

### **2.3.2 Student centric methods**

**experiential learning, participative learning and  
problem solving methodologies**

**Name of the Student Centric Teaching Method: Participative learning, Problem solving,**

**Date of implementation of Practice** – Beginning of every semester in subject Mathematics

**Description of the Practice** –

I used to teach my students with the aim that each and every student can involve in all the activities done in the classroom. The communication in my classroom have been always two way and that has benefited to many students in terms of their personal development.

In case of abstract subjects of Mathematics like geometry or algebra or analysis, I used to use classroom gadgets like bench, chair, table, fan, light, corners of the room, walls, etc.

Further, in case of study of set theory or any subject related to properties of set, I used to creat examples and understanding of the topic from the classroom only by forming sets having elements as the students of that class.

**Mentor teacher** – Darshana Likhada

**Student Participated** – All students of B.Sc. B.Ed. and M.Sc. M.Ed.

**Objective of teaching Practice** –

To enhance thinking procedure of students.

For personal development of the students.

For making better future teachers.

To think beyond the syllabus and books.

**Outcome** –

The students will enable to think beyond the syllabus and textbooks. Their thinking procedure and logics will get strengthen by these methods. Students will be able to understand a particular topic or a theory very easily and in depth.

**Name of the Student Centric Teaching Method: Co-operative learning**

**Title of the Activity: Remedial Teaching by seniors**

**Department: Gujarati Department**

**DATE: December 2021**

**Program: B.A.B.Ed.**

**Participants: Students of Semester 1 and 3**

Students having ATKT BABED Data on December 2021

- |                    |                                 |
|--------------------|---------------------------------|
| 1. Sheetal Jadeja  | 9. Damor Nisha                  |
| 2. Chavada Dwani   | 10. Devarshi Chundawat          |
| 3. Kevani Patel    | 11. Bariya Tushar               |
| 4. Pumpavat Yogdev | 12. Zala Virendra               |
| 5. Solanki Mihir   | 13. Banjara Suhani              |
| 6. Blessy Ebanasan | 14. Sherasiya nazrin ismailbhai |
| 7. Rajgor Tanmay   | 15. Bariya Manisha              |
| 8. Thakkar Naiya   | 16. Desai Dhruv                 |

**Aim:** To establish rapport between seniors and juniors and to provide remedial teaching

**Objectives:**

1. To motivate the students to score high in examination.
2. To reduce Gujarati Language Anxiety among the students who are non-Gujarati or having any difficulty in paper of Gujarati Language.

**Process:**

In this remedial teaching activity, students of semester-1 with semester-3 sat in a single classroom and senior students about the Gujarati language guided juniors. Many students of semester-1 are not from Gujarati Language background and find difficulty in coping with the Gujarati subject. In this activity, senior students took the responsibility of teaching Gujarati Language teaching for the improvement of their juniors. During this, activity senior students tried to correct a deficit rather than teach students to cope with the deficit. They also tried to improve the skills and learning of Gujarati Language through direct instruction. The students, who were from Semester-1 felt very comfortable to learn and clear their doubts to their seniors.,

This Remedial teaching activity also helped students to develop a good rapport with their seniors.

**Outcome:** 1) Developed interest among non-Gujarati students about Gujarati Language.

2) Created a rapport among junior and senior students.

3) Helped students clear their doubts through peer learning.



**Name of the Student Centric Teaching Method: Experiential Learning**

**Title of the Activity: Celebration of World Pollution Day**

**CLUB: ECO CLUB**

**DATE: 2<sup>nd</sup> December, 2021**

**Program: B.A.B.Ed.**

**Club: Eco Club**

**Participants: Students of Semester 1 and 3**

**Aim: To create awareness among students about Conservation of Environment.**

**Objectives:**

1. To motivate the students to re-use the waste plastic products.
2. To motivate the students to keep their surroundings green and clean by undertaking plantation of tress.

