

# ANNUAL REPORT

## 2024 - 2025



**MANIPUR SCIENCE & TECHNOLOGY COUNCIL**

Science & Technology Complex, Takyelpat, Imphal - 795001

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# Annual Report

## 2024 - 2025



### **MANIPUR SCIENCE & TECHNOLOGY COUNCIL**

(An autonomous body of the Dept. of Science & Technology, Govt. of Manipur)

**Science & Technology Complex, Takyelpat, Imphal - 795001**

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## 1.0 Background

The Manipur Science & Technology Council (MASTEC), formerly the State Council of Science, Technology, and Environment, Manipur, was set up in 1985 with 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 autonomous Council is served by its own Secretariat of twenty manpower supported by the Department of Science and Technology (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 area of activities.

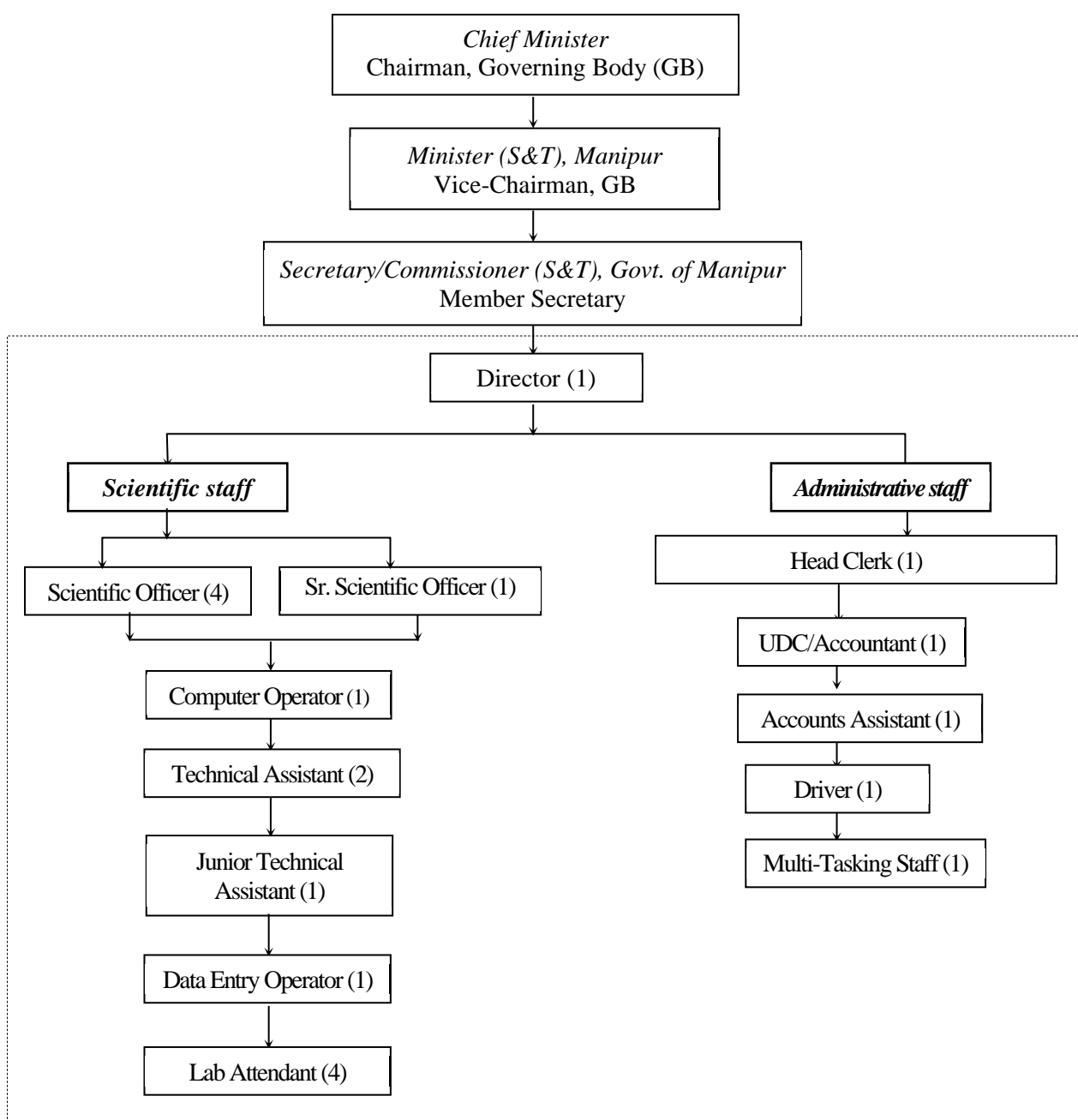
### 1.1 Objectives of the Council

- 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;
- To advise on policies and measures necessary to promote Science, Technology and Environment and their utilisation for achievement of socio-economic objectives;
- To initiate, support, promote and coordinate Research Design and Development projects and programmes, including demonstration projects which are likely to be relevant to the problems, surveys and optimum utilisation of natural resources of the State;
- To promote and undertake activities for the popularisation of Science and Technology and the spread of a Scientific Temper and attitude among the people of the State;
- To supplement and complement the ongoing technical efforts of the State Government;
- To interact with other State, National and International S&T bodies having similar or related objectives;
- To identify priority areas of Science & Technology for long term development of the State;
- To promote, support and undertake the application of renewable sources of energy for the benefit of the people;
- 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.



## 1.2 Organisation

The Council has a Governing Body which consists of a wide distribution of members with expertise in various fields, with the Chief Minister as the Chairman and the Minister in Charge of 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 heads the Executive Committee as its Chairman. The Secretary/Commissioner (S&T), Government of Manipur, is the Member Secretary of the Council. The Member Secretary is the Chief Executive of the Council Secretariat. The organisation chart is shown below.





### 1.3 Existing Staff

Sl. No	Name	Qualification	Designation
1.	Dr. L. Minaketan Singh	M.Sc., PGDRS, Ph.D., Foundation Training of Scientists/Technologists (DST, GoI. Sponsored)	Director (Retd.)
2.	Dr. Kh. Rakesh	M.Sc., Ph.D.	Sr. Scientific Officer (Director i/c)
3.	Er. Ch. Sarat Singh	B.Tech., M.Tech. (Civil)	Scientific Officer
4.	Dr. R.K. Pritamjit Singh	M.Sc., Ph.D.	Scientific Officer
5.	Dr. Ch. Shivaji	M.Sc., PGDCA, Ph.D.	Scientific Officer (Retd.)
6.	Mrs. H. Binodini Devi	B.Sc.	Technical Assistant
7.	Y. Shyamsunder Singh	B.Sc., LLB	Technical Assistant
8.	R.K. Bhanisana Devi	B.Sc.	Sr. Accountant cum Head Clerk
9.	L. Ronel Singh	M. Com.	UDC/Accountant
10.	L. Boyai Singh	VIII	Driver (Retd.)
11.	L. Open Singh	X	Lab Attendant
12.	S. Debendra Singh	X	Lab Attendant
13.	Jamkhanmuan	VIII	Lab Attendant
14.	Kh. Leidou Maring	VIII	Lab Attendant
15.	Chingthanching	VIII	Multi Tasking Staff
16.	L. Surjit Singh	M.Sc. PGDCA	J.R.F. (PIC)
17.	Binita Thiyam	B.Sc. (Bot)	Lab/Field Assistant
18.	Leslie Worchipem Ragui	B.Sc. (Agri)	Lab/Field Assistant
19.	S. Sanjay Singh	XII -Sc.	Attendant cum watchman
20.	H. Sanjay Singh	X	Attendant cum watchman
21.	T Siampu	VIII	Attendant cum watchman

## 2.0 Short-term Activities including Science Popularisation

The Manipur Science and Technology Council (MASTEC) organised various state and centrally sponsored workshops/trainings relevant to the state, including science popularisation to fulfil the objectives for the establishment of the Council. The following were the short-term programmes implemented during the year 2024–2025.

### 2.1 Celebration of National Mathematic Day 2024

Manipur Science & Technology Council (MASTEC), Imphal organised 1-day observation of National Mathematics Day 2024 on December 22, 2024 at Pole Star Public School, Patsoi. Mathematics Competitions and Mathematics Written Quiz were conducted for various classes during February 8-16, 2025 at different schools/colleges and continued



with Mathematics Model Exhibition and Hands on Demonstrations during February 24-28, 2025 at Manipur Science & Technology Council (MASTEC) Complex, Takyelpat, Imphal followed by Lecture Series on Importance of Mathematics in Day-to-Day Life at selected schools in all the districts of Manipur during March 2025. The programme was catalysed and supported by National Council for Science & Technology Communication (NCSTC), Department of Science & Technology, Government of India, New Delhi.

The main feature of the 1-day observation of National Mathematics Day 2024 was deliberation of lecture on “Life and Works of Srinivasa Ramanujan” and “Importance of Mathematics in our day-to-day Life”. Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council, Imphal, Shri S. Jugeshwor Singh, Sr. Assistant Professor, JCRE Global University, Babupara, Imphal and Shri Kh. Biramani Singh, Principal, Pole Star Public School, Patsoi were the Chief Guest, Guest of Honour and President of the observation respectively. In his speech Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council, Imphal highlighted the importance of celebrating National Mathematics Day. Shri S. Jugeshwor Singh, Sr. Assistant Professor, JCRE Global University, Babupara, Imphal delivered a lecture on Life and Works of the Great Indian Mathematician, Srinivasa Ramanujan followed by lecture on Importance of Mathematics in our day-to-day life. Shri Kh. Biramani Singh, Principal, Pole Star Public School, Patsoi expressed his views on the benefits of organising such programmes to motivate the students mind to choose Mathematics as a career. About 250 students and teachers participated in the observation.



*1-day Celebration of National Mathematics Day 2024 at Pole Star Public School, Patsoi*

### **2.1.1 Mathematics Written Quiz**

As one of the activities of National Mathematics Day 2024 celebration, Mathematics Written Quiz was organised for the students reading in Class IX – XII on February 12, 2025 at MASTEC Complex, Takyelpat, Imphal. Altogether 180 students from all over the State took part in the said Quiz. The following is the result of Mathematics Written Quiz Competition held on February 12, 2025 in connection with Celebration of National Mathematics Day 2024.



*Mathematics Written Quiz*



**Results of Mathematics Written Quiz:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Mangalthoiba Khundongbam	The K.M. Blooming Higher Secondary School, Khangabok	11
2 <sup>nd</sup>	Tenheiba Rajkumar	Heritage Convent, Uripok	04
3 <sup>rd</sup>	Jasper Leitanthem	Catholic School, Canchipur	01
<b>Consolation</b>			
	Julai Khundrakpam	The K.M. Blooming Higher Secondary School, Khangabok	47
	Christopher Laishram	The K.M. Blooming Higher Secondary School, Khangabok	32

**2.1.2 Mathematics Competition**

The Mathematics Competition was organized for students of Class III, Class IV and Class V on February 8, 2025 at Model Higher Secondary School, Imphal and for Class VI, Class VII and Class VIII on February 16, 2025 at Oriental College, Imphal. Altogether, 900 students from different schools in the state participated in the mathematics competition.

*Mathematics competition*

The following were the winners of the competition.

**Class III:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Lenthoba Wahengbam	Comprehensive School, Oinam	09
2 <sup>nd</sup>	Khundrakpam Lenil Singh	K.M. Blooming Hr. Sec. School, Khangabok	20
3 <sup>rd</sup>	Meethoihenba Samom	The Kidz Campus School	07
<b>Consolation</b>			
	Laishram Athoiba	S.L. Arena of Learning, Kongpal	56
	Khundrakpam Sinthangamba Meitei	K.M. Blooming Hr. Sec. School, Khangabok	33

**Class IV:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Niranjit Usham	K.M. Blooming Hr. Sec. School, Khangabok	30
2 <sup>nd</sup>	Thoujal Khundrakpam	K.M. Blooming Hr. Sec. School, Khangabok	31
3 <sup>rd</sup>	Yaipharemba Sairem	Evergreen Flower's School, Thoubal	06
<b>Consolation</b>			
	Bh. Inesh Sharma	K.M. Blooming Hr. Sec. School, Khangabok	10
	Ningthoujam Lamnganba Singh	K.M. Blooming Hr. Sec. School, Khangabok	18



**Class V:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Surjesh Kongbrailatpam Sharma	Thangtek Junior High School	54
2 <sup>nd</sup>	Elangbam Bikison Singh	Hiyanglam Primary School	02
3 <sup>rd</sup>	Yaisana Takhellambam	Awang Kongpal Maloti Primary School	62
<b>Consolation</b>			
	Thoubalmayum Abbrash Shah	MOBST Academy, Hayellabuk	65
	Khagokpam Korounganba	MBCC, Khurai	61

**Class VI:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Paritosh Rajput	Assam Rifles Public School, Mantripukhri	54
2 <sup>nd</sup>	Ryan Thokchom	K.M. Blooming Hr. Sec. School, Khangabok	10
3 <sup>rd</sup>	Kunal Gupta	Assam Rifles Public School, Mantripukhri	52
<b>Consolation</b>			
	Bolex Thokchom	K.M. Blooming Hr. Sec. School, Khangabok	11
	Chinglemba Kh.	K.M. Blooming Hr. Sec. School, Khangabok	14
	Kartikraj Laishram	Regular English High School, Imphal	01
	Yaisana Sagolsem	Nirmalabas High School, Imphal	103

**Class VII:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Yumnam Selina Devi	J.N.V. Yaralpat, Imphal East	73
2 <sup>nd</sup>	Machathoi Khwairakpam	J.N.V. Yaralpat, Imphal East	06
3 <sup>rd</sup>	Basista Moirangthem	K.M. Blooming Hr. Sec. School, Khangabok	28
<b>Consolation</b>			
	Shreenibhas Thokchom	K.M. Blooming Hr. Sec. School, Khangabok	25
	Victor Wahengbam	Comprehensive School, Oinam	13



**Class VIII:**

Position	Name of the Winners	Name of School	Sl. No.
1 <sup>st</sup>	Moirangthem Stelon Singh	Eastern Star Hr. Sec. School, Khangabok	107
2 <sup>nd</sup>	Chanam Lanchenba Singh	St. John's English School, Nambol	54
	Yaiphaba Moirangthem	K.M. Blooming Hr. Sec. School, Khangabok	49
3 <sup>rd</sup>	M. Arnold Singh	Eastern Star Hr. Sec. School, Khangabok	110
<b>Consolation</b>			
	Khwairakpam Ajitkumar Singh	K.M. Blooming Hr. Sec. School, Khangabok	31
	Sinam Renil Singh	J.N.V. Khumbong	112
	Takhellambam Yaipuba Meitei	J.N.V. Bishnupur	14

**Continuing Programme of Celebration of National Mathematics Day 2024**

Manipur Science & Technology Council (MASTEC), Imphal organised a 5-day continuing programme of Celebration of National Mathematics Day 2024 during February 24-28, 2025 at MASTEC Complex, Takyelpat, Imphal. The main features of the programme were Mathematics Model Exhibition, Invited Lectures and Hands on Activities. The programme was inaugurated by Prof. N. Rajmuhon Singh, Former Vice Chancellor, Dhanamanjuri University, Imphal in the presence of Smt. Chingakham Shachi Devi, Jt. Secretary (Science & Technology), Govt. of Manipur and Dr. Kh. Rakesh, Director, Manipur Science & Technology Council, Imphal.

