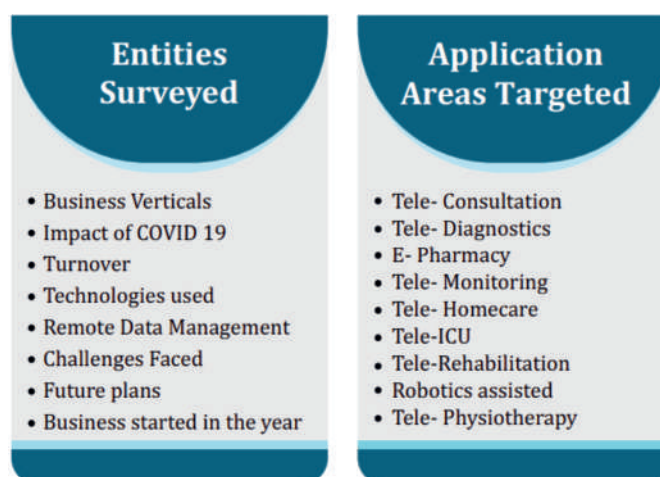


Fig. 1.4 Survey conducted in the area of telemedicine

The report also covers the policy and regulatory issues and entails a set of standards to be adopted for ensuring interoperability and also the standards required in the major areas of healthcare, e.g., diagnostic content, terminology and codes for statistics and laboratory tests which include: FHIR, DICOM, SNOMED, CT ICD-10, LOINC, Standard for EHR, TLS / SSL, SHA-256, AES-256 etc. The report further talks about the medical device standards followed and adopted in the country and also touches upon the challenges in adopting and implementing the Telemedicine standards in the country.

The following are the major recommendations of the report:

- **Connected Healthcare System:** Seamless integration amongst various available platforms and various services required by the patient.

- **Interoperable Standardized Secure Data:** Adoption of standards like FHIR, DICOM, SNOMED CT etc.
- The **security and privacy** of data need to be compliant with the national and international legal framework.
- Facilitation of **deployment of 5G** and Satellite -based network (LEO) enabling seamless accessibility
- **5G:** Scope for a new venture and Telemedicine applications like Telesurgery, Tele ICU will be practiced efficiently.
- **Affordability and efficiency: Private players and Government to join hands (PPP).**
- **Platform integration:** Hospital to Hospital to Diagnostics to Pharmacy is needed.
- **Integration with homecare:** Telemedicine services from a hospital should have seamless integration with homecare services.
- **Advanced Technologies(Health 4.0):** Need to **leverage more applications** of AI, Analytics, IOMT, Cloud, Blockchain, Robotics, Computer vision etc.
- **Ensuring equity:** Care should be taken for inclusive implementation of telemedicine services to ensure that the most deprived sections of the community are not left behind.
- **Use of open source library (OSL):** OSL will lead to reducing the cost of deployment of the software for the Telemedicine system.

During the year, the details of the on-going foresight studies are given below:

1.1.4 Study on “Identification of production, processing and marketing related problems in Apple and Saffron and their redressals Taking Apple and Saffron legacy forward:

This study was launched in a collaborative mode by TIFAC, SKUAST-K and IIIM-J with the broad following objectives

- Identifying farmer’s issues in apple and saffron cultivation in Kashmir
- Designing problem-based solutions for adoption of next generation technologies in cultivation of Apple and Saffron

The broad coverage of the report:

Despite the significant efforts made by the central and state governments for the upliftment of farmers in the J&K, numerous problems continue to exist that bind farmers in a cycle of poverty and deprivation. With a large proportion of JK’s rural population engaged in agricultural activities, as a source of livelihood, it is important to identify the problems faced by the farmers and empower them through innovative technologies in production, processing and marketing of apple and saffron to make them a more profitable farming.

While horticultural produce is on rise in the valley, it is not translated into enhanced income for the fruit’s producers. The production and productivity of apple is less than its productive potential because of many critical factors like lack of organized access to markets, absence of appropriate technologies in production sector (pruning and irrigation etc), dearth of awareness about actual prices in the market, transportation, lack of financial support, inadequate processing and storage facilities, dominance of middlemen and limited access to credits. Over a period of time, a declining trend has been observed in production of saffron crop due to

shrinkage of its area and other various problems like, lack of irrigation facilities, rodent attack, large number of intermediaries, disease incidence etc.

Extensive surveys were carried out in Baramulla, Kupwara, Pulwama, Anantanag, Budgam, Srinagar and Shopian districts of the Kashmir valley to interact with approximately 100 apple growers to understand the problems associated with production of Apple, its processing and marketing. Furthermore, a workshop was organized by the Division of Fruit Science, Faculty of Horticulture (FoH), SKUAST-Kashmir in collaboration with TIFAC, DST at SKUAST-K Shalimar with a focus on identifying problems and their possible advanced technology options for raising the income and profitability.

Likewise, in case of saffron, surveys were also carried out in saffron growing areas of Kashmir including Pulwama, Srinagar and Budgam to identify the root cause for low production and productivity of saffron in Kashmir. A workshop was also conducted at Pampore where the scientists interact with the farmers, stakeholders, entrepreneurs etc.

The project surveys and workshops aimed at analysing the various problems faced by the apple and saffron growers of Kashmir valley in the different on-farm and off-farm activities to serve as preliminary study for further line of action in carrying these legacy crops forward and help the Kashmiri apple and saffron sustain better at the national and international level. The project report also provides a possible technological and managerial solution to make it a more economic and sustainable farming by giving the different examples of start-ups globally already working on the advanced technologies.



Fig.1.5 Workshop on cultivation of Apple in August, 2022 at SKUAST-K, Shalimar

1.1.5 Report on Bamboo

To understand the opportunities and challenges facing the bamboo sector, NITI Aayog is in the process of developing a techno commercial report titled “Bamboo Development Mission Document”. TIFAC Chaired the sub-working group on and submitted the chapter on Bamboo: Technology Innovations Towards Value-Added Applications for the Techno commercial report for the National Bamboo development mission for NITI Aayog.

The report has detailed coverage on SWOT analysis, challenges, opportunities in the processed Bamboo Products for construction sector, application as the engineered bamboo, bamboo building codes etc. It also highlights the action points required by the Governments to include bamboo as a material in national development plans and other mandates on agriculture-based development and raise awareness and promote the advantages of bamboo over mainstream building materials.

1.2 Technology Vision 2047 – A New Initiative

TIFAC has initiated the project for drafting the Technology Vision 2047 document considering the rapid technological development and geo-political changes across the globe coupled with India’s mandate for technology supremacy and Atma Nirbharta. The overall objective would be to delineate developmental path for New India to achieve independence in true spirits technologically and strategically in line with the Vision of the Hon’ble Prime Minister and therefore, the narrative of this vision document is “Striding towards Technology Independence – a self-reliant and climate resilient developed India”. The Technology Vision 2047 exercise will be a follow-up of Technology Vision 2035 document prepared earlier which focused towards identification of key technologies that have the potential over the next 25-30 years to underpin innovation, competitiveness, resilience, responsiveness, sustainability and growth in identified priority sectors.

To steer and guide TV 2047 exercise and preparation of TV 2047 document, a National Apex Committee (NAC) has been formed under the chairmanship of Dr VK Saraswat, Member NITI Aayog & Former Chairman TIFAC Governing Council and Prof Devang Khakar, Chairman TIFAC Governing Council as Co-Chairman and Secretaries from all scientific Departments/Ministries of Government of India and experts from eminent institutes/agencies viz., Department of Science & Technology; Department of Biotechnology, Department of Scientific and Industrial research; Ministry of Earth Sciences; MeitY; DRDO; ICAR; IITs; AIIMS and Industry are the members.

As a part of the visioning process, several regional brainstorming workshops were organised at identified locations across the country in collaboration with reputed Institutes/Universities and industry. The details are given below:

Sl. No.	Host Institute and location	Date(s)	Sectors / Thematic areas	No. of Participants
1.	IIT-Bombay, Mumbai	February 06-07, 2023	<ul style="list-style-type: none"> SuShiksha (Good Education, Skill Development), Swasthya (Food & Nutrition, Health & Health Care), 	Around 70 invited experts and 30 students from IIT-B and various

Sl. No.	Host Institute and location	Date(s)	Sectors / Thematic areas	No. of Participants
			<ul style="list-style-type: none"> Sevan (Mindful Consumption / Utilisation of Resources), Soochna (Information), Digital Intelligence, Communication & Good Governance Shrishti (Energy, Environment & Climate Change) Suraksha (Security) Research and Development 	colleges in Mumbai
2.	TRYST-2023 and Vision of India 2047 events at IIT-Delhi	March 4 th - 6 th , 2023	<p>A two-stage student competition to capture the vision and technological ideas in 2047 perspective.</p> <p>A “Vision of India 2047 Booth” created an engaging and interactive platform for participants to share innovative and imaginative technological ideas and provide their vision for India’s future. The Vision Booth also showcased posters and video clips showing the power of imagination and technology to transform the world.</p>	Around 16,000 to 20,000 visitors along with 100 student participants in competitions organized TRYST-2023
3.	IIT-Guwahati, Guwahati	March 14-15, 2023	Food & Agriculture, Energy, Disaster Management & Climate Change, Human & Animal health, Education & Skill Development and Industry and Student Conclave	Around 60 invited experts and stakeholders from the North-East Region in various sectors. About 70 students from IIT-Guwahati and colleges / Universities from North Eastern States.
4.	Banaras Hindu University	March 20-21, 2023	Strategic sector (Defense & Space Technologies), Health, Food & Agriculture, Climate, Energy & Infrastructure and	Around 50 invited experts and stakeholders from various sectors and

Sl. No.	Host Institute and location	Date(s)	Sectors / Thematic areas	No. of Participants
	(BHU), Varanasi		Automation, Information & Communication technologies and student conclave	More than 60 students from BHU, IIT-BHU and Colleges / Universities from U.P., Bihar and nearby states participated in the student's conclave
5.	Gujrat Council on Science and Technology (GUJCOST), Gandhinagar	March 27-28, 2023	The focused sectors included Industry 4.0 (Artificial Intelligence, IoT, Drones, Robotics, Advanced Manufacturing etc.); Pharmaceuticals & Biotechnology; Automobiles and Food & Agriculture and student conclave	Around 60 invited domain experts in the technical sessions and about 100 students from various Institutes/ universities and colleges in Gujrat participated in the student's conclave.



Fig.1.6 Workshop held at different locations

1.3 Climate Change Initiatives

1.3.1 Preparation of Decarbonization Roadmap for Industries

In response to the Hon'ble PM's commitment at Glasgow (COP 26) in 2021, TIFAC prepared a decarbonization roadmap for different sectors i.e., Energy, and Industry (Steel, Cement,

Aluminium) through large scale interactions with Industry groups. The basic approach was to capture the issues after thorough discussions with relevant stakeholders in the respective sectors in different parts of India and also to consider the decarbonization initiatives being adopted/planned by Industries. Accordingly, the following stakeholder's discussions were organized by TIFAC at different locations and their details are presented below:

Stakeholder workshops

The outcome of various workshops/brainstorming meeting with stakeholder held in different sectors is given below:

a) Steel and other Industries

Sector: Steel and other Industries (2 workshops)			
Theme: Energy Efficiency and Technology Needs Assessment in Steel and other industries			
1 st Workshop hosted by	Participating Stakeholders	2 nd Workshop hosted by	Participating Stakeholders
Tata steel, TISCO Jamshedpur	<ul style="list-style-type: none"> ● TATA Steel Long Product ● TCIL ● TSL and Power Tech Consultants ● Turbotech Precision Engineering Pvt Ltd ● NA Consultancy in Energy ● JCAPCPL ● Tata Power Company ● Tinplate Company of India ● Bluescope ● Thermax 	Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam	<ul style="list-style-type: none"> ● SAIL Bhilai ● NTPC Simhadari BPCL ● ArcelorMittal ● Nippon steel & ● SAIL Bokaro
Outcome:	The unanimous opinion of participants in the workshop was towards achieving deep decarbonization through centralized and distributed measures. Broadly, through enhancing system energy efficiency by eliminating energy waste, using less energy, reducing greenhouse gas emissions; cyclic utilization of resources; optimizing production procedures; and through use of Carbon Capture, Utilization, and Storage (CCUS)		
Technologies identified	Technologies were identified for enhancing material efficiency and performance improvement, energy efficiency of different applications, use of advanced technology options (AI, ML and IOT) etc. pre – process modifications / enhancements towards reduction of carbon dioxide emissions, Options Replacing conventional Blast Furnace and Technology, Low carbon /Carbon neutral technology options.		



Fig.1.7 Stakeholder's discussion at Rashtriya Ispat Nigam Limited, Visakhapatnam

b) Aluminium and other industries

Sector: Aluminum and other industries	
Theme: Technology Needs Assessment for Waste Management & Circular Economy in Manufacturing Industries	
Workshop hosted by: PSG College of Technology, Coimbatore	
Suggestions on decarbonization for the Aluminum sector	<ul style="list-style-type: none"> • Decarbonizing Power generation i.e. switching to renewable energy. • Decarbonizing Process emission (Non-carbon anode development, switching to energy-efficient systems that do not rely on fossil fuels for heat and steam). • Carbon Capture, Utilization, and Storage (CCUS) technologies. • Increase in scrap usage and recycling (Improving techniques for keeping Aluminum out of landfills, improving separation methods to reduce alloy mixing, developing products that are simple to separate, collect, and recycle).



Fig.1.8 Workshop held at PSG College of Technology, Coimbatore

c) *Thermal Power*

Sector: <i>Steel and other Industries</i>	
Theme: <i>Energy Efficiency and Technology Needs Assessment in Steel and other industries</i>	
Workshop hosted by: National Thermal Power Corporation (NTPC)	
Participating Stakeholders	<ul style="list-style-type: none"> ● NTPC, Vindychal ● HINDALCO ● NCL (National Coal field Ltd) ● NTPC Shakti Nagar ● NTPC Vidyanagar
Technology Options to Increase Energy Efficiency	<ul style="list-style-type: none"> ● Flue gas and waste heat and water recovery ● Technology development for real-time monitoring of colloidal silica in the steam water cycle. ● Technology development for advisory system based on Artificial Intelligence (AI). ● Monitoring Real-time chemical parameter for boiler water chemistry. ● Use of Computational Fluid Dynamics, a useful tool for understanding and analysing processes, solving problems, and developing processes and designs.
Technology option for reduction of GHG emissions from Thermal Power Plants	<ul style="list-style-type: none"> ● Carbon Capture and Sequestration technologies ● Biomass co-firing ● Coal beneficiation
Potential for Adoption of Advanced Coal Technologies in High Ash Coal Based Thermal Power Plants	<ul style="list-style-type: none"> ● Use of Advanced Ultra-Supercritical plants ● Use of Circulating Fluidized-bed Combustion Technology (CFBC)



Fig.1.9 Stakeholders discussion at Thermal Power Plant, Singrauli

d) Technology options in Biogas Grid

Sector: Biogas Grid	
Theme: Technology Need Assessment – Renewable Energy Sector focus on Biogas	
Workshop hosted by: PEDA, Chandigarh & Indian Biogas Association	
Outcome	Different processes and techniques were discussed such as Pressure Swing adsorption (PSA), Cryogenic technique, Membrane technique, Chemoautotrophic techniques, and biological technologies. The processes emphasized on increasing the efficiency and enhancing the production of biogas in an effective manner. In addition, several Financial and policy interventions were discussed to Promote of Biogas Grid



Fig.1.10 Stakeholders discussion at PEDA



Fig. 1.11 Prof Pradeep Srivastava, ED TIFAC speaking at PEDA

1.3.2 Participation in COP-27

TIFAC participated in the COP 27 side events of India at Sharm-El-Shaikh, Egypt and organized the following events in association with the Climate Change Programme (CCP) of DST, GOI.

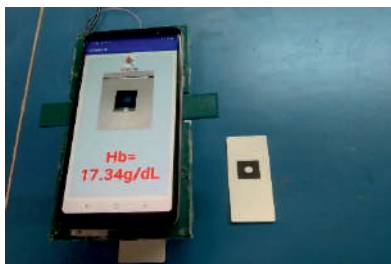
- Release of Decarbonization Report “Decarbonization Roadmap for Indian Industries –A Journey Towards Net Zero Ensuring Sustainability” on November 06, 2022.
- Release of the Film on “TIFAC’s initiative –Decarbonization path for Indian Industries” on November 06, 2022.
- Panel discussion on “Technology Needs Assessment for Sustainable Life” on November 10, 2022 to discuss the decarbonization initiatives being practiced in Industry, Energy and other sectors towards attaining Net Zero status by 2070, issues related to technology transfer and commercialization, technology needs. Besides DST and TIFAC, panellists for the session were from CTCN, Technology Development Board, Shakti Foundation and Central Electricity Authority.

1.4 Assessment of Technology Maturity for Atmanirbharta (ATMA)

The ATMA program focuses on providing handholding support to scientists, researchers and innovators in national labs and academia to facilitate them in bringing technologies closer to the stages of transfer or licensing to industries for commercialization. The handholding support includes business plan preparation based on the market potential of the developed technologies, obtaining necessary regulatory and statutory approvals, conducting field trials to enhance the

readiness levels of the patented technologies. TIFAC has identified over 80 patented technologies from public-funded labs and academia and assessed them for providing handholding support. The following technologies have been supported:

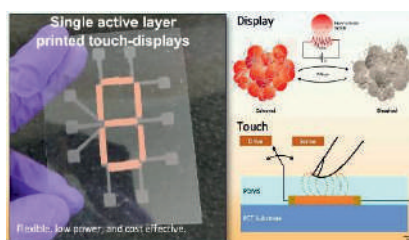
- Smartphone-Enabled Paper-Based Haemoglobin Sensor for Extreme Point-of-Care Diagnostics from IIT Kharagpur



- Development of a POC plasma glucose assay with an accuracy of the gold standard by the paper-based sensor from IIT Kharagpur



- Electro-thermo-chromic touch display devices from IIT Madras



1.5 Transport and Energy (T&E)

- The report titled **“Forecasting Penetration of Electric Two-Wheelers in India: A Bottom-Up Analysis”** was released on 28th June 2022 by Dr V K Saraswat, Member (S&T), NITI Aayog and Shri Amitabh Kant, CEO, NITI Aayog. The study was conducted in association with NITI Aayog. TIFAC developed an agent-based model that simulates the electric two-wheeler purchase decision based on agent attributes, various policy options, as well as technological and economic parameters. The model provides an estimate for the penetration of electric two-wheelers on an annual basis under given scenarios in different time frames. It also projects the required charging facility as well as the demand for onboard energy storage devices in various scenarios. The report provides a scenario analysis using this model and discusses the possible implications of various policy options, infrastructure roll out and technological progress.



Fig.1.12 Release of the Report & Cover page of the Report

- b. TIFAC prepared a draft of the White Paper on **“Power Electronics, Machines and Drives (PEMD)”** under the initiative of the Department of Science and Technology for the preparation of six whitepapers with the broad theme “Technologies to Overcome Hindrances to Electric Mobility in India”. The whitepaper on PEMD focuses on identifying the India-specific technology needs for electric machines and power electronics for electric vehicles. Stakeholder consultation on this report and further discussions on the possibility of an Innovation Cluster on Power Electronics, Machines and Drives are being pursued.
- c. In addition, the following studies are ongoing:
 - Impacts of Electric Mobility
 - Emerging Energy Storage Systems
 - Wireless Opportunity Charging of Electric Buses Using Solar Energy
 - Technology Roadmap for Aatma-Nirbharta in Semiconductor

1.6 DST Satellite Centre for Policy Research (SPR)

DST has approved the proposal for establishing the Satellite Centre for Policy Research in TIFAC. TIFAC would self-coordinate the activities under centre for Policy Research. The SPR at TIFAC would be an opportunity to further enhance its access to S&T ecosystem in India and abroad beyond its network. At the same time the TIFAC’s network of S&T community (be it individual scientist or institution in India or abroad) and experience of TIFAC in technology forecasting, assessment, protection through IPR and patent analytics would leverage technology policy capacity to CPR and SPR network. Such leveraging would include generation evidence-based reports, data acquisition and analytics to support all endeavour of DST through TIFAC or other policy centre on request or project mode. It is anticipated that TIFAC would be entrusted to take specific technology policy assignment from DST from time to time.

As the world has changed a lot with globalization and in an era of growing international competition, mere development of indigenous technologies may not be sufficient. Technology foresight has, in the emerging socio-economic and geo-political scenario, become a necessity like never before. It helps to prepare plan for technology development to stay abreast or move ahead in the technology race. It facilitates the country to put in place necessary enabling environment and appropriate policies for the technologies that shape its future. TIFAC would continue its efforts in this direction.

2. NURTURING INNOVATION

2.1 PATENT FACILITATING CENTRE (PFC)

The Patent Facilitating Centre (PFC) at Technology Information Forecasting and Assessment Council (TIFAC) works with four-fold objectives of creating IPR awareness and a deeper understanding of patents and IPR in the country, facilitating filing, obtaining and maintaining patents on a sustained basis, providing patent information as an input to R&D and handling IPR policy matters. In addition, PFC is also involved in capacity building by implementing the women scientist scheme (WOS-C) of DST whereby it provides one-year training to women in IPR and related matters.

2.1.1 IP/Patent Facilitation

PFC in its endeavour to facilitate the filing and prosecution of patents and other IPR applications on behalf of academic institutions and government R&D institutes has filed 37 new patent applications, 2 IC Layout Design applications. These were filed after due assessment of the patentability of about 61 new inventions and 2 IC Layout Design requests.

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 through DSTs Patent Facilitation Program (PFP) and patent/IP applications are filed in the name of inventing institute/s. PFC conducts thorough patentability assessments in house for all the invention disclosure received by it. During this period 28 Indian patents and two European and one US patents were granted; a list of those patents is given in Table-I.

Table-I: Patents Granted in this financial year (2022-23): 28 Indian, 2 EP and 1 US Patent

Indian Patents				
S. No.	Patent No.	Grant Date	Applicant	Title
1.	394194	04-04-2022	Central Manufacturing Technology Institute, Tumkur	Reinforced cement concrete machine tool structure
2.	394532	08-04-2022	Guru Nanak Dev Engineering College, Ludhiana	A process for making metal matrix composites (MMC) And a wear resistant part having MMC
3.	394464	07-04-2022	Indian Institute of Technology, Guwahati	A system for simultaneously electromagnetic shape forming and perforation on electrically conductive work piece and a method thereof

4.	396086	04-05-2022	Central University of Punjab, Bathinda	Pyrimidine bridged biphenyl derivatives as multi targeting agents for the treatment of neurological disorders
5.	396866	13-05-2022	Dibrugarh University, Dibrugarh	A multipurpose utility vehicle for loading and offloading materials such as litter, building material and the like
6.	399106	14-06-2022	National Institute of Technology, Calicut	Deployable / retractable prefabricated building structure
7.	400170	28-06-2022	All India Institute of Medical Sciences (AIIMS), New Delhi	Cancer detection system
8.	401416	15-07-2022	Banaras Hindu University, Varanasi	Novel composition for controlling storage pests and mycotoxin production
9.	402928	03-08-2022	Panjab University, Chandigarh	Composition and system for transdermal delivery
10.	406154	08-09-2022	Indian Institute of Technology, Delhi	A method of evaluation and grading of textile or fabric or garment appearance
11.	407470	23-09-2022	Indian Institute of Technology, Delhi	Multiple range obstacle detection and warning system for the visually Challenged
12.	408183	30-09-2022	Indian Association for The Cultivation of Science, Kolkata	Diaguanosine derivatives as synthetic membrane channels for drug delivery applications
13.	408696	10-10-2022	Panjab University, Chandigarh	Method for bacterial cell lysis and bacteriophage DNA isolation
14.	411397	14-11-2022	Indian Institute of Technology (Banaras Hindu University), Varanasi	A bioreactor for culturing of living cells or tissues
15.	411698	17-11-2022	Bose Institute, Kolkata	De novo designed novel antimicrobial and antiseptic peptides and its application against plant pathogens

16.	411880	18-11-2022	Cochin University of Science & Technology, Cochin	A method for determining thermal properties of coatings and an instrument thereof
17.	414013	08-12-2022	1.All India Institute of Medical Sciences, Department of Pharmacology 2.Department of Science And Technology	A herbal ophthalmic Formulation for delaying the onset and progression of cataract
18.	414560	14-12-2022	Indian Institute of Technology, Kharagpur	Earthen pot-based proton exchanger cum anode chamber and microbial fuel cell (MFC) obtained thereof
19.	416205	30-12-2022	YMCA University of Science and Technology, Faridabad & IIT Delhi	Triple point angled drill
20.	416492	02-01-2023	University of Rajasthan	Develop on board catalytic Fuel production kit for car
21.	417835	12-01-2023	University College of Medical Sciences, Delhi	Antihyperglycemic and Hypolipidemic compound and a process thereof
22.	419938	31.01.2023	Indian Institute of Technology, Ropar	A weighing system
23.	420473	03-02-2023	Maharshi Dayanand University, Rohtak	Polyvinyl chloride surface co-immobilized with enzymes and uses thereof
24.	420814	07-02-2023	Kumarappa National Handmade Paper Institute	An improved process for making handmade Paper/board from shredded currency waste
25.	422972	23-02-2023	Tezpur University, Tezpur	Selective hydroxylation preferably para-hydroxylation of substituted aromatic hydrocarbons using H ₂ O ₂ catalysed by waterborne hyperbranched polyurethane/carbon quantum dot nanocomposite

26.	424851	13-03-2023	Indian Institute of Technology, Kharagpur	Spacer for use in taper roller or angular contact bearings
27.	425612	17-03-2023	Delhi Technological University	Portable computing device based secure medical records management
28.	427172	28-03-2023	University of Allahabad, Prayagraj	Artificially coloured diamonds and process for artificially inducing colour in diamonds thereof
European Patent				
29.	3191844	20-04-2022	Indian Institute of Science IISc, Bengaluru	Electrochemical biosensor method of sensing Albumin and its complexes
30.	3294125	08-09-2021	Indian Institute of Science , IISc Bengaluru	Device and method for detecting creatinine and albumin to creatinine ratio
US Patent				
31.	11435344	06-09-2022	Indian Institute of Science , IISc Bengaluru	Electrochemical biosensor method of sensing Albumin and its complexes

2.1.2 Training Programs and Workshops

Two workshops were held at Imphal; one in April and the other in May 2022, in association with Patent Information Centre at MASTEC, Imphal.