**Process**

In an extensive Tree plantation Campaign, plantation of hundreds of sapling was undertaken in the college premises as well as the adjoining areas in an effort to make the planet greener. In this, students of Eco-Club collected the waste plastic bottles and planted the sapling in it and kept it all through the campus. In this way by Up-Cycling the waste materials like water bottles and plantation of saplings, students of Eco-Club celebrated the World Pollution Day.

**Outcome: 1) Created awareness and sense of responsibility amongst the upcoming generation.  
2) Created awareness on nature and its importance by planting trees.**



**Name of the Student Centric Teaching Method: Experiential Learning**

**Title of the Activity: Take Your Tea**

**CLUB: History Department**

**DATE: 5<sup>th</sup> December, 2021**

**Program: B.A.B.Ed.**

**Participants: Students of Semester 1 and 3**

**Aim:** To let students know about the archeological sites of India.

**Objectives:**

3. To motivate the students to learn history of India.
4. To motivate the students to conserve the archeological sites of India.

**Process**

In an extensive Historical site visit, students of History subject were taken to Ambapur Stepwell situated at Ambapur. At Ambapur students of History got the opportunity to look at the archeological site of India. They also learnt how in the earlier time step was being built by the people and how much they were concerned about the value of water. In this historical visit they also got the chance to interact with Mr. Yadubirsingh Rawat (a famous archeologist) at this Atulya Varso Tea Party. Mr. Yadubirsingh Rawat has guided the students about the use and construction of stepwell. In this way students understood about the conservation and preservation of archeological sites of India.

**Outcome**

- 1) Created awareness and sense of responsibility amongst the upcoming generation.
- 2) Created awareness of historical sites of India and its importance.
- 3) Developed interest among students about the subject History.

अतुल्य वारसो  
Keep your Heritage

Take your  
**TEA**

With  
**Mr. Yadubirsingh Rawat (Archaeologist)**  
**@Atulya Varso Tea Party**

Date: 05/12/2021 Time: 09:30 to 11:00 AM  
Venue: Ambapur Stepwell, Ambapur



**Name of the Student Centric Teaching Method: Experiential Learning/ Participative Learning and Problem solving etc.**

**1(A) Name of Programme: M.Sc.-M.Ed. Semester 1, Paper Name: Physical Chemistry-1**

1. Date of implementation of Practice: 02-08-2021
2. Description of the Practice: Problem Solving
3. Mentor teacher: Dr. Prajapati Hemantkumar Ramanlal
4. Student Participated: All students of M.Sc. - M.Ed. (Number of Students-15) participated actively
5. Objective of teaching Practice: Students will get basic knowledge of calculation of thermodynamic properties and partition function.
6. Outcome: Practice Students will get basic knowledge of calculation of thermodynamic properties and partition function.

**1(B) Name of Programme: B.Sc.-B.Ed. Semester 5, Paper Name: Physical Chemistry-II**

1. Date of implementation of Practice: 02-08-2021
2. Description of the Practice: Problem Solving
3. Mentor teacher: Dr. Prajapati Hemantkumar Ramanlal
4. Student Participated: All students of B.Sc. - B.Ed. (Number of Students-48) participated actively
5. Objective of teaching Practice: Students will understand basic knowledge of calculation of thermodynamic properties for e.g. Gibbs Free Energy Change, and partition function.
6. Outcome: Students will understand basic knowledge of calculation of thermodynamic properties and partition function.



**Name of the Student Centric Teaching Method: Experiential Learning/ Participative Learning and Problem solving etc.**

M.Sc.-M.Ed. semester 3, Paper Name : Molecular Spectroscopy

7. Date of implementation of Practice: 02/08/2021
8. Description of the Practice: Problem Solving
9. Mentor teacher: Dr. Tejas H Pavagadhi
10. Student Participated: All students of M.Sc.-M.Ed. semester 3 (Number of Students-9) participated actively
11. Objective of teaching Practice: To train students how to interpret data and IR,PMR,13C NMR and MS spectra of organic molecules
12. Outcome: students will be able to interpret data and IR,PMR,13C NMR and MS spectra of organic molecules and elucidate the structure of organic molecules.