**2.1.3 Mathematics Model Exhibition**

The competition was organised for students reading in Class VIII – XII. Altogether, forty-three Mathematics Models were exhibited by students from different schools of the State. The result of the Mathematics Model Competition was as given below:

Position	Name	Class	School	Model Title
First	Roshniya Chongtham	IX	Mother's Pride Academy, Kwasiphai, Bishnupur	Maths Park
Second	Leenoja Nameirakpam	X	St. George High School, Wangkhei	Parts of a Circle
Third	Gorav Ningthoujam	IX	R.K. Mission School, Imphal (Innovation Hub, Manipur Science Centre, Takyelpat)	Error Check
<b>Consolations</b>				
1.	Ayekpam Anju	X	St. Paul English School, Langdum	
2.	Sagolshem Abinash Singh	IX	R.K. Mission School, Imphal (Innovation Hub, Manipur Science Centre, Takyelpat)	Parallel Sorting





*Mathematics Model Exhibition-cum-competition*



*Mathematics Model Exhibition-cum-competition*

**Best Guide Teacher:** Th. Milan, Mother's Pride Academy, Kwasiphai, Bishnupur.

#### 2.1.4 Hands on Activities

Learning Mathematics with Fun is very important to remove the wrong concept that Mathematics is very tough and boring subject from the mind of the young students. Mathematical demonstration through Origami was one of the activities of Celebration of National Mathematics Day 2024. About 35 (thirty five) Mathematical items were demonstrated by two Resource Persons, Dr. Oinam Arunkumari Devi, Lecturer, Lilong Higher Secondary School, Lilong and Shri N. Shyamkishore Singh, Retd. Science Graduate Teacher, St. George High School, Imphal followed by interaction with the students.

#### Prize Distribution Function

Prizes for various competitions of Celebration of National Mathematics Day 2024 were distributed on the 28<sup>th</sup> February 2025 by Smt. Kengoo Zuringla, IAS, Secretary (Science & Technology), Govt. of Manipur, Dr. H. Birkumar Singh, Chief Scientist, CSIR-NEIST, Branch Laboratory, Imphal, Smt. Chingakham Sachi, Jt. Secretary (Science & Technology), Govt. of Manipur and Dr. Kh. Rakesh, Director, Manipur Science & Technology Council, Imphal.



*Distribution of prizes for various competitions of Celebration of National Mathematics Day 2024*



### 2.1.5 Mathematics Lecture Series

Manipur Science and Technology Council, Imphal organised a Mathematics Lecture Series on the topic “**Importance of Mathematics in Day to Day Life**” as a continuing activity of Celebration of National Mathematics Day 2025 at 15 (fifteen) different schools in Manipur in the month of March 2025. The main objective of the lecture series was to remove the misconception from the mindset of the students that Mathematics is a very tough and boring subject. Shri S. Jugeshwor Singh, Sr. Assistant Professor, JCRE Global University, Imphal was engaged as Resource Person for the Lecture Series. The following is the list of schools where lecture programme were conducted.

S. No.	Name of the School
1.	Pari Imom Sindam Sang, Langjing, Imphal West
2.	Brighter Academy Khumbong, Imphal West
3.	S.K. Ideal High School, Ngairangbam, Imphal West
4.	S.L. Arena of Learning, Kongpal, Imphal East
5.	Manu English School, New Chekon, Imphal East
6.	JNV Yaralpat, Imphal East
7.	Ananda Purna Higher Secondary School, Thoubal District
8.	New Public Higher Secondary School, Thoubal, Thoubal District
9.	K.M. Blooming Higher Secondary School, Khangabok, Thoubal District
10.	Hiyanglam Higher Secondary School, Wabagai, Kakching District
11.	Langmeidong Higher Secondary School, Langmeidong, Kakching District
12.	P. R. English School, Kakching, Kakching District
13.	Oinam Govt. Higher Secondary School, Oinam, Bishnupur District
14.	Moirang Multipurpose Higher Secondary School, Moirang, Bishnupur District
15.	Mothers’ Pride Academy, Kwasiphai, Bishnupur District



## Mathematics Lecture Series of Celebration of National Mathematics Day 2024



*Padma Ratna English School, Kakching District*



*K.M. Blooming Hr. Sec. School, Thoubal District*



*Mothers' Pride Academy, Kwasiphai, Bishnupur District*



*Manu English School, New Chekon, Imphal East*



*S.L. Arena of Learning, Kongpal, Imphal East*



*Pole Star Public School, Patsoi, Imphal West District*



## 2.2 Celebration of National Science Day 2025

Manipur Science & Technology Council in association with Science Teachers' Forum Manipur (STFM), Manipur Association for the Promotion of Science (MAPS), Manipur Science Communicators' Association (MASCA), Research Institute of Science & Technology (RIST) and Generation De New Image (GENIM) organised a 5-day State level Celebration of National Science Day 2025 during February 24-28, 2025 at Manipur Science & Technology Council (MASTEC) 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. The theme for National Science Day 2025 was **“Empowering Indian Youth for Global Leadership in Science & Innovation for Viksit Bharat”**.

The programme was inaugurated by Prof. N. Rajmuhon Singh, Former Vice Chancellor, D.M. University, Imphal in the presence of Smt. Chingakhm Shachi Devi, Joint Secretary (Science & Technology), Govt. of Manipur and Dr. KH. Rakesh, Director, Manipur Science & Technology Council, Imphal.

The main activities of the 5-Day National Science Day 2025 Celebration were Science Short Play Competition (Class VI-XII), Science Model Exhibition-cum-competition (Class VIII–XII Science), Science Quiz (Class IX–XII Science), Spot Painting competition in three categories (Sub-junior : Class III-V, Junior : Class VI-VIII & Senior Class IX-XII Science), Declamation Contest (Class IX–XII Science), Poster Competition (Graduate and above), Best Appreciation Award (Open), Best Guide Teacher Award for Science Model etc. Apart from competitions for students/teacher, activities such as Invited talks, Science Behind Miracles Show, Science Film Show, Hands on Experiments, Science with Fun etc. were organised during the Celebration of National Science Day 2025.

### 2.2.1 Science Short Play Competition

The competition was organised for the students reading in Class VI-XII Science. The number of students per team was limited to 8 (eight) from the same school and the time duration for a Play was limited to 30 minutes. The Short Plays were performed either in English or Manipuri language. Altogether 12 (twelve) teams from 10 (ten) Schools participated in the competition. The result of the Science Short Play Competition of National Science Day 2025 Celebration was as given below:



*Science Short Play Competition of NSD-2025*

Position	Name of the Team	School	Title of Play
First	Y. Prity Chanu & party	St. Paul English School, Langdum	Deforestation
Second	Indraraj Bachaspatimayum & party	Laisukol, Thoubal	Eikhoisu Hingningliba Thawaini
Third	Safiya Seikh & party	Manipur Creative School, Imphal	Meirilakta Khongthang



### 2.2.2 Science Model Competition & Exhibition

The competition was organised for students reading in Class VIII – XII. Altogether, eighty-four Science Models were exhibited during the 5-day Celebration of National Science Day 2025. The result of the Science Model Competition was as given below:



*Students displaying Science Exhibit Models*

Position	Name	Class	School	Model Title
First	Oinam Tanish Singh	VIII	JNV Bishnupur	Modern Carotine
Second	Soraisam Dolina Devi	X	Mother's Pride Academy, Kwasiphai	Agri Board: From Straw to Sustainability
Third	Sapam Susmita Devi	X	Pole Star Public School, Patsoi	Waste Water Treatment
<b>Consolations</b>				
1.	Shivit Khumanthem	VIII	Mother's Pride Academy, Kwasiphai	Mechanical Energy Harvesting System
2.	Wangkheimayum Martin	X	K.M. Blooming Hr. Sec. School, Khangabok	Automatic Gate

#### Best Guide Teacher Award

The Best Guide Teacher Award for the Science Model Competition in recognition of the guide teachers in developing and designing the science model for the competition was awarded to **Sophiya Laishram** of **Mother's Pride Academy, Kwasiphai, Bishnupur** for guiding the Science Model entitled "Agri Board: From Straw to Sustainability".

### 2.2.3 Science Quiz Competition

The competition was organised for students reading in Class IX-XII Science. A team of two students each from the same school were allowed to take part in the Science Quiz Competition. Altogether fifty-two teams were enrolled for the competition. The best four teams were selected for the final round through a preliminary written test. The following were the winners of the Science Quiz Competition.



*Science Quiz Competition Final Round*



Position	Name of the Winners	Class	Name of the School
First	Luchingba Keisham	X	Eastern Ideal High School, Akampat
	Brahmacharimayum Barlin Sharma	X	
Second	Topjeet Thounaojam	XI	COMET School, Imphal
	Dharmaraj Laishram	XI	
Third	Hijam Yaiphaba Luwang	IX	JNV, Yaralpat
	Kh. Davidson	IX	
Fourth	Jaileima Th.	X	SL Arena of Learning
	Kh. Kalpana	X	
Consolation			
Arush Khundongbam		X	K.M. Blooming Hr. Sec. School, Khangabok
Wangkheimayum Martin Singh		X	
Kanchal Chanu Khangembam		IX	JNV, Yaralpat
Lairikyengbam Simran Devi		IX	

#### 2.2.4 Spot Painting Competition

Spot Painting Competition was organized in 3(three) categories/groups viz., i) Sub-Junior (Class III-V), ii) Junior (Class VI-VIII) and iii) Senior (Class IX-X). Altogether, 423 students (150 for Sub-Junior category, 175 for Junior category and 98 for Senior category) participated in the Spot Painting Competition. The following was the results of the Spot Painting Competition.



*Spot Painting Competition*

##### **Sub-Junior Category (Class III – V)**

Position	Name of the Winners	Class	Name of the School
First	Khangembam Chandra Meitei	IV	Wangkhei High School
Second	Khangembam Joy Meitei	IV	Wangkhei High School
Third	Sagolsem Pural Mangang	V	St. George High School, Wangkhei
<b>Consolations</b>			
	Oinam Bhumika	IV	Pitambara English School, Kwakeithel
	Thiyam Roshita Devi	V	Nirmalabas School (Jr), Imphal East

##### **Junior Category (Class VI – VIII)**

Position	Name of the Winners	Class	Name of the School
First	Nongmaithem Korounganba	VIII	Heritage Convent, Uripok
Second	Sanahen Oinam	VII	Pitambara English School, Kwakeithel
Third	B. Aditya Sharma	VIII	St. George High School, Wangkhei
<b>Consolations</b>			
	Kh. Chinglembi Chanu	VII	S.L. Arena of Learning, Kongpal
	Seram Jeshita Chanu	VII	Nongpok Maheikol, Imphal



**Senior Category (Class IX – XII)**

Position	Name of the Winners	Class	Name of the School
First	Sunaina Saikhom	IX	Kendriya Vidyalaya No.1, Lamphel
Second	Angela Heikrujam	IX	Kendriya Vidyalaya No.1, Lamphel
Third	Brikrama Lourembam	IX	The Comprehensive School, Oinam
<b>Consolations</b>			
	Seram Jairaj Meitei	X	Nongpok Maheikol, Imphal
	Konjengbam Milky Devi	X	Mother's pride Academy, Kwasiphai

**2.2.5 Declamation Contest**

The competition was organised for students reading in Class IX-XII Science. Eighty six students from various schools participated in the competition. Only 10 contestants were selected for the contest through a preliminary written test. The students gave an oral presentation for 7 minutes either in English or Manipuri with Slide/Power Point Presentation on any of the given three topics viz., (i) Science for Nation Building (ii) Information Technology in Science Education (iii) Women in Science followed by judges' questions was the mode of selection.

*Declamation Contest*

The following was the result of the Declamation contest

Position	Name of the Winners	Class	Name of the School
First	Athoibi Khundrakpam	IX	K.M. Blooming Hr. Sec. School, Khangabok
Second	S. Krishnanda Singh	X	St. John's English School, Nambol
Third	Oinam Kritina	X	Mother's Pride Academy

**2.2.6 Poster Competition**

Poster competition for college and university students (Graduate and above) has been introduced in the Celebration of National Science Day 2025 for the first time. Altogether, 25 posters were displayed by students from some colleges in Manipur and from D.M. University & Manipur University.

