

**ANNUAL ADMINISTRATIVE REPORT  
2022-23**



**GOVERNMENT OF MANIPUR  
DEPARTMENT OF SCIENCE & TECHNOLOGY**

**Imphal, February, 2023,  
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**1. About the Department :**

**1.1** The Department of Science & Technology, Government of Manipur was set up in January, 1985. This Department is the nodal agency in the State for planning, co-coordinating and promoting Science & Technology towards meaningful applications in various developmental programmes for achieving the socio-economic objectives of the State.

The Department was renamed as Dept. of Science, Technology & Environment (DSTE) and later as Department of Science & Technology and Information Technology w.e.f 10<sup>th</sup> July 2007 vide Govt. Order No. 2/9/2001-S&T.dtd 10<sup>th</sup> July 2007. Consequent to the creation of a new Department of Information Technology, Government of Manipur, vide Govt. Notification No.14/1/2008-CON dtd.5/9/2009, the Department has reverted to its original name of **Department of Science & Technology.**

**1.2** The DST has nurtured and implemented the relevant schemes of the Environment sector and Information Technology sector over many years, after which the manpower and schemes were transferred to the newly created Ecology & Environment Wing under Forest Department and I.T. Department. Thus, the focus and activities of the Department have covered a wide spectrum beyond Science & Technology sector. The Department is implementing 2(two) Sub-sectors of the State Plan :

- 1. Scientific Research,**
- 2. Integrated Rural Energy Programme (IREP)**

**1.3** The Department has 1(one) Registered Societies under it:

**Manipur Science & Technology Council (MASTEC):-**

The Manipur Science & Technology Council (MASTEC) formerly, State Council of Science, Technology and Environment, Manipur was set up in the year 1985 with the initiatives from the Department of Science and Technology, Government of Manipur. The Council got registered as an autonomous organisation of the Department of Science & Technology, Government of Manipur in January 1996 under the Manipur Societies Registration Act, 1989.

The Council has a Governing Body which consists of a wide distribution of membership having expertise in various fields, with the Chief Minister as the Chairman, and the Minister (S&T), Manipur as the Vice Chairman. The Council has an Executive Committee to assist the activities towards achieving the objectives of the Council. The Vice-Chairman of the Governing Body of the Council is the Chairman of the Executive Committee. The Secretary/Commissioner (S&T), Government of Manipur is the Member Secretary of the Council and is the Chief Executive of the Council Secretariat.

The autonomous Council is served by its own Secretariat of 20 (twenty) manpower, 100% supported by the DST, Government of India. The Council Secretariat operates with the grants received from DST, Government of India, DST, Government of Manipur and the funds received from various agencies through projects and programmes. The Council works in co-ordination with the State Directorate of S&T in various areas of activities.

### **Objectives of the Council**

1. To identify areas in which Science, Technology and Environment can be utilised for the achievement of the Socio-economic objectives of the State and in particular, tackling the problems of backwardness and underprivileged sections of Society;
2. To advise on policies and measures necessary to promote Science, Technology and Environment and their utilization for achievement of socio-economic objectives;
3. To initiate, support, promote and co-ordinate Research Design and Development projects and programmes, including demonstration projects which are likely to be relevant to the problems, surveys and optimum utilization of natural resources of the State;
4. To promote and undertake activities for the popularization of Science and Technology and the spread of a Scientific Temper and attitude among the people of the State;
5. To supplement and complement the ongoing technical efforts of the State Government;
6. To interact with other State, National and International S&T bodies having similar or related objectives;
7. To identify priority areas of Science & Technology for long term development of the State;
8. To promote, support and undertake the application of renewable sources of energy for the benefit of the people;
9. To accept donations and receive grants, and subsidies from Government of India, Government of Manipur and other supportive agencies and to invest the resources towards the achievement of the objectives of the Council.

**1.4** The Department, has been functioning as the State Nodal Department in respect of several Central Government Ministries/Departments. These are :

1. Department of Science & Technology, Govt. of India.
2. Department of Bio-Technology, Govt. of India, Ministry of Science & Technology.
3. National Council of Science Museums, Kolkata, Ministry of Culture.

The Department also implements projects funded by the North Eastern Council in all of the abovementioned sectors.

## **2. Functions of Science & Technology Department :**

The Department of Science & Technology is entrusted with the following functions:

1. All matters relating to State Council of Science & Technology.
2. All matters relating to promotion of new areas of Science & Technology.
3. All matters relating to Co-ordination in areas of Science & Technology in which a number of Institutions / Departments have interest or capability.
4. All matters relating to Scientific Survey with application of latest Technology.
5. All matters relating to understanding or financially sponsoring Scientific and Technological Survey, Research Design and Development etc.
6. All matters to the support and grants to Scientific Research Institutions, Scientific Associations and Bodies.
7. All matters relating to Science & Technology Entrepreneurship Development.
8. All matters relating to popularization of Science and establishment of Science Centre and Museum.
9. All matters relating to management information systems for Science & Technology and Co-ordination thereof.
10. All matters relating to formulation of Policy statement and guidelines of Science and Technology.

### 3. Organizational Structure:

The Department has been functioning under the Minister(S&T), Manipur, Administrative Secretary (S&T), Government of Manipur, and the Director (S&T) as Head of Department. The Department has only one Office, viz. The Directorate of Science & Technology, presently located at Old Lambulane, Imphal, with 1(one) Sr. Scientific Officer assigned as Head of Office of the Directorate. The followings were the incumbents during 2022-23:

<b>Sl.No.</b>	<b>Designation</b>	<b>Incumbents during 2021-22</b>
1	Minister (S&T) : Dy. Chief Minister (S&T)	<b>Shri Th.Biswajit Singh</b> (from 19/03/2022 till date)
2	Administrative Secretary(S&T)	<b>Shri Devesh Deval Commissioner(S&amp;T)</b> From 20/04/2021 till 31/05/2022.  <b>Shri Yaiskul Meitei Commissioner(S&amp;T)</b> From 01/06/2022 till date
3	Head of Department (S&T)	<b>Smt. Homila Hongrei</b> Director(S&T) (from 01/01/2021 till date)
4	Head of Office and DDO ( Directorate of S&T )	<b>Shri. M.Ramo Singh</b> Sr. Scientific Officer, (from 01/02/2021 till date)