Name of the Student Centric Teaching Method: Experiential learning and problem solving

**Title of the Activity: Visit and Movie screening**

**Department: Physics Department**

**Talk by retired ISRO scientist Dr Chintan Bhatt:**

On 27<sup>th</sup> July, 2019 on invitation from department of Physics, IITE, a retired scientist from ISRO, Dr Chintan Bhatt delivered a talk on Mangalyaan 2 at morning assembly. The students were more than happy to interact with him and cleared many of their queries regarding the Mars Mission and ISRO.

**Movie screening (science fiction):**

On 11<sup>th</sup> September, 2019, the screening of Academy Award winning science fiction film “Gravity” was organized by the department of Physics at the auditorium of IITE for the students and faculty members of IITE. The film starring Sandra Bullock and George Clooney had won Best director, Best cinematography, Best original score, Best Editing, Best Visual Effects at 86<sup>th</sup> Academy Awards.

**Visit to ISRO:**

The department organised two visits to Vikram Sarabhai Space Exhibition (Indian Space Research Organization) on 14/09/19 (UG sem 5 students) and on 24/09/19 (all PG students). During the visit, the students got to learn about India's satellite technology, satellite communication systems, Chandrayaan 1 and Mars Mission through the medium of 3D theatre, augmented reality, animation and virtual reality.

#### **Inauguration of Vikram Sarabhai Wall:**

Indian Institute of Teacher Education (IITE) is celebrating the Birth Centenary of the legendary scientist Dr Vikram Sarabhai during 2019-20. The theme poster regarding this was inaugurated by honourable Education Minister of Gujarat Mr Bhupendrasinh Chudasama on his visit to IITE on 24th October, 2019. The theme poster shows the incredible and extraordinary life of Vikram Sarabhai and his contributions to the growth of science and technology in India. It is placed in the central area of IITE (Abhibyakti) which is near to the dining area, where students can have a look at any time and get inspired.

#### **Study of Solar Eclipse:**

The faculty members of department of Physics guided the students for observing and learning about the Solar Eclipse on 26th December, 2019 from the IITE premises.

#### **Paper Presentation by students:**

Three post graduate students of department of Physics, Mr Ravindra Panchal, Mr Nilesh Damor and Mr Jigar Patel, participated in poster competition in 12<sup>th</sup> National Science Symposium 2020 at Christ college, Rajkot on 19<sup>th</sup> January, 2020. The title of the poster was "Anomalous Variation in GPS based TEC prior to 6 Earthquakes in 2014"

## Name of the Student Centric Teaching Method: Experiential Learning

### B.Sc B.Ed Department



#### Curious corner

The ancient Greek philosopher Plato has said, “Necessity is the mother of invention”, but in today’s world when science and technology is all around, it would be worth saying that “Curiosity is the mother of invention”. Curiosity makes the learning enjoyable and keeps a spark of knowing new things alive within the students. Without curiosity the major discoveries would not have taken place. Every teacher is constantly making efforts to instilling students with a strong desire to know or learn something. As an effort to make students curious, department of life sciences have taken an initiative under the title “Curious Corner”.

On the occasion of world science day i.e. 25<sup>th</sup> February, 2020, department of life sciences has inaugurated “Curious corner”. The basic idea behind this was to make a place where every week, one new activity would be carried out which is new for all, it can be any working model, any new discovery or any experiment which generate curiosity among students as well as staff members. The responsibility of curious corner has been assigned to semester 6 botany students of B.Sc.B.Ed. For this they would find out new concepts every week and execute under the guidance of professors which would enhance their learning process as well.

Team	
Professors	Dr. Mehul Dave, Dr. Roshni Adiyecha, Dr. Urvi Gupta
Students	Gunjan, Ashruti, Hemal, Priya, Tanvi, Purvi, Rahul, Faizal, Jigar, Nirali makwana, Subhadra, Nitee, Shraddha, Priya Faldu, Bhavisha, Nirali Pateliya, Krutika, Vidhi, Nirali kamadiya



### **Activity 1: Know your lung capacity with “Respirometer”**

Date: 25<sup>th</sup> february, 2020

Respirometer is an instrument / setup / device used to measure the **rate of respiration** of a living organism by measuring its rate oxygen uptake or CO<sub>2</sub> release. Respirometers are designed to measure respiration either on the level of a **whole animal** (or plant) or on the cellular level.