Fig 2.1 Workshop in progress at Imphal on April 26, 2022

As per the new mandate from DST, PFC at TIFAC has to conduct awareness programmes on IPR in the North-East. Moving in this direction and therefore, a one-week training programme on *"Understanding, Scouting, Protecting and Utilizing Intellectual Property from North -East"* was organised at the North Eastern Technology Demo Centre of NECTAR Guwahati. It was in collaboration with NECTAR and was organised from May 23-27, 2022.



Fig 2.2 5-Day Training Programme at Guwahati from May 23-27, 2022

2.1.3 TIFAC IP PROTECTION AND COMMERCIALISATION CELL (TIPCC)

As TIFAC has experience in Technology innovation support and IP management of about three decades has taken up the challenge of commercialisation of IP and technology in consortia mode. It started seeking membership in academic institutions, government R&D institutions and industry for TIPCC's effective functioning. The membership shall offer a complete package for IP management and technology transfer in India and abroad through a single platform for maximizing the benefits of R&D and appropriately harnessing the IP potential of institutions and innovators.

Services being offered by TIFAC

- Quarterly review/audit of the IP of the institution
- One IP expert and one Technology Transfer executive would make these interactions and conduct quarterly or biannual audits of Technologies and IP generated by the Institute.
- Assessment of Protect ability of creative outcomes from member institutions on a priority basis (free of cost for members)

- This assessment would in turn enhance the quality of the patent as well as ensure better chances of grant and enforceability of the patent. The assessment would also include the possibility of protecting creative work through other forms of IP such as copyrights, trademarks, industrial design, IC layout design, plant variety etc. TIFAC has desired expertise and resources including subscription to databases.
- Technical, legal and financial support for filing, prosecution and management of IP rights, utilising various schemes of Government (including eligible financial support) through a single window.
- Technology Transfer support with a 20% share in benefits is an integral part of these services.

The membership fee is ₹10 lakhs per year for the first 3 years and 5 lakhs per year for the subsequent years. The National Institute of Technology (NIT), Durgapur is the first institute to join this club to avail these services.

2.1.4 Books Published on Patents and Geographical Indications

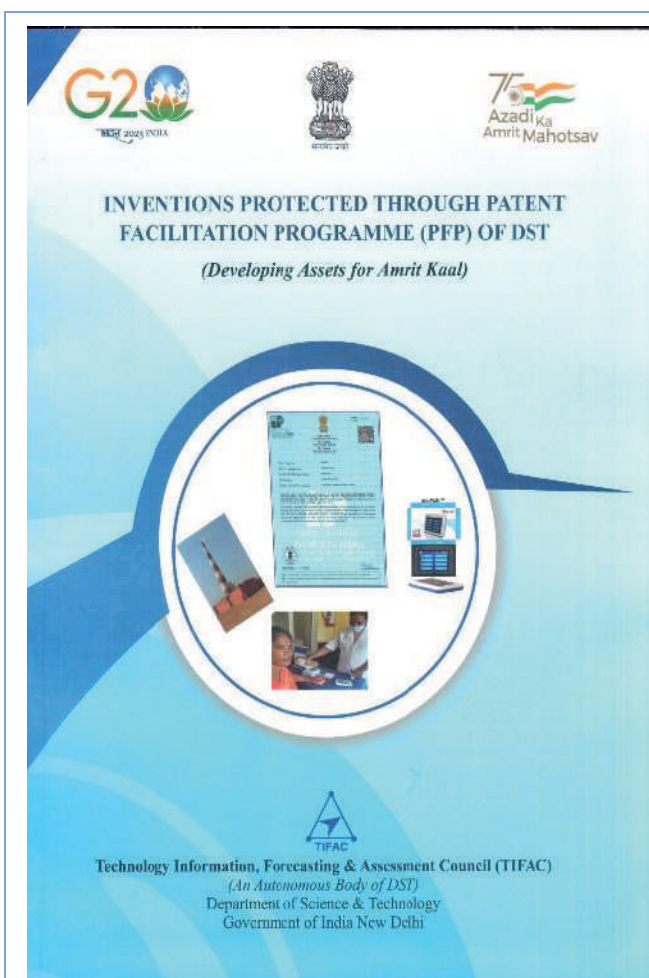
PFC prepared and published the following two books during the period:

- a. Inventions Protected through the Patent Facilitation Programme (PFP) of DST
- b. Indian Heritage Protected through Geographical Indications

These two books were released by Hon'ble Minister of Science and Technology, Govt of Madhya Pradesh during the IISF 2022 held at Bhopal in January 2023.

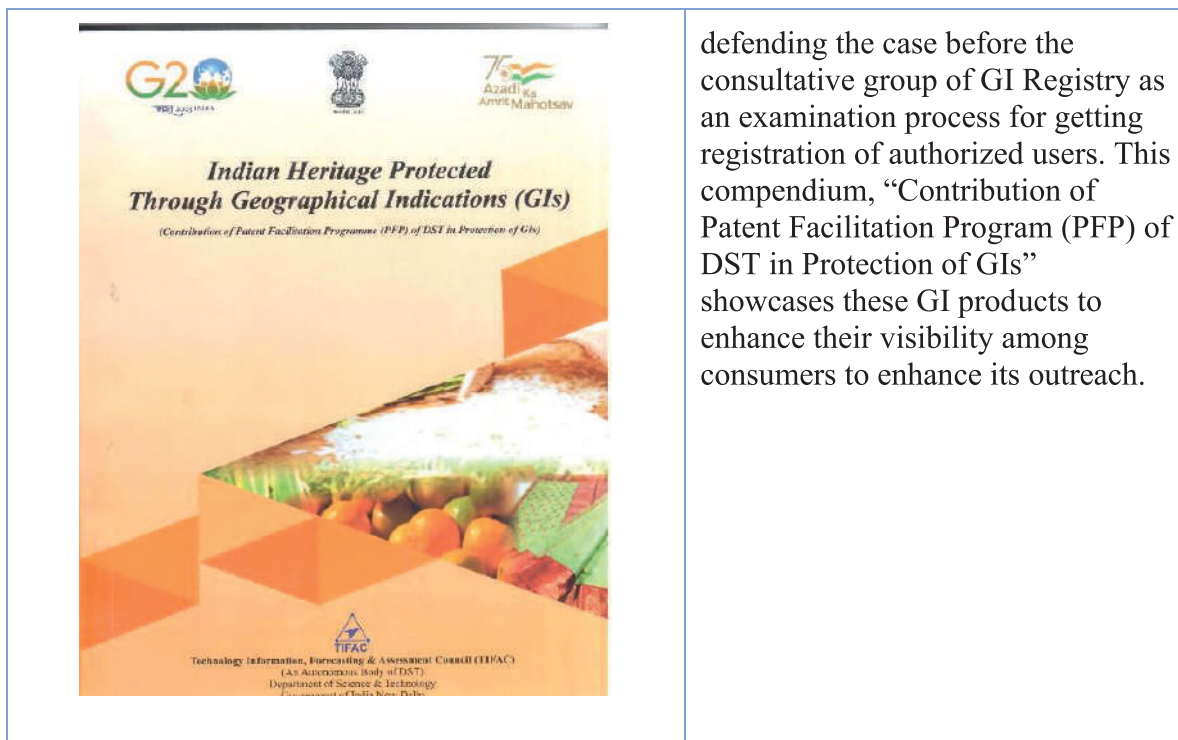


Fig.2.3 Books being released by Minister of S&T, Madhya Pradesh during IISF 2022 held at Bhopal in January 2023



PFC has one of its objectives of facilitating the filing of patents and other IP applications emanating from research being carried out in universities, R&D Institutes and DST-funded projects. PFC provides full technical and financial support for protecting these inventions. At the State level, Patent Information Centers receive inventions from the academia of the state. These inventions are also being sent to PFC for filing. Since 1995 PFC has been supporting this activity. Now India is celebrating Amrit Kaal of the country's 75th year of independence, to commemorate this event, PFC has brought out a book on recently granted 75 patents in India and abroad. The booklet contains the list and the description of the recently granted 75 patents in India and abroad. The filing and prosecution of these patents was facilitated by PFC and have been filed for inventions coming to PFC from universities and through Patent Information Centers. The booklet also gives information about the patents commercialized

The Patent Facilitation Program (PFP) through the involvement of Patent Information Centers (PICs) at State S&T Councils and TIFAC, has taken a multi-dimensional approach to protect GIs from different States, capacity building of the stakeholders and creation of market linkages through exhibitions and fairs. The PICs act as nodal agencies in the States to file GIs and are authorized by State Govts in many States to act as applicants for such GIs. The process involves extensive deliberations with IP Attorneys, Academic Partners and other stakeholders for documentation, filing of GI applications, and



defending the case before the consultative group of GI Registry as an examination process for getting registration of authorized users. This compendium, "Contribution of Patent Facilitation Program (PFP) of DST in Protection of GIs" showcases these GI products to enhance their visibility among consumers to enhance its outreach.

2.1.5 VIGYAN UTSAV: A Programme of DST

During the celebration of the 75th year of India's independence, there was a clarion call from the Hon'ble Prime Minister to infuse new energy and new consciousness among the countrymen by showcasing and celebrating achievements of the last 75 years through "Azadi Ka Amrit Mahotsav". The Department of Science and Technology, GoI through the State S&T Council and PFC division at TIFAC decided to showcase Science, Technology and Innovation (STI) ecosystem in the States and Union Territories and the Contribution towards Atma Nirbhar Bharat through a year-long program called "Vigyan Utsav", a festival of Science under its State Science and Technology Programme. Vigyan Utsav is being celebrated to portray the State level STI ecosystem through month-wise themes. The theme for the month of August 2022, was **"Intellectual Property Rights"**. The PFC at TIFAC led the month long programme on IPR. On day one i.e., August 01, 2022, there was a series of lectures organised by PFC on various topics related to IPR. On other days during the month of August, PICs at State S&T Councils under the guidance of PFC conducted programmes on IPR.

2.2 WOMEN SCIENTISTS SCHEME (WOS-C), WISE KIRAN-IPR

Women Scientist Scheme (WOS-C), KIRAN-IPR is a flagship programme of the WISE-KIRAN Division of the Department of Science & Technology (DST). Through one of its components- 'Women Scientist Scheme C (WOS-C)'- it provides one-year, on-the-job training, in the area of Intellectual Property Rights (IPR) to women with science backgrounds. The Patent Facilitating Centre (PFC) of the Technology Information, Forecasting and Assessment Council (TIFAC) has been entrusted with the implementation of WOS-C since its inception in 2002. The scheme is a recipient of Nari Shakti Puraskar from the Hon'ble President of India for the year 2015.

2.2.1 TRAINING OF 12TH BATCH OF WOS-C

- The training of the 12th Batch which started in December 2021, continued during the year. The women were placed on the job at about 50 agencies all over the country by the 4 Coordination Centres at Delhi, Pune, Bengaluru and Kharagpur. During one year, they were trained in patent searches, prosecuting and filing of patents, preparing patent analysis reports and other related topics.
- Two workshops were held at each coordination centre during the year. The first workshop trained them mainly in patent drafting and related topics. The workshop aimed to equip trainees for the Patent Agent exam which was to be held in May 2023. The workshop was organized through the Delhi Centre on Patent Drafting from April 19-22, 2023, at Miranda House, University of Delhi.



Fig.2.4 Workshop on Patent Drafting in progress at New Delhi from April 19-22, 2023

- A four-day online training from June 30, 2022 - July 5, 2022, was provided to the women scientists of the 11th and 12th batches to gear them up for the forthcoming viva voce scheduled from July 11-13, 2022. IP experts from different subject areas were invited to deliver online lectures for the trainees.
- The second workshop on Trademarks, Copyright, Industrial Designs & GIs was held in New Delhi on November 17-18, 2022, and at Bengaluru Centre on December 8-9, 2022.





Fig.2.5 Workshop on Trademarks, Copyright, Industrial Designs & GIs" in progress in New Delhi on November 17-18, 2022



Fig.2.6 Workshop in progress at Bengaluru Centre on December 8-9, 2022

2.2.2 Certificate Distribution to Women Scientists of 12th Batch

The one-year training for the 12th Batch which started in December 2021 completed in 2022. A total of 87 women successfully completed their training in this batch, and about 25 trainees received certificates in-person during the occasion of International Women's Day on March 8, 2023, in New Delhi and others in absentia. More than 50% of the women from the 12th Batch got employment in the area of IPR after the completion of their training. Dr S Chandrasekhar, Secretary DST and Dr Nisha Mendiratta, Head KIRAN, DST awarded training completion certificates to women scientists.



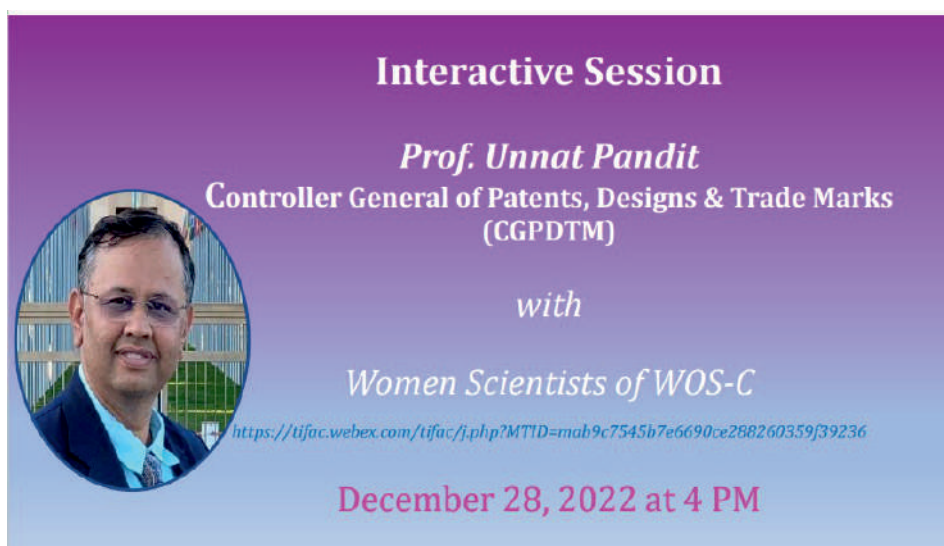


Fig.2.7 Dr S Chandrasekhar, Secretary DST awarding certificates to women scientists of 12th Batch on International Women's Day, March 8, 2023

2.2.3 Contribution of Women Scientists in National Intellectual Property Awareness Mission (NIPAM)

The Office of the Controller General Patents, Designs & Trademarks (CGPDTM) approached TIFAC in order to utilise the potential of women trained under the Women Scientists Scheme (WOS-C) in providing IPR Awareness in women colleges across the country. They invited WOS-C Alumni to be a part of their National Intellectual Property Awareness Mission (NIPAM) under the initiative of the Government's "Azadi ka Amrit Mahotsav" to provide awareness on intellectual property and its rights to 1 million students. A virtual meeting was organised under WOS-C in December 2022 where Prof Unnat Pandit, Controller General addressed the WOS-C alumni to be part of the national initiative.

Many women participated in this mission and delivered lectures across the country in many universities. Three of the women scientists were also selected to be awarded on the occasion of World IP Day whose contribution was recognised by the Patent Office.



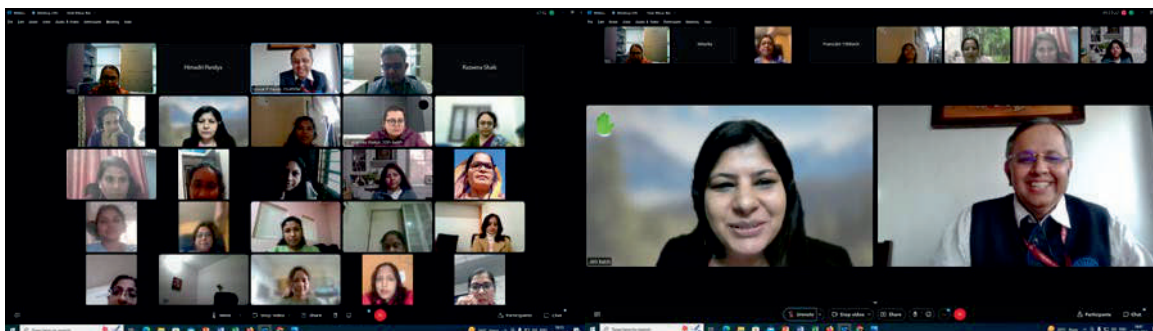


Fig.2.8 Prof Unnat Pandit, Controller General addressing WOS-C alumni on a virtual meeting

2.2.4 Women Scientists from 11th And 12th Batch Clearing Patent Agent Examination

116 women from the 11th and 12th batches of WOS-C cleared the Patent Agent Examination held in May 2022. This is the highest number of women from this scheme clearing exams in one instant. 60 women from the 11th batch and 56 from the 12th batch cleared the exam. DST gave a **PRIZE MONEY** of Rs. 25,000/- each to all these women.



Fig.2.9 Prize Distribution Ceremony for 11th and 12th Batch of WOS-C

The Patent Agent Exam is conducted by the Patent Office of India. Once the women are Patent Agents, they can file and prosecute patents on behalf of inventors. They can register themselves as Patent Facilitators under the SIPP Scheme (Patent Mitra) of the Patent Office. Till now a total of 480 women have cleared the Patent Agent Exam in all the 12 batches. These account for about 10% of the total active Patent Agents in the country. The one-year IPR training and Patent Agent qualified exam increase the job prospects of women to a great extent. Out of the 87 women who completed training under the 12th batch of WOSC, about 50% of them are gainfully employed in IPR.

2.2.5 Launch of Wise Internship in IPR

The erstwhile Women Scientist Scheme (WOS-C) has been renamed by DST as WISE Internship in IPR (WISE IPR) and sanctioned in February for training 100 women scientists in the area of IPR and related matters. The programme is the same as WOS-C with few changes like the entry-level age has been reduced from 27 to 25 years, the number of seats has been reduced from 120 to 100 and new guidelines have been issued by DST which gives clarity on maternity leave.



Fig.2.10 Launching of WISE Internship in IPR On February 10, 2023

2.2.6 Opening of New Coordination Centre for the North-East

A new Coordination Centre under WISE IPR Programme has been opened at **Assam Science Technology & Environment Council (ASTEC), Guwahati** mainly to encourage women from the North East to take benefit of the one-year programme. With the opening of this centre, women from north-eastern states can get trained at Guwahati and nearby locations for on-the-job training during the year. ASTEC also has a Patent Information Centre (PIC) supported by the Department of Science & Technology, GoI and Department of Science & Technology, Govt. of Assam.

2.3 TIFAC-SIDBI-Srijan Programme

2.3.1 New technologies assessed for Scaling Up under Srijan Programme

The 19 new project proposals were identified and technically assessed in terms of innovation content, techno-economic feasibility, readiness level, market potential, business plan etc. and recommended 03 project proposals for financial appraisal by SIDBI towards providing support for scaling up:

- **Development and Improvement of AI-Based Quality Testing Machines**

The quality control in the pharmaceutical manufacturing sector is largely based either on a random sample basis or a manual inspection basis due to which there are chances of several recalls of products across the globe when any quality issue is reported. The consequences of a recall are very large and costly for manufacturers and 100% inspection of products becomes compulsory involving human intervention. The existing imported automatic solutions have critical drawbacks including reduction of production speeds, incapability to inspect uncoated tablets, glossy surfaced capsules and transparent capsules, affordability to the customer etc.

The artificial intelligence (AI) based quality control machine has been developed in India to ensure such pharma and FMCG products are made available to the consumers with higher quality checks. The machine has been equipped with cutting edge AI algorithms to specifically tackle and inspect all product types on bulk counting lines without any compromise on quality and production rates. The machines would help with the 100% inspection with 360-degree checking with accuracy. The machine would detect and reject 100% sealing defects like cut seal, burnt seal, loose cap etc. and it would also ensure that the bottles/ packets with bad seals do not reach the end customer. The AIAI-based machines would reduce the rejection rates to less than 10% in the pharma sector and it could also find applications in other sectors like automobiles, electronics etc.

- **Manufacturing of Edible cutleries**

The ban of single use plastic products especially cutleries to curb rising waste management burden across several countries including India has raised concerns for the demand of alternative environment friendly products. The edible cutlery could be a better alternative to the single use plastic-based cutlery items and would be a zero-waste solution for the municipal landfills. The edible cutlery items like spoons and fork could be used to eat warm or cold meals and it could further be eaten as a delicious snack after its functional requirements. The developed edible flat shape and 3D shape cutlery products are made up of various ingredients like sorghum, wheat, rice, lentils, corn, Xanthan gum, brown sugar and wheat gluten which are completely natural and nutritious. With a sophisticated recipe based on natural, renewable raw materials, mainly consisting of a balanced grain mixture, sustainable cutlery products are given the necessary functionality, stability, and excellent taste. The product would be completely stable even in hot soup at 100°C temperature for up to 30 minutes and after that would be comfortably chewable. The product recipe has been designed to give nutritional benefits when consumed. The novelty of the recipe and process have a perfect balance between stability and chewability. The edible cutlery products have been tested for food safety by TÜV for various factors like Coliform count, E. coli, Salmonella, total plate count, yeast etc. The edible cutlery products have been targeted for the fresh food/ beverages market and take-home segment, particularly for the export market.

- **Development, large-scale production and commercialization of Recombinant Antigens and Monoclonal Antibodies for diagnostic, research and therapeutic markets**

The Indian pharmaceutical market players mostly import the recombinant antigens (rAg) & monoclonal antibodies (mAb) from countries like China and USA. The products sourced from the USA are highly priced and have frequent delivery delays due to shipment issues whereas Chinese products have low sensitivity issues. These issues have created a sizable import-substitute opportunity to offer high-quality, low-cost rAgs and mAbs to Indian markets. The unique high-expression plasmids have been developed to produce antigens of interest, which could be expressed in bacterial/mammalian hosts. The expressed antigens are purified using indigenously developed purification technology for generation of antibodies. The purified antigens are used to immunize suitable animal models to generate hybridoma cell lines to produce antigen specific monoclonal antibodies. The unique process has been developed for selection of antibody secreting cells followed by purification processes for large scale production of antibodies. The antibodies produced are highly sensitive and specific to the targeted antigen with higher yield. Due to the usage of high-expression plasmids and unique monoclonal antibody development platform, turnaround time to deliver the product would be

30-40% faster than Chinese counterparts, and 50-60% of others. The developed rAg and mAb would be useful for management of infectious diseases such as HIV, Hepatitis C, Hepatitis B, Malaria, Chikungunya, Dengue, Typhoid, Scrub Typhus, and Japanese encephalitis etc. The indigenous manufacturing of such proteins in India would ensure supply chain security for production of specialized antibodies for diagnostics and preventative purposes.