**4. Details of existing manpower of the Department :****A) The no. of sanctioned posts in the Department of S&T as on 21/02/2023 is as below:**

Name of Post	Scale of Pay			No. of posts sanctioned	No. of posts filled	No. of posts vacant
	Name of Pay Band	Pay Band	Grade Pay			
<b>TECHNICAL MANPOWER</b>						
<b>Class-I posts :</b>						
1. Director	PB -3	78800-208700	7600/-	1 no.	1no.	-
2. Sr. Scientific Officer	PB -2	53100-167800	5400/-	4 no.	2 nos.	2 no.
3. Project Director	PB -2	53100-167800	5400/-	1 no.	-	1 no.
<b>Class-II posts :</b>						
4. Scientific Officer	PB -2	43300-137100	4400/-	3 no.	2nos.	1 no.
<b>Class-III posts :</b>						
5. Technical Assistant	PB -1	29200-92300	2800/-	3 nos.	3 nos.	-
6. Computer Operator	PB -1	29200-92300	2800/-	1 no.	1no.	-
7. Extension Officer	PB -1	29200-92300	2800/-	1 no.	-	1 no.
8. Investigator	PB -1	29200-92300	2800/-	2 nos.	-	2 nos.
9. Photo Lab. Technician-cum-Photographer	PB -1	25500-81100	2400/-	1 no.	1 no.	-
	<b>Sub-Total :</b>			<b>17 nos.</b>	<b>10nos</b>	<b>7 nos.</b>
<b>MINISTERIAL MANPOWER:</b>						
<b>Class-III posts :</b>						
10. Asstt. Private Secretary	PB -2	38800-123100	4300/-	2 nos.	2 nos.	-
11. Head Clerk	PB -2	35400-112400	4200/-	1 no.	1 no.	-
12. Upper Divisional Clerk	PB -1	25500-81100	2400/-	2 nos.	1 no.	1 no.
13. Accountant	PB -1	25500-81100	2400/-	1 no.	1 no.	1 no.
14. Lower Divisional Clerk	PB -1	19900-63200	1900/-	5 nos.	5 nos.	1 no.
15. Driver (Light vehicle)	PB -1	19900-63200	1900/-	2 nos.	1 no.	1 no.
16. Stenographer Gd.III	PB-1			2 nos.	-	2 nos.
	<b>Sub-Total :</b>			<b>15 nos.</b>	<b>11 nos.</b>	<b>6 nos</b>
<b>Class-IV posts :</b>						
17. Attendant	- 1 S	14800-47100	1300/-	2 nos.	2 no.	-
18. Grade-IV	- 1 S	14800-47100	1300/-	5 nos.	4 nos.	1 no.
19. Sweeper	- 1 S	14800-47100	1300/-	1 no.	1 no.	-
20. Watchman-cum-Runner	- 1 S	14800-47100	1300/-	1 no.	1 no.	-
	<b>Sub-Total :</b>			<b>9 nos.</b>	<b>8 nos.</b>	<b>1 no.</b>
<b>MANPOWER OF MANIPUR SCIENCE CENTRE</b>						
1) Curator	PB-2	53100-167800	5400/-	1 no	1 no.	-
2) Assistant Curator	PB-2	38800-123100	4300/-	1 no.	-	1 no.
3) Junior Mentor	PB-2	38800-123100	4300/-	2 nos.	2 nos.	-
4) Education Assistant	PB-1	29200-92300	2800/-	3 nos.	3 nos.	-
5) Computer Operator	PB-1	29200-92300	2800/-	1 no.	1 no.	-
6) Office Assistant	PB-1	21700-69100	2000/-	2 nos.	2 nos.	-
7) Technician Cum Supervisor	PB-1	19900-63200	1900/-	5 nos.	4 nos.	1 no.
8) Ticket Seller	PB-1	18000-56900	1800/-	1 no.	1 no.	-
9) Chowkidar	-1S	14800-47100	1300/-	1 no.	1 no.	-
	<b>Sub-Total :</b>			<b>17 nos</b>	<b>15 nos</b>	<b>2 nos.</b>
	<b>GRAND TOTAL :</b>			<b>58 nos.</b>	<b>42 nos.</b>	<b>16 nos.</b>

**Manpower and organizational structure:** In carrying out the activities of the Department, the Director (S&T) is assisted by Senior Scientific Officers, Scientific Officers and other qualified Scientific Technical staff. The total sanctioned strength of the Department is 58 nos.

Out of which, 24 (twenty four) nos. are Scientific Technical manpower and 34 nos. are Ministerial staff. A total of 17 nos. Scientific/Technical staff operate the Manipur Science Centre under this Department at Takyelpat, Imphal.

The organizational / hierarchical structure is to be revamped with the upgradation of a post of Additional Director and Jr. Scientific Officer as this is the only Department which does not have an Additional Director/Joint Director. and promotions thereafter up to the post of Director. Now entry-level for direct recruitment is Scientific Officer level which is a Class-II post has been made and recruitment will be through MPSC. Creation of different Categories of 17 posts for this Department and District Science Centre Churachandpur and Ukhrul has been initiated from this Department which are expected to be inaugurated during August & December 2023.

In addition to the above manpower of the Directorate, the 1(one) Government Registered Societies under this Department, e.g, MASTEC has separate manpower.

**5. Actual Expenditure for 2021-22, Anticipated Expenditure for 2021-22 and Financial Outlay for 2022-23. (Rs. in lakhs)**

Name of sector/ Major Head	Actual Expdt. 2021-22	Financial/RE Outlay 2022- 23	Anticipated/BE Expenditure 2022-23	Outlay 2023-24
A) Scientific Research	532.81	428.50	428.50	460.50
B) Integrated Rural Energy Planning	27.00	30.00	30.00	45.00
C) North Eastern Council (NEC)	-	70.00	70.00	-
<b>Grand Total :</b>	559.81	528.50	528.50	505.50

**Financial Achievement of the Budget during 2021-22.**

Sector	Revised Estimates, 2022-23 Outlay	Anticipated Expenditure 2022-23
<b>Scientific Research:</b>	428.50	428.50
<b>IREP Programme :</b>	30.00	30.00
<b>Total (Plan) :</b>	<b>458.50</b>	<b>458.50</b>
C.S.S. :	0.00	0.00
North Eastern Area:	70.00	70.00
<b>GRAND TOTAL :</b>	<b>528.50</b>	<b>528.50</b>

## **6. Performance Highlights of schemes implemented during 2022-23.**

The Schemes implemented by this Department during 2021-22 are 22 (twenty two) nos. as under:

### **A. Scientific Research sector:**

- 1) Directorate of S&T (Direction & Administration)
- 2) Popularization of Science.
- 3) S&T Knowledge Resource Centre.
- 4) Upgradation & District Science Centre.
- 5) Digital Planetarium.
- 6) R&D and Bio-Technology Programme.
- 7) S&T for HRD & Skill Development.
- 8) Appropriate Technology & Innovation.
- 9) S&T for Women, SC&ST, Disabled etc.
- 10) S&T for Women
- 11) Grants-in-aid to MASTEC.
- 12) Innovation Hub.