*Poster Competition*

The following is the result of the poster competition:

Position	Name of the Winners	Class	Name of the School
First	Yumnam Monitor Singh	Ph.D. Student	Manipur University, Imphal
Second	Leishangthem Debajit Singh	M.Sc.	D.M. University, Imphal
Third	Mutum Rawat Singh	B.Sc. 5 <sup>th</sup> Sem	Mangolnganbi College, Ningthoukhong
	Wakambam Henthoiba Meitei	M.Sc.	D.M. University, Imphal



### 2.2.7 Best Appreciation Award

The most prestigious award of Celebration of National Science Day 2025, “Best Appreciation Award 2025” was organised on the day of National Science Day. The award was given to an individual student who proved to have gained the maximum knowledge of science and technology from Celebration of National Science Day 2025 as judged by questionnaire response and oral presentation on Science & Technology related questions provided at the spot. The Best Appreciation Award 2025 was selected from 156 participants of various classes from different schools. The award was given to Salman Farshi of Manipur Creative School, Imphal.



*Final round of Best Appreciation Award*

### 2.2.8 Hands on Experiments

Hands on experiments on Physics and Life Sciences were conducted by Shri N. Shyamkishore Singh, Retd. Science Graduate Teacher, St. George High School, Wangkhei and Dr. Oinam Arunkumari Devi, Lecturer, Lilong Higher Secondary School, Lilong respectively during the 5-day Celebration of National Science Day 2025 followed by interaction session with the students.



*Conducting Hands on Experiments*

### 2.2.9 Science Miracles Show

In the 5-day Celebration of National Science Day 2025, a programme on explaining Science behind miracle was included to showcase scientific reasons behind miracles. The main objective of the programme was to explain the scientific reasons/background lying behind Miracles in order to remove superstitions from the mind of young students. About 40 miracle items were performed and demonstrated during the Celebration of National Science Day 2025 by a team of Artists and the scientific backgrounds of the miracles were also explained to the audience. The participating students could learn how science is related with miracles.

### Closing and Prize Distribution Function

The 5-day Celebration of National Science Day 2025 was concluded on February 28, 2025. Smt. Kengoo Zuringla, Secretary (Science & Technology), Govt. of Manipur and Member Secretary, Manipur Science & Technology Council, Imphal, Dr. H. Birkumar Singh, Chief Scientist, CSIR-NEIST, Imphal, Smt. Chingakhom. Shachi, Joint Secretary (Science & Technology), Govt. of Manipur, and Dr. Kh. Rakesh, Director, Manipur Science & Technology Council, Imphal distributed Cash prizes with citations and memento to the winners of various competitions of National Science Day Celebration 2025.



*Secretary (Science & Technology), Govt. of Manipur addressing the audience*



### 2.3. National Space Day Celebration 2024

To commemorate the successful landing of Chandrayan -3 Vikram Lander on the surface of the Moon. Manipur Science & Technology Council (MASTEC), Imphal in association with North East Space Application Centre (NESAC), Shillong and National Institute of Electronics & Information Technology (NIELIT), Imphal jointly organised National Space Day Celebration 2024 on July 19, 2024 at NIELIT, Akampat, Imphal. The objective of the celebration is to engage & inspire the youths of the Nation towards space technology and its applications. The theme for National Space Day Celebration 2024 is **“Touching Lives while Touching the Moon: India’s Space Saga”**.



*Dignitaries of National Space Day Celebration 2024 at NIELIT, Imphal*

The programme was inaugurated by Shri Th. Biswajit Singh, Hon’ble Minister (Science & Technology) Manipur in the presence of Shri Hungyo Worshang, IAS, Secretary (Science & Technology) Govt. of Manipur, Raghu Ningthoujam, Scientist -SG, Deputy Director, DTDI, ISRO HQ Bangaluru, Shri M. Somorjit Singh, Scientist-SF, Head, Geoscience Division, NESAC, Shillong, Shri N. Debachandra Singh, Director, NIELIT, Imphal and Dr. L. Minaketan Singh, Director, MASTEC. Altogether a team of 4 (four) Scientists viz., (i) Shri Raghu Ningthoujam, Scientist -SG, Deputy Director, DTDI, ISRO HQ Bangaluru (ii) Shri M. Somorjit Singh, Scientist-SF, Head Geoscience Division, NESAC, Shillong (iii) Shri Victor Saikhom, Scientist-SF, NESAC Shillong and (iv) Shri Puyam Subhas, Scientist-SF, NESAC Shillong came down to Imphal for the celebration.

The main features of the programme included Invited Talks on Indian Space Programme with special emphasis on Moon Missions (Lunar Exploration) by Raghu Ningthoujam, Scientist, ISRO, Space Applications for Societal Benefits by Shri M. Somorjit Singh, Scientist, NESAC apart from a session on Interaction of students with Scientists from Indian Space Research Organisation (ISRO) and NESAC. A Written Science Quiz on Space Exploration was also organised for students from Class IX – XII etc.



*Shri Raghu Ningthoujam, Scientist-SG, ISRO HQ, Bengaluru, delivering lecture on India’s Space Programme with emphasis on Moon Mission*



*Shri M Somorjit, Scientist-SF, NESAC, Shillong delivering lecture on Space Application for Societal Benefits*



The target group of participants were students from Class IX to College level, Teachers and general public. About 250 participants from all over the State participated in the technical sessions while 54 teams with each team consisting of 2 students each participated in the Written Science Quiz on Space Exploration.



*Written Science Quiz in the National Space Day Celebration 2024*

The following was the result of the Written Science Quiz.

Rank.	Names of Students	School
First	Y. Tomthinnganbi & Ch. Tondon	T.G. Hr. Sec. School, Imphal
Second	Dhanachandra Ng & M. Lalin Singh	Regular English High School, Imphal
Third	B. Barlin Sharma & Luchingba Keisham	Eastern Ideal High School, Akampt
Fourth	Dushant Moirangthem & Bonish Thingbaijam	Pitambara English School, Kwakeithel
Fifth	Ajish Aribam & Kh. Topjohn	C.C. Hr. Sec. School, Imphal

The programme was concluded with distribution of prizes to winners of Written Science Quiz and participation Certificates to the delegates.

## 2.4 Science Motivational Programme

India has made remarkable progress in the field of Science & Technology since independence. Many advance research institutions, engineering institutions, industrial institutes etc. have been established in the country. However, it has been observed in the last few decades as highlighted in several forums by Researchers, Scientists that the interest of the students towards basic sciences has declined considerably in India. In the hills and far flung rural areas, majority of the students even though they are talented, are ignorant of taking science at the college level. One of the factors at grass root level is perhaps, the school level education without basic science facilities and lack of specialized science faculties due to which science study could not be made charm. In order to create awareness about the importance of science and to motivate the school students to choose Science as career, some programme on exposure of students to the research laboratories/institutions is required.

A 3-day Science Motivational Programme for School students was organized for the students staying in the relief camp during August 28-30, 2024 at the Training Hall of MASTEC, Takyelpat, Imphal. The programme was inaugurated by Shri Hungyo Worhsang, IAS, Secretary (Science & Technology), Govt. of Manipur as Chief Guest, Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council (MASTEC), Imphal and Prof. N. Rajmuhon Singh, Former Vice Chancellor, Dhanamanjuri University were the President and Guest of Honour of the inaugural function. Altogether, 30 students and 10 Guide Teachers from different schools participated in the programme.



**OBJECTIVES:** The main objectives of the programme were

- i) To create awareness about the importance of science and generate curiosity among the students.
- ii) To motivate the students to choose science as career.
- iii) To make students aware of different fields of science in order to enable them to choose his/her right field.

**ACTIVITIES OF THE PROGRAMME:**

**2.4.1 Lecture and Hands on Activities:**

An invited lecture on “Basic Sciences - Career Opportunities and Prospects” was delivered by Prof. N. Rajmuhon Singh, Former Vice Chancellor, Dhanamanjuri University and interacted with the participants. On the last Day of the programme a Hands-on Activity on Grafting of Fruit and Flower plants was conducted by Shri Kangjam Homen Singh, Senior Scientist & Head, KVK, Senapati. The participants carried out different grafting methods on Mango, lemon, Roses etc. of their own.

**2.4.2 Visit to R&D and Scientific Institutions:**

During the 3-day programme the participants were taken to four Institutions in Manipur viz., (i) Institute of Bioresources & Sustainable Development (IBSD), Takyelpat, Imphal (ii) Manipur Technical University (MTU), Takyelpat, Imphal (iii) Shija Academy of Health Sciences, Langol, Imphal and (iv) Central Agricultural University (CAU), Iroisemba, Imphal. During the said visits, Scientists highlighted the activities being carried out in their respective Institutions and interacted with the students.

**2.4.3 Face to Face Interaction with Scientists/Experts:**

A session on Face to Face interaction with Scientists/Experts was also arranged during the 3-day Science Motivational Programme for School Students. Altogether 6 (six) Scientists/Experts from various R&D and Scientific Institutions namely (i) Prof. S. Dorendrajit Singh, Former Professor, Physics Dept. of Manipur University (Physics Scientist/Expert) (ii) Prof. L. Nabachandra Singh, Agronomy Dept., College of Agriculture, Central Agricultural University, Iroisemba, Imphal (Agricultural Scientists/Expert) (iii) Dr. O. Joychandra Singh, Senior Faculty, Shija Academy of Health Sciences, Langol (Medical Scientist/Expert) (iv) Dr. H. Birkumar Singh, Chief Scientist, CSIR-North East Institute of Science & Technology (NEIST), Lamphelpat, Imphal (Life Sciences Scientist/Expert) (v) Prof. U. Chaoba Singh, Central Agricultural University and (vi) Dr. Angom Buboo Singh, Scientist ‘E’, National Institute of Electronics & Information Technology (NIELIT), Akampat, Imphal (IT Expert) interacted with the students.

**Closing Function:**

The 3-day Science Motivational Programme for School Students was concluded on the 30<sup>th</sup> August 2024 with a closing function in which Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council (MASTEC), Imphal and all the Scientists/Experts of the Face to Face Interaction programme were the dignitaries on the dais. In his concluding remarks, Dr. L. Minaketan Singh, Director, MASTEC mentioned the need for motivating students to choose



Science as their career. He also mentioned that parents must give their children the chance of choosing the career of their own after 10+2. If the students are aware of all the fields of science, they may be able to choose the right field of their choice. Feedback reports were also delivered by some of the participants in the closing function. Participation certificates were also distributed to the participants.

## **2.5 Popularisation-cum-Demonstration of Technologies in Technology Demonstration Centre**

Technology Demonstration Centre, MASTEC has about 14 (fourteen) technologies obtained from various Institutions/organisations such as Bhabha Atomic Research Centre (BARC), Mumbai, National Innovation Foundation (NIF), New Delhi and purchased as equipment for some projects from other organisations etc. Some of the technologies are (i) Soil Organic Carbon Detection Kit (SOCDK) (ii) Fluoride Detection Kit (FDK) for water (iii) Vibro Thermal Disinfester (VTD) for preservation of seeds (iv) Foldable Solar Dryer (FSD) for drying fruits and vegetables (v) Membrane based Ultra Filtration (UF) Technology for Water Filtration (vi) Potato Harvester (vii) Corn Shelling Machine (viii) Solar Operated Rice Puffing Machine (ix) Soy Milk Machine and (x) Stabilized Mud Block Machine (xi) Mini Dal Mill (xii) Organic Manure Making Machine (xiii) Multipurpose Fruit Processing Machine (xiv) Mini Fruit Processing Machine and some Machines use for packaging. MASTEC has been organising demonstration programme for popularisation of some of the above technologies to the farmers of the state so that they may use the technologies for their own benefit.

A 2-day Popularisation-cum-Demonstration of Technologies in Technology Demonstration Centre, MASTEC, Takyelpat was organized for the farmers during November 7-8, 2024. The programme was inaugurated by Shri Hungyo Worshang, IAS, Secretary (Science & Technology), Govt. of Manipur as Chief Guest. Prof. Ng. Joykumar Singh, Central Agricultural University (CAU), Imphal, Smt. Chingakhram Shachi Devi, Jt. Secretary (Science & Technology) Govt. of Manipur and Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council (MASTEC), Imphal were the Guest of Honour and President respectively of the Inaugural Function. Altogether 35 (thirty-five) farmers from all over the state participated the programme. During the 2-day programme the functioning/operation of the technologies in the Centre as well as their applications in farming were explained and demonstrated to the participants followed by hands on activities and interaction.

**OBJECTIVES:** The main objectives of the programme were

- i) To make aware and popularise the available technologies in MASTEC to the local farmers.
- ii) To demonstrate the technologies to the farmers so that they may utilise the suitable technologies for their own benefit.

**ACTIVITIES OF THE PROGRAMME:**

### **2.5.1 Lecture-cum-Demonstrations and Hands on Activities:**

A lecture-cum demonstration on Organic Manure Making Machine was conducted by Shri N. Ningthem Singh, Technician, Green Biotech Eco-solutions Pvt. Ltd., Lamshang Laingamkhul.



Lecture-cum-demonstrations on Soil Organic Carbon Detection Kit (SOCDK) and Fluoride Detection Kit (FDK) of Bhabha Atomic Research Centre, Mumbai were conducted by Shi Khaidem Ingocha Meitei, Ex- Trainee of DAE Technologies Training at Bhabha Atomic Research Centre, Mumbai. About 10 soil samples from different fields/farms/kitchen gardens were tested using the Testing Kit and about 15 water samples collected by the participating farmers were tested for Fluoride Content during the programme. Hands on activities on Soil Organic Carbon Content Test and Fluoride Detection in Water were carried out by the participants of their own after the demonstration session.

A detailed lecture and demonstration on preparation of various items prepared from fruit such as Amla, Pineapple, Orange, Lemon, Papaya etc. were conducted by Shri I. Umaichand Singh, Technician, Likla Factory, Imphal. Demonstrations on Foldable Solar Dryer (FSD), Vibro Thermal Disinfester (VTD), UF Water Filtration Unit, Stabilised Mud Block Machine, Potato Harvester, Corn Shelling Machine, Solar Operated Rice Puffing Machine etc. were also conducted during the 2-day programme. A lecture on Intellectual Property Rights was delivered by Shri L. Surjit Singh, Patent Information Centre, MASTEC and interacted with the participants.