2.3.2 Ongoing Projects

TIFAC monitored and reviewed the progress of the following ongoing projects supported under the Srijan Programme:

- “Intelligent Waterless Solar Panel Cleaning Robot” by M/s. Aegeus Technologies Pvt. Ltd., Bengaluru
- “GPS/GIS Based Minefield Recording and Retrieval System” by M/s. Synthreads Computing LLP, Pune
- “Manufacturing of high precision low voltage micro electronic connectors and terminals for applications in automotive, medical, defence and electrical component sectors” by M/s. Tiea Connectors Pvt. Ltd., Bangalore

2.3.3 Outreach Activities

- 03 workshops were convened for generating awareness about scaling up of innovations under Srijan Programme and to identify new technology based projects at TIMed, Sree Chitra Thirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, CSIR-NIIST, Thiruvananthapuram and M/s Adjukines Applied Solutions Pvt. Ltd. Bengaluru
- An Audio-Visual film was made towards wider dissemination and outreach of the impacts of technologies commercialized under Srijan Programme which was shown on various platforms.
- TIFAC in association with Sustainable Communities India Pvt. Ltd. (SCIPL) organized a workshop on “Accelerating Clean and Equitable (ACE) Technologies in Textile Cluster” at the Textile Export Association, Tirupur, Tamil Nadu on April 21, 2022.
- TIFAC in association with DST and Indian Chemical Council (ICC) organized a Trader’s meet on “Chemicals and Petrochemicals sectors” under the Chairmanship of Secretary-DST in New Delhi on May 10, 2022.
- TIFAC in association with Sustainable Communities India Pvt. Ltd. (SCIPL) organized “Clean Tech Steering Alliance (CTSA)” at IIT Gandhinagar on May 13, 2022, to frame opportunities on Accelerating Clean and Equitable Manufacturing in Gujarat State towards achieving Net Zero.
- TIFAC organized following 06 interactive workshops in partnership with various national labs to identify and assess technologies developed by national labs, academia and start-ups followed by Panel discussions on the issues and challenges of technology transfer and to suggest appropriate models to accelerate technology licensing:
 - At CSIR-IICT, Hyderabad on August 22, 2022
 - At CSIR-IICB, Kolkata on September 23, 2022
 - At NIPER, Guwahati on November 4, 2022
 - At C-CAMP, Bengaluru on December 13, 2022
 - At CSIR-NIIST, Thiruvananthapuram on December 21, 2022
 - At CSIR-CDRI, Lucknow on January 23, 2023

3. TECHNOLOGY SUPPORT

TIFAC has been playing a significant role in Industry segments by providing Technical and R&D support to technologically homogeneous MSME clusters. Some of TIFAC's initiatives in this regard are given below:

3.1 MSME Cluster Programme

MSME Programme of TIFAC, 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 Programme has covered more than fifty clusters across the country.

To provide sustained linkages of the academic / R&D institutions with nearby MSME clusters, TIFAC has joined hands with five such institutions (one in each zone – North, South, East, West and Central) as TIFAC Academic Partners (TAP). These TAPs, in addition to undertaking technology gap analysis studies in the clusters, also support and handhold MSME clusters on a continuous basis to implement technological interventions by leveraging various programmes and schemes of the Govt. / other sources. During the year 2022-23, TIFAC commissioned Two (02) new TAPs in the following regions of the country:

- a. Indian Institute of Technology (IIT-BHU), Varanasi, U.P.
- b. National Institute of Technology (NIT), Srinagar, Jammu & Kashmir

3.1.1 Technology Gap Analysis Studies for MSME clusters

The following nine MSME clusters have been taken up through TIFAC Academic Partners for preparing the Technology Gap Analysis reports during the year:

i. *Aquaculture Shrimp Hatcheries Cluster, Marakkanam, Villupuram, Tamilnadu:*

The aquaculture and fisheries sector contribute around 1% to India's Gross Domestic Product (GDP). The brackish water aquaculture sector dominated by shrimp farming is the economic engine of Indian aquaculture which has a significant contribution to food production, employment generation and economic benefits. Farmed shrimp production touched 7.0 lakh tonnes in 2019, of which 87% is exported to the USA, China, Japan, EU and Southeast Asia, earning a robust foreign exchange to the tune of Rs.35,000 crores (MPEDA, 2019). The majority of the critical inputs like Shrimp seeds, feed and other inputs are produced in Andhra Pradesh and Tamil Nadu and transported to all the shrimp farming states, including the inland saline aquaculture areas. About 12 lakh families are dependent on this sector directly and indirectly for their employment and income to sustain their livelihoods.

ii. **Metal Sheet Fabrication and Welding Cluster, Thirumullaivoyal, Tiruvallur, Tamilnadu**

The Thirumullaivoyal Women's SIDCO Industrial Estate is a manufacturing hub located in the Thirumullaivoyal neighbourhood of Chennai, Tamil Nadu. The industrial estate is spread over an area of approximately 33 acres and is home to numerous small and medium-sized enterprises (SMEs) in the metal sheet fabrication and welding industries. The industrial estate was established by the Small Industries Development Corporation (SIDCO) of Tamil Nadu to

promote the growth of the manufacturing sector in the state. The estate provides a range of infrastructure facilities and support services to the businesses operating within it, including power supply, water supply, waste management, and security services. The metal sheet fabrication and welding industries are a significant contributor to the economy of Thirumullaivoyal Women's SIDCO Industrial Estate, providing employment opportunities for skilled and unskilled workers. The businesses in the estate produce a variety of metal products, including sheet metal components, enclosures, cabinets, and panels, as well as metal fabrication services such as welding, cutting, and bending. The parts / components produced in this estate are being supplied to various reputed brands including those in the automobile sector.

iii. Plastic Injection Moulding Cluster, Puducherry

The plastic industry sector of Puducherry has several small and medium-sized plastic manufacturing units spread across the state. These small and medium sized plastic manufacturing units produce a wide range of plastic products, including packaging materials, household items, and industrial products. These are automotive plastic components, plastic injection & blow moulded components, food & pharmaceutical containers, HMHDPE/LDPE/PP bags, printed bags, Electrical Laminations, Motor stampings and Transformer parts.

The All Pondicherry Plastic Traders and Manufacturers Association (APPTMA) is a Puducherry Based Industrial Association with 150 registered MSME Plastic Industries. The annual turnover of these MSME Units of AAPTMA ranges from 60 Lakhs to 3 crores.

iv. Tangail Shari Cluster, Fulia, West Bengal

The handloom enterprises offer good employment possibilities in West Bengal. Shantipur and Fulia in Nadia district are West Bengal's two primary handloom-focused regions, specifically the Tangail saree. This is one of the key economic drivers in the region. Although there are numerous locations that are well-known for this business, Fulia has unique characteristics. Despite the Tangail Saree's fame and widespread acceptance throughout India, there are no effective development initiatives. As a result, it is impossible to analyse the current circumstances for the Fulia handloom business without accurate statistical data. There are three main Co-operatives in this region. In addition, this area also has three other small, active cooperative societies. The Fulia Tangail Saree Byan Shilpa located in Fulia, Nadia is a MSME cluster. The key functions of this cluster are production of different varieties of handloom sarees and trade it all over India. This cluster provides good employment opportunities to skilled and unskilled workers in the 8 nearby regions and even from all around the state. This project mainly focuses on the study and recommendation for improvement of the quality and productivity of the finished products.

v. Leather Cluster, Bantala, West Bengal

The Calcutta leather complex (CLC), situated in the Karaidanga Mouja at South 24 parganas, popularly known as "Bantala leather complex" is the largest leather cluster in West Bengal. The original leather industry clusters of this state situated at Tangra and Topsia in Kolkata had been entirely relocated to this Calcutta leather complex (CLC), consisting of a massive Common Effluent Treatment Plant (CTEP) for treating entire effluent released by all the tanneries in the cluster through an organised sequential method laid down by government policies. The complex is intended to serve as a primary leather-based tanning unit for Kolkata.

Bantala has about 500 tanneries. The state of West Bengal is responsible for approximately 55% of India's leather-based exports.

It is located 20 km from the central business district of Kolkata and has an area of approximately 4.5 square kilometres. The key feature of this cluster is the manufacturing of various varieties of leather-based bags, merchandise and trading it all over the world. This cluster provides good employment to skilled and unskilled employees in the nearby areas and even from all around the state.

vi. Bhadohi Carpet Cluster, UP (for decarbonization)

Carpet industries come as no exceptions in consumption of energy and high carbon emissions like many other industries such as automobile industries, Steel industries, Cement industries, and many more. It is expected to continue to utilize huge amounts of energy, which eventually will lead to high carbon emissions. Considering the overall increment in the economy of average populations, the demand for carpets is increasing more than ever and it will keep accelerating. It becomes necessary to keep a check ~~tha~~ energy consumption in carpet industries.

Starting from the production of its raw materials, Fibres such as wool, Nylon, Polyester, etc., to the manufacturing process until the transportation of the finished carpets, every step needs an assessment of how much an environmentalist needs to be concerned. A majority of the carpet manufactured in Bhadohi is exported. So, in a way, the environmental concerns related to carpet industries are completely dependent on the demands from other countries and many economically well-established cities in India.

The life cycle assessment of a carpet typically calculates the energy consumption and carbon emission production over the course of the entire carpet life cycle, including the transportation of raw materials from the point of extraction to the point of manufacture, installation, use, disposal, and recycling. At the raw material extraction stage, transportation activities from a raw material extraction site to a raw material manufacturing or production site, as well as the necessary energy and produced carbon emissions connected to the extraction of raw material, have to be estimated. All energy needs and associated carbon emissions in the manufacturing of raw materials are being assessed during this phase, in addition to the transportation activities from a raw material manufacturer to a carpet maker.

vii. Wood Carving Cluster, Varanasi, UP

Varanasi is renowned for producing silk brocades with gold and silver thread work, glass bangles, ivory work, brassware and wooden toys. These artisans' forefathers worked at the royal court as ivory carvers. Since ivory was banned, Varanasi artisans began sculpting wood. These wooden toys have a long history of popularity. These toys are made from a unique form of wood. As the colours used in these wooden toys are sterile and safe, even when a youngster puts the toy in its mouth, they are in high demand internationally. However, as cutting of these timbers is banned, toy manufacturers are struggling for the raw material. As per some reports, now there are only 2,500 artists left, who are crafting wooden toys throughout the city. Further, there are issues related to electricity, tools, such as knives and other machinery, to cut, peel, and shape wood.

viii. Spun Pipe Manufacturing Cluster, Pune

Reinforced cement concrete spun pipes are widely used for water drainage, sewerage, culverts, and irrigation. R.C.C. pipes are classified as pressure and non-pressure pipes, viz. NPI, NP2, NP3, P1, P2, and P3 for use in specific conditions. These pipes are made from cement, coarse and fine aggregate, sand, mild steel, H.T. rods, and bars. Concrete pipe-making machines have been used for many years, and various advancements have been made to improve their performance, durability, and sustainability. The current technology used in concrete pipe-making machines includes a horizontal (spinning) process. Despite the significant advancements made in concrete pipe-making technology, gaps still need to be addressed to improve the overall performance and sustainability of the machine.

ix. Cricket Bat Manufacturing Cluster, Bijbehara, Jammu & Kashmir

The state of Kashmir is famous for its wood-based industry such as wooden furniture and Cricket bat. These industries utilize different varieties of woods such as Willow, Poplar, Mulberry, Walnut etc., for its raw material which is found here abundantly. The Kashmiri cricket bat, mainly made from willow, is very popular worldwide due to its strength and lightness. The Cricket bat consists of two parts, the cleft and the handle. The cleft part is used to hit the ball whereas the cane is used to hold the bat. Clefts can be made from willow and poplar, which are grown in Kashmir. The supply of Cane wood is mainly from states like Assam, Karnataka, Goa and Andaman and Nicobar Islands and is also imported from Malaysia. The Willow wood-based cricket bat is mainly used with leather balls because of its strength and lightness whereas popular wood-based bats are used to play with rubber/plastic tennis balls because of their low strength. The study aims to identify the technological gaps towards making the entire manufacturing process more structured, weather independent, safe and consistent.

3.1.2 TIFAC Initiatives for Carbon Neutral MSMEs

The Indian MSMEs contribute about 8% to GDP and over 45% to overall industrial output. Our MSMEs contribute to about 13% of the annual final energy consumption resulting in around 135 MMtCO₂ GHG emission per annum out of total GHG emissions from manufacturing industries. In view of India's commitment to become a carbon neutral economy by 2030 and subsequently achieving the target of net-zero emissions by 2070, decarbonizing the Indian MSME cluster has become the need of the hour. Towards this, MSMEs need to be provided with a proper understanding of the subject along with clear vision and handholding support. TIFAC has taken up an initiative to help / support the gradual shifting of the MSMEs towards decarbonizing their production and supply chain and moving towards a Carbon Neutral status. Towards this, select MSME clusters would be taken up for identifying the measures to be taken up and strategizing on how to save cost by reducing energy consumption and reducing waste, switching from conventional sources of power/energy to renewable ones, and access to more reliable and less volatile energy sources, driving new innovation in low-carbon emitting materials, products, services, business models, etc.

3.2 SAKSHAM

SAKSHAM portal of TIFAC provides a platform to the blue collared workers (Shramiks) as well as MSMEs and other industries, where the available skills can be highlighted and utilised by the industries on a need based rational approach. The portal maps the skill profiles of the Shramiks with the requirements of MSMEs and other industries using AI tools and data

analytics. Phase-I and Phase II of the SAKSHAM project were towards the development of the portal, its testing, enhancing the reach, etc. During this period, the portal has been developed and completed the registration of more than 3.5 lakh workers and thousands of MSMEs. More than 4000 workers have been connected with their potential employers.

The portal has now been licensed towards large-scale professional implementation to address the need of job seekers, primarily shramiks (blue-collared workers) for their gainful employment along with their complete skill profiling and to connect them with the MSMEs and other industries as per their skill requirements using artificial intelligence, data analytics, etc. The activity is being undertaken on a self-sustainable model along with revenue generation.

3.3 Bioprocess & Bioproducts

The Programme aims towards carrying out systems study in the field of bioprocess & bioproducts and supporting R & D in niche areas. Under the program, technology development projects were supported earlier in the areas of biotransformation & enzymatic processes for API, nutraceuticals, phytochemicals, value-added bioproducts, bio-energy & biofuels, etc. Several specialized reports in the area of bioproducts, biomass assessment published and spatial information systems for biomass and bioenergy mapping have been developed.

3.3.1 Ongoing Projects:

a. Seaweed program

TIFAC in collaboration with CSIR-Central Salt and Marine Research Institute (CSMCRI) and Indian Centre for Climate and Societal Impact Research (ICCSIR), Mandvi-Kutch, Gujarat has implemented a project ‘Technology assessment for edible seaweed production (*Monostroma sp.*) and seedling production (*Gracilaria dura*)’.

The project targets scaling-up cultivation of *Monostroma sp.* in semi-control conditions in 5 KL tanks, with envisaged daily growth rate of about 10%. The project also targets standardization of critical biological and physical parameters such as size of clone and weight to volume ratio respectively and various pre-treatments of hormones and seaweed extracts to achieve maximum survival and regeneration of *Gracilaria dura* under controlled laboratory conditions and subsequent out-planting.

The seaweed production facility was inaugurated on November 01, 2022, at Manar, Bhavnagar, Gujarat. Cultivation of *Monostroma sp.* was carried out in four cycles with a duration of about 30 days each. The culture exhibited significant weight gain under semi-controlled conditions. Three cycles, with a duration of about 90 days each, of seedling production of *Gracilaria dura* have been attempted. In each cycle, 25,000 explants of *Gracilaria dura* were transplanted. Significant bud formation, bud length increase and survival rate were observed for *Gracilaria dura*.

The project has established the feasibility of tank cultivation of *Monostroma sp.* and seedling production of *Gracilaria dura* under semi-controlled out-door conditions along the Indian coast. The project could form the basis for new seaweed industries in coastal regions, development of new products and applications etc. that can collectively contribute towards sustainable economic growth of the nation.



Fig.3.1 Inauguration of Seaweed Production Facility by ED -TIFAC, CSIR-CSMCRI Director and Shri Ashwin Shroff, CEO ICCSIR

b. Mapping of Technologies for Value-Addition of Seaweeds in India

Seaweeds are often considered as the ‘Wonder Plants of the Sea’ due to their ecological, social, and economic contributions. Seaweeds sequester significant amounts of carbon in the ocean, can aid in reducing the rate of global warming and contribute considerably to climate change mitigation and amelioration of ocean acidification. Seaweeds attenuate waves advancing to the shore and protect shorelines from erosion and flooding. Seaweeds are contemplated as a sustainable source of nutrients to achieve global nutritional security. Seaweed has the potential to contribute towards sustainable healthy diets and can be used as a tool to achieve the Sustainable Development Goals (SDGs). Considering the importance of seaweeds in the bioeconomy, a holistic study was carried out to understand the prospects of seaweed value-addition in India.



Fig.3.2 Report on mapping of Technologies for Value-Addition of Seaweeds in India

The study comprises the following areas:

- exploring the potential applications/ economic uses of seaweeds
- comprehending the current scenario of global and Indian seaweed sector,
- delineating the status of seaweed value-addition industries/ products in India,
- collation of seaweed value-addition technologies developed in India,
- analysing the trends in development of seaweed value-addition technologies,
- study of the R&D trends in seaweed value-addition in India, and
- recommendations for establishing sustainable seaweed value chains and to transform the Indian seaweed sector into a self-sustainable industry

c. Demonstration of Tele-Digital Health Pilot Project

TIFAC as part of its continuous efforts to bring new technologies for the benefit of the Society, has launched a tele-digital health pilot demonstration project, as an initiative towards **Swasth Bharat**, in collaboration with IIT M Pravartak Technologies Foundation and C DAC- Mohali in March 2022.

The project is aimed to demonstrate the efficacy of applying cutting edge technologies in reaching out to people living in rural areas, inhospitable terrain, with quality medical care including diagnostic facilities. It envisages assessment of sensor based medical devices for providing tele-diagnostic services - first time in India- through generation of health data in the form of Electronic Health Record (EHR).

The key activities under the project included reaching out to target population through representatives of Outreach Academic Partners (OAPs); examining the patients in a phased manner with wearable /gadgets/android based apps etc and recording / transmitting data/information through the gadgets to the cloud. The E-Platform and cloud for uploading of data would be provided by TIFAC through C-DAC and coordination with local health authorities to bring synergy in the project.

Three Outreach Academic Partners (OAPs) have been selected for collecting the EHR, namely **DDUGU**, **BHU** and **NIT-Manipur**. In each district ~20,000 Patients/ Persons were planned to be covered in a period of six months from the nearby identified villages. Their history and parameters would be stored in the cloud / portal created by CDAC.

IITM-Pravartak have provided devices for OAPs. Two sets of devices for each centre and one set of devices for CDAC for integration purposes. Accordingly, two sets of devices to each OAPs, to be carried by health workers, were provided by TIFAC. The key health parameters analyzed under the project are: *ECG, Heart Rate, Blood Pressure, Temperature, SpO2, Blood Sugar, Lipid Profile, Haemoglobin & Fetal Doppler*.

Mobile App: A web-based interface with Mobile Application (Android) an integrated platform for tele-diagnosis has been developed by CDAC to capture different diagnostic parameters of patients/persons. The data has been digitally uploaded on cloud. This android app has Store & Forward based on Hub & Spoke model including several other features like Login Module for health worker, patient registration and patient feedback etc. During data management all the ethical and privacy norms would be followed. Total no. of persons screened by OAPs so far is 30986. The brief highlights of the Tests conducted by each OAPs are as given below:

OAP	Total no. of tests conducted	Total no. of persons screened
BHU-Varanasi	36219	11876
DDUGU-Gorakhpur	22500	14900
NIT-Manipur	12590	4210
TOTAL	71309	30986



Fig.3.3 Camps organised at various villages for EHR generation



Fig.3.4 Camp organised at village near Manipur (NE)

It is expected that the successful demonstration would help in providing affordable quality healthcare to a vast majority of Indian masses including those living in inhospitable terrain. More than 160 villages have been covered in all the three Centres.

Further, Oral Cancer is the 6th most common cancer in the world and claims more than 10 lives every hour in India alone. Currently, the most effective way to control oral cancer is to combine early detection and appropriate treatment. Because more than 90% of all oral cancers are squamous cell carcinomas, the vast majority of oral cancers will be diagnosed from lesions on the mucosal surface. Skyfire Applied Intelligence Pvt. Ltd., Bengaluru with his team developed an AI algorithm which can accurately identify oral cavity lesions in the field using images captured using smartphones. This innovation is granted a patent as well. Rigorous internal

testing has been completed. The team is working with BBCI Assam, HCG, AIIMS Delhi, etc. and 4 other institutions across India.

Another module detects important health vitals of a person by looking into the smartphone camera by Nuverse Health Solutions Pvt. Ltd. Pune. The measurements are done on the device itself and can operate without internet connectivity. It is made for the global citizens with high privacy and data security. It uses Remote Photoplethysmography (rPPG) and PPG technology and is a mix of signal processing and AI to extract Data. No connected devices or wearables is required and the solution is affordable and easy to use.

With this in view, it has been planned to incorporate two new modules in the project as an additional activity related to Oral cancer screening using AI and smartphones and AI enables contactless access system for vital monitoring.

3.4 TIFAC Agreements/MoU

3.4.1 MoU Signed between TIFAC & SIDBI

An MoU was signed on September 22, 2022, to collaborate with SIDBI for the identification of scalable green and clean technologies, where TIFAC will provide support through the assessment of technologies and projects to technically recommend to SIDBI. SIDBI will support MSMEs through financing under its various credit schemes to implement the identified, assessed and forecasted technologies for commercialization through industries, particularly MSMEs and start-ups. Thus, SIDBI would capitalize the technical strength and capabilities of TIFAC as a knowledge partner in the- techno economic assessment of technologies for financing under its various schemes. Through this MOU, TIFAC and SIDBI recognised that cooperation among the two parties will further accelerate the development of MSMEs across India in a structured and planned manner through synergies of core competency and capabilities of both parties.

3.4.2 MoU Signed between TIFAC, NECTAR & CFTRI

Implementation of “Mobile fruits & vegetables Processing Unit for North Eastern Region of India” – A joint initiative between TIFAC, NECTAR & CFTRI

The establishment of a mobile fruits & vegetables processing unit for the North Eastern Region of India is one of the key recommendations mentioned in the Foresight Report “Opportunities for Fruit & Vegetable Processing in the North Eastern Region A Technology Foresight Study”. TIFAC in coordination with NECTAR and CSIR-CFTRI has signed an MoU on February 25, 2022, at TIFAC in the august presence of Dr Srivari Chandrasekhar, Secretary, DST to implement a collaborative project for development and demonstration of a Mobile Fruit & Vegetable Processing Unit in the NER. In this joint initiative, TIFAC is extending the networking, planning, assessment, mentoring, monitoring & handholding support, CSIR-CFTRI, Mysuru is the knowledge partner to provide the necessary technology know-how support and training while NECTAR is providing the required financial support for the implementation of the project and promotion of the technology. The project is expected to make value addition to local produce which would reduce wastage and enhance income of farmers to facilitate the Food Processing sector in the NER to catch up with the national benchmark.

3.4.3 MoU Signed between TIFAC and IET Bengaluru

MoU was signed between TIFAC and IET Services (India) Private Limited (IET), Bangalore on 27th day of May 2022. IET and TIFAC propose to collaborate on multiple projects that align with the IET's and TIFAC's objectives for initiatives such as joint events, joint programmes, joint pilot projects, courses and competitions, building technology roadmaps and whitepapers, joint studies in the field of technology on the terms set out in this MOU. Both institutions would work towards scanning the global and national ecosystem for transformational technological innovations in an effort to strengthen the technology infrastructure in the country.

They would identify technologies which have the ability to transform social and economic environment as well as generating employment for the youth of the nation on immediate, medium-term- and longterm basis. Also, develop policy frameworks for easy adoption of technology; upscaling and manufacturing leading to its commercialization in the nation.

4. EXTERNALLY FUNDED PROJECTS

During the period TIFAC received 4 externally funded project for which details are given below:

4.1 Title of the Project: *Review of National Awards for Women's Development through Application of Science & Technology*

Sanctioning Authority: *SEED Division of DST, GoI*

Project Cost & Duration: *Rs.28,76,000/- for a period of six months*

SEED division of DST has been implementing the award under the programme S&T for Women since the year 2000. The objectives under project are:

- Reviewing the existing protocols and procedures on incentives & awards under various schemes/programmes related to women development being implemented by Govt. of India.
- Assessing the impact of the National award for Women's development through application of Science & technology.
- Proposing strategies for optimizing/ transforming the awards and their categories based on data analysis comprising all the input and output variables of the study.
- Based on analysis and experts' recommendations, proposing a framework for such awards including, standardization of forms, timelines, general terms & conditions etc.
- Submission of award analysis report containing comments/ suggestions/ recommendations for streamlining and transforming the award system.

The possibility of having these awards along with other parallel awards of scientific and other ministries would also be considered.