### **B. Integrated Rural Energy Planning sector:**

- 13) IREP Scheme.

### **C. Ongoing Projects funded by NEC**

- 14) Setting up of Astro Park
- 15) Construction of District Science Centre and Planetarium, Churachandpur
- 16) Construction of District Science Centre and Planetarium, Ukhrul.

### **D. Future Plan**

- 17) Setting up of Biotechnology Park at Salam Keikhu, Imphal.
- 18) Setting up of Science City at Khaidem Village, Imphal.
- 19) Modernization/Upgradation of existing Galleries & setting up of New Gallery on "Science of Sports".
- 20) Setting up of Science Centre and Planetarium to all the 11(eleven) Districts.
- 21) Setting up of Science Centre and Planetarium, Tamenglong, Kangpokpi & Jiribam.
- 22) Setting up of Planetarium at Imphal.

**The Scheme-wise performance and achievement details are as below:**

### **A) SCIENTIFIC RESEARCH SECTOR:**

#### **6.1 SCHEME OF DIRECTORATE OF S&T :**

During 2022-23, the sanctioned manpower strength of the Department was 58 nos. Out of the 58 nos. of regular posts, Technical manpower was 17 only and 24 nos. was Ministerial staff and a total of 17 nos. Scientific/Technical staff operate the Manipur Science Centre of this Department at Takyelpat.

The Directorate Office continued to function in the rented premises at Old Lambulane, Imphal, within walking distance of the Secretariat. The 10-acre DST Institutional Area at Takyelpat comprises the Manipur Science Centre covering 5 acres, MASTEC & MANIREDA building, the Institute of Bio resources & Sustainable Development (IBSD) under Ministry of Science & Technology, Govt. of India, the Office of MANIREDA and project buildings/sheds of MASTEC. The Department has applied for allotment of about 12 acres of Govt. Khas land at Takyelpat for expansion of Manipur Science Centre, Rural Biotechnology Park, Women Technology Park etc. But this land has allotted to IBSD vide Revenue Department's Order No. 21/211/2013-Rdtd. 1/8/2015. Construction of this Directorate Office is urgently required.

Accordingly, the Administration Department has written to the Director(Planning) for allocation of fund of Rs.5.00 crores from the Planning Department for construction of new Office building of Directorate of Science & Technology Department, Manipur at DST Complex, Takyelpat, Imphal.

## **6.2 SCHEME OF POPULARISATION OF SCIENCE :**

This scheme aims to encourage all round activities in the popularization of Science for the community and particularly for the children and students. The activities are shown below:

**(1) State Level Science Drama :-** 8 (eight) team from different schools of this state, a team comprising of 10 (ten) students from 6th to 10th standard participate in the State level Science Drama and out of which 1 (one) best drama team from Brighter Academy, Khumbong Imphal West, Manipur participate in the NE Zone Science Drama competition held at Guwahati held on 13/10/2022. The main objective of this program is to inspire the students, teachers and other science communications to explore and experiment to try proscenium theater as mode of science communication.

**(2) State Award on Science & Technology :-** State Award on Science & Technology were distributed by the Hon'ble Minister (S&T) to 8 (eight) students who secured the highest Mark in Mathematics and Science in 4 (four) categories in HSLC 2022 conducted by BOSEM.

**(3) Children Science Congress :-** Organisation of District and State Level Children's Science Congress, 10 (ten) students selected from state level Children's Science Congress participated in the National Children's Science held at Manipur Science Centre under the Theme "Understanding Ecosystem for Health and Well being". The Congress is to promote Science & Technology Communication.

**(4) Quiz Competition:-** A Quiz competition to celebrate the 75th Independence of India "Azadi Ka Amrit Mahotsav" was organized by this department on the 7th of July, 2022 in the Auditorium Hall of Manipur Science Centre, Takyelpat, Imphal on the theme "Integrated Approach in S&T for Sustainable Future". A total of 8 schools participated in the competition. The objective behind organizing a Quiz Competition are to evaluate the knowledge of the participants and students within academics as well as beyond academics and to make them familiar with the prospects of Quizzes and the objectivity of the questions.

**(5) Science Excursion:-** The Department had been sponsoring Science Excursion for Science Students to different Scientific institution/places in Guwahati/Kolkata/Bangalore for the last 23 years. As a continuation programme, DST Science Excursion 2021-22 was organized during 18<sup>th</sup>-22<sup>nd</sup> April 2022 for 38(thirty eight) nos. of Students from different Schools of the State to Guwahati, Assam. The Excursion team visited institutions such as IIT, Guwahati, Cane & Bamboo Training Centre (CBTC), Guwahati, Zoo & Botanical Garden, Guwahati, CIPET, Guwahati, IASST, Guwahati, etc.

### **6.3 SCHEME OF S&T KNOWLEDGE RESOURCE CENTRE (Manipur Science Centre) :**

The Manipur Science Centre at Imphal was set up in connection with National Council of Science Museums (NCSM), Ministry of Culture, Govt. of India, in 2005 and attracts students and public. It is located in a 5-acre plot at Takyelpat, is the first S&T Knowledge Resource Centre of the State. In Manipur Science Centre there are facilities like:-

1. **Digital Planetarium:-** It provides a unique opportunity to the people of Manipur particularly student communities about astronomy, Solar System, Dynamic, Sky Celestial Environment inside the dome and it is one of the main attractors of the Centre.
2. **Innovation Hub:** Engaged the youth in creative hobbies and activities in Science & Solving Skills and to support Innovation ideas to the innovators of this State and build them to come to fruition.
3. **Mirror Maze:** A house of mirrors or hall of mirrors is to be a maze-like Puzzle.
4. Photo studio and many Indoor and Outdoor Scientific exhibits are installed in the Manipur Science Centre and more than 30,000 (thirty thousand) people visited the Centre and earned a revenue of Rs. 5.00 – 6.00 lakhs per year.