### **Closing Function:**

The 2-day Popularisation-cum-Demonstration of Technologies in Technology Demonstration Centre, MASTEC was concluded on November 8, 2024. Dr. L. Minaketan Singh, Director, Manipur Science & Technology Council (MASTEC), Imphal and other officers of MASTEC distributed participation certificates to the farmers. In his concluding remarks, Director, MASTEC highlighted about some new technologies which are likely to reach in MASTEC. He further appeal to the farmers to avail the utility of all the available technologies in MASTEC as and when required and some technologies that has to be taken to fields may be utilized in consultation with MASTEC. Soil and water testing programme may also be organized at village level through local clubs/organizations. Four participants gave feedbacks on the programme mentioning that the programme was very useful but the duration was little short.

### **2.5.2 Transferred of Organic Manure Making Machine**

Among the 6 (six) technologies supported by National Innovation Foundation (NIF) – India to MASTEC, Organic Manure making Machine has been transferred to one Firm, Green Biotech Ecosolutions Private Limited. The firm is a bio fertilizer, bio pesticides, organic compost manufacturing cum marketing company based at Imphal, Manipur. It is a well-established and well-functioning company in Manipur with the current business model. Promoting Organic farming, with the trained expert team. The Organic Manure Making machine is designed to facilitate the efficient production of high-quality compost, promoting sustainable agricultural practices and enhancing soil health.



*Organic Manure Making Machine in Operation*



*Processed Organic Manure*



It has been reported that the machine processes about 400 kg compost per day making it suitable for small to medium-scale operations. It streamlines the composting process, reducing the time and labour traditionally required for manual composting. Designed with ease of use the machine can be operated with minimal training, allowing farmers to integrate it seamlessly into their operations.



*Packaged organic manure*

## 2.6 Millennium Science Lecture

The Millennium Science Lecture is a regular lecture programme conducted every year on the 10<sup>th</sup> December since the year 1999. Every year on this remarkable day the Swedish Nobel committee distributes the Nobel prizes to the Nobel laureates of the respective years in recognition of their works and achievements for the human community. The main objective of this lecture programme is to encourage the future generation specially the students of our society in the field of science by appreciating the works and achievements of the great minds so that the idea could be developed in the minds of young generation of the society. For the year 2024, the Manipur Science Communicators' Association (MASCA), Imphal organized the "Millennium Science Lecture - 2024" on the 10<sup>th</sup> December 2024 at Wangoi Higher Secondary School, Wangoi.

Dr. Chungkham Indira Devi, Lecturer, Department of Chemistry, Johnstone Higher Secondary School, Imphal, Dr. Kongkham Nomita Devi, Associate Professor, Manipur University and Dr. Neerajkumar Sharma Manohar, Assistant Professor, Dept. of Pharmacology, Shija Academy of Health Sciences, Langol, Imphal delivered lectures on Nobel Prize winning topics of 2024 for Chemistry, Physics and Medicine respectively and interacted with the student participants.

## 2.7 Manipur Science Congress

Scientific changes, driven by advancements in technology and communication, and globalization, significantly impact our daily lives. These changes open up vast learning opportunities for the new generation, requiring the acquisition of new skills like problem-solving, creativity, and communication. Teacher Education programs aim to incorporate these skills in teaching methodology, focusing on overall student development. Science teachers instil science education at various levels, with school-level classrooms serving as hatching grounds for higher studies, which in turn will pave a way for a sustainable Manipur.

Science and Technology for a sustainable Manipur is a way forward towards meeting the needs of the present without compromising the ability of future generations to meet their own needs as envisioned in the United Nations definition of sustainable development. Sustainability requires the protection of natural resources, the environment and health using available resources efficiently.

Science and Technology can help us understand our environment better and allow us to make smart decisions about how to use our own resources. It can help us to find solutions to climate change, pollution, health and environmental hazards. New materials, advanced knowledge, advanced energy sources and the development of new technologies can help for a



better quality of life. Multiple uses of technologies can act as key drivers towards economic development and social inclusiveness. Managing climate change, countering pollution and health hazards, managing disasters, ensuring the availability of clean water and sufficient food, protecting biodiversity, and developing renewable and green energy are some factors that need to be dealt with for a sustainable future. Sustainable innovations, green infrastructure, smart mobility, sustainable biotechnology, nanotechnology, etc., are also some alternatives for a technologically developed Manipur.

Taking into account the importance of science and technology towards making Manipur a self-sufficient, sustainable and environmentally safe place, the Manipur Science and Technology Council (MASTEC), Imphal and the Department of Zoology, Manipur University under the sponsorship of the Department of Science and Technology (DST), Manipur and Manipur University organized a 3 – Day Manipur Science Congress. The focal theme of the Science Congress was “**Science and Technology for Sustainable Manipur**”.

### 2.7.1 Inauguration of Manipur Science Congress 2024

The Manipur Science Congress 2024 was held at Auditorium Hall of the Manipur University, Canchipur from December 13 to 15, 2024. It was inaugurated by Shri Th. Biswajit Singh, Hon’ble Minister (S&T), Manipur in the presence of Prof. N. Lokendra Singh, Vice-Chancellor, Manipur University, Prof. C. Amuba Singh, Former Vice-Chancellor, Manipur University, Prof. N. Rajmuhon Singh, Former Vice-Chancellor, Dhanamanjuri University, Shri Hungyo Worshang, IAS, Secretary (S&T), Govt. of Manipur and Dr. L. Minaketan Singh, Director, MASTEC.



*Inauguration of Manipur Science Congress 2024*

Prof. Th. Binoy Singh, Head, Department of Zoology, Manipur University gave the welcome address. Dr. L. Minaketan Singh, Director, MASTEC shared his views about holding the Manipur Science Congress 2024. He expressed his desire of keeping this event as an annual feature.

The Hon'ble Minister (S&T) of Manipur, Shri Th. Biswajit Singh, has agreed to organize such an important and relevant event annually and has promised to earmark enough funds for future Science Congresses.

The activities of the 3-day programme were:

- i) Invited talks by Resource Persons,
- ii) Paper and poster presentation by Science Teachers and Researchers.



*Presentation of Research Paper*



*Poster Presentation Competition*



## 2.7.2 Awards of the Manipur Science Congress 2024

There was an overwhelming response from teachers and young researchers of the state. Around 300 participants were registered for the Science Congress. There were a total of 242 abstracts submitted for the paper presentation, poster presentation and for Young Scientist Award.

The focal theme was sub-divided into 5 sub-themes, they are:

1. Biological Diversity and Conservation, Biomolecules and Biotechnology
2. Regenerative Technologies, Agriculture and Allied Sciences
3. Physical, Chemical, Mathematical, Computational and Engineering Sciences
4. Ecology, Environmental, Earth and Atmospheric Sciences
5. Health, Medical and Anthropological Sciences

The best paper(s) in each of the five sub-themes were awarded the Best Paper Presentation Awards of the Manipur Science Congress 2024 for both Oral and Poster presentations. Additionally, the best paper presented in a special session of the Young Scientist Award competition was awarded the Manipur Science Congress 2024 Young Scientist Award.

Each winner of the best paper award in the five sub-themes were given a cash prize of ₹3000/-, a certificate and a memento. While, the winner of the Young Scientist Award received a cash prize of ₹10,000/-, a certificate and a memento.

The prize money for the Best Paper Presentation Awards (Oral and Poster) was sponsored by Shri Hungyo Worshang, IAS, Secretary (S&T), Government of Manipur and Young Scientist Award of the Manipur Science Congress 2024 was sponsored by Dr. L. Minaketan Singh, Director, MASTEC in memory of his elder brother (Late) Loitongbam Khogendro Singh of Langjing Achouba, Imphal West.

The winners of the Awards of the Manipur Science Congress 2024 are listed below:

### **Sub-theme 1: “Biological Diversity and conservation, Biomolecules and Biotechnology”**

- Oral:
- i) N. Hemeshwor, Zoology Department, M.U.
  - ii) Th. D. Songomsing Chiru, Zoology Department, M.U.
  - iii) M. Haripriya Devi, Department of Botany, Manipur College, Imphal.
- Poster:
- i) S. Samita, Department of Zoology, M.U.
  - ii) Thonbamliu Abonmai, Department of Zoology, D.M. University.

### **Sub-theme 2: “Regenerative Technologies, Agriculture and Allied Sciences:**

- Oral:
- i) Ng. Piloo, College of Agriculture, CAU, Iroisemba.
  - ii) Atom Anupama Devi, Pandit Deen Dayal Institute of Agricultural Sciences, Utlou.
- Poster: Dinesh Thokchom, College of Agriculture, CAU, Iroisemba.

### **Sub-theme 3: “Physical, Chemical, Mathematical, Computational and Engineering Sciences:**

- Oral: Jerina Soibam, Department of Chemistry, G.P. Women’s College.
- Poster: Soibam Jogita Devi, Department of Physics, Biramangol College, Sawombung



#### **Sub-theme 4: “Ecology, Environment, Earth & Atmospheric Sciences”**

Oral: Priya Khumukcham, Department of Environmental Sciences, DM University

Poster: Sharungbam Lousingleima, Department of Zoology, M.U.

#### **Sub-theme 5: “Health, Medical and Anthropological Sciences:**

Oral: Jinita Lourembam, Department of Zoology, M.U.

Poster: i) Naorem Loya Mangang of Department of Zoology, M.U.

ii) Thokchom Bidyalakshmi Devi, Department of Zoology, M.U.

#### **Young Scientist Award:**

Keisham Dony Devi, Central Agricultural University, Iroisemba.

A volume of Souvenir cum Abstracts book was released during the Manipur Science Congress 2024. The Manipur Science Congress 2024 was concluded on December 15, 2024 with a solemn valedictory function at the VC Court Hall of Manipur University.

## **2.8 International Year of Quantum Science and Technology.**

The official declaration of the year 2025 as the “**International Year of Quantum Science and Technology (IYQ)**” by the General Assembly of the United Nations on June 7, 2024, was inspired by the centennial celebration of the initial development of quantum mechanics. This milestone marks 100 years since the ground breaking advancements in quantum mechanics, which have profoundly influenced science and technology.

The International Year of Quantum Science and Technology got underway at UNESCO headquarters in PARIS on February 4, 2025. More than 800 researchers, policy makers and government officials from around the world gathered in Paris to attend the official launch of the International Year of Quantum Science and Technology (IYQ). Cephas Adjei Mensah, Research Director in Ghana government remarked, “Let us commit to making quantum science accessible to all, to make an equitable and prosperous future for all”. Chinese quantum physicist Jian-Wei Pan remarked, “The second quantum revolution will likely provide another human leap in human civilization”.



*Member Secretary, MASTEC at the Inauguration*

The first quantum revolution led to lasers, semiconductors, transistors etc. The second quantum revolution promised more by exploring effects such as quantum entanglement and superposition – even if its potential can be hard to grasp. William Philips, Nobel Prize winning physicist remarked, “It is not that there is something deeply wrong with quantum mechanics – it is that there is something deeply wrong with our ability to understand it”.



### 2.8.1 Workshop on IYQ-2025 at Imphal

It was a great news that the Research Institute of Science and Technology (RIST) based in Manipur University Complex, and Manipur Science and Technology Council (MASTEC), Takyelpat, Imphal, jointly organized a “**Three-day Workshop on International Year of Quantum Science and Technology (IYQ 2025)**” as a part of National Science Day 2025, during February 21-23, 2025 at Physics Department, Manipur University. 19 eminent scientists/experts delivered invited talks on this important field of quantum science and technology.



*Students interacting with experts and visitors*

#### **List of speakers who presented their valuable one-hour presentations during the Workshop on International Year of Quantum Science and Technology (IYQ):**

1. **Prof. Murli Manohar Verma** (Dean, Research & Development Cell, Lucknow University)- Key-note Speech on IYQ-2025
2. **Prof. C. Amuba Singh** (RIST) – *Pedagogical introduction to formulation of quantum mechanics*
3. **Shri S. Subhaschandra Singh** (Imphal College) – *An overview of optical scattering phenomena with emphases on the historical backgrounds of Compton effect and Raman effect*
4. **Dr. Anirban Roy** (Assam Univ, Diphu Campus) – *Properties of entanglement under Local Operation and Classical Communication*
5. **Prof. Th. Jekendra Singh** (MU) – *On Quantum Entanglement*
6. **Prof. Sh. Dorendrajit Singh** (MU) – *Emerging quantum technologies*
7. **Prof. N. Rajmuhon Singh** (RIST) – *Quantum Revolution – A Scientific World of Tomorrow*
8. **Shri Maibam Somananda Singh** (DMU) – *A brief Review on Old Quantum Theory*
9. **Prof. A. Dilipkumar Singh** (MU): *Quantum phase transition*
10. **Prof. R. K. Brojen Singh** (JNU): *Bohr-Einstein Debate and Bell's Theorem*
11. **Dr. Th. Gomti Devi** (MU): *Spin in Quantum Mechanics and its implications*
12. **Dr. Lenin Sagolsem** (NIT, Imphal) – *Quantum statistical mechanics*
13. **Dr. A. Keshwarjit Singh** (DMU) – *Path Integral approach to Quantum Mechanics*
14. **Dr. Soram Robertson Singh** (RIST) – *Relativistic Quantum Mechanics and QFT*
15. **Dr. Sapam Ranjita Chanu** (IITK) – *Quantum Technology: Progress using trapped atomic ion*
16. **Dr. Augustine Kshetrimayum** (France) – *Quantum Computing: Where are we going?*
17. **Dr. Nilakah Sorokhaibam** (Tezpur Univ) – *Quantum chaos*
18. **Dr. Vishal Ngairangbam** (IPPP, Durham,UK) – *Quantum Machine learning*
19. **Dr. Oinam Romesh Meitei** (MIT, USA) – *Challenges and Opportunities in Quantum Molecular Simulation: Fast Quantum State Preparation and Optimized Measurements*

It was a great success with almost 70 participants comprising of researchers, faculty members of colleges and universities of the state participated in the programme. A poster competition on the same topic was also organised with 16 competitors.