4.2 Title of the Project: *Technology Needs Assessment (TNA) for Climate Change*

Sanctioning Authority: *Climate Change Programme (CCP) Division of DST, GoI*

Project Cost & Duration: *Rs.1.38/- Crores for a period of 2 Years*

Considering TIFAC's experience in preparing Technology Needs Assessment reports and Global Technology Watch Group Reports, the Climate Change Programme (CCP) Division of DST, GoI has sanctioned the "Technology Needs Assessment" project. The main objectives of TNA Project are as given below:

- Development of TNA portfolio through systematic identification of priority technologies for mitigation and adaptation measures.
- Assessment of Technology Needs to fulfil India's commitments towards the issues related to climate change.
- To identify Energy efficient technologies in priority SME sector/clusters for piloting demonstration by relevant Departments / Ministries
- To create a clean energy transformation mechanism in partnership with various stakeholders, both public and private sector.

The outcome of this project will significantly benefit decision makers as it will assist them in deployment of suitable technologies for the respective sectors, and hence have a clearer picture on the level of R&D and funding requirements for the project to be implemented. A crucial aspect of the study will be to act as a guiding force for the scientific community, researchers and decision makers in prioritizing certain technologies deemed fit, clarity on future research activities. The outcome of the project would also benefit SMEs immensely as they cater to more than half of manufacturing output, majorly by unorganized sectors.

4.3 Title of the Project: Study on Techno-commercial assessment of TRL-6 and above technologies

Sanctioning Authority: *Department of Scientific & Industrial Research (DSIR), GoI*

Project Cost & Duration: *Rs.40 Lakhs for a period of 1.5 Years*

A study has been conducted under the support of A2K+ program of the Department of Scientific and Industrial Research (DSIR). The objective of this study is to identify and assess technologies at Technology Readiness Level (TRL) 6 and above and developed by Indian labs, academia and industries particularly start-ups in the domains of chemicals, pharmaceuticals, medical sciences, and healthcare. The study would also identify challenges, barriers and issues related to the transfer of technologies by labs to industries and translate them to commercial ventures.

As a part of the study, TIFAC organized six interactive workshops in partnership with various national labs across geographical spreads and in the hubs of the identified technology sectors. Workshops were held at CSIR-IICT, Hyderabad, CSIR-IICB, Kolkata, CSIR-NIIST, Thiruvananthapuram, CSIR-CDRI, Lucknow, NIPER, Guwahati and C-CAMP, Bengaluru. Each of the workshops was structured in a way to identify and assess technologies through presentations by Principal Investigators followed by interactions with other scientists, researchers and industries. Panel discussions were held during the workshops involving leading technology managers as panellists to discuss the issues and challenges of technology transfer and suggest appropriate models to accelerate technology licensing. More than 250 participants shared their thoughts and details on about 90 technologies that were presented and discussed during the six workshops.

TIFAC has identified approximately 100 indigenous technologies spanning in the range of TRL4-6. As an outcome of the study, the information on the technologies would be collated in the form of a compendium which would also include recommendations towards addressing the challenges of technology commercialization.



CSIR-IICT Hyderabad



CSIR-IICB, Kolkata



NIPER-Guwahati



C-CAMP, Bengaluru



CSIR-NIIST, Thiruvananthapuram



CSIR-CDRI, Lucknow

Fig.4.1 Stakeholder's Workshop held at different locations

4.4 Title of the project: Estimation of Real-Life Fuel Economy of Indian Vehicles by a Data-Driven Approach

Sanctioning Authority: *International Transport Forum at OECD (ITF-OECD), France*
Project Cost & Duration: *Euro29276 for a period of 4 months*

This was taken up with the objectives to help assessment of real-life fuel economy, mileage and load/ passenger capacity for various modes and segments of transport under Indian conditions along with the impact of ageing on these parameters. The data will be useful for the Life Cycle Analysis Model being developed by the International Transport Forum at OECD (ITF-OECD) under the project "Decarbonization of Transport in Emerging Economies". For estimating the real-life fuel economy, a model has been developed for reconciliation between the top down and bottom-up fuel consumption. It also includes an estimation of vehicle stocks and age profiles.



Fig.4.2 Brainstorming Workshop in Progress on Decarbonization Strategies for Transport Sector

A Brainstorming meeting on “Decarbonization Strategies for the Transport Sector: Estimation of Real-Life Fuel Economy and Mileage” was held on September 13, 2022, at IIC, New Delhi. The Brainstorming meeting was graced by Dr VK Saraswat, Hon’ble Member NITI Aayog. About 40-45 experts/stakeholders working in this area involving Industry, Academia and Government agencies, participated in the Brainstorming meeting.

TIFAC submitted data sheets on the estimated representative real-life fuel economy of various categories of road vehicles for LCA tools along with impacts of vehicle age to the International Transport Forum at OECD. These recommended values were based on analysis of data available from various sources and also expert consultations. A report on the analyses carried out in this study is under preparation.

5.0 INTERNATIONAL LINKAGES

TIFAC has collaborated with various international institutions/agencies for carrying out activities related to system analysis & modelling in socio-economic sectors, sharing IP knowledge, training and facilitating cooperation in science, technology and innovation policy etc.

5.1 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. Through multiple research collaborations, 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 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.

5.1.1 Capacity Building Initiative

This is 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, young scientist joins an IIASA programme (June-August every year) and experiences at first hand, interdisciplinary cooperation in an international setting. This year, two YSSPers from India had undergone training at IIASA.

5.1.2 Collaborative Studies

On-Going: Under the India-IIASA programme, the following studies are underway:

a. Study on Establishment and Application of AQM Modelling In The Indo Gangetic Plain with World Bank and MOEF&CC

The World Bank is currently engaged with the Government of India on a technical assistance (TA) program on AQM. Through this program it is supporting the MoEF&CC, CPCB, and the SPCBs to strengthen ambient air quality monitoring (AAQM), source apportionment (SA), emission inventory (EI) and overall AQM that will help in achieving targets relevant for the National Clean Air Program (NCAP). The key objectives of the project AQMMod were to develop the IGP version of the GAINS model and demonstrate its utility as an air quality management tool in the IGP region.

The activity data for all sub-sectors and sectors have been compiled and updated in the IGP-GAINS model for the baseline year 2020 (few data are only available till 2019). Emissions of primary pollutants and secondary precursors have been estimated for each state for the baseline year. The baseline calculation considered all existing control scenarios implemented by the Government of India. The sectoral and sub-sectoral contributions to primary and secondary PM_{2.5} have been estimated at the state level. The regional contributions to each sector and sub-sector-specific PM_{2.5} have been quantified.

Currently, IITD is working on the control measures for projecting emissions and PM_{2.5} exposure (population-weighted) in each state for 2025 and 2030. Most recently, several new policies have been announced, which need to be included in the scenario analysis. For example, the GoI policy to promote electric vehicles and the new scraping policies need to be included in the future control strategies in the model.

b. Climate Change Mitigation and Regional Bio Diversity Strategy under fairSTREAM initiatives of IIASA: A study on documentation of diversity and socio-ecological systems in Bheema River Basin

TIFAC plans to undertake the project under **fairSTREAM** to develop and demonstrate a co-production methodology for including equity and justice (fairness) alongside efficiency in developing sustainable policy options across the food water-biodiversity nexus. Under the FairSTREAM initiative of IIASA, TIFAC plans to take up the project on **Climate Change Mitigation and Regional Bio-Diversity Strategy** with IIASA and Indian collaborators. Better protection, management and restoration of natural and managed ecosystems can make significant contributions to climate mitigation by reducing emissions from deforestation and

other land use change, and by enhancing carbon sinks. The work would be initiated in Bhima Basin, in Maharashtra.

c. India Energy Model

IIASA and NITI-Aayog along with TIFAC have partnered to develop MESSAGEix modeling framework for Niti Aayog for national energy systems and energy policies. The model would allow an analysis of key questions in addition to sectorial details, fuel-conversion technologies, etc. It would update data and assumptions and establish a baseline scenario. Due to varying inter-sectoral dependencies and cross-sectoral issues, the aforesaid modelling approach would help national policymaking – to come out with better solutions.

5.1.3 Conference/Workshop

- a. The International Conference on Systems Analysis for Enabling Integrated Policy Making was held and completed successfully, between August 10 and August 12, 2022, at the Scope Convention Centre, Lodhi Road, New Delhi. This conference, co-hosted by TIFAC and the International Institute for Applied Systems Analysis (IIASA) with partners from China, Iran, Japan, and Jordan was aimed to build on the expertise and interlinkages between the system analysts' communities in Asia and it also discussed and analysed transformative approaches to achieving sustainability across multiple stakeholders, sectors, and regions. It was an event to mark the 75th Anniversary of India's Independence and the 50th Anniversary of IIASA, Austria.

The conference was divided into 5 themes, each with a plenary talk, and subdivided into 23 parallel sessions that put together topics from several academic disciplines and complex global challenges. The topics subjectively covered almost all the sustainable developed goals (SDGs) with an objective approach towards the issues of Health, Energy, Digitalization, Climate Change, and Agriculture and also addressed questions on Gender, Just Transition, and Livelihood. The themes were designed to elucidate the trade-offs and find integrated solutions to maximize co-benefits towards achieving SDGs. The potential areas covered specifically included agricultural sector development, urban systems management towards low or no-carbon cities, expanding new edge technologies, fossil fuel phaseout, and blockchain technology. The conference also underlined the capacity of small data analytics to fuel real-time decision-making at a local level.

The conference was inaugurated under the gracious presence of Dr Jitendra Singh, Hon'ble Minister of State (Independent Charge) for the Ministry of Science and Technology, Ministry of Earth Science, and Minister of State for Prime Minister's Office; Personnel, Public Grievances, and Pensions; Department of Atomic Energy and Department of Space; Shri Ajay Kumar Sood, Principal Scientific Adviser to the Government of India; Ms Maaïke Bijker, Chief of Evidence (Data Research and Evaluation), UNICEF India, Shri Dorasamy Pillay, Representative, IIASA, Austria and Prof Pradeep Srivastava, Executive Director-TIFAC.



Fig.5.1: Dr Jitendra Singh, Hon’ble Minister of State (Independent Charge) for the Ministry of Science and Technology addressing the gathering

About 600 people registered in in-person and virtual mode. More than 300 abstracts were received for posters which were only reviewed online and were subjected to stringent screening and shortlisting. The conference was joined by participants across Asia, including Japan, Austria, Malaysia, Bangladesh, Jordan, Iran, Philippines, Italy, the United Kingdom, and the United States. More than 100 scientific works were presented by researchers with 23 key-note lectures from eminent scholars of the respective fields sharing knowledge and future prospects.

With a focus on how Systems analysis can facilitate the research environment, policy making, and customizing solutions the conference was entitled “Systems Analysis for Enabling Integrated Policy Making.” The conference addressed a variety of topics via the systems lens, relevant to the central themes that include 1. Sustainable Development 2. Complex Global Problems 3. Digitalization and Sustainability 4. Resilience to Climate Change in Agriculture and Disaster Risk Resilience and, 5. Sustainable Energy Transition in Asian Countries. Among the many issues raised by the speakers, the role of systems analysis as a harbinger for designing policies, driving partnerships, and building up

collaborative projects at local, sub-regional, and regional levels in the post-pandemic world had an important place.

This international conference successfully concluded as a forum to bring together experts across disciplines, researchers, scientists, tech entrepreneurs, social scientists, policymakers, think-tanks, and practitioners from around the globe to discuss innovative ideas and diverse topics to guide just transformation towards a more equal and sustainable earth.

- b. TIFAC Scientists participated in the brainstorming sessions with IIASA delegations to discuss Science to Policy System Analysis of Air pollution in Delhi at Jamia Millia Islamia University and Delhi School of Economics, Delhi University.
- c. Under the Fair STREAM initiative of IIASA, a workshop for the project on Climate Change Mitigation and Regional Bio-Diversity Strategy was organised on February 11, 2022 to finalize the scope and methodology.

5.1.4 Other Activities

The interaction with IIASA is helping 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 450 journal articles or 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.

6.0 PUBLICATION AND OUTREACH ACTIVITIES

TIFAC has been involved in various human resource development activities including internship schemes, publishing reports & articles, newsletters, delivering lectures & invited talks etc. The details are mentioned in the following section:

6.1 Papers Published

- Jeemut Bhan Sangiri; Arghya Sardar; Sudipto Ghosh; Suman Maiti; Chandan Chakraborty ; A composite electrochemical-thermal model for the determination of thermal profiles of lithium-ion cell for electric vehicle application; Electrical Engineering; <https://doi.org/10.1007/s00202-022-01575-8>.
- Sangeeta Baksi, Pradeep Srivastava, Bamboo: Technology Innovations Towards Value-Added Applications J. Bamboo & Rattan, Vol. 20, Nos. 4 (May 2022).
- Sangeeta Baksi, Pradeep Srivastava Bamboo: Technology Innovations Towards Value-Added Applications published in Agricultural Reviews, Agricultural Research Communication Centre, August 2022.
- Sunil Nautiyala, Mrinalini Goswami, Satya Prakash, KS Rao, RK Maikhuri, KG Saxena. Sangeeta Baksi Shrivani Banerjee, Spatio-temporal variations of geo-climatic environment

in a high-altitude landscape of Central Himalaya: An assessment from the perspective of vulnerability of glacial lakes, published in Natural Hazards Research, August 2022.

6.2 Participation in National and International Conferences/Seminars/Symposia/Workshops/ Meetings

Name of the event	Name of Scientist/Officer
Participated in the webinar on Navigating Patent Pitfalls by Office of Tech Transfer, C-CAMP	Pradeep Srivastava, ED-TIFAC
Participated in meeting on an advanced technology development for making Biodegrade Polyethylene (PE) and polypropylene (PP), NITY Aayog	Pradeep Srivastava, ED-TIFAC
Participated in meeting of API: Talk on “Status and Perspectives”	Pradeep Srivastava, ED-TIFAC
Delivered talk on “Technology for climate Resistance” at LBSNAA, Mussoorie	Pradeep Srivastava, ED-TIFAC
Delivered talk on “Ayush – Innovation and IP at Jaipur	Pradeep Srivastava, ED-TIFAC
Participated in IIASA Meeting	Pradeep Srivastava, ED-TIFAC
Delivered Plenary Talk on “IPR and Innovation” at Sharda University	Pradeep Srivastava, ED-TIFAC
Delivered talk on “Emerging Technologies – E mobility, Hydrogen as solution for Climate Change” at LBSNAA, Mussoorie	Pradeep Srivastava, ED-TIFAC
Delivered IIT-Delhi Talk on “Entrepreneurship through Technology”	Pradeep Srivastava, ED-TIFAC
Participated in QCFI Meeting – Talk on MSMEs in India	Pradeep Srivastava, ED-TIFAC
Delivered a talk on “Remanufacturing and approach towards Sustainability” in the International Workshop on Remanufacturing Capacity Building organized by National Institute of Advanced Manufacturing Technology (NIAMT), Ranchi	Gautam Goswami, Sc-F
Delivered lectures on various aspects of Foresight viz., Technology Foresight methodology, Scenario Building, Multi-criteria Decision Analysis (MCDA), Delphi Technique in the Training-cum-workshop programme for Indian Information Service (IIS) Officers organized by Indian Institute of Mass Communication (IIMC), New Delhi.	Gautam Goswami, Sc-G & T Chakradhar, Sc-C
Attended International Energy Summit on the theme “Transitioning Towards Green Economy” at New Delhi organized by ASSOCHAM.	Debabrata Majumder, Sc-F
Attended National Conference on Plant-Based Food: Capturing Avenues to Intensify Food Processing Industry at New Delhi organized by ASSOCHAM.	Debabrata Majumder, Sc-F

FICCI Round Table on Non-Ferrous Metals Industry: Scripting the Indian Growth Story - Opportunities, Challenges & Way Forward on April 07, 2022.	Jancy Ayyaswamy, Sc-F
Meeting of the Expert Committee on Electrical Energy Storage under the UNIDO Programme Facilitation of Low Carbon Technology Development (FLCTD) on April 18, 2023.	Arghya Sardar, SC-F
Conference on “Developing Ports for the Future: Accelerated Shift Towards Smart, Safe and Sustainable” to be held on April 28, 2023, at FICCI Federation House, New Delhi.	Arghya Sardar, SC-F Mukti Prasad, SC-C
Panel discussion at the Roundtable on UNIDO FLCTD Innovation Challenge on Emerging Energy Storage Systems 2022, held during the India Energy Storage Week (IESW) on May 02, 2022, in New Delhi.	Arghya Sardar, SC-F
2nd edition of the EV Two-wheeler summit organized by Mobility Outlook with theme “Made in India, Made for the World-Creating A Global Hub” on July 21, 2022.	Arghya Sardar, SC-F S K Goel, SC-E
FICCI Webinar on Developments in Metallurgy & Applications of Vanadium Containing Steels on September 30, 2022.	Jancy Ayyaswamy, Sc-F
Participated in <i>SDG Charter Virtual Dialogue on Lifestyles and Sustainable Consumption in the Context of SDG 12</i> on September 23, 2022, organized by The Energy and Resources Institute (TERI), New Delhi.	Sangeeta Baksi, Sc-F
Participated in ‘ <i>International Conference on Biofuels – A Pathway Towards Sustainable Future</i> ’ held on 19th October 2022, New Delhi.	Nirmala Kaushik, Sc-F
Delivered talk on “Technologies for Decarbonisation of Industries” at COP 27, Egypt	Pradeep Srivastava, ED-TIFAC
Delivered Plenary talk on Post Harvest and Future start-ups	Pradeep Srivastava, ED-TIFAC
Delivered talk on “Technology Vision on Health Tech at Sree Chitra Tirunal Medical Science & Technology, TVM.	Pradeep Srivastava, ED-TIFAC
Delivered Plenary talk on Emerging Paradigm in Bio Engineering, IIT, Roorkee, Conference at Rishikesh	Pradeep Srivastava, ED-TIFAC
Delivered talk on Bioprocess Technology at TU, Vienna	Pradeep Srivastava, ED-TIFAC
Participated in the 5th edition of Indian Chemicals and Petrochemicals Conference (ICPC) 2022, with the theme, ‘Building a competitive Framework for India@2047 on 18th November 18, 2022.	Nirmala Kaushik, Sc-F and Jancy Ayyaswamy, Sc-F
Participated in the 5th edition of Indian Chemicals and Petrochemicals Conference (ICPC) 2022, with the theme, ‘Building a competitive Framework for India@2047 on 18th November 18, 2022.	Nirmala Kaushik, Sc-F
Participated in the International Conference on Waste to Worth on November 30, 2022.	Nirmala Kaushik, Sc-F

International Meetings

- On the invitation from the Ministry of Energy of Russian Federation and UN ESCAP, Dr Gautam Goswami, Scientist G attended the Russian Energy Week 2022 (ROSCONGRESS) at Moscow during 12th -14th October, 2022. Dr Goswami made an intervention in the session on “Asia-Pacific Energy Transition” on 12th Oct. 2022 and made comments on “BRICS Renewable Energy Report” in a Session on 13th October, 2022.

6.3 Invited Lectures

- Shri PR Basak, Scientist-G, made presentation as an invited speaker in the S&T session of Global Technology Summit 2023 held at Visakhapatnam on February 16, 2023

6.4 Mega Events Participation

The following sections provide detail of TIFAC’s participation in various events as delegate:

6.4.1 India International Science Festival (IISF) 2022

TIFAC participated in the 8th edition of IISF at MANIT, Bhopal during January 21- 24, 2023. The festival was organised in sync with Azadi ka Amrit Mahotsav with the theme of *Marching towards Amrit Kaal with Science and Innovation*. The event was jointly inaugurated by Hon’ble Union Minister for Science & Technology, Dr Jitendra Singh and Shri Shivraj Singh Chauhan, Chief Minister of Madhya Pradesh jointly IISF-2022. During the festival, 15 events were organised such as, Student Innovation Festival, Science through Games & Toys, Artisan s technology Village and others. IISF 2022 also showcased the scientific and technological advancements to common people through Mega Science Expo. TIFAC showcased/demonstrated following four technologies supported and scaled up under the Srijan Programme during the event:

Name of Product/Technology demonstrated	Name of Start-up
Steel Integrated Floating Jetty (SIFJ)	M/s Acquafront Infrastructure Pvt. Ltd, Kanpur (UP)
Waterless Robotic Solution for Cleaning Solar PV Panels	M/s Aegues Technologies Pvt. Ltd., Bangalore (Karnataka)
Portable Oxygen Concentrator for defense & Domestic Application	M/s Chemdist Membrane Systems Pvt. Ltd, Pune (Maharashtra)
Edible Cutlery as an alternative to single use Plastic	M/s Frenvi products Pvt. Ltd. Bangalore (Karnataka)

The Activities and achievements of TIFAC were also showcased through posters, published reports/publication, pamphlets and flyers. The TIFAC stall was visited by Dr S Chandrashekhar, Secretary, DST, academicians, representatives from industries & NGOs, students, start-ups, including local audience etc., and applauded the work and activities in support of innovation technology development.



Fig.6.1 Visitors at the event

6.4.2 Event Rise in Uttar Pradesh 2022

TIFAC, on invitation from DST, participated in the event “Rise in Uttar Pradesh 2022” during November 22-24, 2022, at HRIT Group of Institutions, Ghaziabad, UP. The event was organised by TARMESH events, New Delhi under the guidance of Dr Anil Agrawal, Hon’ble MP, Raiya Sabha, Ghaziabad, UP. This event made students aware about the schemes, policies and initiatives of the government. It highlighted the role of Skill Development and training in the different fields of Science & Technology, Agriculture, Forest Conservation, Handloom & Handicrafts, Tourism, Research & Development, Information Technology, Women Empowerment & Children Development, Skill Development, Power Energy, Infrastructure, Water Conservation and Healthcare & Medication.

The Activities and achievements of TIFAC were also showcased through posters, published reports/publication, pamphlets and flyers. The TIFAC stall was visited by Hon’ble B. L. Verma, Minister of State, Ministry of Development of North Eastern Region and Dr Anil Agrawal, Hon’ble MP, Raiya Sabha, Ghaziabad, UP and applauded the work and activities in support of innovation technology development of TIFAC. This event provided students with an exposure to understand the relevance of problem solving, creative thinking and demonstration skills.



Fig.6.2 Hon'ble BL Verma, Minister of State, Ministry of DoNER and Dr Anil Agrawal, Hon'ble MP, Raiya Sabha, visited TIFAC stall

6.5 TIFAC Newsletter

TIFAC publishes a quarterly Newsletter covering various progress made on activities and programmes of TIFAC to reach out to various stakeholders. During this year, TIFAC published two newsletters that highlighted articles & news on the following:

- TIFAC-IIASA International Conference on Systems Analysis for enabling integrated policy making
- Transport Sector: real-life fuel economy of Indian vehicles for life-cycle analysis model
- TIFAC-RINL brainstorming meeting on “Technology Needs Assessment energy efficiency with focus on steel and other industries”
- A boom of clearing patent agent exam: A boon for women scientists of KIRAN, NITI Aayog and TIFAC launch report on Future Penetration of electric Two-Wheelers in the Indian Market.
- Tele digital health pilot program for generating e-Health record
- Opportunities for processing of spices in North-East region of India
- Study on Techno-commercial assessment of indigenous technologies
- Patent analytics, filing and prosecution at TIFAC
- TIFAC project on seaweed with CSMCRI & ICSSIR facility at Manar, Rajbhasha Pakhwada
- Swachh Bharat Special Campaign and other meetings, workshops & events of TIFAC.

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TIFAC-IIASA International Conference on Systems Analysis for Enabling Integrated Policy Making

75 Azadi Ka Amrit Mahotsav

The International Conference was held during August 10-12, 2022, at the Scope Convention Center, Lodhi Road, New Delhi was co-hosted by the TIFAC and the International Institute for Applied Systems Analysis (IIASA) with partners from China, Iran, Japan, and Jordan was aimed to build on the expertise and inter-linkages between the system analysts' communities in Asia and it also discussed and analyzed transformative approaches to achieving sustainability across multiple stakeholders, sectors, and regions. It was an event to mark the 75th Anniversary of India's Independence and the 50th Anniversary of IIASA, Austria.

The conference was divided into 5 themes, each with a plenary talk, and 23 parallel sessions. The topics covered almost all the sustainable developed goals (SDGs) including the issues of Health, Energy, Digitalization, Climate Change, and Agriculture, and also addressed questions on Gender, Just Transition, and Livelihood. The themes were designed to elucidate the trade-offs and find integrated solutions to maximize co-benefits towards achieving SDGs.

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With a focus on how Systems analysis can facilitate the research environment, policy making, and customizing solutions the conference was entitled "Systems Analysis for Enabling Integrated Policy Making."