**Setting up of two new District Science Centre and Planetarium at Ukhrul and Churachandpur have been sanctioned by NEC at the rate of Rs. 802.00 lakhs and Rs. 785.00 lakhs respectively. Civil Works completed up to 80% & 85% respectively. Fabrication of the exhibit for both Centre are in full swing and expected to inaugurate during August 2023 and December 2023 respectively. Now, Ministry of Railways, Government of India has gifted one Toy Train to Manipur Science Centre and it is one of the main attractions of Manipur Science Centre.**

DPR for setting up of Bio-technology Park at Imphal has been submitted to the Ministry of Science & Technology, Govt. of India. Approval is awaited.

Concept note for setting up of District Science Centre, Jiribam, Tamenglong & Kangpokpi has been submitted to NEC for approval.

Concept note for setting up of Science City at Khaidem Village, Imphal has been submitted to the Ministry of Culture, Govt. of India the process for propagating DPR is under process.

#### **Environmental Day:-**

It was observed on 5th June, 2022 theme of World Environment day 2022 is "Only One Earth", highlighting the need to live sustainably in harmony with nature. This day provides us with an opportunity to take responsible steps to preserve and enhance the environment.

#### **World Ozone Day(16th September, 2022):-**

It was observed on 16 September. It highlights the importance of safeguarding the Earth's protective ozone layer and shows that collective action, guided by science, is the best way to solve major global.

**Hiroshima Day(6th August, 2022) :** It was observed on 16<sup>th</sup> August 2022. It aims to promote peace politics against war. This day is a reminder of the bombing attack on Hiroshima by the United States during World War II. Hiroshima Day 2022 marks the 77th anniversary of the Hiroshima nuclear bombing

## **6.4 INNOVATION HUB**

Manipur Science Centre has launched 'Innovation Hub' to provide facilities to the students or any individual to help them unlocking their innovative ideas, thereby promoting creativity and inspire young students to make innovations, ultimately spreading a culture of innovation in the state and the country as a whole. Innovation Hub was inaugurated on 16th March 2020. During 2021-22, Innovation Hub has given exposure to more than 2000 students.

### **Activities/Workshop of Manipur Science Centre 2021-till date.**

During the financial year 2021-22, where the COVID-19 pandemic were still going on, various online workshops, seminars & quiz competition were conducted by the officials of Innovation Hub. In all these online workshops, various subject matter expert, lecturer & professors who have done tremendous number of works in their respective fields were invited to share their experience and keep some guidance to the young minds who were attending these workshops virtually from home.

#### **1. "COMPUTATIONAL THINKING" on 25th June 2021**

by Staff of Innovation Hub, MSC.

Computational thinking workshop help us to solve problems. However, before a problem can be tackled, the problem and the ways in which it could be solved needs to be understood. Computational thinking allows us to do this. It allows us to take a complex problem, understand what the problem is and develop possible solutions.

#### **2. "LIFE AND WORK OF MADAM CURIE" on 31ST July 2021**

by Prof. N. Nimai Singh, Dept. of Physics, Manipur University

#### **3. QUIZ COMPETITION ON "STEM" (31st July, 2021)**

by Dr. Raheijuddin Sheikh, Principal Lilong Haoreibi College

#### **4."DEMONSTRATION OF EDUCATIONAL SCIENCE KIT" on 4th September 2021**

by Staff of Innovation Hub, MSC.

Demonstration helps students learn through observation and is suitable when a school cannot afford either the resources or the time that might be required if all students were to carry out an investigation. It can provide more opportunities to engage students than teacher or textbook explanations alone.

#### **5."OZONE FOR LIFE" on 16th September 2021**

by Prof. N. Rajmuhon Singh, Vice Chancellor, DM University, Imphal.

#### **6. "ROBOTICS ACTIVITIES" on 18th October 2021**

by Staff of Innovation Hub, MSC.

The workshop teaches the students the fundamentals of creating and programming a robot to interact with its environment and perform basic tasks involving motion, sensor data and decision-making.

#### **7."FUN SCIENCE WORKSHOP" on 31st January 2022.**

by Staff of Innovation Hub, MSC.

This workshop helps to promote Hands-on experimentation in-school and off-school activities. This workshop aims to learn the magic of science, which helps the students to understand the physical applications of science in our everyday lives.

## **(B).OFFLINE WORKSHOP CONDUCTED DURING 2021-2022 till date**

### **1."Hands on Activities" on 21st February, 2022**

Resource person : P. Govin Singh, Lecturer (HoD) Physics Dept. Millennium Institute of Sciences.

During hands-on activities, students work together and foster teamwork skills. Hands-on learning improves their cognitive understanding of the subject material and social skills. Through group activities, students learn how to find solutions diplomatically, delegate, and work as part of a team.

### **2. "Intellectual Property Rights(IPR)"29th June 2022**

Resource person :L. Surjit Singh(JRF), Patent Information Centre(MASTEC).

The aim of this workshop was to create public awareness about the benefits of IPR among all the section of Society. The participants of the workshop will be able to understand the procedure to convert the research outcome into patents.

### **3. "3 (three) days workshop on Robotics & Science Demonstration" from 17th - 19th October 2022.**

Resource person: Ramendra Medhi, Education officer, Regional Science Centre, Guwahati Achintya Saha, Director, Technomate Edubotics Pvt. Ltd., Agartala

To provide an introduction to Robotics including robot classification, design and selection, analysis and applications in industry. To provide information on various types of end effectors, their design, interfacing and selection. The objectives of science demonstration workshop are to provide knowledge of the facts, principles, concepts and laws of science. To develop skills in experimentation, observation, drawing, problem solving and manipulating apparatus.