The result of Poster presentation Competition was:

- 1<sup>st</sup> Position : Salam Johncena, MSc 4<sup>th</sup>Semester, Manipur University.  
 2<sup>nd</sup> Position: Thokchom Victoria Devi, MSc 4<sup>th</sup>Semester, Dhanamanjuri University.  
 3<sup>rd</sup> Position : Leishangthem Debajit Singh, MSc 4<sup>th</sup>Semester, Dhanamanjuri University.

The 3-day workshop was concluded with the distribution of certificates and prizes to the winners of Poster presentation Competition and delegates and concluding remarks from Prof. C. Amuba Singh, Former Vice-Chancellor of Manipur University.

## 2.9 National Seminar on Technology and Sustainability at Thambal Marik College

A two-day National Multidisciplinary Seminar titled “**Emerging Trends in Technology and Sustainability: Perspectives from Environmental Science, Basic Sciences, and Humanities**” was organised at Thambal Marik College, Oinam during March 12 – 13, 2025. The programme was jointly organised by Manipur Science & Technology Council (MASTEC) and Institutional Research Committee (IRC) of Thambal Marik College, Oinam with the support of Directorate of Environment & Climate Change, Manipur.



*Inauguration of the National Seminar*

The main objective of the seminar was to provide an excellent platform for students, teachers, research scholars and academicians and to share and exchange their research findings and views in various thrust areas of Environmental Science, Basic Sciences and Humanities.

79 research scholars, faculty members of colleges and universities of the state presented papers on the following sub-themes of the workshop.

Sl. No.	Sub-Theme	Name of the Chairperson	No. of Delegates
1.	Physical, Chemical, Mathematical and Sports Science	Prof. S. Dorendrajit Singh Department of Physics Manipur University	18
2.	Biological Sciences	Prof. P. Kumar Singh Department of Botany Manipur International University	23
3.	Environmental Science and Earth Sciences	Prof. Kh. Mohon Singh Principal, Thambal Marik College	21
4.	Humanities	Prof. Irom Gambhir Manipur University	17
<b>Total:</b>			<b>79</b>

Altogether 120 researchers, faculty members from colleges and universities participated in the oral and poster presentations.



### 3.0 Participation in Science Festival/Science & Technology Conclave

MASTEC took part in the National Science & Technology Conclave, Science Festivals such as India International Science Festival (IISF) every year to showcase its activities to the public.

#### 3.1 10<sup>th</sup> Edition of India International Science Festival (IISF) – 2024

India International Science Festival (IISF) is an annual event initiated jointly by Ministry of Science & Technology, Ministry of Earth Sciences and Vijnana Bharati in 2015. So far, nine such festivals have organised successfully in different places across the Country to celebrate science with people. The 10<sup>th</sup> Edition of India International Science Festival (IISF) with a special focus on “**Celebrating Science with the North East**” was organised by the Ministry of Science & Technology in association with Ministries of New and Renewable Energy, Environment, Forest & Climate Change, Health & Family Welfare, Agriculture and Farmers Welfare, AYUSH, MeitY, Information & Broadcasting, RD and others institutions - DRDO, ICAR, ICMR, AICTE and Vijnana Bharati at IIT Guwahati, Assam during November 30 – December 03, 2024. The theme of IISF 2024 was “**Transforming India into a Science and Technology Driven Global Manufacturing Hub**”.



*Dr. Anita Aggarwal, Head, SSTP, DST with the officials of State S&T Councils*

A series of events were organized as part of IISF 2024, with the active participation of students, institutes and the general public. Few activities were -

- |   |   |
|---|---|
| - Science-Technology-Defence-Space Exhibition         | : Sci-Tech Expo                         |
| - The Museum of the Moon                              | : Chandrayanan                          |
| - Focused S&T for the North East                      | : Science Odyssey of the Seven Sisters  |
| - Global Manufacturing Summit                         | : Make in India, Make for the World     |
| - Women's Development to Women-led Development in S&T | : Nari Shakti                           |
| - Ideas for Viksit Bharat                             | : S&T Hackathon                         |
| - Empowering the Youth                                | : Young Scientists Conclave             |
| - Minister-Secretary-CEO Conclave                     | : Thought Leaders Round Table           |
| - Innovation, Technology and Entrepreneurship         | : Mission Start-up                      |
| - Meteorology, Oceanography and Ecology               | : Sagarika - The Tale of Earth Sciences |
| - Nuclear Energy for Self-Reliant India               | : Fusion Form- The Atomic Assembly      |
| - North East Food Street                              | : The Taste of the Hills                |
| - North East Cultural Fest                            | : North East Symphony                   |

The officials of MASTEC attended the science festival and interacted with the visitors – students, researchers, scientists, farmers, entrepreneurs and general public.



## 4.0 Projects

MASTEC implemented projects/local specific programmes funded by central agencies/ departments and state governments for different target groups/beneficiaries. The following were the projects implemented during 2024-2025.

### 4.1 7 Days Residential Skill Development Training Programme on Food Processing and value addition for the women of hill districts of Manipur.

Manipur Science and Technology Council (MASTEC), Imphal with an aim to provide employment opportunities to people of the hill districts of Manipur organized 7 days residential skill development training programme on food processing and value addition for the women of hill districts of Manipur during October 23 – 29, 2024 at Common Facility cum Demonstration Center for food processing, MASTEC Complex, Takyelpat, Imphal. The training was inaugurated by Dr. L. Minaketan Singh, Director, MASTEC. During the inaugural Speech, Director, MASTEC appealed to all the trainees to participate the training actively to enable them to start producing their own food products after the training. 25 participants from six hill districts of the state attended the training programme.



*Trainees preparing food products*



*Resource Person delivering lecture*

The training programme covered both theory and practical classes on various aspects of food processing. Shri Surendra Singh, Food Safety Officer, State Health Services, Govt. of Manipur delivered a lecture on the topic “Licensing and Registration under Food Safety and Standard Act 2006”. Chief Instructor Shri T. Sanajaoba Singh, Food Technologist took 3 (three) theory classes on the topics -

1. Food safety and their impacts on health including food additives
2. Preparation of different types of food products
3. Food preservation and processing industries in Manipur.

Practical classes were conducted by Chief Instructor, Shri T. Sanajaoba Singh and Assistant Instructor, Smt. P. Surbala Devi, Food Technologist and during the 7 days course, 36 various food items had been prepared.



The items prepared were –

- |  |                          |
|--|--------------------------|
| 1. Ginger Candy                            | 19. Jack Fruit Chips     |
| 2. Lemon Candy                             | 20. Kiwi Squash          |
| 3. Wild Apple Candy                        | 21. Lemon Squash         |
| 4. Kiwi Candy                              | 22. Guava Jelly          |
| 5. Pineapple Candy                         | 23. Pineapple Jam        |
| 6. Gooseberry Candy                        | 24. Gooseberry Jam       |
| 7. Dry lime shred candy                    | 25. Garlic Ginger Paste  |
| 8. Litchi Drinks                           | 26. Amla Preserve        |
| 9. Orange Drinks                           | 27. Lemon Juice preserve |
| 10. Lime Ginger Juice                      | 28. Petha Sweet          |
| 11. King Chilli Pickle                     | 29. Papaya Tuti frutti   |
| 12. King Chilli with fermented fish Pickle | 30. Steeped King Chilli  |
| 13. Mix Vegetables Pickle                  | 31. Tomato Sauce         |
| 14. Bamboo Shoot Pickle                    | 32. Soya Milk            |
| 15. Mushroom Pickle                        | 33. Soya Paneer/Tofu     |
| 16. Chicken Pickle                         | 34. Butter Cake          |
| 17. Banana Chips                           | 35. Vinegar              |
| 18. Tapioca Chips                          | 36. Banana Crush         |

### List of Participants

Sl. No.	Name	Address
1.	Widaliu Wijunamai	Chaton 1, Tamei, Tamenglong District
2.	Maisithonliu Newmai	Tudian Village, Tamenglong District
3.	Rashi Jajo	Ningthi Village, Kamjong District
4.	Chanreiwon Bungpadang	Ningthi village, Kamjong District
5.	Yaoreichon Jajo	Ningthi Village, Kamjong District
6.	Singmi Hungyo	Bungpa Khunou Village, Kamjong District
7.	Emichon Hashuwo	Lunghar Village, Ukhrul District
8.	Doibila Regina	Willong Khullen Village
9.	Rachel Ngaomei	Phalong Village, Tamenglong
10.	Luthuaylu	Pongrinlong, Kangpokpi
11.	Landiliu Pamei	Tharon Thangmeiband/Noney District
12.	A Eloziia	Song Song Village, Mao Senapati District
13.	Dk Junerose Maring	Salemphei Village, Tamenglong Dist.
14.	Mochoyia L Kriichena	A-74, Rabunamai, Senapati Dist.
15.	Helena Th	Maram Bazar, Senapati Dist.
16.	Salew Koshune	T Pudunamai Village. Senaptti Disi.
17.	Karingjonliu	Tamei, Tamenglong District
18.	Rosa Luiram	Longpi Kajui
19.	P. Wisibuiliu	Chaton -1, Tamenglong District
20.	Yarmila Chithung	Kumram Village, Ukhrul Dist.
21.	Lk Ngachonphy	Teinem, Ukhrul Dist.
22.	R Wonshiyo	Teinem, Ukhrul Dist.
23.	Peimiwor Vashi	Teinem, Ukhrul Dist.
24.	Arila H. Thangal	Makeng Cheijinba, Katomei, Senapati
25.	Hungyo Sorinwon	Lishamluk, Kangpokpi



The training programme was concluded on October 29, 2024 with Shri Hungyo Worshang (IAS), Secretary, Science and Technology, Government of Manipur as the Chief Guest of the function. Smt. Chingakham Shachi, Joint Secretary, Science and Technology, Government of Manipur, Dr. L. Minaketan Singh, Director, MASTEC and Shri T. Sanajaoba Singh, Chief Instructor shared the dais of the closing function. In his address, the Chief Guest Shri Hungyo Worshang said that the programme is of high value to the trainees even though the duration of the training was short. After going back to their homes, the trainees should start producing food items of their choice based on the availability of the raw materials in their places and if any chemicals or other technical knowledge is required, he appealed the resource persons and officials of MASTEC or people in the valley areas to help them.



*Food products prepared by the trainees*

## 4.2 Manipur Science Aquarium

The first aquarium display was opened to the public in 1853 at Regent's Park in London and followed by Berlin, Naples, and Paris. Nowadays, hobbyists could keep fish as well as corals etc. in aquarium successfully. The Greek philosopher Aristotle (384-322 B.C.) started documenting the science of fish by studying their structure and other characteristics. He carefully recorded accurate information on 115 species of fish. Today, scientists have classified more than 20,000 species of fish around the world. The world's best aquarium is in San Francisco.

Manipur Science and Technology Council (MASTEC), Imphal with the support of Department of Higher Education, Govt. of Manipur established the one and only Centre of the state - Manipur Science Aquarium in the premises of the then D.M. College Campus, Imphal and it was inaugurated on 31st March 2011. But now this Centre is maintained by MASTEC with the support of Department of Science & Technology, Govt. of Manipur. The centre is open on all working days for the general public.

Apart from the normal visitors, students and faculty members of various institutions of the state also visited the Centre for their academic purposes. Officials of the Centre demonstrate and explain the scientific aspects - such as physio-chemical parameters, classification, food and feeding, breeding habits, diseases, behaviour, etc. of different fish species (exotic and indigenous) available in the centre.

### 4.2.1 9<sup>th</sup> One Week State Level Aquarium Exhibition-cum-Flower Show

After the successful organization of Annual Exhibition in the year 2012, 2014, 2015, 2016, 2018, 2019, 2022 and 2023, the 9<sup>th</sup> State Level Aquarium Exhibition-cum-Flower Show was held during October 18 - 24, 2024 at the Manipur Science Aquarium, D.M. University Campus, Imphal by Shri Hungyo Worshang, IAS, Secretary (S&T), Govt. of Manipur and Member Secretary, MASTEC in the presence of Smt. Chingakham Sachi Devi, Jt. Secretary (S&T), Govt. of Manipur; Smt. Homila Hongrei, Director (S&T), Govt. of Manipur and Dr. L. Minaketan Singh, Director, MASTEC.



*Dignitaries in the Inauguration Function*



#### 4.2.2 Exhibition of indigenous & exotic fishes & plants and bonsai

During the 7-day exhibition, Manipur Science Aquarium along with four local aqua-entrepreneurs displayed around 25 local/indigenous & 40 exotic ornamental fish species. Some endangered local species – Ngamhai, Ngahou, Nganap, Ngatup etc. were also displayed during the exhibition. These local indigenous fishes were collected from different water bodies of the state. Many of the fishes displayed in the exhibition were in the export list of fresh water ornamental fishes of India, published by the Marine Products Export Development Authority (MPEDA), under the Ministry of Commerce and Industry, Govt. of India.



*Exhibition of Bonsai plants during the programme*

There were six exhibitors and contributors in the floriculture section. This year, 150 flower/plant species including 50 locally available indigenous plants, 30 bonsai plants of 12 different styles were exhibited/displayed. They also exhibited a wide range of design, size, made of different material flower pots, various design of garden tools, medicines, plant hormones, insecticides and both inorganic and organic fertilizers.

#### 4.2.3 Lecture series on Aquarium Fish Keeping

Lecture series on Aquarium Fish Keeping for college students was also included this year during the programme. Students and faculty members of Kamakhya Pemton College, Hiyangthang and T S Paul Women's College, Monsangei have been benefitted from this lecture series during October 18-19, 2024. Shri L. Nilkumar Singh, Retd. Fishery Officer, Manipur Science Aquarium delivered lecture on Aquarium Fish Keeping and interacted with the participants.