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Tele-digital Health Pilot Program for generating e-health record (EHR)

75 Azadi Ka Amrit Mahotsav

We are delighted to inform that TIFAC this year, introduced two special programs—"Tele-digital Health" and the Mission for Innovative Technological Outreach and Application (MITRA)—aimed at improving healthcare and providing inclusive support to villages. These activities will ensure the delivery of accessible and inexpensive healthcare to realise the full potential and overall inclusive growth.

In the coming years, TIFAC will continue to actively work to strengthen MSME clusters, support cutting-edge technologies at various TRIs, engage in foresight studies in areas of socio-economic importance, and concentrate on the accessibility of technology to the most remote & rural areas to promote inclusive growth towards the country's aspiration of Atma Nirbhar.

TIFAC is also endeavouring to work in tandem with the Hon'ble P.M.'s Vision of Net Zero by 2070. TIFAC also participated in COP-27 and released a document on Roadmap for Decarbonization of Indian Industries. TIFAC looks forward for needful initiatives towards making India clean, liveable and Atma Nirbhar.

*I wish all our readers
"A Very Happy New Year 2023"*

**TIFAC wishes all its readers,
A Very Happy, Healthy & Prosperous New Year 2023**

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TIFAC-IIASA International Conference on Systems Analysis for Enabling Integrated Policy Making

75 Azadi Ka Amrit Mahotsav

The International Conference was held during August 10-12, 2022, at the Scope Convention Center, Lodhi Road, New Delhi was co-hosted by the TIFAC and the International Institute for Applied Systems Analysis (IIASA) with partners from China, Iran, Japan, and Jordan was aimed to build on the expertise and inter-linkages between the system analysts' communities in Asia and it also discussed and analyzed transformative approaches to achieving sustainability across multiple stakeholders, sectors, and regions. It was an event to mark the 75th Anniversary of India's Independence and the 50th Anniversary of IIASA, Austria.

The conference was divided into 5 themes, each with a plenary talk, and 23 parallel sessions. The topics covered almost all the sustainable developed goals (SDGs) including the issues of Health, Energy, Digitalization, Climate Change, and Agriculture, and also addressed questions on Gender, Just Transition, and Livelihood. The themes were designed to elucidate the trade-offs and find integrated solutions to maximize co-benefits towards achieving SDGs.

The conference was inaugurated under the gracious presence of Shri Jitendra Singh, Hon'ble Minister of State (Independent Charge) for the Ministry of Science and Technology, Ministry of Earth Science, and Minister of State for Prime Minister's Office, Personnel, Public Grievances, and Pensions; Department of Atomic Energy and Department of Space; Shri Ajay Kumar Sood, Principal Scientific Adviser to the Government of India; Mr. Masvidler, Chief of Evidence (Data Research and Evaluation), UNICEF India; Shri Dorasamy Pillay, Representative, BASA, Austria and Prof. Pradeep Srivastava, Executive Director-TIFAC.

With a focus on how Systems analysis can facilitate the research environment, policy making, and customizing solutions the conference was entitled "Systems Analysis for Enabling Integrated Policy Making."

The potential areas covered specifically included agricultural sector development, urban systems management towards low or no-carbon cities, expanding new edge technologies, fossil fuel phaseout, and blockchain technology. The conference also underlined the capacity of small data analytics to fuel real-time decision-making at a local level.

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Fig.6.3 Sample cover pages of TIFAC Newsletters

6.6 TIFAC Tech Talks (T3)

To celebrate Azadi ka Amrit Mahotsav, TIFAC conducted a series of Tech Talks delivered by eminent scientists. These Tech Talks were focused on contemporary scientific topics on a wide range of subjects, to foster learning and knowledge dissemination. The details of Tech Talks are mentioned below:

Sl. No.	Speaker	Date	Topic
1.	Dr Anjan Ray Director IIP	April 18, 2022	Aligning R&D with India's climate imperative
2.	Shri Sanjay Nayak CEO, Tejas Networks	May 19, 2022	Entrepreneurship & technology - building a product nation
3.	Prof AK Srivastava Former Chairman Agricultural Scientists Recruitment Board (ASRB)	May 31, 2022	Milk for all - there is no alternative
4.	Dr V Sumantran CEO, Celeris Technologies	June 08, 2022	Supporting India's growth trajectory with a sustainable mobility architecture
5.	Prof V Kamakoti Director IIT Madras	July 06, 2022	Education and research in emerging and disruptive technologies
6.	Dr Balamuralidharan P Chief Scientist and Head TCS Research Lab Bangalore	July 26, 2022	Robotics and sustainability
7.	Prof T N Singh Director IIT Patna	December 15, 2022	CO ₂ sequestration in geological reservoirs – problems and proposed solutions

6.7 36th TIFAC Foundation Day

TIFAC celebrated its 36th Foundation Day on February 10, 2023, at SCOPE Convention Centre, New Delhi. The theme of this year's Foundation Day was ***Technology Independence in Amrit Kaal***. Three new initiatives of TIFAC were launched during the event.

- Technology Vision 2047
- Technology Assessment and Mentoring (TeAM) towards showcasing technologies from start ups
- Technology Exchange Platform

The Chief Guest of the 36th TIFAC Foundation Day event, Dr VK Saraswat, Hon'ble Member Science & Technology, NITI Aayog and Former Chairman, addressed the audience with his inspiring words

and appreciated the unique role and contribution of TIFAC as a Think Tank in the domain of science & technology of the country.

The TIFAC Day Lecture was delivered by Professor TG Sitharam, Chairman, AICTE.

A video was shown on the occasion of the launch of these three new initiatives of TIFAC. A recent report on the **“Decarbonization Roadmap”** prepared by TIFAC was also released during the event. TIFAC made the announcement of launching the WISE Internship Scheme in IPR during this Foundation Day event. Two films on TIFAC and TIFAC-SIDBI Technology Innovation Program (Srijan) were screened.

Women Scientists of the 11th and 12th Batch of WOS-C (KIRAN-IPR) who have cleared the Patent Agent Examination were felicitated. Employees of TIFAC who have completed 25 years of service in TIFAC were also felicitated by Dr VK Sarwaswat.



Fig.6.4 Women Scientists of the 11th and 12th Batch of WOS-C (KIRAN-IPR) being felicitated

7.0 INFRASTRUCTURE AND RESOURCES

TIFAC facilitates resources for smooth functioning and day-to-day activities to TIFAC employees by way of a library, seamless internet connectivity, digital access to journals and e-office facility etc.

7.1 Library

TIFAC Library, a knowledge centre facilitates and fosters the flow of 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. Four scientific/technical books were procured during the year, raising the total holding of the TIFAC Library to 2582. In addition, 23 Nos. of scientific/technical journals, and magazines were subscribed to TIFAC Library. Relevant scientific and technical information published in the newspapers/magazines was also provided to the scientists during the year.

7.2 Mahanagar Telephone Nigam Ltd Network (MTNL)

During the year, TIFAC made use of the connectivity provided by the Mahanagar Telephone Nigam Ltd Network (MTNL). This provides TIFAC with a 100MBPS line for internet connectivity.

7.3 TIFAC Information Interfaces

During this period, TIFAC continued to maintain the in-house website (<https://tifac.org.in>). New design features along with added menu items were added to give an enhanced look and feel. Throughout the year, all announcements were updated promptly following Government norms.

Changes were incorporated and improvisation was carried out in the Experts Database form which was integrated into the website. TIFAC received registration from several professionals for the expert database-NEST. Along with announcements, regular updates/news on ongoing activities of TIFAC were updated time-to-time on the website.

The website also served as a platform for the announcement of Government schemes as and when required. TIFAC website also has hyperlinks to other Government Department web portals. The NIC firewall security feature is in place for the TIFAC website and vulnerabilities were fixed promptly as and when required for the website as per instructions of NIC.

Periodic updates on technology information and new initiatives of TIFAC were covered in social media through TIFAC's Facebook & Twitter accounts (URLs given below).

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

Both these media platforms enabled people to be informed about the different TIFAC events, activities, advertisements and schemes.

8.0 COMPLIANCES

8.1 Swachhata Pakhwada

Since April 2016, Swachhata Pakhwada has been celebrated in various GoI Ministries/Departments and their associated institutions as part of the Swachh Bharat Mission. TIFAC celebrated Swachhata Pakhwada during May 01-15, 2022 and took up several initiatives during this period to put an intense focus on the issues and practices of Swachhata.

On the first day of the Swachhata, an anti-littering pledge was administered by all the employees and a short film (23.33 minutes) titled, "Swachh Bharat: India's Sanitation Revolution" was screened. On the following days in addition to the special cleansing drives for the office premises at Technology Bhawan and Vishwakarma Bhawan, several competitions as mentioned below were also organized for the participation of employees on a Swachhata/environment-related theme:

- On the spot sketch making competition
- Rangoli making competition
- Quiz
- Cross Word puzzle solving in English

- Extempore (Both in Hindi and English)

The first three winners in each of the above competitions were awarded a cash prize of Rs. 2000/-, Rs. 1500/- and Rs. 1000/-, respectively by Executive Director-TIFAC during the valedictory function of the Pakhwada which was organized on May 13, 2023.

A free polythene day and a green colour day were other attractions. On one of the days, all the employees came to the office in green shade attire to sensitize everyone about the importance of hygiene and better environment.

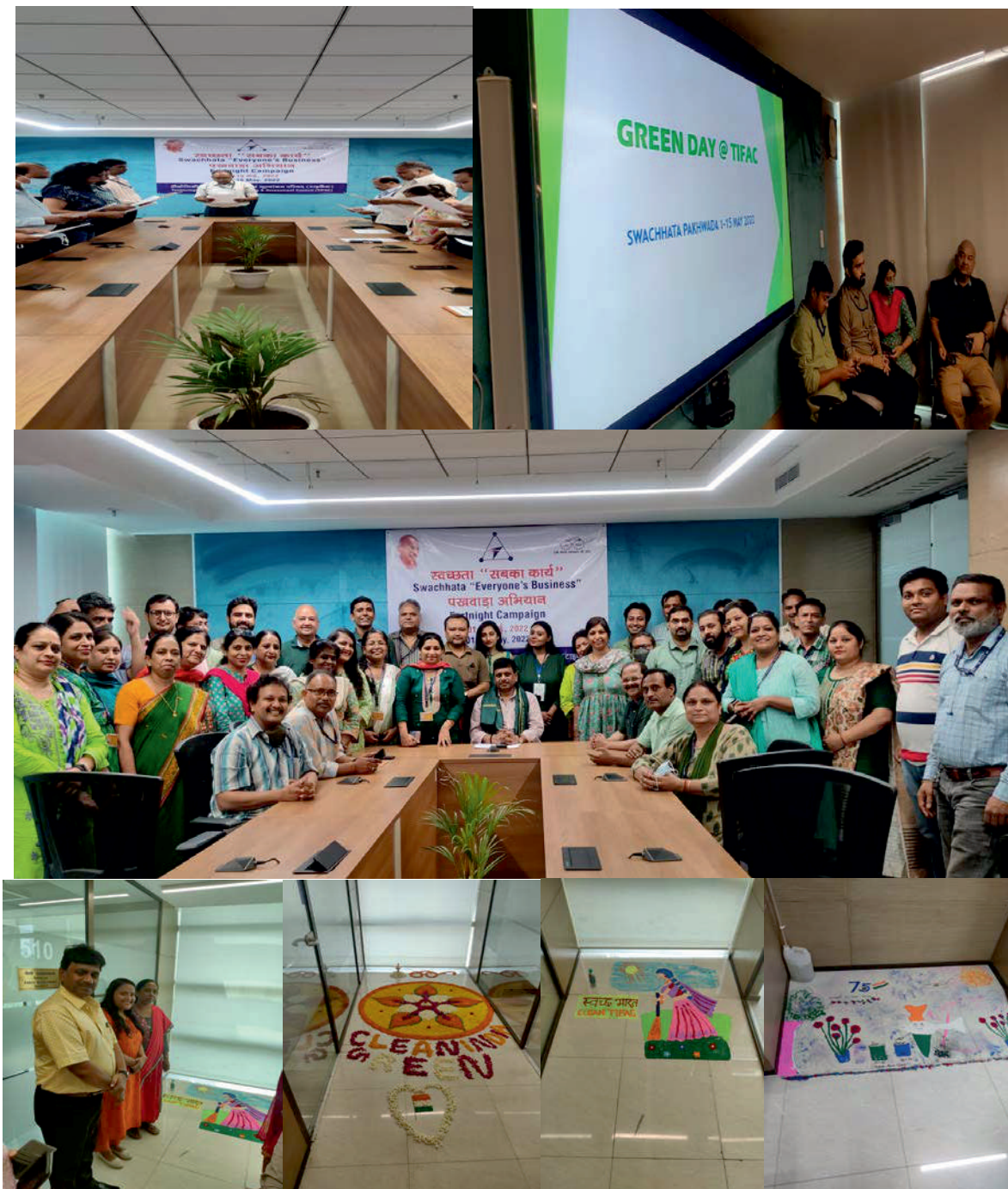


Fig.8.1: TIFAC Employees Participated in Swachhata Pakhwada

8.2 Vigilance Awareness Week

In pursuance of the directives of CVC, the Vigilance Awareness Week (VAW)- 2022 was observed in TIFAC from October 31, 2022- November 06, 2022. The theme for this year was“ भ्रष्टाचार मुक्त भारत - विकसित भारत ” (**Corruption-free India for a developed Nation**). The rundown of the various activities during a weeklong observance is as follows:

- **Pledge Administration**

The Integrity Pledge was administered (both in Hindi and English) by Dr Pradeep Srivasatava, Executive Director -TIFAC and Shri PR Basak, Scientist ‘G’ TIFAC on October 31, 2022. All of the scientific and administrative staff of TIFAC enthusiastically participated in the integrity pledge ceremony.



Fig.8.2 TIFAC Officials taking the pledge of integrity

Outreach Activities on Vigilance

- **Preventive Vigilance**

Preventive vigilance is aimed at tackling the areas vulnerable to corruption within the organisation. Towards educating on vigilance matters and related case studies and for creating awareness, a film on Preventive Vigilance Initiatives by CVC screened for TIFAC employees.





Fig. 8.3 TIFAC officials watching a film screened at TIFAC office for Preventive Vigilance initiatives programme by CVC

- **Creating Awareness on the Vigilance**

With the aim to create awareness among the employees about the VAW, the banners were displayed at the prominent places of TIFAC office premises, programme place and at the entry gate. The information about the observation of Vigilance Awareness Week-2022 was also circulated to all the employees.



Fig.8.4 Banner at Conference Room Banner at TIFAC Reception Banner at the Entry Gate

- **Social Media and Website**

TIFAC employees were instructed to take an e-integrity pledge and to facilitate the same, a hyperlink to e-pledge of CVC website was made available to all the employees of TIFAC.

A **Twitter handle** was used to promulgate the awareness week in TIFAC. The pictures and messages associated with the integrity pledge, lecture and other VAW activities were posted on twitter handle.

The digital display of information on VAW-2022 was displayed at the TIFAC office and also on TV at TIFAC reception. TIFAC website, e-mails, e-office TIFAC, twitter all such type of social media were used during the VAW-2022.

- **Vigilance awareness lecture**

As a part of Vigilance Awareness Week, spreading awareness and educating on the preventive & punitive vigilance, good governance and related matters, a lecture was organised on 4th November, 2022 in TIFAC by Guest /Expert Dr Laxman Prasad, Former Ex-Advisor-DST.



Fig.8.5 Dr Laxman Prasad, Former Advisor-DST (Guest /Expert) gave a talk on a theme (“भ्रष्टाचार मुक्त भारत - विकसित भारत”) (“Corruption free India for a developed Nation”)

TIFAC staff and officials attended the lecture and received very well among staff members of TIFAC. It was concluded with an interactive session at the end, wherein various doubts of TIFAC Officials were clarified by the Guest /Expert.

- **Display of Important Notice at the Entry Gate for awareness among the public**

If the public is made aware of their rights, and also of the rules and regulations, then they are able to resist unfair treatment and arbitrary behaviour by public officials. Public should be encouraged to demand the services due to them and to raise their voice when their rights are denied or powers are misused by public officers. With the aforesaid in view, TIFAC has displayed a notice board at its entry gate at AI building, Technology Bhawan.

आवश्यक सूचना / Important Notice			
<p>रिश्वत न दें। यदि इस कार्यालय में कोई आपसे रिश्वत की मांग करता है, या आपके पास इस कार्यालय में भ्रष्टाचार के संबंध में कोई जानकारी है, या आप इस कार्यालय में भ्रष्टाचार के शिकार हुए हैं, तो आप कार्यकारी निदेशक, सतर्कता अधिकारी, मुख्य सतर्कता अधिकारी (डी एस टी) या केन्द्रीय सतर्कता आयोग को शिकायत कर सकते हैं।</p> <p>DO NOT PAY BRIBE. IF ANYBODY OF THIS OFFICE ASKS FOR BRIBE OR IF YOU HAVE ANY INFORMATION OF CORRUPTION IN THIS OFFICE OR IF YOU ARE VICTIM OF CORRUPTION IN THIS OFFICE, YOU CAN COMPLAIN TO THE EXECUTIVE DIRECTOR, VIGILANCE OFFICER, CHIEF VIGILANCE OFFICER (DST) OR TO THE CENTRAL VIGILANCE COMMISSION</p>			
<p>प्रो. प्रदीप श्रीवास्तव कार्यकारी निदेशक प्रौद्योगिकी सूचना, प्रशिक्षण एवं मूल्यांकन परिषद् (टाईफैक) 5 वीं मजिल, ए आई ब्लॉक, टेक्नोलॉजी भवन, न्यू महरौली रोड, नई दिल्ली-110016 फोन नं.: 011-26511245 ई-मेल: ed@tifac.org.in</p>	<p>श्रीमती निर्मला कौशिक सतर्कता अधिकारी प्रौद्योगिकी सूचना, प्रशिक्षण एवं मूल्यांकन परिषद् (टाईफैक) 5 वीं मजिल, ए आई ब्लॉक, टेक्नोलॉजी भवन, न्यू महरौली रोड, नई दिल्ली-110016 फोन नं.: 011-26511238 ई-मेल: vo@tifac.org.in</p>	<p>श्री सुनील कुमार मुख्य सतर्कता अधिकारी विज्ञान एवं प्रौद्योगिकी विभाग टेक्नोलॉजी भवन, न्यू महरौली रोड, नई दिल्ली-110016 फोन नं.: 011-26962216 ई-मेल: jssk-dst@gov.in</p>	<p>सचिव केन्द्रीय सतर्कता आयोग सतर्कता भवन, जी. पी. ओ. कॉम्प्लेक्स ब्लॉक ए, आई. एन. ए. नई दिल्ली-110023 फोन नं.: 011-24651259 ई-मेल: sacy.cvc@nic.in</p>
<p>Prof. Pradeep Srivastava Executive Director Technology Information, Forecasting & Assessment Council (TIFAC) 5th Floor, AI-Block, Technology Bhawan, New Mehrauli Road, New Delhi-110016 Phone No.: 011-26511245 E-mail: ed@tifac.org.in</p>	<p>Mrs. Nirmala Kaushik Vigilance Officer Technology Information, Forecasting & Assessment Council (TIFAC) 5th Floor, AI-Block, Technology Bhawan, New Mehrauli Road, New Delhi-110016 Phone No.: 011-26511238 E-mail: vo@tifac.org.in</p>	<p>Shri Sunil Kumar Chief Vigilance Officer Department of Science & Technology Technology Bhawan, New Mehrauli Road, New Delhi-110016 Phone No.: 011-26962216 E-mail: jssk-dst@gov.in</p>	<p>Secretary Central Vigilance Commission Satarikata Bhawan, G.P.O. Complex, Block A, INA, New Delhi-110023 Phone No.: 011-24651259 E-mail: sacy.cvc@nic.in</p>

8.3 Internal Complaints Committee (ICC)

TIFAC is compliant with the SHWW Act 2013 and has an Internal Complaints Committee (ICC) in place since the year 2014. The ICC of TIFAC is responsible for attending to sexual harassment cases and ensuring a safe and secure workspace for its women staff. Activities of ICC-TIFAC include creating consciousness about the SHHW Act, conducting awareness workshops/surveys about the Act etc.

During the period April 2022 to March 2023, two meetings of the ICC were held. Reports about the activities of ICC were submitted to DST in a timely manner during the year. ICC also circulated e-articles to women employees for creating awareness during the period.

8.4 Right to Information (RTI)

During the year 2022-23, TIFAC received 10 RTI applications. However, no appeal was filed during the year. All these applications (whether received online or by post) were entered into the RTI portal and also were disposed of timely. The replies to all such queries were also made available online. TIFAC has also filed quarterly returns during the year 2022-23. As per the CIC the guideline, TIFAC has Suo Moto disclosed the information on the TIFAC website as per Section 4.0 of the RTI Act. The website was audited by a Third Party namely the Indian Institute of Mass Communication (IIMC) in October 2022. TIFAC scored 95.4% for the information disclosed on the website.

8.5 Public Grievance

TIFAC has a Grievance Cell to address grievances/complaints received online through the PG portal as well as offline. During the financial year 2022 2023, TIFAC received seven grievances which were duly examined and disposed of within the stipulated time.

8.6 Implementation of Official Language Policy

During the year, under the guidance of the Departmental Official Language Implementation Committee, TIFAC continued active efforts for the implementation of the Official Language Policy. The Committee took many important decisions to increase the progressive use of the official language Hindi in the office. Apart from this, to increase the interest of the officers/employees in Hindi, TIFAC organized speeches/presentations of famous Hindi scholars/artists and public utility speech programs on Hindi by eminent professionals of other subjects. The '*Hindi Pakhwada*' was celebrated in the office in the month of September 2022, in which 05 Hindi competitions were organized. The winners of the competitions were honoured with cash prizes and certificates.

9.0 AUDITOR'S REPORT TOGETHER WITH AUDITED STATEMENT OF ACCOUNTS



SHIV TIBREWAL & CO.

Chartered Accountants

301, Rohit House, 3 Tolstoy Marg, Connaught Place, New Delhi - 110001
Ph.: 011-43723307, 43545218, Mob.: 9811118154 E-mail: stc_ca@yahoo.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 *Mis* Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi, (hereinafter referred to as 'Society') which comprise the Balance Sheet as at March 31, 2023 and the Statement of Income and Expenditure Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

Responsibility of Management 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. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.



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. As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:
 - a. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
 - b. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
 - c. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the society's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our audit report. However, future events or conditions may cause the society to cease to continue as a going concern.
 - d. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.



6. Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements.
7. We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
8. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Qualified Opinion

9. 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 2023 and Excess of Expenditure over Income for the year ended on that date however subject to:
 - a) Non recognition of various loans, amounting to Rs. 42.13 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. 9 of Notes on Accounts of the Balance Sheet).
 - b) Non recognition of an amount of Rs. 48067/- as recoverable from Ms. Sangeeta Nagar (Scientist E) on account of a laptop misplaced by her in FY 2009-10 and corresponding rectification of fixed assets schedule.
 - c) Non recognition of Rs. 2.28 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 the statutory audit report for the financial year 2016-17.
 - d) 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 I of Internal Audit Report of DST for the period 1-4-2016 to 31-3-2018.
 - e) The SIDBI use to charge management fees on the total disbursement of project loans, year to year basis, whereas the management fees should have been charged once only at the time of disbursement of the project loans. No provision for the same has been made in the Profit & Loss account as not yet agreed by the SIDBI.



- f) The society is not properly maintaining the fixed assets register so as to show inventory of individual fixed assets items. Physical verification of fixed assets items has not been done by the society during the year.
- g) The society is not maintaining inventories of publication of its reports.
- h) The Society is making the payment for expenditure on the basis of Performa Invoice/Purchase Order instead of tax/commercial invoice in some cases.
- i) No provisions/ adjustments have made for Sundry Debtors, Loan & Advances, staff advance and EMD/ Security Deposited received which are outstanding for more than three years.

10. 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.
 - 1. The society has pending litigations which may impact its financial position.
 - 11. 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: 15.09.2023
Place: New Delhi

As per our report of even date Attached

For Shiv Tibrewal & Co.

Chartered Accountants

FRN NO. : 011391N

S. K. Tibrewal

Partner

Membership No.080098

UDIN: 23080098BGWRFI8104



TECHNOLOGY INFORMATION FORECASTING AND 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.

6(b) The matter has been settled through recovery of due amount from the Division officials on 19th April 2023..

6(c) The workshop was organized by PFC and DRDO with both contributing towards the project. DRDO have already contributed the amount which has been adjusted towards the expenditure incurred under the workshop and the remaining amount held amounting to Rs.2.28 lakhs was to be adjusted as PFC contribution. The matter is being put up to the competent authority of TIFAC for approval for adjusting the balance amount of Rs.2.28 lakhs as part of PFC division's contribution.