## **(C) OUTREACH PROGRAM**

Innovation Hub, Manipur Science Centre was invited to deliver a talk and to demonstrate on "Basics working of Robotics "at RamaKrishna Mission School, Imphal in connection to the observation of International Week of Science of the school on 9th November 2022.

A total number of 300 students was given exposure of Robotics and the facilities available in the Innovation Hub.

## **(D) PROJECTS UNDERTAKEN UNDER INNOVATION HUB:**

Individual Projects:-	1(one)
Group Projects:-	2(two)

## **(E) ACHIEVEMENTS OF INNOVATION HUB:-**

It is worth mentioning that one of the member of Innovation Hub has participated in 49<sup>th</sup> Rashtriya Bal Viagyanik Pradarshani 2022 at New Delhi during the month of November 2022 and also showcased in Innovation festival at RSC, Guwahati during the month of February 2023.

## **(E) MEMBERS OF INNOVATON HUB TILL FEBRUARY 2023.**

Individual Member :-	15 (Fifteen)
Group/Institutional :-	3 (Three)

## **6.5 SCHEME OF R&D AND BIO-TECHNOLOGY PROGRAMME :**

This scheme promotes R&D in the State by providing financial assistance for short term R&D Project on applications of local relevance to the Scientists, Doctors, Engineers, etc of Universities/Institution located in the State. During 2021-22 the Department had extended financial assistance for taking up of 5(five) nos. of short-Term R&D Project through Institution, viz, Manipur University, NIT and G.P. Women's College, Imphal.

During 2022-23, the Expert Committee had recommended 12 (twelve)Nos. Research Projects to Govt. for giving financial assistance in different field in different institutions in the State in 2(two) phase, 1<sup>st</sup> Phase consist of 6 projects during 2022-23 and 6 projects during 2023-24 due to shortage of fund.

## **6.6 SCHEME OF APPROPRIATE TECHNOLOGY AND INNOVATION :**

This scheme covers recognition of Innovators in various fields. Consultative discussions are held with experts for identification of appropriate technology / methodology for implementation on pilot/ demonstration basis. This scheme is to demonstrate appropriate technologies like smart Cane for blind students etc. Support for Innovative ideas through State Award for S&T Innovation. Distribution of Smart Cane for visually impaired persons on 2<sup>nd</sup> December 2022.

## **6.7 SCHEME OF HRD & SKILL DEVELOPMENT**

This scheme covers skill development and various EDP programmes in various fields to students and budding entrepreneur so that it can aid in their works. 2 months Training programme on Smartphone(android) repairing for 25 unemployed youths of Manipur was conducted from 9<sup>th</sup> June- 22<sup>nd</sup> July 2022 in collaboration with NIELIT, Imphal.

## **6.6 SCHEME OF S&T FOR WOMEN, SC/ST & DISABLED :**

This scheme covers science for the betterment of women, SC/ST, Disabled. It provides Scientific appliances or tools that will aid in their daily life. 1(one) week Entrepreneurship Development Programme on food science for 30(thirty) unemployed women of the State was organized on 6<sup>th</sup>-16<sup>th</sup> September 2022 in collaboration with NIELIT.

## **6.7 GRANTS-IN-AID TO MANIPUR SCIENCE & TECHNOLOGY COUNCIL (MASTEC):**

### **Short-term Activities including Science Popularisation:**

The Manipur Science and Technology Council (MASTEC) organised various centrally sponsored programmes/workshops/trainings relevant to the state including science popularisation to fulfil the objectives for establishment of the Council. The following were the short-term programmes implemented by the Council during 2021-2022.

#### **1 Continuing Programme of National Mathematics Day 2020 & National Science Day 2021 - April 17-20, 2021:**

Manipur Science & Technology Council (MASTEC), Imphal in association with Science Teachers' Forum Manipur (STFM) and Manipur Science Communicators' Association (MASCA) organised a 4-day continuing programme of Celebration of National Mathematics Day 2020 and National Science Day 2021 during April 17-20, 2021 at MASTEC Complex, Takyel, Imphal.

#### **2 Science Model Exhibition/Competition on COVID-19 - December 20-23, 2021**

The Science Model Exhibition for the students reading in Class VIII to Class X was held during December 20-23, 2021 at the MASTEC Complex, Takyelpat, Imphal West. Altogether 46 science models on the theme: COVID-19 were displayed by students from different schools. Each student was allowed to exhibit one model. Three models were selected as the First, second and third winner with two consolation prizes.

- 3 Science Short Play Competition on COVID-19 - December 20 & 22, 2021**  
The Science Short Play competition for students reading in Class VI – X were held on December 20 & 22, 2021 at the Training Hall of MASTEC. Altogether 13 teams of students from 12 schools took part in the competition. Three schools were selected as the first, the second and the third winners of the competition.
- 4 Celebration of National Mathematics Day 2021: December 22, 2021**  
Manipur Science & Technology Council (MASTEC), Imphal organised Celebration of National Mathematics Day 2021 on December 22, 2021 at Manipur Science & Technology Complex, Takyelpat, Imphal. The programme was catalysed and supported by National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Government of India, New Delhi.
- 5 The 7th State Level Aquarium Exhibition-cum-Flower Show- February 10 – 16, 2022**  
The 7th State Level Aquarium Exhibition-cum-Flower Show was organized during February 10 – 16, 2022 at Manipur Science Aquarium, D. M. College Campus, Imphal in association with 13 aquarium and 11 floriculture entrepreneurs. During the exhibition, Manipur Science Aquarium along with the 13 local entrepreneurs displayed around 25 local and 60 exotic fish species. As a part of the exhibition, Spot Painting Competitions in three categories - Sub-Junior (Class III-V), Junior (Class VI-VIII) and Senior (Class IX-X) students were organised at the programme venue on February 13, 2022.
- 6 Webinar in association with Vigyan Prasar, DST, Govt. of India on Black Fungus (Mucormycosis) Post Covid Pandemic in India on 6<sup>th</sup> July 2021.**

## PROJECTS:

MASTEC implements time bound research as well as technology transfer projects and entrepreneurship programmes funded by various organisations. The following projects are being carried out during the year 2021-2022.