*Resource Person delivering lecture*

#### 4.2.4 Training workshop

A 3-day training workshop on fabrication of aquarium tanks and its management was also organised during October 22-24, 2024. Thirty four trainees including students, faculty members of colleges and individuals have been trained in the fabrication of aquarium tanks and its management.



*Setting up of aquarium tank*



*Hands on training*



#### 4.2.5 Aqua-scaping competition:

The aqua-scaping competition for the aquarium lovers of the state was introduced for the first time during the one-week aquarium exhibition-cum-flower show. There were 13 participants displaying in six different styles such as – Iwagumi, Nature Style, Cave, Biotape (Africa), Free Style and Shrimp Paradise.



*Aqua-scaping competition*

List of the prize winners of the aqua-scaping competition:

Position	Name of the Participant	Title of the Display
First	Rahul Hanglem Kwakeithel Heinoukhongnembi	Nature Style
Second	Th. Dikash Singh Keishamthong Moirang Ningthou Leirak	Biotape (Africa)
Third	Th. Bhoj Sai Khongman Mangjil	Free Style

During the 7 days long exhibition on an average, 300 visitors per day - students and teachers of various schools, officials of different government departments, research scholars and general public visited and witnessed the exhibition.

The Closing and Prize Distribution Function was held on October 24, 2024 with Prof. N. Mohilal Meitei, Director, CDC, Manipur University, Prof. L. Hemchandra Singh, Head, Department of Zoology, D M College of Science, Imphal and Dr. L. Minaketan Singh, Director, MASTEC as the Chief Guest, Guest of honour and President of the function respectively. Certificate with cash prizes and mementos were distributed to the winners of Aqua-scaping Competition. Certificate of appreciation and participation certificate were also distributed to the Aquarists and Horticulturists, entrepreneurs, contributors and trainees. The 9<sup>th</sup> one Week State Level Aquarium Exhibition-cum-Flower Show was closed with the concluding remarks from the Chief Guest.



*Trainees receiving memento*



*Group photo of trainees*



### 4.3 Patent Information Centre

Today, Intellectual Property Rights (IPR) play a key role in gaining an advantageous position in the competitive technological game for economic growth. India enjoys a large asset of R&D personnel and infrastructural facilities. Scientists and policy makers need more information, orientation and facilities for protecting the products of intellectual prowess of Indian scientists. As a step in this direction, a single window Patent Facilitating Centre (PFC), was created by the Department of Science & Technology (DST) at the Technology Information, Forecasting and Assessment Council (TIFAC), an autonomous body under DST in June 1995 with the following objectives:

1. Introduce patent information as a vital input in the process of promotion of R&D programmes.
2. Provide patenting facilities to scientists and technologists in the country for Indian and foreign patents on a sustained basis.
3. Keep a watch on developments in the areas of IPR and make important issues known to policy makers, scientists, industry etc.
4. Create awareness and understanding relating to patents and the challenges and opportunities in this area including arranging of workshops, seminars, conferences etc.

#### **Objectives of the Centre:**

- To create awareness about IPRs, especially patents, in the state and neighboring region of this Centre and enable patent searches using modern search software for the universities, industries, government departments and R&D institutions in the State and around.
- To facilitate universities, industries, government departments and R&D institution for patent filling and searches, GI registration, Copyrights, Industrial design, Electronic circuit copyrights, New Plant Varieties (NPV's) etc. Building up capacity of subject specific patent landscaping in selected universities of the states.
- To create Intellectual Property Cells in the Universities (IPCU's) specifically in Govt. Universities/Institute of Higher Educations.
- To analyze the patent information on a regular basis and start technology scan studies involving IPCU's and other academic/management institutes/ laboratories under the programme to suggest new programmes for R&D based on such information.
- Carrying out the patent searches using modern search software to guide the inventors in respect of patenting their inventions.
- ICT enabled networking of PICs and Intellectual Property Cell in University (IPCU) and development of e-platform for query and solutions among PICs/IPCUs/stakeholders.
- Providing e-learning IP material, this can be used online or through CD ROM for the multiplier effect.
- Training and capacity building in post patent filling activities i.e. technology valuation & audit, technology licensing and technology transfer & commercialization.
- Development of Children awareness material from WIPO (which has good animation and cartoon kind of multimedia features can be reprinted through proper permission for distribution through PICs at mass scale and in local languages.
- To give special emphasis on school children, rural innovators, start-ups and block level officers of state governments to bring about attitudinal changes in terms of sharing of IPRs in terms of knowledge and economic wealth through awareness programs.
- Greater cohesion with State Biodiversity Boards (SBBs) for proper documentation of TK, biodiversity through strengthening of Peoples' Biodiversity Registers (PBRs).



## **IP searches: 06**

- Cost Effective Method of Curcumin from Raw Turmeric
- Pineapple fiber yarn production
- Stable Capsaicin Oleoresin and Capsaicin from Capsicum Chinese
- Sun Cured Bricks
- Keirak
- Thei

## **Patent Filed: 01**

**Title:** Cost Effective Method of Curcumin from Raw Turmeric

**Application No:** 202431055676 dated 22-07-2024

## **Patent Application in process: 02**

- Sun cured bricks
- Stable capsaicin oleoresin and capsaicin from capsicum

## **Trade Mark Registration:**

### **Application Filed:03**

- |     |                  |            |
|-----|------------------|------------|
| i.  | Trademark Name:  | KEIRAK     |
|     | Class:           | 29         |
|     | Application No.: | 6712006    |
|     | Date of Filing : | 15-11-2024 |
| ii. | Trademark Name:  | KEIRAK     |
|     | Class:           | 30         |
|     | Application No.: | 6712007    |
|     | Date of Filing : | 15-11-2024 |
| iii | Trademark Name:  | THEI       |
|     | Class:           | 32         |
|     | Application No.: | 6766436    |
|     | Date of Filing : | 20-12-2024 |

### **TM Journal Published: 01**

- |    |  |
|----|--|
| i. | WANGLEI                                      |
|    | Class: 33                                    |
|    | Application No.: 5139159                     |
|    | Publication No. and Date: 2156 of 13/05/2024 |



## TM Registered: 02

Sl. No.	Name of TM	RegnNo.	Class	Logo	Status	Dated of Registration
1	Sidayai Nadayai	6228010	30		Registered	10/06/2024
2	WANGLEI	5139159	33		Registered	28/09/2024

## Copyright Registration: 01

Title of the work	: Assistive app for the blind: Netra 2.1
Class and description of the work	: Computer software work app to help blind people reading
Registration Number	: SW-19358/2024
Date of registration	: 6/08/2024

## Workshops/Seminars/Awareness Programmes - 06

### 4.3.1 Observation of World Intellectual Property Day 2024

World Intellectual Property Day 2024 was observed on 26<sup>th</sup> April 2024 under the theme **“IP and SDGs: Building Our Common Future with Innovation and Creativity”** organized by Patent Information Centre (PIC), Manipur Science & Technology Council, Imphal in association NIELIT, Akampat Imphal. The main objective of the workshop was to create awareness about the different forms of IPs such as – patents, designs, trademarks, geographical indications, copyrights etc. among the intellectuals, students and individuals. Dr. R.K. Pritamjit Singh, Scientific Officer, MASTEC and Shri N. Devchandra Singh, Executive Director, NIELIT attended the observation function as dignitaries. Shri. L. Surjit Singh of PIC, Manipur delivered a talk on IPR and its management and interacting with the students. About 60 participants including faculty members, B Tech students from the Institute and interested individuals attended the programme.



*Observation of World IP Day at NIELIT*

### 4.3.2 Slogan Writing Competition in connection with Celebration of World IP Day

To commemorate World Intellectual Property Day, the IPR Cell-MTU, in association with the Institution's Innovation Council (IIC), organized a Slogan Writing Competition on the theme "IP and the SDGs: Building Our Common Future with Innovation and Creativity" on April 26, 2024. The competition was open to all MBA and B.Tech. students, encouraging them to creatively express the role of intellectual property in achieving the Sustainable Development Goals (SDGs).



Highlights:

- Over 150 students participated in the competition.
- Entries were evaluated based on creativity, relevance to the theme and originality.
- Cash prizes were awarded to the top three winners:
  - 1st Prize: Rs 3,000/-
  - 2<sup>nd</sup> Prize: Rs 2,000/-
  - 3rd Prize: Rs 1,000/-

The event successfully raised awareness about the importance of IP in driving innovation and sustainable development.

#### 4.3.3 Awareness cum Quiz Programme on IPR at Waikhom Mani Girl's College

Awareness cum Quiz Programme as a part of celebration of World Intellectual Property Day - 2024 was held on 27<sup>th</sup> April, 2024 at Waikhom Mani Girl's College, Thoubal on the theme "IP and SDGs: Building Our Common Future with Innovation and Creativity". The event was organized by IPR Cell in association with Patent Information Centre, MASTEC and the Department of Geology to educate the students about innovation and different forms of intellectual property. Over 150 participants were present in the event. Shri L. Surjit Singh, PIC-MASTEC delivered a talk on IPR and also organized a quiz program on IPR. The quiz programme was open to all the students of the college and 20 selected winners were awarded prizes with certificates.

#### 4.3.4 One Day Awareness Programme on IPR at Oriental College, Takyel

PIC- MASTEC and IPR Cell-Oriental College (Autonomous), Takyel jointly organized a one-day Awareness Programme on Intellectual Property Rights on October 04, 2024 at Oriental College, Takyel, Imphal. Prof. R.K. Rajeshwari Devi, Chairperson, IPR Cell Oriental College, Prof. S. Ranjit Singh, Principal, Oriental College and Dr. R. K. Pritamjit Singh, Scientific Officer & In-Charge, Patent Information Centre, MASTEC were on the dais of the programme. Shri L. Surjit Singh, PIC-Manipur delivered a talk on "An Overview of IPR" and interacted with students and faculty members present there.



*Awareness programme on IPR at Oriental College.*

#### 4.3.5 State Level Workshop on Intellectual Property Rights (IPR) at Imphal College

Patent Information Centre (PIC), MASTEC organised One day State Level Workshop on Intellectual Property Rights (IPR) in association with Imphal College, Imphal on December 23, 2024 at Imphal College, Imphal. The focal theme of the workshop was "Overview of IPR & Patent System and its benefits to MSMEs, Patent Filling, Registration of Design & Trademark and infringement, Management of Intellectual Property". Dr. L. Minaketan Singh, Director MASTEC, Dr. M. Chandra Singh, Principal Imphal College, Shri L. Somarjit Singh, Retd. HoD Botany Department, Imphal College and Dr. R.K. Pritamjit Singh, Scientific Officer and In-Charge PIC-MASTEC were on the dais. Shri L. Surjit Singh, PIC-MASTEC delivered a talk on IPR and its management. Students and faculty members of the college attended the programme.



*Workshop on IPR at Imphal College*



#### 4.3.6 State Level Workshop on Intellectual Property Rights (IPR) at Thambal Marik College, Oinam

Patent Information Centre (PIC), MASTEC organised One day State Level Workshop on Intellectual Property Rights (IPR) in association with IQAC, Thambal Marik College, Oinam on December 26, 2024 at Thambal Marik College, Oinam. Dr. L. Minaketan Singh, Director MASTEC, Dr. Kh. Mohon Singh, Principal Thambal Marik College, Oinam and Dr. M. Somorendro, HoD, Zoology Department, Thambal Marik College, Oinam were on the dais. Dr. R.K. Pritamjit Singh, Scientific Officer and In-Charge PIC-MASTEC delivered a talk on National IPR Policy 2016 and its significance in NEP 2020. Shri L. Surjit Singh, PIC-MASTEC delivered a talk on Overview of IPR and its management. Students and faculty members of the college attended the programme.



*Workshop on IPR at Thambal Marik College*

#### IPRs disseminated/programme organised by PIC-Manipur and IPR Cells:10

Sl. No.	Name of Awareness programme & Venue	Organised By	Date	Resource Person
1	World IP Day 2024 at NIELIT Imphal	PIC, Manipur & IPR Cell-NIELIT Imphal	26-04-2024	Dr. RK Pritamjit Singh & L. Surjit Singh, PIC, MASTEC
2	Slogan Writing Competition in connection with Celebration of World IP Day at MTU	IPR Cell-MTU Imphal	26-04-2024	Kosygin Leishangthem, Nodal Officer, IPR Cell, MTU
3	One day IPR awareness cum Quiz at Waikhom Mani Girls College, Thoubal	PIC, Manipur & IPR Cell - Waikhom Mani Girl's College	27-04-2024	L. Surjit Singh PIC, Manipur
4	IPR Awareness and Sensitization Lecture on Patent Filing Process	T. S. Paul Manipur Women's College	11/05/2024	Kosygin Leishangthem, Nodal Officer, IPR Cell, MTU
5	Lecture on IPR at Science Motivational Programme for Talented School Students at MASTEC Training Hall.	MASTEC	30/08/2024	L. Surjit Singh PIC, Manipur
6	One Day Awareness Programm on IPR at Oriental College, Takyel	IPR CELL Oriental College and PIC, Manipur	04/10/2024	L. Surjit Singh PIC, Manipur
7	Lecture on IPR at Manipur Science Aquarium	MASTEC	24/10/2024	L. Surjit Singh PIC, Manipur
8	Lecture on IPR at 2 days demonstration cum popularization of technologies.	MASTEC	08/11/2024	L. Surjit Singh PIC, Manipur
9	One day state level workshop on IPR	Imphal College and PIC, MASTEC	23/12/2024	L. Surjit Singh PIC, Manipur
10	One day state level workshop on IPR	Thambal Marik College, Oinam and PIC, MASTEC	26/12/2024	Dr. RK Pritamjit Singh In Charge PIC L. Surjit Singh, PIC, Manipur



### Regular Courses Conducted by IPR Cells – 03

Sl.No.	Course Title	Target Group	Name of IPR Cell
1.	IPR classroom lecture programme	2 <sup>nd</sup> Semester of 4years undergraduate course	Waikhom Mani Girls' College, Thoubal
2.	IPR Course for B.Tech Students	7 <sup>th</sup> Semester (Non-Credit Course)	Manipur Technical University (MTU)
3.	Introduction to IPR	B.Tech and MBA Student Induction Programmes	Manipur Technical University (MTU)

### Meeting/Training Attended: 04

Sl.No	Name of Training/Meeting	Organised By	Date	Attendee
1	Meeting of Stakeholders/Owners of Registered GIs	MASTEC	July 26, 2024	Dr. R.K. Pritamjit Singh
2	Patent Drafting for Beginners	IIT Madras	Jul-Aug 2024 (4 week course)	Kosygin Leishangthem, Nodal Officer, IPR Cell, MTU
3	Meeting of IPR/Patent Cell Committee of IBSD	IBSD, Imphal	January 06, 2025	Dr. R.K. Pritamjit Singh
4	Technical Committee Meeting for registration of goods under Geographical Indication of Goods	Department of Handloom & Textiles, Govt. of Manipur	January 24, 2025	Dr. R.K. Pritamjit Singh
5	Meeting of IPR/Patent Cell Committee of IBSD	IBSD, Imphal	January 30, 2025	Dr. R.K. Pritamjit Singh

### 4.4 Sustainable utilisation of bio resources towards bio-entrepreneurship and socio-economic development of Manipur

The project is a collaborative effort involving the Institute of Bioresources and Sustainable Development (IBSD), BRIC, DBT, Government of India in Imphal, the Fragrance and Flavour Development Centre (FFDC) under MSME in Kannauj, UP and the Manipur Science and Technology Council (MASTEC), Imphal.