The idea of Respirometer was proposed by Ms. Gunjan and the working model was made by Gunjan, Tanvi, Rahul, Nitee, Jigar, Faizal and Priya Faldu. Ashruti, Hemal, Nirali Makwana, Subhadra, Shraddha have taken care of overall decoration and drawing. Logo for curious corner was designed by Purvi and Priya Singh. Whole class has shown a great team work to make it successful.

Respirometer had spread the wind of curiosity in whole campus and almost everyone who came to know about it have visited and checked their lung capacity. On record 120 individuals including students, teaching and non teaching staff have visited the curious corner and actively participated to measure their lung capacity.



## **Activity 2: Meet unwanted guest of your mouth**

**“Observation of micro flora of tooth tartar”**

**Date: 2march, 2020**

Dr. Mehul Dave, Head Life Science Department has proposed the idea and whole activity was conducted under his guidance. The concept behind this idea was to arrange a meeting of bacteria with their host, in simple words everyone carrying bacteria in their teeth but never seen them. So here students have facilitate everyone to see the bacteria residing in their tooth tartar.

In this activity, sample of tooth tartar was taken from each individual and slides were prepared from it and shown to the individuals. Everyone were amazed to observe the microflora present in their tooth tartar.



They won't get anything from my teeth...

*“Till now, 2 activities have been carried out in Curious Corner. But 2 of them have successfully maintained curiosity among students, not only curiosity but it was a great learning experience for all along with lots of fun and happiness.”*

Students are involved in co-curricular practices which are part of the curriculum.

**Organized a range of programs on World Ozone Day**  
<https://fb.watch/8bQ-NOoF80/>

**Indian Institute of Teacher Education**  
 (A State Public University Established by Govt. of Gujarat)

**International Day for the Preservation of the Ozone Layer**  
 16<sup>th</sup> September

**A Talk by**

**Dr. Sumit Vyas**  
 Project Director  
 Regional Science Museum

Gujarat Council on Science and Technology  
 Department of Science & Technology  
 Government of Gujarat

Organized by  
 Department Of Life Science,  
 Centre Of Education  
[www.iite.ac.in](http://www.iite.ac.in)

Co-Ordinator  
 Dr Mehul P. Dave  
 Associate Professor (Life Sciences)  
[iitegandhinagar](https://www.facebook.com/iitegandhinagar)

**International Day for the Preservation of the Ozone Layer**

Disaster Management Training  
 Environment Awareness Talk & E Content  
 Debate & Discussions

*“Let us go hand in hand to stitch up the ozone hole that we have created”*

[www.iite.ac.in](http://www.iite.ac.in)  
[f](https://www.facebook.com/iitegandhinagar) [i](https://www.instagram.com/iitegandhinagar) [t](https://www.youtube.com/iitegandhinagar) [v](https://www.youtube.com/iitegandhinagar)  
**iitegandhinagar**

Organized by  
 Department of Life Science  
 Centre of Education

Co-ordinator  
 Dr. Mehul Dave

**16 Sept 2021**



Indian Institute of Teacher Education, Gandhinagar  
**9<sup>th</sup> January**  
**Birth Anniversary of**

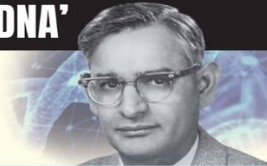


**DR. HAR GOBIND KHORANA**

A Scientist who made us learn the language of life  
 A Noble laureate in Physiology and Medicine

**‘Deciphering the DNA’**

A Talk by  
**(DR) KUNAL UPADHYAY**  
 CSIR-NET, UGC-NET, GSET  
 Section Officer, GAD, Sachivalay Gujarat



Organized by  
 Department of Life Sciences,  
 Indian Institute of Teacher Education, Gandhinagar