### **1. Common Facility Cum Demonstration Centre for Food Processing supported by DST, Govt. of India.**

Under the project "Common facility cum demonstration for food processing" skill development training on food processing with emphasis on value addition on fruits and vegetables, soy milk and paneer production, spices and bakery products of 7 days duration was organized during December 3 – 9, 2021 at the Common facility cum demonstration Centre and 28 trainees attended the training programme.

### **2. Mapping of S&T Needs in the State supported by DST, Govt. of India.**

The Project engages in the identification of areas in different sectors such as agriculture, fishery, industry, education, health care, water & sanitation etc. for intervention of science & technology. This may lead to sustainable development of the society and create a spatial database, linking with socio-economic & demographic data.

### **3. Capacity building awareness programme on climate change issues and production/broadcast of Radio Serial on Traditional Knowledge System in three languages/dialects- A Joint Programme with Vigyan Prasar, DST, GoI.**

Under the project, the Council started producing and broadcasting Radio Serial on Traditional Knowledge System through All India Radio, Imphal in Manipuri language, Thadou/Kuki and Tangkhul dialects.

Capacity building awareness programme on climate change issues in Manipur was organized in 4 (four) hill districts with the help of posters, hands-on experiments/ demonstration to create awareness amongst farmers, women, panchayat members, officials and students about climate change related issues.

#### **4. Artificial Intelligence: 52 – Episode Radio Serial.**

Manipur Science and Technology Council, Imphal under the catalyzation and support of Vigyan Prasar, Noida and in association with All India Radio, Imphal has started broadcasting the 52-episode radio science serial on Artificial Intelligence (AI) titled "Hayengdi Youraklani".

#### **5. Patent Information Centre (PIC) supported by DST, Govt. of India.**

PIC Manipur was established at MASTEC in 2008 under the guidance of TIFAC, DST, GoI to create awareness about IPRs, especially patents, in the state and also facilitate universities, industries, government departments and R&D institutions for patent filling and searches etc. PIC Manipur has opened 6 (six) IPR Cells at technical institutions and colleges.

#### **6. Manipur Science Aquarium supported by DST, Govt. of Manipur.**

MASTEC running the Manipur Science Aquarium in the premises of D.M. College Campus, Imphal with the support of Department of Science & Technology, Govt. of Manipur.

It has 18 RCC fixed tanks and 30 glass tanks. Many exotic and indigenous fishes are kept in this aquarium for the visitors.

#### **7. Year of Awareness on Science & Health (YASH)**

MASTEC implemented the project, which was supported by DST, Govt. of India. It is the combined efforts of science & health communication for minimizing risks at all levels and promoting the common minimum science for community care and health safety measures. It has three parts:

**Part-A:** Students' Essay Writing competition, Declamation contest, Science short play competition, Science exhibition, Best Guide Teacher selection, Invited talk, Science Quiz, Spot painting for different categories;

**Part-B:** Children Centric Outreach activity – Awareness lectures series on COVID-19;

**Part-C:** Workshop for Science communicators.

#### **Activities of MASTEC for 2022-2023**

1. The Vigyan Utsav (Science Festival), a year-long programme, as part of Azadi Ka Amrit Mahotsav initiated by Department of Science & Technology, Govt. of India and hosted by MASTEC were held on the followings:
  - a) Held on April 25, 2022 on the theme: Science and Society.
  - b) Held on May 20, 2022 on the theme: "Future Technology".
  - c) Held on June 24, 2022 on the theme: "Basic Science for Atmanirbharata".
  - d) Held on 26/08/2022 on the theme "Intellectual Property Rights".
2. World Intellectual Property Day 2022 was observed on 26th April 2022 under the theme "IP and Youth – Innovating for a Better Future". It was organized in association with Manipur Institute of Technology (MIT), Imphal at Canchipur Campus of MIT.
3. Intellectual Property Right (IPR) Cell was set up on the followings:
  - a) On April 26, 2022 at Manipur Institute of technology (MIT), Imphal under Patent Information Centre (PIC), Manipur Science & Technology Council, Imphal.
  - b) On May 26, 2022 at Manipur Technical University (MTU), Takyelpat, Imphal under Patent Information Centre (PIC), Manipur Science & Technology Council, Imphal.
  - c) An IPR Cell was opened at Mangolnganbi College, Ningthoukhong, Bishnupur District on November 15, 2022.
  - d) An IPR Cell was opened at Thoubal College, Thoubal District on December 05, 2022. A One-day Seminar on IPR was also organized on the occasion.
  - e) An IPR Cell was opened at Waikhom Mani Girls' College, Thoubal District on December 14, 2022. On the occasion a One-day Seminar on IPR was also organized at Waikhom Mani Girls' College, Thoubal District.