*Training of project staff at FFDC, Kannauj, UP*



*Propagation of Lemongrass at IBSD Bioresources Park, Haraorou*



As part of the project, two Laboratory/Field Assistants have been recruited. The project staff completed a 10-day comprehensive training program at FFDC, MSME, GoI, Kannauj, focusing on essential oils and the fragrance and flavour industry. This training covered nearly all aspects of establishing industries related to essential oils, fragrances, and flavourings.

During the training, various sowing methods and propagation techniques for aromatic plants were demonstrated, including Lemongrass (*Cymbopogon citratus*), Citronella (*Cymbopogon nardus*), Palmarosa (*Cymbopogon martinii*), and Patchouli (*Pogostemon cablin*). Training also included cultivation, cropping, harvesting, and post-harvest handling practices. Participants received information about common diseases and pests affecting aromatic plants, as well as techniques to protect the plants from these pests and how to treat diseases. Additionally, methods for extracting essential oils were demonstrated. Twenty water pumps intended for distribution to beneficiaries/farmers have been procured. IBSD is responsible for providing plantlets of four aromatic plants- Palmarosa, Citronella, Lemongrass, and Patchouli—to the beneficiaries/farmers for cultivation on 200 acres of land. MASTEC is currently identifying the beneficiaries/farmers. Once the selection process is complete, the plants will be cultivated on the beneficiaries'/farmers' lands.

## 4.5 Mapping of Manipur's Horticulture Crops (Pineapple, Ginger and Turmeric) Cultivation Areas- A GIS Approach

### Introduction

Modern farming is as much about data and strategy as it is about hard work in the fields. Geographic Information Systems (GIS) have revolutionized agriculture by helping farmers analyze spatial and environmental data more effectively. By integrating soil analysis, climate patterns, and historic yield data, farmers can make precise decisions that lead to better resource utilization and sustainability.

Precision farming, driven by GIS and remote sensing data, allows for targeted irrigation, optimized fertilizer use, and early detection of pest infestations. This leads to higher crop productivity and lower environmental impact.

Geographical Information Systems (GIS) are a popular technology used in precision agriculture to monitor and manage horticultural crops:

- Crop monitoring  
GIS can help track and visualize crop health and growth throughout the season using data from drones, sensors, satellites, or remote sensing. This can help improve farming techniques and post-harvest crop management.
- Water management  
GIS can help farmers determine where rainwater is draining too quickly or too slowly. This information can help them reroute the flow or apply chemicals to improve soil drainage.



- Soil and irrigation  
GIS can help monitor and manage soil and irrigation for horticultural farms and orchards.
- Precision agriculture  
GIS can help famers access records like soil survey maps and plant characteristics for the region. This information can help farmers remotely identify pests or stress like drought, and adjust amounts of seeds, nutrients. herbicides, and fertilizer for each plot.

## **Objectives**

1. To carry out GIS mapping of the cultivation areas and productions of horticulture crops (pineapple, ginger and turmeric)
2. To reproduce geo-spatial map of the findings

## **Methodology**

Steps to be carried out during the study:

- i) The first step for taking up this task will be to get relevant data from the Department of Horticulture, Govt. of Manipur;
- ii) Will hold consultation meeting with the stack holders;
- iii) Analysis of the accumulated data;
- iv) Use GIS for mapping of the cultivation areas and productions;
- v) Report compilation.

## **Progress Report**

Department of Horticulture and Soil Conservation, Government of Manipur, has taken up planting of organic horticulture crops like pineapple, ginger, and turmeric in the different districts of Manipur where it finds them suitable. Data on district-wise lists of plantation area and production of the horticulture crops – pineapple, ginger and turmeric have been collected from the Department of Horticulture and Soil Conservation, Govt. of Manipur.



**Table 1: Distribution of plantation area (Ha) and production (MT) for Pineapple, Ginger and Turmeric by Districts of Manipur for the year 2023-24**

District	Pineapple		Ginger		Turmeric		Total	
	Area	Prod	Area	Prod	Area	Prod	Area	Prod
Chandel	-	-	1200	5308.11	1200	9833.08	2400	15141.19
Churachandpur	2000	17957.09	800	3627.39	400	2969.60	3200	24554.08
Imphal East	2050	18088.08	-	-	-	-	2050	18088.08
Jiribam	500	4241.42	-	-	-	-	500	4241.42
Kakching	-	-	350	1692.60	450	3814.20	800	5506.80
Kamjong	-	-	300	1315.68	425	3440.63	725	4756.31
Kangpokpi	1325	11593.75	625	2467.63	450	3351.69	2400	17413.07
Noney	-	-	300	1398.90	1000	8732.30	1300	10131.20
Pherzawl	-	-	2450	13302.66	500	3732.88	2950	17035.54
Senapati	-	-	125	544.13	1150	9742.52	1275	10286.65
Tamenglong	-	-	300	1461.00	1150	9510.50	1450	10971.50
Tengnoupal	-	-	300	1091.10	400	3073.48	700	4164.58
Thoubal	750	6585.00	-	-	-	-	750	6585.00
Ukhrul	-	-	400	1830.68	600	4919.02	1000	6749.70
<b>Total</b>	<b>6625</b>	<b>58465.34</b>	<b>7150</b>	<b>34039.88</b>	<b>7725</b>	<b>63119.90</b>	<b>21500</b>	<b>155625.12</b>

Source: Department of Horticulture & Soil Conservation, Govt. of Manipur

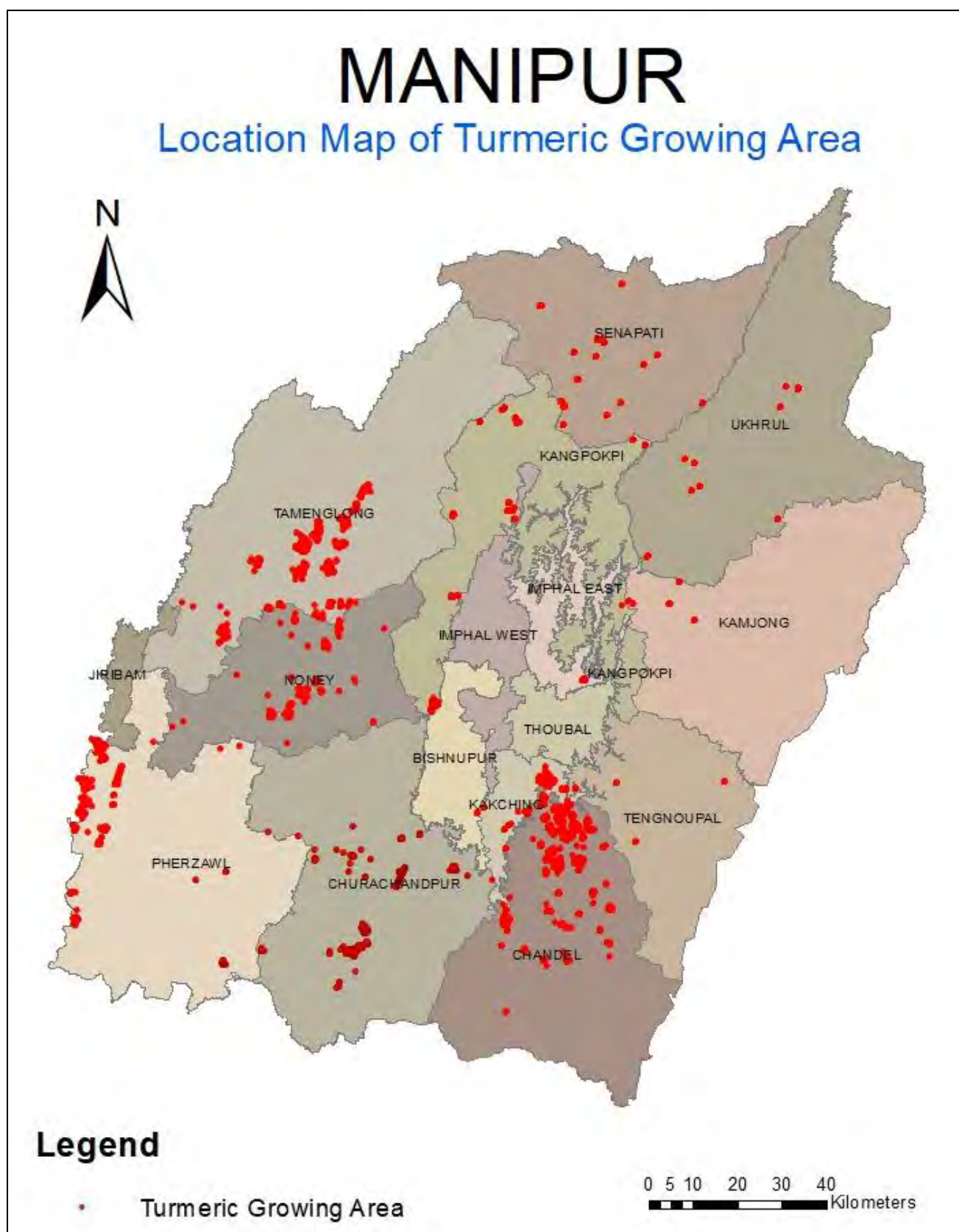
**Table 2: Distribution of No. of Beneficiaries for Pineapple, Ginger and Turmeric by Districts of Manipur for the year 2023-24**

District	Pineapple	Ginger	Turmeric	Total
Chandel	-	2000	2000	4000
Churachandpur	1500	500	300	2300
Imphal East	1800	-	-	1800
Jiribam	500	-	-	500
Kakching	-	500	500	1000
Kamjong	-	300	225	525
Kangpokpi	725	550	300	1575
Noney	-	300	800	1100
Pherzawl	-	1612	562	2174
Senapati	-	-	600	600
Tamenglong	-	-	840	840
Tengnoupal	-	320	180	500
Thoubal	500	-	-	500
Ukhrul	-	300	200	500
<b>Total</b>	<b>5025</b>	<b>6382</b>	<b>6507</b>	<b>17914</b>

Source: Department of Horticulture & Soil Conservation, Govt. of Manipur



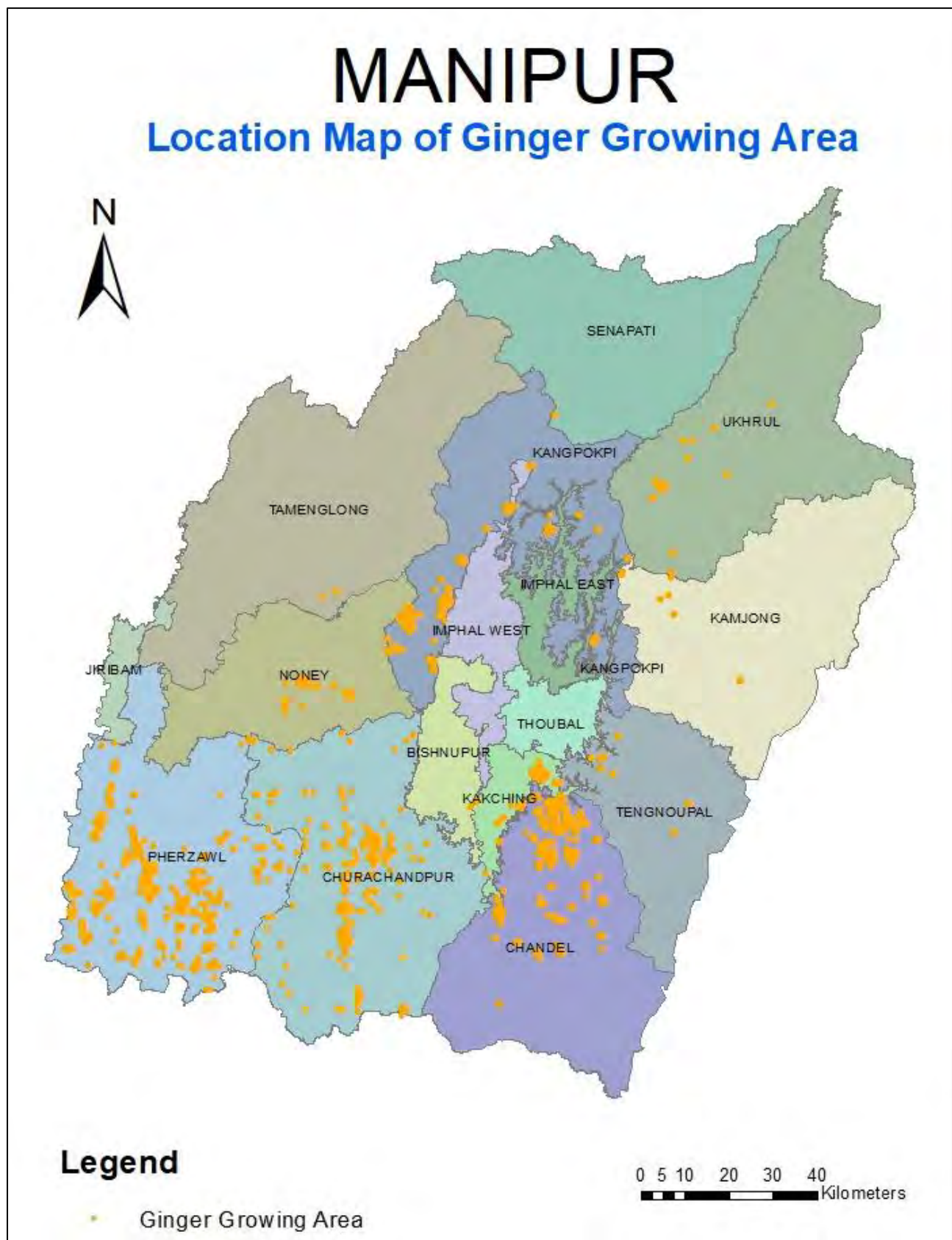
**Fig. 1: Map showing Turmeric plantation areas of Manipur during 2023-24**