**#ExpertTalk**

**“REUBEN DAVID - GUJARAT'S LINK BETWEEN MAN AND WILDLIFE”**



DATE : 28 FEB 2020 (NATIONAL SCIENCE DAY) TIME : 2.30 PM

**Expert Speaker :**



**Esther David**  
 AUTHOR - ART CRITIC - ARTIST - COLUMNISTCONNECT

**Organised By**

**DEPARTMENT OF LIFE SCIENCES**  
**INDIAN INSTITUTE OF TEACHER EDUCATION**

Ramkrushna Paramhans Vidya  
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 Sector -15 Gandhinagar - 382016  
 (Gujarat)

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## Plastic waste collection from Sanjeevani



## A talk on Alternative Energy Resources



राष्ट्रीय उर्जा संरक्षण दिवस

An Expert Talk on  
 "Significance of Nonconventional Energy Resources in 21<sup>st</sup> Century"  
 14<sup>th</sup> Dec. at 8.00 am @ IITE Assembly Hall

by  
**Mr. Kapil Butani**  
 Associate Vice President  
 Abellon Clean Energy Limited  
 Ahmedabad

**NATIONAL ENERGY CONSERVATION DAY**  
 14th December



## Biology Films by Students

NO	TITLE OF THE DOCUMENTARY	TEAM MEMBERS
1	BIOTECHNOLOGY	ISHIKA, VAIBHAV, DONA, MUKTI, PRATIK, MILAN
2	MYCOLOGY	KRISHNA, RITIKA, BHAVISHA, SNEHAL, RITU
3	PHYCOLOGY	MEERA, HARSH, DHRUV, DIYA, DINESHWARI
4	MICROBIOLOGY	SANGRAM, RAMILA, KARTIK, SHREYA, JAYSINH
5	ETHANOLOGY	PRAGYAN, SRUSHTI, MITAL, DHVANIL,
6	HORTICULTURE	TEJAS, KAVAN, URVASHI, YASHU, NANDINI
7	PLANT GENETICS	ANURAG, KHUSBU, SANDHYA, SARTHAK, UTKARSH, SALONI, KANDARP
8	PLANT TISSUE CULTURE	ISHA, PARTHRAJ, DHARTI, MAITRI, RAJESH
9	ECONOMIC BOTANY	PUSHKAR, RIDDHI, AMI, ABHAY
10	BIOCHEMISTRY	JATAN, MIT, AYAJ, JULI, DHARMI
11	PLANT BREEDING	DHAVAL, VISHWA, KULDIP, HETAL, SIMA
12	INSECTIVOROUS PLANTS	BHARGAV, KHUSHI, JINAL, TRUSHIKA, HELLY

12

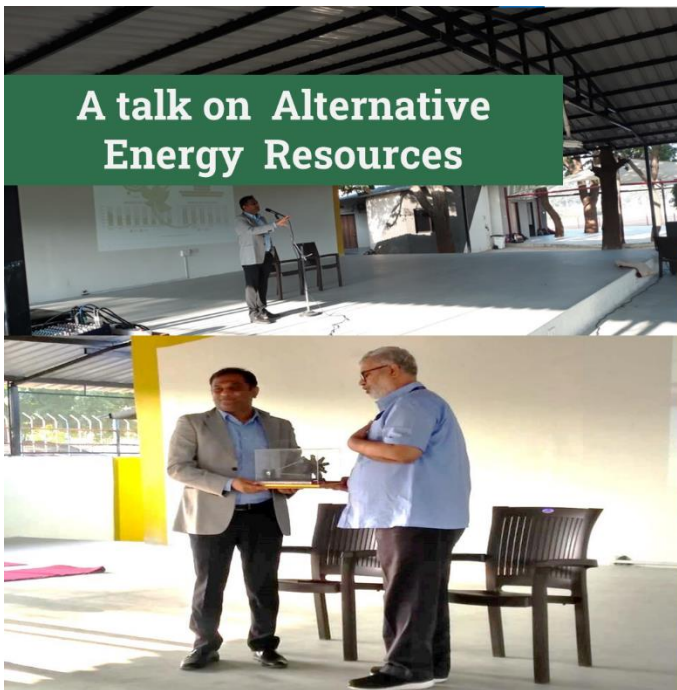
## A Visit to Ahd Flower Show



14



## Plastic waste collection from Sanjeevani



## A talk on Alternative Energy Resources

राष्ट्रीय ऊर्जा संरक्षण दिवस

An Expert Talk on  
 "Significance of Nonconventional Energy Resources in 21<sup>st</sup> Century"  
 14<sup>th</sup> Dec. at 8.00 am @ IITE Assembly Hall