6(d) The matter related to payment of transport allowance to Mr Vibhu Mushran, Scientist G promoted under FCS has been referred to DST for opinion/decision. This has also been discussed in the 7th meeting of TIFAC Finance Committee, wherein it was recommended for waiver as Mr Vibhu Mushran had already resigned from TIFAC even before receipt of audit observation. He has not been with any government employment or is availing pension from any department. The matter is being now taken up for waiver.

6(e) The matter has been taken up with to SIDBI.

6(f) Physical verification of fixed assets is ongoing.

6(g) Matter is being taken up for compliance.

6(h) Now this is being complied.

6(i) The matter is under examination and would be taken up for release/recovery of due amounts.



Technology Information Forecasting And Assessment Council, (TIFAC)
Balance Sheet as at 31.03.2023 (2022-2023)

		Current Year				Previous Year			
Schedule		TIFAC	PTC	WSS	Total	TIFAC	PTC	WSS	Total
CORPUS / CAPITAL FUND AND LIABILITIES	1	378613388.67	10324703.25	4832972.83	393791264.75	416929522.02	-1439772.47	37720800.46	453210550.01
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	7	213329947.14	1958912.00	878714.00	216166573.14	198477780.50	2347014.00	7061504.00	207886298.50
Total		591942535.81	12283615.25	5731686.83	609957837.89	615407302.52	907241.53	44782304.46	661096848.51
Assets									
	Fixed Assets (Net)	42022286.10	161935.36	200359.64	42474761.10	46828848.60	208767.23	48175.40	47085791.23
	Investments-From Earmarked / Endowment Funds	140703000.00	0.00	0.00	140703000.00	141183000.00	0.00	0.00	141183000.00
	Investments-Others	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Current Assets: Loans, Advances etc	409217249.71	12121679.89	5441147.19	426780076.79	427395433.92	698474.30	44734129.06	472828057.28
Miscellaneous Expenditure (to the extent not written off or adjusted)				0.00	0.00	0.00	0.00	0.00	0.00
Total		591942535.81	12283615.25	5731686.83	609957837.89	615407302.52	907241.53	44782304.46	661096848.51
Significant Accounting Policies and Notes on Accounts		24							
Contingent Liabilities									

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

[illegible]

Date : 15.09.2023

Technology Information Forecasting And Assessment Council, (TIFAC)
Income & Expenditure Account for the Year Ended 31.03.2023

	Schedule	Current Year				Previous Year			
		TIFAC	PhC	WSSS	Total	TIFAC	PhC	WSSS	Total
Income									
Income from Sales / Services	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grants / Subsidies	13	170096966.00	20000000.00	0.00	190096966.00	220000000.00	0.00	45000000.00	265000000.00
Fees / Subscriptions	14	10.00	0.00	0.00	10.00	20.00	0.00	0.00	20.00
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	2400.00	0.00	0.00	2400.00	61500.00	0.00	0.00	61500.00
Interest Earned	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Income	18	4031638.37	0.00	0.00	4031638.37	4352022.46	0.00	0.00	4352022.46
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	1217713.00	0.00	0.00	1217713.00	19185000.00	0.00	0.00	19185000.00
Total (A)		175348727.37	20000000.00	0.00	195348727.37	243598542.46	0.00	45000000.00	288598542.46
Expenditure									
Establishment & Other Administrative Expenses	21	149550456.22	7208857.41	32424162.87	189183476.50	141320526.71	11137925.45	16154824.00	168613176.16
Expenditure on Grant, Subsidies etc	22	54703888.00	979835.00	358986.00	56042709.00	7526211.38	148617.00	0.00	75410828.33
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	9410316.30	46831.87	84678.76	9541827.13	1009049.72	68244.07	32117.00	10190800.7
Total (B)		213664600.72	823524.28	32867827.63	254768012.63	226673177.51	11354686.52	16186941.00	254214808.3
Balance being excess of Income over Expenditure (Expenditure over Income)		-38315933.35	11764475.72	-32867827.63	-59419285.26	16925364.65	-11354686.52	28813059.00	34383737.1
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

For the Firm/Member & Co.
Chartered Accountants
RGN No. 137311A
N. K. Tandon
Partner
Member - Non Audit
(Since 13.08.2003)

Dr. K. Srinivasan / P. K. Anilkumar
Chartered Accountants / Chartered Financial Analysts (C.F.A.)
RGN No. 137311A
N. K. Tandon
Partner
Member - Non Audit
(Since 13.08.2003)

Dr. K. Srinivasan / P. K. Anilkumar
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RGN No. 137311A
N. K. Tandon
Partner
Member - Non Audit
(Since 13.08.2003)

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2023 (2022-2023)

Schedule 1 - Corpus / Capital Fund	Current year				Previous Year			
	TIFAC	PFC	WSSS	Total	TIFAC	PFC	WSSS	Total
Opening Balance (General)	24,69,29,522.02	(14,39,772.47)	3,77,20,800.46	28,32,10,550.01	23,00,04,157.37	99,14,914.05	89,07,741.46	24,88,26,812.88
Opening Balance (SIDBI Revolving Fund)	17,00,00,000.00			17,00,00,000.00	17,00,00,000.00			17,00,00,000.00
Total Opening Balance (A)	41,69,29,522.02	(14,39,772.47)	3,77,20,800.46	45,32,10,550.01	40,00,04,157.37	99,14,914.05	89,07,741.46	41,88,26,812.88
Excess of Income over Expenditure (Expenditure over Income)(C)	(3,83,15,933.35)	1,17,64,475.72	(3,28,67,827.63)	(5,94,19,285.26)	1,69,25,364.65	(1,13,54,686.52)	2,88,13,059.00	3,43,83,737.13
Total Closing Balance (A)+(B)+(C)	37,86,13,588.67	1,03,24,703.25	48,52,972.83	39,37,91,264.75	41,69,29,522.02	(14,39,772.47)	3,77,20,800.46	45,32,10,550.01



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 :

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
A) Current Liabilities								
1. Sundry Creditors : a) For Goods								
URDP Pure (WSSS)								
2. Statutory Liabilities								
a) Others : TDS Payable (Sub Total (B) of Annexure - 8)	18,22,636.00	78,231.00	9,056.00	19,09,923.00	13,88,345.00	83,404.00	8,411.00	14,80,160.00
3. Other Current Liabilities								
III-TIFAC Maintenance (Provisions)	2,08,70,000.00			2,08,70,000.00	1,88,40,000.00			1,88,40,000.00
Grant : Global Technology Watch Group (GTWG) (Annexure 10)	20,18,218.00			20,18,218.00	20,18,218.00			20,18,218.00
Grant : Interdisciplinary Cyber Physical Systems (ICPS) (Annexure 10)	-			-	1,00,785.00			1,00,785.00
National Steering Committee on Tech Need Assessment (TNA) for Habitat Sector (MOFF&CC)	26,06,081.70			26,06,081.70	32,34,206.70			32,34,206.70
Grant : Technology Assessment of Start ups for Tax Exemption (Annexure 10)	6,09,478.00			6,09,478.00	6,09,478.00			6,09,478.00
Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science (Annexure 10)	2,93,523.00			2,93,523.00	2,93,523.00			2,93,523.00
Grant : Detailed project report for National Mission on Quantum Technology & Application (NM-QTA) (Annexure 10)	5,13,515.00			5,13,515.00	2,49,818.00			2,49,818.00
Grant : Intellectual services relative to support TIF activities on life cycle analysis focusing on the India Transport.	3,29,766.00			3,29,766.00				
Grant : Classified Project Study : MCA	9,51,483.50			9,51,483.50	22,00,000.00			22,00,000.00
Grant : DSIR Techno-Commercial Assessment of TIL-5 and above technologies developed in India in academic, research labs and Industry.		5,25,782.00	6,26,654.00	54,87,043.00	1,77,19,192.00	2,00,466.00	2,12,189.00	1,81,31,847.00
Bharat Kosh (Govt)	43,34,607.00			43,34,607.00				
Fixed Deposit Interest Accumulated	2,28,55,016.00			2,28,55,016.00				
DRDO's Workshop Expenses		3,31,823.00		3,31,823.00		3,31,823.00		3,31,823.00
WIPRO's Workshop Expenses		14,728.00		14,728.00		14,728.00		14,728.00
Training of Trainers Programme		15,714.00		15,714.00		15,714.00		15,714.00
UNIDO Workshop		5,88,088.00		5,88,088.00		5,88,088.00		5,88,088.00
Gratuity (Receivable on Depuration) (M/s Indu Yernani)	1,38,493.00			1,38,493.00	55,314.00			55,314.00
Sh Sanjay Singh (Foreign Travel)	55,314.00			55,314.00	1,21,21,305.80			1,21,21,305.80
Expenses Payable (Sub Total (A) of Annexure - 8)	1,10,00,186.94	3,28,299.00	2,31,840.00	1,15,60,318.94	1,500.00	10,36,537.00	68,29,740.00	1,99,87,592.80
Medical Scheme	1,000.00			1,000.00				1,500.00
GPF	17,000.00			17,000.00	17,000.00			17,000.00
GSLS	18,997.00			18,997.00	18,572.00			18,572.00
4 (a) Unpert Balance of Running Projects		76,254.00		76,254.00		76,254.00		76,254.00
5. EMND Security Deposit (TIFAC) of (Annexure - 9)								
6. Superannuation / Pension/Gratuity	5,15,000.00			5,15,000.00	5,33,784.00			5,33,784.00
7. Accumulated Leave Encashment	7,61,70,182.00			7,61,70,182.00	7,39,72,283.00			7,39,72,283.00
	6,92,58,448.00			6,92,58,448.00	6,51,04,456.00			6,51,04,456.00
Total (A+B)	21,33,28,947.14	19,58,912.00	8,78,714.00	21,61,66,573.14	19,84,77,780.50	23,47,014.00	70,61,504.00	20,78,86,298.50



TECHNOLOGY INFORMATION FORECASTING AND ASSESSMENT COUNCIL (TIFAC) (REGULAR)
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2023 (2022-2023)

GROSS BLOCK											DEPRECIATION			NET BLOCK						
SCHEDULE 8-FIXED ASSETS											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	11,78,50,000.00	-	-	11,78,50,000.00	10,01,61,347.02	17,68,865.00	10,19,30,212.02	1,59,19,787.98	1,76,88,652.98
e) Interior work of TIFAC Building											10.00	5,35,90,427.80	-	-	5,35,90,427.80	4,03,92,890.26	13,19,754.00	4,17,12,644.26	1,18,77,783.54	1,31,97,537.54
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers											15.00	14,88,381.00	-	-	14,88,381.00	11,01,605.54	58,016.00	11,59,621.54	3,28,759.46	3,86,775.46
4. VEHICLES											-	-	-	-	-	-	-	-	-	-
5. FURNITURE & FIXTURES											10.00	38,04,490.60	12,390.00	-	38,16,880.60	21,50,620.21	1,66,626.00	23,17,246.21	14,99,634.39	16,53,870.39
6. OFFICE EQUIPMENT											15.00	2,86,48,029.58	8,20,750.00	-	2,94,68,779.58	2,46,78,582.09	7,15,193.00	2,53,93,775.09	40,75,004.49	39,69,447.49
6(A) OFFICE EQUIPMENT (Ext. Proj)											15.00	6,780.00	-	-	6,780.00	2,249.25	680.00	2,929.25	3,850.75	4,580.75
7. COMPUTER/PERIPHERALS											40.00	2,18,51,333.03	35,14,340.00	-	2,53,65,673.03	1,59,73,080.90	36,21,818.00	1,95,94,898.90	57,70,774.13	58,78,282.13
7 (A) COMPUTER/PERIPHERALS (Ext. Proj)											40.00	14,02,583.00	2,54,688.00	-	16,57,271.00	12,07,607.36	1,70,885.00	13,78,492.36	2,78,778.64	1,94,975.64
8. TIFAC SOFTWARE DEVELOPMENT											40.00	3,24,500.00	-	-	3,24,500.00	1,68,740.00	62,304.00	2,31,044.00	93,456.00	1,55,760.00
9. ELECTRIC INSTALLATIONS											-	-	-	-	-	-	-	-	-	-
10. LIBRARY BOOKS											100.00	62,87,763.60	1,566.00	-	62,89,329.60	62,12,405.10	76,700.50	62,89,106.60	243.00	75,357.50
11. TUBEWELL & W SUPPLY											-	-	-	-	-	-	-	-	-	-
12. OTHER FIXED ASSETS (E-Office)											40.00	1,00,65,802.00	-	-	1,00,65,802.00	64,42,113.28	14,49,475.00	78,91,588.28	21,74,213.72	36,23,688.72
TOTAL OF CURRENT YEAR												24,53,20,090.61	46,03,754.00	-	24,99,23,844.61	19,84,91,242.01	94,10,316.50	20,79,01,558.51	4,20,22,286.10	4,68,28,848.60
PREVIOUS YEAR												24,02,90,170.83	50,29,919.78	-	24,53,20,090.61	18,84,00,802.29	1,00,90,439.72	19,84,91,242.01	4,68,28,848.60	5,18,89,368.54
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.

Assets (External Projects)	F.Y 2018-2019	F.Y 2019-2020	F.Y 2020-2021	F.Y 2021-2022
Under GTWG Project	Comp.	Office Equip.	Comp.	
Under ICTS Project				
Under INSPIRE Project				
Under DIPF Project				
NNM-QTA				
Total		86,700.00	6,780.00	2,63,670.00
		86,700.00	6,780.00	2,63,670.00



TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL (TIFAC)
PATENT FACILITATING CENTER (PFC)
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31.03.2023 (2022-2023)

(Amount – Rs)										
GROSS BLOCK					DEPRECIATION			NET BLOCK		
SCHEDULE 8-FIXED ASSETS	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	10.00	48,000.00	-	-	48,000.00	18,081.84	2,991.81	21,073.65	26,926.35	29,918.16
6. OFFICE EQUIPMENT	15.00	2,29,159.00	-	-	2,29,159.00	1,18,360.73	16,619.74	1,34,980.47	94,178.53	1,10,798.27
7. COMPUTER/PERIPHERALS	40.00	4,16,180.00	-	-	4,16,180.00	3,62,997.20	21,273.12	3,84,270.32	31,909.68	53,182.80
8. TIFAC Software Development	40.00	41,300.00	-	-	41,300.00	26,432.00	5,947.20	32,379.20	8,920.80	14,868.00
8. ELECTRIC INSTALLATIONS		-	-	-	-	-	-	-	-	-
9. LIBRARY BOOKS	100.00	-	-	-	-	-	-	-	-	-
10. TUBEWELL & W/SUPPLY		-	-	-	-	-	-	-	-	-
11. OTHER FIXED ASSETS		-	-	-	-	-	-	-	-	-
TOTAL OF CURRENT YEAR		7,34,639.00	-	-	7,34,639.00	5,25,871.77	46,831.87	5,72,703.64	1,51,935.36	2,08,767.23
PREVIOUS YEAR		7,34,639.00	-	-	7,34,639.00	4,57,627.70	68,244.07	5,25,871.77	2,08,767.23	2,77,011.30
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 31.03.2023 (2022-2023)

GROSS BLOCK					DEPRECIATION			NET BLOCK		
SCHEDULE SHOWN ASSETS	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	10.00	-	-	-	-	-	-	-	-	-
6. OFFICE EQUIPMENT	15.00	-	-	-	-	-	-	-	-	-
7. COMPUTER/PERIPHERALS	40.00	4,79,573.00	3,27,043.00	-	8,06,616.00	4,31,397.60	84,678.76	5,16,076.36	2,90,539.64	48,175.40
8. ELECTRIC INSTALLATIONS		-	-	-	-	-	-	-	-	-
9. LIBRARY BOOKS	100.00	-	-	-	-	-	-	-	-	-
10. TUBEWELL & SUPPLY		-	-	-	-	-	-	-	-	-
11. OTHER FIXED ASSETS		-	-	-	-	-	-	-	-	-
TOTAL OF CURRENT YEAR		4,79,573.00	3,27,043.00	-	8,06,616.00	4,31,397.60	84,678.76	5,16,076.36	2,90,539.64	48,175.40
PREVIOUS YEAR		4,79,573.00	-	-	4,79,573.00	3,99,280.60	32,117.00	4,31,397.60	48,175.40	80,292.00
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.



Schedule 9 – Investments from Earned/Endowment Funds

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2023 (2022-2023)

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	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-SDBI Revolving Fund)	14,07,03,000.00			14,07,03,000.00	14,11,83,000.00			14,11,83,000.00
Total	14,07,03,000.00	-	-	14,07,03,000.00	14,11,83,000.00	-	-	14,11,83,000.00



Schedule 10 - Investments - Others : Nil

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2023 (2022-2023)

Particulars	Current Year				Previous Year			
	TIFAC	PRC	WSSS	TOTAL	TIFAC	PRC	WSSS	TOTAL
1. Sundry Debtors :								
a) Debts outstanding for a period exceeding six months	2,70,000.00	2,22,775.00	-	4,92,775.00	2,70,000.00	2,22,775.00	-	4,92,775.00
2. Cash Balances in Hand (including Cheques / Drafts and Imprest) (Under TIFAC Account)	18,318.00	1,793.00	1,667.00	21,778.00	10,366.00	1,793.00	1,667.00	13,826.00
3. Bank Balances :								
Union Bank of India : Deposit Accounts (Short Term deposits) (Annex-7)	24,66,60,001.00	-	-	24,66,60,001.00	21,25,27,272.00	-	-	21,25,27,272.00
Union Bank of India : Flexi Deposit Account (Annex - 7)	10,00,000.00	-	-	10,00,000.00	5,00,000.00	-	-	5,00,000.00
Accrued Interest (Accrued Interest) (Annexure 7)	56,10,630.00	-	-	56,10,630.00	40,80,502.00	-	-	40,80,502.00
On Savings Accounts	15,03,28,994.99	1,17,75,034.89	31,04,220.19	16,52,09,250.07	20,41,34,487.70	4,39,737.30	4,03,65,796.06	24,49,40,021.06
B) Loans, Advances and Other Assets :-								
1. Loans:								
a) Staff Loan (Under TIFAC Account) (Annex-1)	4,88,983.00	-	-	4,88,983.00	4,91,442.00	-	-	4,91,442.00
Advance : DAVP								
Advance : M/s Balmer Lawrie & Co. Ltd.	1,12,476.00	-	-	1,12,476.00	1,12,476.00	-	-	1,12,476.00
Advance : CSIR-Central Glass & Ceramic Research Institute	8,550.00	-	-	8,550.00	8,550.00	-	-	8,550.00
Advance : NISCS (Sparrow)	13,55,198.00	-	-	13,55,198.00	18,06,930.00	-	-	18,06,930.00
Advance : Principal, Miranda House								
Maheshwari Rice Mills receivable	1,47,000.00	-	-	1,47,000.00	-	-	11,76,000.00	11,76,000.00
Prepaid E-Office Expenses (System Administrator)	7,00,137.00	-	-	7,00,137.00	-	-	20,446.00	20,446.00
International Women's Day KIRAN-IPR 2021								
Advance : Khargpur Centre KIRAN IPR			5,62,177.00	5,62,177.00			5,62,177.00	5,62,177.00
Advance : Karnataka State Council for Science and Technology			15,97,113.00	15,97,113.00			15,97,113.00	15,97,113.00
Advance : Pune Center KIRAN IPR			1,21,553.00	1,21,553.00			10,00,000.00	10,00,000.00
Advance : E-Office (System Administrator)			-	-	5,07,934.50		-	5,07,934.50
Leave Encashment Recoverable (Sh. Manish Kumar)	2,000.00	-	-	2,000.00	-	-	-	-
CFR under Policy Research Cell Programme of DST	4,11,715.00	-	-	4,11,715.00	-	-	-	-
Grant : Scientific Social Responsibility (SSR) Policy (Annexure 10)	1,15,000.72	-	-	1,15,000.72	1,15,000.72	-	-	1,15,000.72
Security Deposit	1,08,403.00	-	-	1,08,403.00	1,08,403.00	-	-	1,08,403.00
WSSS (Overhead) / receivable	8,29,950.00	-	-	8,29,950.00	8,29,950.00	-	-	8,29,950.00
TDS Receivable from Income Tax Department (DPP)	1,40,400.00	1,972.00	-	1,42,372.00	1,40,400.00	-	-	1,42,372.00
TDS Receivable from Income Tax Department (AFRIS)	5,000.00	-	-	5,000.00	5,000.00	-	-	5,000.00
Interest Accrued from Union Bank of India (on Savings Bank Account)	9,04,493.00	1,19,105.00	54,417.00	10,78,015.00	17,46,740.00	32,197.00	10,930.00	17,89,867.00
Total (A) + (B)	40,92,17,249.71	1,21,21,679.89	54,41,147.19	42,67,80,076.79	42,73,95,453.92	6,98,474.30	4,47,34,129.06	47,28,28,057.28



Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)

Schedules Forming Part of Income & Expenditure for the year ended 31.03.2023 (2022-2023)

Schedule 12 - Income From Sales / Services : Nil

Schedule 13 - Grants / Subsidies (TIFAC Regular)

Particulars	Current Year				Previous Year			
	TIFAC	PGC	WSSS	TOTAL	TIFAC	PGC	WSSS	TOTAL
1. From Central Government								
TIFAC Grant								
a) Grants in Aid (Plan)	Actual Grant Received Rs.75000000.00			-				-
	7,50,00,000.00	2,00,00,000.00		9,50,00,000.00	12,00,00,000.00		4,50,00,000.00	16,50,00,000.00
Amount Taken Back from PMIS Portal (Rs.Nil)								
b) Grant in Aid (Non-Plan)				-				-
c) Grant in Aid (Plan) Capital Assets				-				-
d) Grant in Aid (Salary)	Actual Grant Received Rs.96700000.00			9,50,96,966.00	10,00,00,000.00			10,00,00,000.00
Amount Taken Back from PMIS Portal (Rs. 1503034.00)	9,50,96,966.00							
Total	17,00,96,966.00	2,00,00,000.00	-	19,00,96,966.00	22,00,00,000.00	-	4,50,00,000.00	26,50,00,000.00

Schedule 14 - Fees / Subscriptions

Particulars	Current Year				Previous Year			
	TIFAC	PGC	WSSS	TOTAL	TIFAC	PGC	WSSS	TOTAL
Award For Nari Shakti				-				-
RTIA Questions	10.00			10.00	20.00			20.00
Total	10.00	-	-	10.00	20.00	-	-	20.00

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

Schedule 16 - Income From Royalty, Publication Etc.