4. EDP Programme and Workshops conducted are as follows:
- a) One day workshop was organised on 7th May, 2022 by Patent Information Centre (PIC), Manipur Science & Technology Council, Imphal in association with Khangabok Higher Secondary School, Thoubal.
  - b) On May 26, 2022, a Workshop on Intellectual Property Rights (IPR) was also organized jointly by Manipur Science & Technology Council (MASTEC) and Manipur Technical University (MTU) at MTU Campus, Takyelpat.
  - c) MASTEC and the Department of Science and Technology, Govt. of Manipur organized a 10-day Entrepreneurship Development Programme on "Preparation of Pickles and other allied products" during September 6-16, 2022 at the Common Facility cum Demonstration Centre for Food Processing of MASTEC at Takyelpat, Imphal. Altogether, 30 (thirty) persons were selected for the Programme.
  - d) MASTEC and AIC-SELCO Foundation, Guwahati jointly organized 2-days State Level Innovators' Meet cum Exhibition (TECHNOVATION '22) during September 22-23, 2022 at Manipur Science Centre, Takyelpat, Imphal. The main feature of the programme was exhibition of innovators' technology. The exhibition aimed to provide a platform for innovators from the state to showcase and pitch their technology to the stakeholders and the larger audience.
  - e) PIC in association with schools organised two Awareness/Lectures programmes on IPR at Diligent Public School, Moirang and Loktak Cristian Model High School, Moirang on 17-10-2022.
  - f) A One-day Awareness Lecture Programme on IPR was organized by MASTEC at CC Hr. Sec. School, Imphal West on December 09, 2022.
  - g) The Celebration of National Mathematics Day 2023 was held at MASTEC office complex at Takyelpat, Imphal on December 22, 2022. During the celebration a Mathematics Written Quiz competition was also held for school students of class IX and X. A popular talk was also arranged on the occasion with Prof. S. Dorendrajit Singh, Department of Physics, Manipur University as the speaker.
  - h) Organised Awareness/Lectures Programme on IPR in association with Lilong Hr. Sec. School on 12-01-2023.
  - i) On November 23, 2022, a lecture programme on IPR was held at Moirang College, Moirang, Bishnupur District.
5. MASTEC has participated in the followings:
- a) Dr. Kh. Rakesh, Senior Scientific Officer, attended virtually, a brain-storming session on "Brainstorming-cum-Consultation Meeting on Promotion of Bio-entrepreneurship in North East Region on July 18, 2022.
  - b) MASTEC participated the Pride of India-Mega Science Expo of the 108th Indian Science Congress (ISC) held during 3-7 January 2023 at Rashtrant Tukadoji Maharaj Nagpur University, Nagpur. MASTEC took part in the Expo. Poster exhibits showcasing the activities of MASTEC were presented during the Expo.
  - c) MASTEC participated the State Science & Technology Councils Conclave which was held as a part of the 8th India International Science Festival (IISF)-2022 at Maulana Azad National Institute of Technology (MANIT), Bhopal, Madhya Pradesh during 21-24 January 2023. In the Exhibition MASTEC displayed 7 (seven) registered GI products of Manipur viz., (1) Shaphee Lanphee, (2) Wangkhei Phee, (3) Moirang Phee, (4) Kachai Lemon, (5) Tamenglong Orange, (6) Hathei Chilli and (7) Chak-hao. Posters highlighting the activities of MASTEC were presented during the Exhibition. The Director, MASTEC made presentation on the STI Ecosystem of Manipur during the S&T Conclave.
  - d) Dr. L. Minaketan Singh, Director, MASTEC and Dr. Kh. Rakesh, Senior Scientific Officer, MASTEC participated the Indo-German Science & Technology Centre (IGSTC) Outreach Event at IIT Guwahati, Guwahati on 30th January 2023.

6. MASTEC has registered the following Trademarks:
  - a) PIC Manipur applied Trademark registration- NUJA: Class – 32 with Application No. 5558436 dated 04/08/2022. 1(one) trademark NUJA: Class-30 with Trademark No. 5281794 was registered on 20/08/2022.
  - b) PIC Manipur applied Trademark registration- DEVICE: Application No. 5517885 dated 05/07/2022 in class 03. 1(one) trademark KUMSHUNG: Trademark No. 5241077, Class – 03 was registered on 07/07/2022.
  - c) Published Trademark MALEM: Application No. 5498553, Class-30 in Journal No. 2075 Date 24/10/22. Design Applied: Fragrance and Flavors Extractors: Application No.: 373068-001 Dated 26/10/2022.
  - d) Trademark Applied: Mukta Shoes: Class: 25, Application No: 5767458 dated 17/01/2023. Trade Mark Published: Device- Class 3, Application No. 5517885, Trade Marks Journal No: 2089 dated 30/01/2023.
7. Under the aegis of Atal Innovation Mission (AIM) which promotes a culture of innovation and entrepreneurship in India, a Memorandum of Understanding was signed between Atal Incubation Centre (AIC) – SELCO Foundation, Guwahati and Manipur Science & Technology Council (MASTEC), Imphal on 29th July 2022; with an objective to identify and support grassroot innovators from Manipur state and will be incubated under AIC SELCO Incubation Programme. It focuses on encouraging and supporting start-ups, innovators, and the development of innovation-led business ideas to achieve Sustainable Development Goals.
8. A Stakeholders' Meet was organised jointly by MASTEC and AIC-SELCO Foundation, Guwahati on 23rd August 2022 at the premises of MASTEC.
9. On August 31, 2022 a team of 28 members comprising teachers, students, industry partner of Moirang College, Moirang visited Manipur Science Aquarium as a part of their academic programme.
10. Annual Meeting of State S&T Councils was held at MPCST, Bhopal (M.P.) from August 29 – 31, 2022. Dr. L. Minaketan Singh, Director, MASTEC and Dr. Ch. Shivaji, Scientific Officer, MASTEC attended the Meeting. Altogether 29 State S&T Councils were present in the Meeting.
11. During the month of September, 6 nos. of individual/firms visited PIC MASTEC for query to protect their different forms of IP. Officials of the Centre explained in detail how to protect and advise them to submit applications at the earliest.
12. On November 16, 2022 an MOU was signed between MASTEC and Pravabati Peace Garden Trust, Changangei Uchekon, Imphal for instituting Dr. Pravabati Science Popularization Award.
13. Distribution of Dr. Ibeyaima Innovation Award-2022 was held on December 22, 2022. This year's award was presented to the three winners (1) Jina Khumujam, Our Rest House, Khurai Thoidingjam Leikai for Ma-Ngal Handmade Soap, (2) Dr. Wangkheirakpam Sujata, NIT Manipur for Novel Method of separation and isolation of indirubin from *Strobilanthes flaccidifolius* leaves and (3) Shrimayum Gita Devi, Gita Cocoons Fancy Centre, Khurai Thongam Leikai for Innovative Designs of Traditional Jewellery & Ornaments of Meitei Women of Manipur (Made from Cocoon).
14. State Science Communicators' Award-2022 was presented to Dr. Oinam Joychandra Singh, Shija Academy of Health Sciences, Imphal on December 22, 2022.
15. 5 (five) radio serials on Traditional Knowledge System had been broadcast in Manipuri Language in both Kangla and Sangai Channels of AIR Imphal on every Sunday at 7:00 a.m. 4 (four) radio serials on Traditional Knowledge System in Thadou/Kuki dialect had also been broadcast in both Kangla and Sangai Channels of AIR Imphal on every Wednesday at 5:00 p.m. In Tangkhul dialect also, 4 (four) radio serials on Traditional Knowledge System had been broadcast in both Kangla and Sangai Channels of AIR Imphal on every Wednesday at 5.50 p.m. in January 2023.