by  
**Mr. Kapil Butani**  
 Associate Vice President  
 Abellon Clean Energy Limited  
 Ahmedabad



**NATIONAL ENERGY CONSERVATION DAY**  
 14th December

॥ वा वि ज्ञानेन वाचुन चरिष्यमिह विप्रतः ॥

## Biology Films by Students

NO	TITLE OF THE DOCUMENTARY	TEAM MEMBERS
1	BIOTECHNOLOGY	ISHIKA, VAIBHAV, DONA, MUKTI, PRATIK, MILAN
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4	MICROBIOLOGY	SANGRAM, RAMILA, KARTIK, SHREYA, JAYSINH
5	ETHANOLOGY	PRAGYAN, SRUSHTI, MITAL, DHVANIL,
6	HORTICULTURE	TEJAS, KAVAN, URVASHI, YASHU, NANDINI
7	PLANT GENETICS	ANURAG, KHUSBU, SANDHYA, SARTHAK, UTKARSH, SALONI, KANDARP
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12

## A Visit to Ahd Flower Show

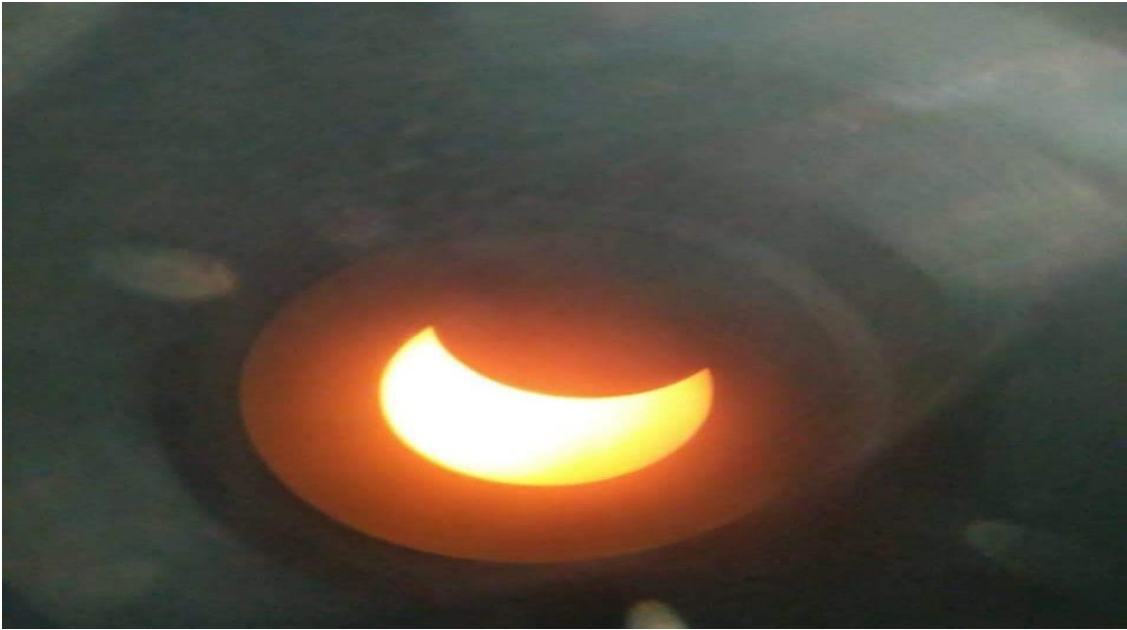


14

Name of the Student Centric Teaching Method: Problem Solving and Project Based and Constructivist learning

Event : Topic selection and presentation and dialogue series









**A DIALOGUE SERIES AS A PART OF BIRTH CENTENARY CELEBRATION OF DR. VIKRAM SARABHAI**

**Indian Institute of Teacher Education, Gandhinagar**

**10 YEARS**

**BIRTH CENTENARY CELEBRATION**

**DIALOGUE SERIES**

**BIRTH CENTENARY CELEBRATION**

**of**

**Dr. Vikram Sarabhai**

Father of Indian Space Programme.