*Source: Department of Horticulture & Soil Conservation, Govt. of Manipur*



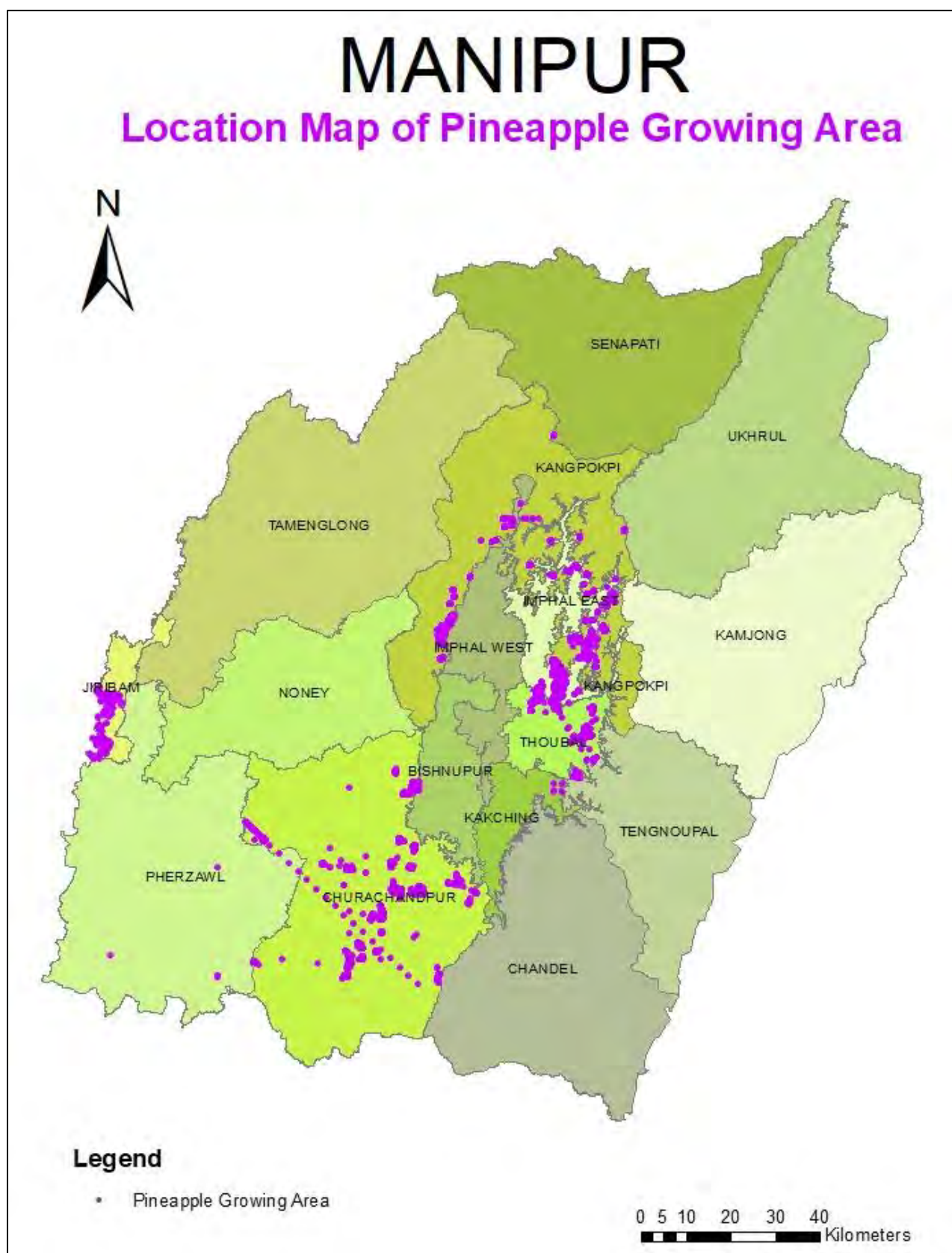
Fig. 2: Map showing Ginger plantation areas of Manipur during 2023-24



Source: Department of Horticulture & Soil Conservation, Govt. of Manipur



Fig. 3: Map showing Pineapple plantation areas of Manipur during 2023-24



Source: Department of Horticulture & Soil Conservation, Govt. of Manipur



## 5.0 Science & Technology conclave/Official visits/workshops/Meetings attended

### 5.1 Workshop on IP Policy and Geographical Indications

A 2-day Workshop on IP Policy and Geographical Indications was held during August 12-13, 2024 at Guwahati, Assam. The workshop was organised by Assam Science, Technology and Environment Council (ASTEC), Guwahati. This workshop will address the common issues regarding IP Policy and also will assist State S&T Councils in formulating their state policies. The workshop was inaugurated on August 12, 2024 with Dr. Anita Aggarwal, Head-SEED-SSTP, DST, GoI, Smt. Laya Madduri, Secretary (S&T), Govt. of Assam, Prof. Prabuddha Ganguli, CEO, Vision-IPR, Dr. A.K. Mittal, Former MHRD IPR Chair Professor & Emeritus Professor, IIT Kanpur, Shri Anil Pandey, Sr. Counsellor, CII Gujarat and Prof. Pritam Deb, DPIIT Chair Professor, IPR Cell, Tezpur University.



*Dignitaries on the dais*

Dr Anita welcomed all the expert members and officials from the 19 State S&T Councils and highlighted the importance of organising such workshop. Prof. Ganguli explained in brief about the draft IP Policy and suggested to work in line with the National IPR Policy as per the requirement of respective states. Each state council also shared issues and achievements of PIC as per the objectives of National IPR Policy. For Manipur, we highlighted the creation of IPR awareness in the state at different levels i.e., university, colleges, technical institutions, start-ups artisans, farmers etc. opened 6 IPR Cells at University, Technical Institution, College and generate Patents, Trademarks, Designs, Copyright etc. In the commercialisation stage – many IP holders have started their business and become key players in the local market and few in e-market also. Lack of manpower resources in the field of IP in the state and requirement of more training programme were also placed before the expert committee.



*Officials of State S&T Councils*

On the second day i.e. August 13, 2024 all the State Councils gave presentation on 2 registered GI and its impact in the State. We also gave the presentation on 2 registered GIs of Manipur i.e., Chak-hao and Moir ang Phee. Marketing challenges and issues such as limited consumer awareness, lack of initiatives in building brands, lack of organization structures or control mechanisms, lack of artisan database, identification of markets and information on market trends etc. were highlighted. Major impacts of GI is the improvement of livelihood of stakeholders as there is an increasing demand of registered GI items in the local, national and international markets and number of start-ups working on GI products have also been increased. Concluding remarks from Dr. Anita appealed to all the State Councils to work on framing the State IPR Policy as soon as possible and the programme was ended.



### **Interactive Meeting at IIT, Guwahati August 14, 2024**

Dr. L. Minaketan Singh, Director and Dr. R.K. Pritamjit Singh, Scientific Officer, MASTEC attended the interactive meeting at IIT, Guwahati on August 14, 2024. A team comprises of faculty staff, post doc fellows, research students of Technology Innovation Hub (TIH), IIT-Guwahati headed by Prof. N.N. Dutta welcomed officers of our council and two officers of Arunachal State Council of S&T at their centre. Prof. Dutta, Prof. S.K. Dwivedy, Prof. Subashisa Dutta, Sajjan Kapil and other faculty staffs presented activities/researches carried out in their centre such as - Intelligent Cyber-Physical Systems, underwater exploration, drone technologies, 3-D printing, EV, flash flood warning system etc. Later, all the officers of Manipur and Arunachal State Councils along with Prof. Dwivedy and faculty staff visited their labs – 3-D, EV, water exploration, drone, IOT etc. TIH, IIT-Guwahati agreed to extend technical support in training programmes and also expressed their willingness to work with our Council in future.



*Interaction programme with TIH, IIT Guwahati*



*Visit at Central Workshop, IIT Guwahati*

### **Interactive Meeting at NECTAR, Guwahati**

Dr. L. Minaketan Singh, Director and Dr. R.K. Pritamjit Singh, Scientific Officer, MASTEC visited NECTAR Guwahati on August 14, 2024. One senior officer highlighted activities of NECTAR taken up in NE states including Manipur. He explained about the drone pilot training programme, banana plant fibre extraction under Technology Outreach and Services Scheme (TOSS). We also discussed about the possibilities of any available technologies in NECTAR to provide to MASTEC for demonstration/transfer to the public, especially, in the areas of food processing.



1. **Dr. Kh. Rakesh, Director** attended the following meetings:

Sl. No.	Meetings/Trainings	Sponsored Organisation	Period
1.	10 <sup>th</sup> Edition of India International Science Festival (IISF) at IIT Guwahati	DST Govt. of India	November 30-December 3, 2024
2.	NITI Aayog Meeting on developing a roadmap for strengthening the State Science and Technology Councils of North Eastern Region (Virtual Meeting)	NITI Aayog	February 25, 2025
3.	Aahaar Kranti Initiative of Global Indian Scientist and Technocrats (GIST) Forum, Vijnana Bharati	Virtual meeting	March 4, 2025
4.	Post Budget Webinar-2025	Virtual meeting	March 5, 2025
5.	NITI Aayog workshop on the theme “Empowering Stat S&T Councils: towards a collaborative approach for improving India’s R&D ecosystem”	NITI Aayog	March 18, 2025

2. **Shri Ch. Sarat Singh, Scientific Officer** attended the following meetings:

Sl. No.	Meetings/Trainings	Sponsored Organisation	Period
1.	Virtual Meeting for submission of project proposal for National Mathematics Day 2024 and National Science Day 2025 Celebration.	NCSTC DST, GoI	July 3, 2024
2.	Online meeting for formative of Regional teams for celebration of NSD 2024 & 2025	-do-	Sept 9, 2024
3.	Online meeting for finalization of programme for NMD 2025	-do-	Sept 23, 2024
4.	Online meeting regarding celebration of NSD 2025	-do-	Feb 17, 2025
5.	Online meeting regarding celebration of NSD 2025	-do-	Feb 24, 2025

3. **Dr. R.K. Pritamjit Singh, Scientific Officer** attended the following meetings:

Sl. No.	Meetings/Trainings	Sponsored Organisation	Venue	Period
1.	Workshop on IP Policy and Geographical Indications	DST, GoI	Hotel Arista, Guwahati	August 12-13, 2024
2.	Interactive Meeting	Technology Innovation Hub (TIH), IIT-Guwahati	IIT, Guwahati	August 14, 2024
3.	Interactive Meeting	NECTAR, Guwahati	NECTAR, Guwahati	August 14, 2024
4.	10th Edition of India International Science Festival (IISF)	DST, GoI	IIT Guwahati, Assam	November 30 – December 3, 2024



## 6.0 Scientists who visited MASTEC during 2023-2024

Sl. No.	Name of the Scientist	Organisation	Programme	Period
1.	Shri Raghu Ningthoujam	Deputy Director, DTDI, ISRO HQ, Bangaluru	Celebration of National Space Day 2024 in Manipur	July 19, 2024
2.	Shri Puyam Subhas	NESAC, Shillong	Celebration of National Space Day 2024 in Manipur	July 19, 2024
3	Shri Victor Saikhom	NESAC, Shillong	Celebration of National Space Day 2024 in Manipur	July 19, 2024
4.	Shri M. Somorjit Singh	Head, Geoscience Division, NESAC, Shillong	Celebration of National Space Day 2024 in Manipur	July 19, 2024
5.	Prof. Murli Manohar Verma,	Research & Development Cell, Lucknow University	Workshop on International Year of Quantum Science and Technology (IYQ)	February 21-23, 2025
6.	Prof. R. K. Brojen Singh	Department of Physics, JNU, Delhi	Workshop on International Year of Quantum Science and Technology (IYQ)	February 21-23, 2025
7.	Dr. Nilakah Sorokhaibam	Department of Physics, Tezpur University, Assam	Workshop on International Year of Quantum Science and Technology (IYQ)	February 21-23, 2025

## 7.0 Library

MASTEC has made a modest attempt to build up its own library. There is a collection of about five hundred volumes of various disciplines. In addition, a number of periodical journals, newsletters, bulletins, local papers, science publications etc. are received regularly. MASTEC aims at strengthening the library of the council.



## **8.0    Audit Report**