Particulars	Current Year				Previous Year			
	TIFAC	PGC	WSSS	TOTAL	TIFAC	PGC	WSSS	TOTAL
1) Income from Royalty				-				-
2) Sale of Publications	2,400.00			2,400.00	61,500.00			61,500.00
3) Other (Specify)				-				-
Total	2,400.00	-	-	2,400.00	61,500.00	-	-	61,500.00



Schedule 17 - Interest Earned (Regular)

Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)
Schedules Forming Part of Income & Expenditure for the year ended 31.03.2023 (2022-2023)

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. On Term Deposits				-				-
a) Union Bank of India, (Scheduled Banks)				-				-
2. On Savings Accounts				-				-
Interest from Savings Bank (General)				-				-
Interest from Savings Bank Salary Account				-				-
Interest from Savings Bank Fixed Account				-				-
3. On loans :				-				-
a) Employees (LTA, Scooter Car Tour, LTC, HRA and Computers)				-				-
b) Others (Interest from Income Tax and Projects)				-				-
4. Interest on Debtors and Other Receivables (TIFAC-SIDBI Revolving Fund)				-				-
Total	-	-	-	-	-	-	-	-

Note : Tax deducted at source to be indicated

Schedule 18 - Other Income

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. Miscellaneous Income				-				-
Other Receipts	410.01			410.01	1,05,772.46			1,05,772.46
Leave Salary & Pension Contribution	2,09,546.00			2,09,546.00	2,65,426.00			2,65,426.00
Training Workshop : Integrated Assessment of Air Pollution				-	1,02,000.00			1,02,000.00
Training Workshop : Patent Search and Analytics				-	20,000.00			20,000.00
Technology Evaluation and Assessment	45,000.00			45,000.00	50,000.00			50,000.00
IPR and Technology Transfer	10,00,000.00			10,00,000.00				
International Conference on System Analysis (Participation Fee)	80,290.36			80,290.36				
2. Income Accrued and Received on Running Projects				-				-
Revenue Earned During the Year (TIFAC-SIDBI Revolving Fund)	22,42,000.00			22,42,000.00	28,94,000.00			28,94,000.00
Overhead : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science				-	41,200.00			41,200.00
Overhead : DSIR Technology Commercial Assessment on TR-6 Project	2,86,000.00			2,86,000.00				
Overhead : Classified Project Study : MCA	76,292.00			76,292.00				
Overhead : CIR Under Policy Research	92,100.00			92,100.00				
Overhead : Detail Project Report for National Mission				-	79,705.00			79,705.00
Overhead : WSSS				-	7,99,919.00			7,99,919.00
Total	40,31,638.37	-	-	40,31,638.37	43,52,022.46	-	-	43,52,022.46



Technology Information Forecasting And Assessment Council, (TIFAC) (Regular)

Schedules Forming Part of Income & Expenditure for the year ended 31.03.2023 (2022-2023)

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)	3,50,000.00	-	-	3,50,000.00	85,85,000.00	-	-	85,85,000.00
Advanced Composites Programme (Annex-2)	8,67,713.00	-	-	8,67,713.00	6,00,000.00	-	-	6,00,000.00
Sugar Technology Mission (Annex-2)	-	-	-	-	1,00,00,000.00	-	-	1,00,00,000.00
Total	12,17,713.00	-	-	12,17,713.00	1,91,85,000.00	-	-	1,91,85,000.00

Schedule 21 - Establishment & Other Administrative Expenses

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Establishment Expenditure(Annex-3)	130582281.94	250400.00	27603895.00	158477176.94	122,83,592.80	775554.00	11633713.00	135,23,949.80
Administrative Expenses (Annex-4)	18967574.28	6918457.41	4820267.87	30706299.56	18485143.91	1098271.45	4521811.00	33369226.36
Establishment & Administrative Expenditure (Vision 2020)(Annex-6)	0.00	-	-	0.00	0.00	-	-	0.00
Total	149550455.22	7208857.41	32424162.87	189183475.50	141320526.71	11137825.45	16154824.00	168613175.16

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)	4,67,693,08.00	5,79,835.00	3,58,986.00	4,81,08,129.00	6,67,92,495.38	1,48,617.00	-	6,69,41,112.38
Project Expenditure (Vision 2020)(Annex-6a)	79,34,580.00	-	-	79,34,580.00	84,69,716.00	-	-	84,69,716.00
Project Expenditure (Vision 2035) (Annex-5&6a)	-	-	-	-	-	-	-	-
Total	5,47,03,888.00	9,79,835.00	3,58,986.00	5,60,42,709.00	7,52,62,211.38	1,48,617.00	-	7,54,10,828.38

Schedule 23 - Interest : NIL



TECHNOLOGY INFORMATION, FORECASTING & ASSESSMENT COUNCIL

SCHEDULE FORMING PART OF THE ACCOUNTS FOR THE YEAR ENDED 31.03.2023

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, sale of publications and as stated in the below paras.
 - (i) The Grants granted to the society are taken as income in the year of receipt of grant irrespective of the fact whether the sanctioned grant is actually spent or not.
 - (ii) 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.
 - (iii) 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.
 - (iv) 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.
 - (v) In cases where the projects are executed by other institutions, all disbursements of grants irrespective of its utilization by them for projects are treated as expenditure during the Financial Year in which the grant is released.
2. Fixed assets are stated at cost less accumulated depreciation. Cost comprises the purchase price and any cost attributable for bringing the asset to its working condition for its intended use.
3. 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, 1961.
4. Total expenditure is not bifurcated into plan and non-plan expenditure in the financial statements of the society.
5. The society used to reimburse the expenses on the presentation of the bills irrespective of the period of the expenses.

B. CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS

a. Contingent Liabilities

1. Some legal cases have been filed against the Society for which liability may arise in future. The amount is not ascertainable.
2. TDS not deducted and paid under section 51 of CGST Act, 2017 from 2018-2022 for which liability may arise in future. The amount is not ascertainable.

b. Notes on Accounts

1. The society runs various projects under the instructions and guidance of Department of Science and Technology (DST), Ministry of Science and Technology, separate accounts for project-wise have not been maintained for the unutilized amount on the project for which the grant/fund released and accounted for as expenditure irrespective of the fact that the amounts so released may not have been fully utilized towards the projects during the year as per the accounting policies.
2. Other Current liabilities also include the net amount of the Grants received for external projects from DST and amount released for the projects. No period wise details have been maintained to adjust the same either by the release to the project or refund to the DST (grantee).
3. 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.

4. 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.
5. In view of there being no taxable income under Income tax Act, 1961 as per section 10(23C) applicable to the Society, no provision for Income Tax has been considered necessary.
6. The reimbursement of expenses has been made to employees on the basis of approval of the ED.

7. FOREIGN CURRENCY TRANSACTIONS

(Amount Rs.)

Current
Year

Previous
Year

Expenditure in foreign currency:

a) Travel	9,31,324/-	2,60,468/-
b) Remittances and Interest Payment to Financial Institutions/ Banks in Foreign Currency	Nil	Nil
c) Patents Filing abroad	43,75,182/-	58,77,100/-
d) Other expenditure:		
- Membership Fees	31070140/-	598,13,734/-
- Legal and Professional Expenses	Nil	Nil
- Miscellaneous Expenses	Nil	Nil

8. Remuneration to Auditors:

- Audit Fees	1,77,385/-	1,42,175/-
- Taxation matters	Nil	Nil
- Consultancy Charges	Nil	Nil
- Certification	Nil	Nil
- Goods & Service Tax	Nil	Nil

9. 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	157433818.36	157433818.36
Advanced Composite Programmes	0.00	133508293.00	133508293.00
Sugar Technology Units	0.00	15135528.00	15135528.00
Fly Ash Utilization	0.00	11834000.00	11834000.00
Agriculture and Agro Food Sector	0.00	10625000.00	10625000.00
Targeted Programmes in other Important Areas	0.00	92765000.00	92765000.00
Total	0.00	421301639.36	421301639.36

10. 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 CPF accounts 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 2022-23 there was a deficit of Rs. 31,54,838.94/- with the CPF Trust due to difference in interest provided on the balance in the employees account and interest earned on deposits with the Nationalized Banks and the same to be recovered from the TIFAC.

11. An amount of Rs. 54,87,043/-is to be transferred to Bharat Kosh Account being Interest earned on deposits with Nationalized banks for the years 2022-23.
12. The Grants have been given on the basis of utilization certificates issued by the Institute itself to which the grant has been given and not certified by the designated auditors of the institute, who had audited the accounts of the institute, regarding the expenditure incurred by the institute for the given specified project.
13. Previous year's figures have been regrouped/rearranged wherever found necessary to make them comparable with current year figures.
14. Schedules 1 to 13 are annexed to and form an integral part of the Balance Sheet as at 31.03.2023 and the Income and Expenditure Account for the year ended on that date.

As per our report of even date annexed herewith

<p>For Sign, Witnessed & Co. Chartered Accountants Firm Name: ARSHIN S. R. T. Sharma Partner Membership No. 100000 Place: New Delhi Date: 15.09.2023</p>	  P.K. Anilkumar / P.K. Anilkumar Chartered Accountant / Chartered Accountant Technology Information, Forecasting and Assessment Council (TIFAC) Ministry of Science & Technology, Govt. of India New Delhi-110016 / New Delhi-110016	 In-charge (Fin. & Acct.) TIFAC प्रभारी (वित्त एवं लेखा) / In-charge (Fin. & Acct.) प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टीएफएसी) विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार / Dept. of Science & Technology, Govt. of India नई दिल्ली-110016 / New Delhi-110016	 Executive Director TIFAC डॉ. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava कार्यकारी निदेशक / Executive Director प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टीएफएसी) Technology Information, Forecasting and Assessment Council (TIFAC) विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार / Dept. of Science & Technology, Govt. of India नई दिल्ली-110016 / New Delhi-110016
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Place: New Delhi
Date: 15.09.2023

Staff Advances

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Staff Advances under TIFAC Account								
A) HRA Advance								
Ms. Sangeta Bakshi	86,400.00			86,400.00	1,36,800.00			1,36,800.00
B) Car Advance								
Sh. T. Chandrasekhar	27,900.00			27,900.00	38,700.00			38,700.00
Sh. Yashwant Dev Panwar	10,800.00			10,800.00	32,400.00			32,400.00
C) Leave Travel Concession								
Ms. Mini K. K.				-	14,000.00			14,000.00
Ms. Anita Naik	20,529.00			20,529.00				
Sh. Sushil Kumar Jha	36,270.00			36,270.00				
Mrs. Geeta Naik	13,268.00			13,268.00				
Sh. Debbabrat Mazumdar	64,274.00			64,274.00				
D) Tour Advance								
Sh. Sajid Mubashir	81,042.00			81,042.00				
E) Computer Advance								
Sh. Sushil Kumar Jha	45,200.00			45,200.00				
Sh. Mahipal Singh Rawat	11,000.00			11,000.00	23,000.00			23,000.00
Sh. Sanjay Sundriyal	21,000.00			21,000.00	33,000.00			33,000.00
Sh. Ravi Dutt	7,000.00			7,000.00	19,000.00			19,000.00
Sh. Kumar Singh	26,000.00			26,000.00	38,000.00			38,000.00
Ms. Premila Khilani	14,300.00			14,300.00	39,500.00			39,500.00
Sh. Bishram Bhakta	24,000.00			24,000.00	36,000.00			36,000.00
Total	4,88,983.00			4,88,983.00	4,91,442.00			4,91,442.00



REFUND FROM PROJECTS FINANCED (TIFAC REGULAR ACCOUNT) - INCOME

Annexure -2

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(A) Home Grown Technology :								
Up Sealing Technology for Processed Coir	3,50,000.00	-	-	3,50,000.00	85,85,000.00	-	-	85,85,000.00
Manufacture of Nutan Himveer Buhari								
Sub Total (A)	3,50,000.00	-	-	3,50,000.00	85,85,000.00	-	-	85,85,000.00
(B) Advanced Composites Programme								
Development of Composite Modular Acoustic Enclosure	5,67,713.00			5,67,713.00	6,00,000.00			6,00,000.00
Development of Filament Wound Composite Road Tanker	3,00,000.00			3,00,000.00				
Sub Total (B)	8,67,713.00	-	-	8,67,713.00	6,00,000.00	-	-	6,00,000.00
(C) Sugar Technology Mission								
Cane Juice Clarification					1,00,00,000.00			1,00,00,000.00
Sub Total (C)	-	-	-	-	1,00,00,000.00	-	-	1,00,00,000.00
Total (A) + (B) + (C) + (D)+(E)	12,17,713.00	-	-	12,17,713.00	1,91,85,000.00	-	-	1,91,85,000.00



Establishment Expenditure (TIFAC Regular)

Annexure 3

PARTICULARS	Current Year			Previous Year			
	TIFAC	PPC	WSSS	TOTAL	TIFAC	PPC	WSSS
a) Salaries	9,66,72,078.00			9,66,72,078.00	9,21,89,433.00		9,21,89,433.00
Salary - Consolidated	3,18,876.00	2,90,400.00		6,09,276.00	3,18,876.00	7,75,554.00	10,94,430.00
Stipend				-	3,02,400.00		3,02,400.00
Internship Scheme				-	10,838.00		10,838.00
b) TIFAC Contribution to New Pension Scheme	61,99,531.00			61,99,531.00	79,65,410.00		79,65,410.00
c) Contribution to Provident Fund	49,99,590.94			49,99,590.94	44,90,446.80		44,90,446.80
d) Others (Specify)				-			
Consultancy Fee (Others)	30,34,057.00			30,34,057.00	13,92,838.00		13,92,838.00
Consultancy Fee (Legal)	7,79,097.00			7,79,097.00	7,52,500.00		7,52,500.00
Consultancy Fee (Estt.)	8,40,000.00			8,40,000.00	8,80,000.00		8,80,000.00
Young Professional	9,65,678.00			9,65,678.00	8,18,193.00		8,18,193.00
Hospitalisation Expenses	9,93,828.00			9,93,828.00	4,33,283.00		4,33,283.00
Medical Expenses	17,26,515.00			17,26,515.00	16,91,296.00		16,91,296.00
Leave Travel Concession	18,02,884.00			18,02,884.00	8,08,075.00		8,08,075.00
Gratuity	47,67,715.00			47,67,715.00	57,46,566.00		57,46,566.00
Leave Encashment (TIFAC Employees)	39,60,491.00			39,60,491.00	19,75,890.00		19,75,890.00
Encashment of Leave (TIFAC Employees)	20,32,332.00			20,32,332.00	16,32,456.00		16,32,456.00
Leave Salary & Pension Contribution	6,64,934.00			6,64,934.00			
Tuition Fee/Children Education Allowance	8,25,275.00			8,25,275.00	14,26,882.00		14,26,882.00
Scholarship for Women Scientists (12th Batch)			2,43,37,065.00	2,43,37,065.00			98,31,517.00
Salary of IT Scientist			9,68,036.00	9,68,036.00			80,000.00
Salary of Staff Training Coordinator			12,88,244.00	12,88,244.00			7,24,836.00
Salary of Accounts Assistant			3,36,850.00	3,36,850.00			3,32,220.00
Salary of Data Entry Operator			3,36,850.00	3,36,850.00			3,32,220.00
Salary of Training Assistant			3,36,850.00	3,36,850.00			3,32,220.00
Total	13,05,82,881.94	2,90,400.00	2,76,03,895.00	15,84,77,176.94	12,28,35,382.80	7,75,554.00	1,16,33,013.00
							13,55,43,949.80



Administrative Expenses (TIFAC Regular)

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Repair and Maintenance	8,12,749.00	8,024.00	-	8,20,773.00	3,76,877.00	-	-	3,76,877.00
Rent, Rates and Taxes	-	-	-	-	-	-	-	-
Car hire Charges	12,97,718.00	27,291.00	-	13,25,009.00	9,40,201.53	2,834.00	-	9,43,035.53
Postage, Telephone and Communication Charges	11,55,066.00	-	-	11,55,066.00	15,43,380.69	-	-	15,43,380.69
Printing, Stationery & Printing of Publications	16,12,625.00	-	-	16,12,625.00	10,15,374.72	-	-	10,15,374.72
Transport Recovery (Sh. Sanjay Singh)	-	-	-	-	3,29,323.00	-	-	3,29,323.00
Travelling and Conveyance Expenses	1,14,384.00	1,088.00	-	1,15,472.00	58,941.00	-	-	58,941.00
Subscription Expenses	1,78,556.00	-	-	1,78,556.00	1,81,930.00	-	-	1,81,930.00
TIFAC Foundation Day (2020-21)	-	-	-	-	1,120.00	-	-	1,120.00
TIFAC Foundation Day (2021-22)	-	-	-	-	1,10,671.00	-	-	1,10,671.00
TIFAC Foundation Day (2022-23)	11,39,763.00	-	-	11,39,763.00	-	-	-	-
Professional Charges	1,12,362.00	-	-	1,12,362.00	1,54,992.00	-	-	1,54,992.00
Auditors Remuneration	-	-	-	-	-	-	-	-
Audit Fee	1,77,385.00	-	-	1,77,385.00	1,42,175.00	-	-	1,42,175.00
GST on Audit Fee & Income Tax Return	-	-	-	-	31,608.00	-	-	31,608.00
Tea/Water/Opening and Closing of Office	3,93,626.00	-	-	3,93,626.00	2,98,824.00	-	-	2,98,824.00
Advertisement and Publicity	6,30,000.00	-	92,623.00	7,22,623.00	2,07,985.00	2,65,780.00	28,72,806.00	33,46,571.00
Others (Specify)	-	-	-	-	-	-	-	-
Bank Charges	9,313.76	963.41	7,463.87	17,741.04	11,047.97	622.43	1,416.00	13,086.42
Misc. Office Expenses	7,74,164.02	-	-	7,74,164.02	8,27,642.76	2,662.00	-	8,30,304.76
Membership Fee	1,11,969.00	-	-	1,11,969.00	1,08,539.00	-	-	1,08,539.00
Mainpower (Service Provider Agencies)	20,36,695.00	-	-	20,36,695.00	24,38,738.00	-	-	24,38,738.00
Electricity and Water Bill expenditure	8,05,343.00	-	-	8,05,343.00	-	-	-	-
International Conference on System Analysis	17,98,817.00	-	-	17,98,817.00	-	-	-	-
E-Office (System Administrator)	7,56,447.50	-	-	7,56,447.50	4,10,068.50	-	-	4,10,068.50
E-Office LITE (Sparrow)	4,51,732.00	-	-	4,51,732.00	4,57,036.00	-	-	4,57,036.00



Maintenance of Vishwakarma Bhavan	20,30,000.00				61,00,000.00		61,00,000.00
Legal Charges	43,192.00				1,31,645.00		1,31,645.00
Retirement Benefits (Composite Transfer Grant)	2,94,972.00						
Rajabhasha Committee Meeting	97,735.00				1,39,508.00		1,39,508.00
Swachh Bharat Mission	39,222.00				15,000.00		15,000.00
Digitization and Scanning Service					1,17,065.74		1,17,065.74
Web Portal Service/Applications					2,41,770.00		2,41,770.00
Filing of Patent (Indian)	23,42,216.00					37,38,426.00	37,38,426.00
Filing of Patent (Abroad)	43,75,182.00					58,77,100.00	58,77,100.00
Incentive For Higher Qualification	30,000.00						
Honorarium to Experts	2,31,000.00			2,02,098.00	6,04,000.00		7,32,000.00
Housekeeping of TIFAC Building	9,95,506.00				14,75,560.00		14,75,560.00
Saksham Portal Maintenance	1,67,400.00						
TIFAC Website and Applications	2,40,000.00						
TIFAC Software Maintenance	21,832.00				11,800.00		11,800.00
Patent Agent Prize Money (11th Batch)				15,00,000.00			
Patent Agent Prize Money (12th Batch)				14,00,000.00			
Interest : TDS					2,300.00		2,300.00
Faculty Travels to Orientation and Workshop (12th batch)				3,52,268.00			
TA/DA for attending Orientation Programme				33,455.00			
TA/DA for Attending Orientation Programme (12th Batch)							
TA/DA for Women Scientist (Workshop & Orientation)							
International Womens Day Kiran - IPR 2021				20,446.00			
Study Kit for Orientation Programme				2,35,914.00			
Orientation Programme				7,86,623.00			
Contingency, Refresher for Alumni							
Contingency (12th Batch)				1,04,850.00			
Consumable (Printer Cartridges, Stationery, Kits)				20,000.00			
Overhead				64,527.00			
Maintenance of Accounting Software	4,132.00						
					4,132.00		



Training Programme on IPR at Guwahati		1,59,561.00						
Training Programme on IPR at Telangana State Council								
Training Programme on IPR at Tamil Nadu State Council								
Total	1,89,67,574.28	69,18,457.41	48,20,267.87	3,07,06,299.56	1,84,85,143.91	1,99,203.00 2,75,644.00	45,21,811.00	1,99,203.00 2,75,644.00 3,33,69,226.36



PARTICULARS	PROJECT EXPENSES (TIFAC Regular Account)							
	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(a) Follow-Up Action/Special Initiatives								
ATMA Programme Under SRLAN	4,80,000.00			4,80,000.00				-
Assessment of Technology Maturity for AATMA Nibhar Bharat	10,00,000.00			10,00,000.00				-
Brainstorming Meeting TV 2047	35,34,265.00			35,34,265.00				-
Study on Identification of Production, Processing and marketing related problems in Apple and Saffron and their redressals taking apple and saffron legacy forward from science to society	3,00,000.00			3,00,000.00				-
Shramik Shakti Manch (Saksham)	10,45,775.00			10,45,775.00	6,10,945.00			6,10,945.00
Management Fee & Incidental Charges (TIFAC-SIDBI Revolving Fund)	27,22,000.00			27,22,000.00	31,45,000.00			31,45,000.00
Sub-Total (a)	90,82,040.00	-	-	90,82,040.00	37,55,945.00	-	-	37,55,945.00
(b) IITASA - TIFAC Projects/Study/Membership Fee								
IITASA - TIFAC Joint Workshop (TIFAC)	3,10,70,140.00			3,10,70,140.00	1,14,294.00			1,14,294.00
INDIA-IITASA Membership Fee					5,98,13,734.38			5,98,13,734.38
Sub-Total (b)	3,10,70,140.00	-	-	3,10,70,140.00	5,99,28,028.38	-	-	5,99,28,028.38
(c) Project Related Expenditure								
Meeting Expenditure, Meeting (Project Related), Meeting (NITI AAYOG) TIFAC, DST Review Committee Meeting	6,55,473.00	22,155.00		6,77,528.00	2,17,973.00	24,000.00		2,41,973.00
Traveling Expenditure, Travel Abroad, Travel Expenditure (Project Expenditure)	41,95,019.00	77,680.00		42,72,699.00	20,92,738.00			20,92,738.00
Workshop Expenditure, Workshop :TIFAC/DST ITS Canada, Workshop on CIPC 2016	17,66,736.00	8,80,000.00	3,58,986.00	30,05,722.00	7,97,811.00	1,24,617.00		9,22,428.00
Sub-Total (c)	66,17,128.00	9,79,835.00	3,58,986.00	79,55,949.00	31,08,522.00	1,48,617.00	-	32,57,139.00
Total (a) to (c)	4,67,69,308.00	9,79,835.00	3,58,986.00	4,81,08,129.00	6,67,92,495.38	1,48,617.00	-	6,69,41,112.38



Annexure -6

PARTICULARS	EXPENDITURE OF VISION 2020 and Vision 2035					
	Current Year			Previous Year		
	V2020	Vision 2035	TOTAL	V2020	Vision 2035	TOTAL
Establishment & Administrative Expenditure						
Printing, Stationary & Printing of Publications						
Sub Total (A)						
Total (A)						

Annexure - 6A

PARTICULARS	PROJECT EXPENDITURE OF VISION 2020					
	Current Year			Previous Year		
	Vision 2020	Vision 2035	TOTAL	Vision 2020	Vision 2035	TOTAL
(a) Targeted Programme in Other Important Area						
MSME Expenses	9,06,202.00		9,06,202.00	3,10,496.00		3,10,496.00
MSME : Commissioning TIFAC Academic Partner (TAP)	20,00,000.00		20,00,000.00	66,23,800.00		66,23,800.00
MSME : Outreach Academic Partner	11,51,900.00		11,51,900.00			
MSME : Study on the Brass Metal Cluster	4,75,200.00		4,75,200.00			
MSME : Study on Apparel Manufacturing Cluster	4,34,347.00		4,34,347.00			
MSME : Study for Karkhal Shil Pati Cluster	6,80,556.00		6,80,556.00			
MSME : Technology Gap Analysis Report for Channapattanam	5,89,500.00		5,89,500.00			
MSME : Seaweed Mission	9,16,352.00		9,16,352.00	8,88,920.00		8,88,920.00
MSME : Study for Ready Made Garment Cluster	4,31,578.00		4,31,578.00			
MSME : Study on Sal Leaf Cluster Bankura	3,48,945.00		3,48,945.00			
MSME : Study for the Jhulka Cluster, Kankalyaganj, Nalanda, Bihar				2,04,600.00		2,04,600.00
MSME Study for Agriculture Implement Cluster, Noorsari, Nalanda Bihar				2,04,600.00		2,04,600.00
MSME : Study for the Textile & Garment Manufacturing				2,37,300.00		2,37,300.00
	79,34,580.00		79,34,580.00	84,69,716.00		84,69,716.00



PROJECT EXPENDITURE OF VISION 2020

Annexure - 6A

PARTICULARS	Current Year			Previous Year		
	Vision 2020	Vision 2035	TOTAL	Vision 2020	Vision 2035	TOTAL
(a) Targeted Programme in Other Important Area Brainstroming Meeting 2035			-			-
Sub-Total (a)	-	-	-	-	-	-
(b) Project Related Expenditure Travelling Expenditure, Travel Abroad, Travel Expenditure (Project Expenditure)			-			-
Sub-Total (b)	-	-	-	-	-	-
TOTAL (a) to (b)	79,34,580.00	-	79,34,580.00	84,69,716.00	-	84,69,716.00

Annexure 7

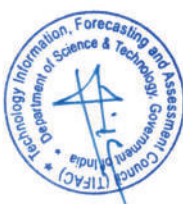
SHORT TERM DEPOSITS WITH BANKS

PARTICULARS	Current Year			Previous Year		
	TIFAC	PFC	WSSS	TIFAC	PFC	WSSS
Short Term Deposits						
TIFAC	24,66,60,001.00			21,25,27,272.00		
Flexi Account	10,00,000.00			5,00,000.00		
Accrued Interest	56,10,630.00			40,80,502.00		
TOTAL	25,32,70,631.00	-	-	21,71,07,774.00	-	-