Live Streaming of the dialogue will be done on IITE's Facebook account

<https://www.facebook.com/iitegandhinagar>

Method: Participative learning

Objective

- ❑ As the whole nation is celebrating the birth anniversary of Dr Vikram Sarabhai, the father of space Research in India in 2019-20.
- ❑ Indian Institute of Teacher Education is also paying tribute to the legendary scientist by organizing a dialogue on science topics by eminent professors every month.
- ❑ We aim to spread the values and vision of Dr. Vikram Sarabhai to nurture scientific temperament and develop a sense of inquiry to the larger audience of the society through this lecture series.
- ❑ First dialogue was by Prof. B.Y.Thakore, Professor, Department of Physics, Sardar Patel University on 12<sup>th</sup> of December 2019 at P. C. Vaidya Auditorium, IITE, Gandhinagar.

Topic” Correlation between Indian calendar (Panchang)”

- ❑ He introduced the audience with three type of calendars which are Gregorian, Hijri and Hindu calendars.
- ❑ Panchang means 5 part which are
  - Tithi
  - Var
  - Nakshatra
  - Yog
  - Karma

Among these Var and Yog does not depend on astronomical configuration of celestial bodies.

- ❑ Many mathematical calculations were shown by the professor regarding an extra day in four years and month.
- ❑ Total 200 students and faculties have attended the talk
- ❑ Also more than 2000 views on facebook

2<sup>nd</sup> Dialogue

- ❑ Second dialogue was by Mr. Kartikeya Sarabhai son of Dr. Vikram Sarabhai who is Founder and Director of Center for Environment Education (CEE).
- ❑ This was on January 11, 2020 at 10.30 a.m. at the AMA auditorium, Ahmedabad.



Topic “My Father - Father of Indian Space Programme”.

- ❑ He gave the glance of unknown facts about Dr. Vikram Sarabhai as a space programmer and as a father.
- ❑ More that 270 faculties, professionals and students have attended the talk.



3<sup>rd</sup> Dialogue

- ❑ Third dialogue by Prof. Raghavan Rangrajan, Director, Ahmedabad University on 12<sup>th</sup> of February 2020 at P.C.Vaidya Auditorium, IITE, Gandhinagar.

Topic “Nobel Prize in Physics 2019-Physical Cosmology and Exoplanets”

- ❑ More than 200 faculties and students have attended the talk



- ❑ Fourth dialogue by Padma shri Prof. H. C Verma, Ex. Prof. Department of Physics, IIT, Kanpur.
- ❑ This talk was organized on May 9<sup>th</sup> 2020 at 4.30 PM.

Topic “Plank’s constant : Key to quantum world”

- ❑ A total of 1300 participants from around the nation registered for the talk and many others joined via Facebook

The image displays promotional materials for a Zoom talk. On the left is a poster for the Indian Institute of Teacher Education, Gandhinagar, commemorating its 100th Birth Centenary Celebration. The poster features a portrait of Prof. Harish Chandra Verma and mentions the 'Dialogue Series'. Below the portrait, it lists the speaker's name, title, and affiliation, along with the talk's title, date, and time. Registration information is provided at the bottom. On the right is a screenshot of a Zoom meeting. The main window shows a slide titled 'Planck's Constant: the key to Quantum World And Nobel Prizes' with a portrait of Hrish Chandra Verma and the text 'हरीश चन्द्र वर्मा भौतिकी विभाग IIT KNPUR 9<sup>th</sup> May 2020'. A video feed of the speaker is visible in the top right corner of the Zoom window.