## B) INTEGRATED RURAL ENERGY PROGRAMME SECTOR :

### 6.8 IREP SCHEME.

Integrated Rural Energy Programme (IREP) is a scheme of the Deptt. to provide minimum domestic energy needs for cooking, heating and lighting purposes to rural people with focus on renewable energy and energy-efficient devices by providing the most effective mix of various energy sources and option for meeting the requirement of rural development of the State

The IREP Scheme has been implementing in 6(six) Zilla Parishads and 6(six) Autonomous District Councils (ADCs) of the State under Devolution of Powers to Panchayati Raj Institutions(PRIs) in Valley Districts and Autonomous District Councils (ADCs) in Hill Districts respectively. The implementation of the scheme were included various energy-efficient devices like Compact Fluorescent Lamps/LED Lamps/Bulbs, Biogas Plants, Improved Crematorium, Solar Lanterns, Solar Cookers, Improved Chulhas, Solar Water Heaters, etc which were available to the beneficiaries of the rural areas and Schools to meet their domestic needs of energy.

The Department had installed and commissioned 2(two) no. each of Solar Water Heater of 100 LPD at Kasturba Gandhi Balika Vidyalaya, Moirang and New Residential School, Lai angoubi, Kumbi under Bishnupur District for demonstration of energy-efficient devices to the public in general during 2021-22.

During 2022-23, the Department will implement IREP Scheme in Autonomous District Councils(ADCs) and Zilla Parishads under Devolution of Powers to ADCs and Panchayati Raj Institutions(PRIs) with providing 1860 nos. of white LED based Solar Lanterns.

## 7. ANNUAL PLAN OUTLAY AND EXPENDITURE FOR 2022-23.

(Rs.in lakhs)

Sl. No.	Sector/Major Head/Minor Head of Development	Actual Expdt. for A.P. 2021-22	Actual Expdt. for A.P. 2022-23 as on 21/02/23	Antic. Expdt. 2022-23
1	2	3	4	5
<b>A.</b>	<b>OTHER SCIENTIFIC RESEARCH</b>			
	<b>TOTAL(A):</b>	443.40	233.56	448.50
<b>B</b>	<b>INTEGRATED RURAL ENERGY PLANNING PROGRAMME</b>			
	<b>TOTAL(B)</b>	1.71	-	30.00
<b>C</b>	<b>NORTH EASTERN COUNCIL</b>			
	<b>TOTAL(C)</b>	-	70.00	70.00
	<b>GRAND TOTAL(A+B+C)</b>	<b>445.11</b>	<b>303.56</b>	<b>548.50</b>

## **8. Manpower Training during 2022-23:**

During this year 2022-23, the following Officer of the Department attended different Training programmes as under :

<b>Sl.No.</b>	<b>Name of Training Course, Venue and dates</b>	<b>Name of participant</b>	<b>Nos.</b>
1	Capacity Building Conference on 5G held on 10/11/2022 at Hotel Classic Grande, Manipur	i) Shri Kh.Cha.Romesh, SO ii) Shri K.Baleshwor, SO iii) Shri K.Yarreingam Rangry, TA iv) Shri.W.Nelson Singh, TA v) Shri. M.Chandrakumar, TA	5
2	Integrated Training/Skill Upgradation Framework from 18-20 <sup>th</sup> July 2022.	i) Shri. M.Chandrakumar, TA ii) Shri. W.Nelson Singh, TA	2
3	Manipur State Gender Responsive Budgeting(GRB) on 8 <sup>th</sup> and 9 <sup>th</sup> August 2022.	i) Shri Kh.Cha.Romesh, SO ii) Shri K.Baleshwor Singh, SO	2
4	One day awareness-cum-interaction programme on TDS/TCS held on 25 <sup>th</sup> August 2022 at SAT, Takyelpat.	i) Shri M.Ramo Singh, SSO ii) K.Jackichand Singh, CO iii) Shri Lenthoi Marim Chothe, LDC	3
5	Liasoning Training at SAT, Takyelpat	i) Shri.Kh.Cha,Romesh, SO ii) Shri. K.Baleshwor Singh iii) Shri. Jimmy Maisnam	3
6	GIS Technology Vision on State Natural Disaster Management on 06/-9/2022 at Sangai Hall, Hotel Imphal, North AOC, Imphal	i) Shri. K.Baleshwar Singh, SO	1
7	One day Training/Awareness Program entitled "Services on GeM" on 8 <sup>th</sup> September 2022 at Classic Hotel, Royale Hall	i) Shri K.Jackichand Singh, CO ii) Shri. Y.Mahesh, EA	2
8	3 days training programmes on "Integrated Training Framework for Government Employees" to be held at SAT, Takyelpat	i) Shri. M.Ramo Singh, SSO ii) Shri. K.Yarreingam Rangry, TA iii) Shri. Lenthoi Marim Chothe, LDC	3
9	Liasoning Training	i) Shri. T.D Kom, Curator ii) Shri. Kh.Cha.Romesh, SO iii) Shri. K.Baleshwor Singh, SO	3
10	Workshop on Cyber Security for Government Employees on 10 <sup>th</sup> February 2023	i) Shri. Onil Heikrujam, CO ii) Shri. K.Jackichand Singh, CO	2
	<b>Total :</b>		26

**9. RETIREMENTS, PROMOTIONS AND RECRUITMENTS DURING 2021-22 :**

During 2021-22 , the details of Retirements, Promotions and Recruitments were as under:

Sl.No.	Particulars	No. of persons	Name of official
1	Persons retired during the year:	1 Nos.	i) Shri. K.Debanaran Sharma ii) Shri Th.Tomba Singh
2	Persons promoted during the year:	1 Nos.	Shri. Khumujam Jitkumar Singh, LDC to Accountant
3	Persons recruited during the year :	0 Nos.	-
4	Expired during the year :	0 No.	-
5	MACP during the year:	3 No.	i) Shri. K.Debanaran Sharma SSO. ii) Smt. Tingneikim Khongsai Head Clerk. iii) Shri. Th.Tomba Singh UDC.

**10. REVENUE RECEIPTS :-** This Department contributed to the Revenue receipt of the Government during 2022-23 from Fees for Entry, Science Show, 3-D Theatre etc. from **Manipur Science Centre, Takyelpat** till January 2023 Imphal are as under:-

Sl. No.	Particulars	Amount	Remarks
1	Revenue receipt from Manipur Science Centre being entry fees, etc.	4.83	
	Total	4.83	

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