EXPENSES PAYABLE

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Expenses Payables Under TIFAC								
Salary Payable	57,51,292.00	24,180.00	2,31,840.00	60,07,312.00	54,73,263.00	24,180.00	2,15,818.00	57,13,261.00
Salary Arrear 30% Payable (01.04.2019 to 31.03.2020)				-	-	2,44,147.00		2,44,147.00
Consultancy Fee	3,32,082.00			3,32,082.00	4,05,645.00			4,05,645.00
NPS Contribution (Employees)	3,89,153.00			3,89,153.00	3,54,881.00			3,54,881.00
NPS Contribution (Employers)	5,44,803.00			5,44,803.00	4,96,824.00			4,96,824.00
CPF Contribution (Employee)	3,07,809.00			3,07,809.00	3,24,658.00			3,24,658.00
CPF Contribution (Employers)	33,41,752.94			33,41,752.94	14,28,395.80			14,28,395.80
Experts Members Payable (Outsiders)(Honorarium)				-	32,000.00			32,000.00
M/s Gobind Computers Pvt. Ltd.	270.00			270.00				-
M/s O A Compserve Pvt. Ltd.	73,266.00			73,266.00				-
M/s Shiv Tibrewal & Co. (Chartered Accountant)	1,61,050.00	30,958.00		1,61,050.00 30,958.00	1,19,790.00			1,19,790.00 3,71,606.00
M/s Ashok Travels and Tours				-	4,80,000.00			4,80,000.00
Bhannars Hindu University (BHU)				-	10,00,000.00			10,00,000.00
Indian Institute of Technology BHU, Varanasi				-	6,750.00			6,750.00
M/s K S Gupta And Company				-	4,325.00			4,325.00
M/s Hameed Furniture Works, New Delhi				-	12,747.00			12,747.00
MTNL				-	1,69,128.00			1,69,128.00
M/s Business Aids (India)				-	14,281.00		38,068.00	52,349.00
M/s Chawla Reprographics				-	13,214.00			13,214.00
M/s Sunil Sharma, New Delhi				-	47,096.00			47,096.00
M/s Prime System Technologies	46,284.00			46,284.00				-
M/s Bharat Enterprises	24,554.00			24,554.00	4,473.00			4,473.00
M/s Scientific American, Harlan, IOWA				-	46,744.00			46,744.00
M/s Darshnee Enterprises, New Delhi				-	873.00			873.00
M/s CDAC Pune BDG 2021-22				-	37,423.00			37,423.00
M/s Babu Tourist Taxi Service				-	1,77,000.00			1,77,000.00
M/s Forty Five Integrated Solutions Pvt. Ltd.				-				-



M/s Star Travel Solution	8,554.00	26,535.00	26,535.00
NIFT-TEA Knitwear Fashion Institute	-	2,37,300.00	2,37,300.00
PSG College of Technology Science and Technology	-	42,595.00	42,595.00
Enterprises	-	3,89,098.00	3,89,098.00
Reimbursement Payable	-	1,416.00	15,953.00
The Printways	-	66,000.00	66,000.00
Income Tax on Audit & Return	-	41,265.00	46,995.00
M/s Sarathi Enterprises	-	7,540.00	7,540.00
M/s Oasis Telecommunications	-	2,365.00	2,365.00
M/s Malik Water Supply	-	-	-
M/s Obhan & Associates	1,64,600.00	-	-
M/s Khuram & Khuram	1,00,000.00	-	-
M/s Sensys Technologies Pvt. Ltd.	-	95,000.00	95,000.00
GST on Audit Fee	27,871.00	35,010.00	35,010.00
M/s Director, New Delhi HPO, Delhi	-	342.00	342.00
M/s Unecops Technologies Limited, New Delhi	-	1,544.00	1,544.00
M/s Anand & Anand	-	2,68,322.00	2,68,322.00
M/s Anjan Sane & Associates	-	12,245.00	12,245.00
M/s S Majumdar & Company	-	4,87,643.00	4,87,643.00
Scholarship for Women Scientists	-	57,25,727.00	57,25,727.00
TIFAC (Overhead Charges) Payable	-	8,29,950.00	8,29,950.00
M/s Uma Dev & Sons	-	1,54,179.00	1,54,179.00
Sub Total (A)	1,10,00,186.94	1,21,21,305.80	1,99,87,582.80
TDS Payable	18,22,636.00	13,88,345.00	14,80,160.00
Sub Total (B)	18,22,636.00	13,88,345.00	14,80,160.00
Total A+B	1,28,22,822.94	1,35,09,650.80	2,14,67,742.80



Earnest Money held with TIFAC

PARTICULARS	Current Year			Previous Year				
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Earnest Money held from Sugar Factories								
Earnest Money: Sakthi Sugars Ltd	1,00,000.00			1,00,000.00	1,00,000.00			1,00,000.00
Earnest Money : Simbhaoli Sugar	3,00,000.00			3,00,000.00	3,00,000.00			3,00,000.00
Sub Total (A)	4,00,000.00			4,00,000.00	4,00,000.00			4,00,000.00
Earnest Money from Parties								
M/s Nimbus Harbour Pvt Ltd.	20,000.00			20,000.00	20,000.00			20,000.00
M/s Perfect Traders	5,000.00			5,000.00	5,000.00			5,000.00
M/s Omnittech Automations Pvt Ltd	5,000.00			5,000.00	5,000.00			5,000.00
M/s Dip Technologies Pvt. Ltd.	5,000.00			5,000.00	5,000.00			5,000.00
M/s Asha Enterprises Pvt. Ltd.	50,000.00			50,000.00	50,000.00			50,000.00
M/s Belek Canadian Water Ltd. (Aquaflow)	5,000.00			5,000.00	5,000.00			5,000.00
Security Deposit : M/s Pink House Keeping					18,784.00			18,784.00
Security Deposit : M/s Prime Systime Technologies	25,000.00			25,000.00	25,000.00			25,000.00
Security Deposit : M/s Softline Studio Services								
Sum Total (B)	1,15,000.00	-	-	1,15,000.00	1,33,784.00	-	-	1,33,784.00
TOTAL A + B	5,15,000.00	-	-	5,15,000.00	5,33,784.00	-	-	5,33,784.00



Expenditure Voucher/Receipt by TIFAC

(Annexure 10)

PARTICULARS	Current Year										Previous Year									
	GRNG	IOS	TMA	CIR	RS/IT/Activity	OS/IN/CA	RND/MS&T	T&C/ST/RAO	DRP	MM/CLA	SR	ED	DSR/IR+S	AS&ARMS	GRNG	IOS	TMA	CIR	RS/IT/Activity	OS/IN/CA
Opening Balance from Previous Year	20,18,728.00	1,00,785.00	32,34,285.00	-	-	-	-	-	6,09,728.00	2,09,838.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	12,98,371.00	-	-	-
Income Received during the Year					6,56,490.00	17,65,800.00	-	-	-	2,63,897.00	-	-	-	-	-	-	19,76,430.00	-	-	-
Grant Received from Ministries/Departments/Institutions							-	-	6,09,728.00	5,23,535.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	32,34,285.00	-	-	-
Sub Total	20,18,728.00	1,00,785.00	32,34,285.00	-	6,56,490.00	17,65,800.00	-	-	6,09,728.00	5,23,535.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	32,34,285.00	-	-	-
Expenditure Incurred					5,96,400.00	17,65,800.00	-	-	6,09,728.00	5,23,535.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	32,34,285.00	-	-	-
Head (Expenditure)																				
Research Associates/Manpower/Corollary					1,34,580.00	3,73,790.00	-	-	-	-	-	-	8,48,070.00	-	-	-	-	-	-	-
Project Technical Staff				12,128.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRS/SGS/Committee Meeting					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Consultative Meeting/Workshops					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Travel Expenses of Steering Committee Members (67 cases), the above mentioned in the account					-	57,200.00	-	-	-	-	-	-	4,58,995.00	-	-	4,58,995.00	-	-	-	-
Program for the Academy Committee (18-20) and Steering Committee Members (400) residing per member except TIFAC officials				24,000.00	6,591.00	-	-	-	-	-	-	-	28,000.00	-	-	-	-	-	-	-
Printing of P&I					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traveling				4,33,591.00	1,28,217.00	1,28,280.00	-	-	-	-	-	-	1,68,322.00	-	-	-	-	-	-	-
Featuring				88,564.00	47,598.00	1,03,943	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contingency				11,577.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meeting expenses of Academy/Steering Committee/Member (Local Transport, Boarding, Lodging, Working, Local etc)				1,15,736.00	56,430.00	34,412.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commodities					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Storing fee					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regional Workshop					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Web Portal Development					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multi Function Printer					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overhead					92,100.00	76,290.00	-	-	-	-	-	-	2,08,000.00	-	-	-	-	-	-	-
Amount Refunded back to the Institute		1,00,785.00											4,42,916.00							
Sub Total	-	1,00,785.00	5,26,128.00	4,41,715.00	3,66,728.00	7,04,514	-	-	6,09,728.00	5,23,535.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	42,925.00	-	-	-
Total	20,18,728.00	-	20,66,817.00	(4,17,750.00)	3,20,768.00	9,54,483.94	-	-	6,09,728.00	5,23,535.00	[1,50,000 Z]	-	22,00,000.00	2,09,520.00	20,18,728.00	1,00,785.00	32,34,285.00	-	-	-



Technology Information Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2023

	Receipts	Current Year	Previous Year
1	<u>Opening Balances</u>		
	Cash in hand	10,366.00	7,265.00
	Cash in Hand (Under PFC New Account)	1,793.00	1,793.00
	Cash in Hand (Under WSSS New Account)	1,667.00	1,667.00
	Bank balances		
	In Current Accounts		
	In Deposit Accounts	21,66,07,774.00	21,91,37,942.00
	Short Term Deposit (Flexi Deposit Account)	5,00,000.00	10,00,000.00
	Savings Accounts	20,41,34,487.70	17,35,76,958.05
	Savings Accounts (Under PFC New Account)	4,39,737.30	1,05,83,199.75
	Savings Accounts (Under WSSS New Account)	4,03,65,796.06	1,03,90,655.06
2	<u>Grants Received</u>		
	From Government of India - Plan (TIFAC)	17,00,96,966.00	22,00,00,000.00
3	<u>Other Income (Specify)</u>		
	Refund from HGT Project	3,50,000.00	85,85,000.00
	Refund from Advance Composite Programme	8,67,713.00	6,00,000.00
	Refund from Sugar Technology Mission		1,00,00,000.00
	Other Income (Schedule 18)	40,31,638.37	43,52,022.46
4	<u>Receipts fro Patent Facilitating Centre</u>		
	Grant in Aid (Under PFC New Account)	2,00,00,000.00	
5	<u>Receipts for Women Scientist Scholourship Scheme</u>		
	Grant in Aid (Under WSSS New Account)		4,50,00,000.00
6	<u>Other Receipts (Give Details)</u>		
	Nominal Charges for Dissemination of TIFAC Reports	2,400.00	61,500.00
	RTIA Questions	10.00	20.00
	National Steerign Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)		19,78,430.00
	Grant : Detail project report for Natinal Mission on Quantum Technology & Application (NM-QTA)	2,63,697.00	3,69,138.00
	Grant : Intellectual Services relative to suppor IIT activitees on life cycle analysis focusing on the India Transport	6,96,490.00	
	Grant : Classified Project Study	17,45,800.00	
	Grant : DSIR Techno-Commercial Assessment of TRL-6 and above technologies developed in India in academic, Research labs and Industry		22,00,000.00
	Gratuity (Receivable on Deputation) (Ms Indu Vermani)	1,38,495.00	
	Bharat Kosh (Govt.) (TIFAC,PFC & WSSS)	54,87,043.00	1,81,31,847.00
	Fixed Deposit Interest Accumulated	2,28,55,016.00	
	Sh Sanjay Singh (Foreign Travel)		55,314.00
	GSLIS	18,997.00	18,572.00
	Staff Loan	2,459.00	1,65,925.00
	Medical Scheme	1,000.00	1,500.00
	IIT-TIFAC Maintenance (Provision)	20,30,000.00	61,00,000.00
	Advance DAVP		4,43,361.00
	Advance : India International Centre		624.00
	Advance : Special Festival Package		1,31,000.00
	Sub Total	69,06,49,345.43	73,28,93,733.32



Technology Information Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2023

Receipts	Current Year	Previous Year
Sub Total carried forwarded from Previous page	69,06,49,345.43	73,28,93,733.32
Advance : NISCI (Sparrow)	4,51,732.00	4,51,732.00
Advance : Principal Miranda House	11,76,000.00	
International Womens Day Kiran -IPR 2021	20,446.00	
Advance : Pune Centre Kiran IPR	8,78,447.00	
TIFAC-SIDBI Revolving Funds)	4,80,000.00	2,51,000.00
Advance : E-Office (System Administrator)	5,07,934.50	
Interest Accrued from Union Bank of India (Savings Bank)	17,89,867.00	14,17,702.00
Superannuation / Pension/ Gratuity (Provision)	21,47,899.00	12,44,028.00
Accumulated Leave Encashment	31,53,992.00	18,27,668.00
Total (ii)	70,12,55,662.93	73,80,85,863.32

For Shiv Tibrewal & Co.

Chartered Accountants

FRN NO. : 011391N



S. K. Tibrewal
Partner

Membership No.080098

Place : New Delhi

Date : 15.09.2023

DDO
TIFAC

Incharge(Fin.&Accounts)
TIFAC

Executive Director
TIFAC

पी. के. अनिलकुमार / P.K. Anilkumar
वैज्ञानिक 'सी' एवं डी.डी.ओ. / Scientist 'C' & D.D.O.
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार / Deptt. of Science & Technology, Govt. of India
नई दिल्ली-110016 / New Delhi-110016

प्रो. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava
कार्यकारी निदेशक / Executive Director
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
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नई दिल्ली-110016 / New Delhi-110016

प्रभारी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
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नई दिल्ली-110016 / New Delhi-110016

Technology Information Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2023

	Particulars	Current Year		Previous Year	
1	<u>Expenses</u>				
a	Establishment Expenses (Schedule 21)	13,05,82,881.94		12,28,35,382.80	
	Add : Opening Expenses Payable	54,73,263.00		86,09,215.00	
	Less : Expenses Payable	57,51,292.00	13,03,04,852.94	54,73,263.00	12,59,71,334.80
b	Administrative Expenses (Schedule 21)	1,89,67,574.28		1,84,85,143.91	
	Add : Opening Expenses Payable	80,36,387.80		78,08,027.24	
	Add : Loss of sale of Fixed Assets				
	Less : Payables	70,71,530.94	1,99,32,431.14	80,36,387.80	1,82,56,783.35
	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)		4,67,69,308.00		6,67,92,495.38
2	<u>Payments made against funds for various projects</u>				
	Establishment Expenses (Under PFC New Account)	2,90,400.00		7,75,554.00	
	Add : Opening Expenses Payable	2,68,327.00		2,44,147.00	
	Less : Expenses Payable	24,180.00	5,34,547.00	2,68,327.00	7,51,374.00
	Administrative Expenses (Under PFC New Account)	78,98,292.41		1,05,10,888.45	
	Add : Opening Expenses Payable	8,51,614.00		85,213.00	
	Less : Expenses Payable	3,82,343.00	83,67,563.41	8,51,614.00	97,44,487.45
	<u>Payments made against funds for various projects</u>				
	Establishment Expenses (Under WSSS New Account)	2,76,03,895.00		87,86,722.00	
	Add : Opening Expenses Payable	2,15,818.00		1,42,338.00	
	Less : Expenses Payable	2,31,840.00	2,75,87,873.00	2,15,818.00	87,13,242.00
	Administrative Expenses (Under WSSS New Account)	51,79,253.87		45,14,105.00	
	Add : Opening Expenses Payable	66,22,333.00		9,37,343.00	
	Less : Expenses Payable	9,056.00	1,17,92,530.87	37,68,336.00	16,83,112.00
	Grant Utilisation - Vision 2020	79,34,580.00		84,69,716.00	
	Add : Opening Expenses Payable				
	Less : Expenses Payable		79,34,580.00		84,69,716.00
	Grant Utilisation - Technology Vision 2035				
	Addition in Fixed Assets				
	Office Equipment		8,20,750.00		30,499.00
	Library Book		1,586.00		1,53,715.00
	Furniture & Fixtures		12,390.00		7,97,632.00
	Computer & Peripherals		35,14,340.00		32,90,086.98
	Interior Work of TIFAC Building				7,57,986.80
	Computer & Peripherals (Ext. Project)		2,54,688.00		
	Computer/Peripherals (WSSS)		3,27,043.00		
3	<u>Other Payments (Specify)</u>				
	National Steering Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)		6,28,125.00		42,595.00
	Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science				2,25,200.00
	Grant : Detail project report for Natinal Mission on Quantum Technology & Application (NM-QTA)				8,76,755.00
	Grant : Experts Committee on Biobionics (ECB)				3,65,600.00
	Grant : Interdisciplinary Cyber Physical Systems (ICPS)		1,00,785.00		
	Grant : Intellectual Services relative to support ITF activities on life cycle analysis focusing on the India Transport		3,66,724.00		
	Grant : Classified Project Study		7,94,316.50		
	Grant : DSIR Techno-Commercial Assessment of TRL-6 and above technologies developed in India in academic, Research labs and Industry		22,00,000.00		
	Grant : CPR Under Policy Research Cell Programme of DST		4,11,715.00		4,50,000.00
	International Womens Day KIRAN-IPR				2,08,91,645.00
	Bharat Kosh (Govt.) (TIFAC, PFC & WSSS)		1,81,31,847.00		500.00
	Medical Scheme		1,500.00		21,016.00
	GSLIS		18,572.00		23,010.00
	EMD/Securiy Deposit TIFAC		18,784.00		11,76,000.00
	Advance : Principal Miranda House				20,446.00
	International Womens Day Kiran - IPR				5,62,177.00
	Advance : Kharagpur Centre KIRAN IPR				10,00,000.00
	Advance : Pune Centre KIRAN IPR				15,97,113.00
	Advance : Karnataka State Council for Science and Technology				5,07,934.50
	Advance : E-Office (System Administrator)				
	Maheshwari Rice Mills Receivable		1,47,000.00		
	Prepaid E-Office Expenses (System Administrator)		7,00,137.00		
	Security Deposit				1,00,000.00
	Leave Encashment Recoverable (Sh Manish Kumar)		2,000.00		9,56,919.00
	Due to DST (Unspent Balance Amount in respect of Old Projects)				5,000.00
	TDS Receivable from Income Tax Department (AERIS)				17,89,867.00
	Interest Accrued From Union Bank of India (Savings Bank of India)		10,78,015.00		
	Sub Total		28,27,54,003.86		27,60,24,242.26



Technology Information Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2023

Particulars	Current Year	Previous Year
Sub Total Carried forwarded from Previous page	28,27,54,003.86	27,60,24,242.26
Closing Balance		
Cash in Hand	18,318.00	10,366.00
Cash in Hand(Under PFC New Account)	1,793.00	1,793.00
Cash in Hand(Under WSSS New Account)	1,667.00	1,667.00
Cash at Bank	15,03,28,994.99	20,41,34,487.70
Cash in Bank (Under PFC New Account)	1,17,76,034.89	4,39,737.30
Cash in Bank (Under WSSS New Account)	31,04,220.19	4,03,65,796.06
Short Term Deposit	25,22,70,631.00	21,66,07,774.00
Short Term Deposit (Flexi Deposit Account)	10,00,000.00	5,00,000.00
Total (ii)	70,12,55,662.93	73,80,85,863.32

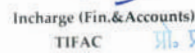
For Shiv Tibrewal & Co.
Chartered Accountants
FRN No. : 011391N

S. K. Tibrewal
Partner
Membership No.080098
Place : New Delhi
Date : 15.09.2023



पी. के. अनिलकुमार / P.K. Anilkumar
वैज्ञानिक 'सी' एवं डी.डी.ओ. / Scientist 'C' & D.D.O.
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक),
Technology Information, Forecasting and Assessment Council (TIFAC)
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नई दिल्ली-110016 / New Delhi-110016


DDO
TIFAC


In-charge (Fin.&Accounts)
TIFAC


Executive Director
प्रो. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava
कार्यकारी निदेशक / Executive Director
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नई दिल्ली-110016 / New Delhi-110016

प्रभारी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
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नई दिल्ली-110016 / New Delhi-110016



SHIV TIBREWAL & CO.

Chartered Accountants

301, Rohit House, 3 Tolstoy Marg, Connaught Place, New Delhi - 110001
Ph.: 011-43723307, 43545218, Mob.: 9811118154 E-mail: stc_ca@yahoo.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, 2023.

Responsibility of Management 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 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. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.



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. As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:
 - a. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
 - b. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
 - c. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the society ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our audit report. However future events or conditions may cause the society to cease to continue as a going concern.
 - d. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.



6. Materiality is the magnitude of misstatements in the financial statements that, individually or in aggregate, makes it probable that the economic decisions of a reasonably knowledgeable user of the financial statements may be influenced. We consider quantitative materiality and qualitative factors in (i) planning the scope of our audit work and in evaluating the results of our work; and (ii) to evaluate the effect of any identified misstatements in the financial statements.
7. We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
8. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Qualified Opinion

9. 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 2023 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 12th 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.

10. 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: 15.09.2023

Place: New Delhi

For Shiv Tibrewal & Co.

Chartered Accountants

FRN NO. : 011391N

S. K. Tibrewal

Partner

Membership No.080098

UDIN: 23080098BGWRFJ4582



COUTRIBUTORY PROVIDENT FUND OF TIFAC

SCHEDULE FORMING PART OF ACCOUNTS FOR THE YEAR ENDED 31.03.2023

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 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. Till 31.03.2023 there was a deficit of Rs. 31,54,838.94 with the CPF which has been shown as recoverable from TIFAC.
4. 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

For Shiv Tibrewal & Co.

Chartered Accountants

FRN NO. : 011391N

S. K. Tibrewal

Partner

Membership No.080098

UDIN: 23080098BGWRFI8104




In-charge (Fin. & Acct.)
TIFAC

प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)
प्रबन्धी (वित्त एवं लेखा) / In-charge (Fin. & Acct.)



Nirmala Kaushik
Chairperson Trustee

Date: 15.09.2023

Place: New Delhi

Contributory Provident Fund of TIFAC
Statement of Affairs as on 31st March 2023

Previous Year as on 31.03.2022	Previous Year as on 31.03.2022	Particulars	Current Year as on 31.03.2023	Current Year as on 31.03.2023	Previous Year as on 31.03.2022	Particulars	Current Year as on 31.03.2023
5,18,67,555.00		Employees Contribution	5,71,22,678.00		1,52,84,454.04	Union Bank of India S/b A/C	1,26,78,100.90
36,35,867.00		Opening Balance	34,12,273.00		5,20,330.00	Special deposit with RBI	5,20,330.00
1,12,910.00		Add: Received during the year	-				
37,79,843.00		Add: Amount directly transferred from PFC	38,19,592.00		7,45,07,947.00	Short Term deposit with UBI including interest accrued thereon Less Bank Charges	7,84,48,785.00
3,24,658.00		Add: Interest Accrued During the Year	3,07,809.00				
5,97,20,833.00		Add: Employees Subscription for the m/o March	6,46,62,352.00		7,23,477.00	Flexi Deposit- UBI	7,43,763.00
25,98,155.00		Less: Paid during the year	75,58,284.00		1,90,000.00	Loan/ Advances to staff members	70,000.00
	5,71,22,678.00			5,71,04,068.00	5,05,665.00	Sh. Y. D. Panwar	4,94,723.00
	5,71,22,678.00	Total (A)				Receivable from TIFAC account of Employer & Employee Contribution for March, 2023	
3,48,62,763.84		TIFAC Contribution	3,58,56,583.84		12,47,388.80	Receivable from TIFAC account difference in interest earned & paid by the CPF Trust	21,75,970.04
-		Opening Balance	9,78,868.00				
23,68,045.00		ADD: Payment Recoverable from TIFAC for Nector	20,33,230.00			Interest earned & paid by the CPF Trust	
26,19,699.00		Add: Received during the year	26,46,801.00			Payment made to NECTAR from CPF to be received from TIFAC	9,78,868.00
1,81,007.00		Add: Interest Accrued During the Year	1,86,914.00				
4,00,31,514.84		Add: Employer Subscription for the m/o March 2023	4,17,02,396.84				
31,96,063.00		Less: Paid during the year	26,95,924.00				
9,78,868.00		Less: Payable to Nector	-				
	3,58,56,583.84			3,90,06,472.84			
	3,58,56,583.84	Total (B)				Total	
				3,90,06,472.84			
	9,29,79,261.84	Total (A+B)		9,61,10,540.84	9,29,79,261.84		9,61,10,540.84

Subject to Schedule-I, forming part of the Balance Sheet.

As per our report of even date Attached

For Shiv Tibrewal & Co.

Chartered Accountants

FRN NO.: 011391N

S. K. Tibrewal

Partner

Membership No.080098

UDIN: 2308098BGWRF18104



श्री. के. अशोक कुमार / P.K. Anilkumar
Chartered Accountant / Member C.A. (Firm)
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Nirmala Kaushik

Chairperson Trustee





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