

# **ELECTRONIC SCIENTISTS & ENGINEERS SOCIETY (ESES)**



*Report and Activities of the Electronic Scientists and Engineers Society  
(ESES) - 2022*

## **Academic and special Interactive programs on the lifting of Pandemic Protocols :**

### **(1) Special Events of April 23, 2022:**

It was a beautiful spring morning, especially calm after a prolonged rain with thunderclouds looming over, the date is the 23<sup>rd</sup> of April 2022. It is a special day for us, the members of ESES. The President of the Society will be with us to have a scientific discourse on the topic "Worst weather, Hazard and the Impact on Society ". The pandemic has created a physical wall between us and we had to keep in communication with the President through online modes be it a Seminar or an Event Now, the pandemic situation has been officially declared improved and protocols are lifted, we decide to have our first physical interactive session today, with the President. So, on this Special Day, we plan to facilitate Sir, with great pleasure because it is a Day when he enters his 90<sup>th</sup> Birthday.

So all of us ESES members specially Alaka, Abhay, Rakesh , Subrat, Samiran, and Dhon started preparing to welcome Sir, after 2 years of a long wait for a personal meeting.

At 10 clock Sir arrived with Abhay and Rakesh. Sir got emotional when Alaka, and myself offered him a pleasant welcome. Subrat joined us and paid his great respect in the most traditional way by touching his feet. The joy of Sir in meeting us was very emotional to us also.

Sir carried with him a food basket packed with homemade cake and special Assamese Pitha for breakfast and fish curry with homegrown tomatoes for lunch.

We then tried to relax by opening up our long-due conversation with Sir, before the formal talk begins. Meanwhile, we enjoyed the cake and Assamese *pitha* brought by Sir as a token of love to us all. The excellent homemade sweets have created a touching homely environment.

Meanwhile, Samiran joined us bringing a flower bouquet of beautiful roses and cresenthimum as a special gift to Sir.

Kritika another young member joined us with a special book in her hand for Sir.

Our gathering grew with the joining of Monoj, one of the Senior members of ESES

We started our felicitation programme first, before the deliberation of the scientific discourse by Sir. Subrat offered his welcome address expressing how we all are delighted to have him today in our midst. Alaka facilitated Sir with a beautiful traditional Assamese Gamosa, Samiran offered Sir the flower bouquet that he carried with him and Kritika presented Sir with the religious book that she brought with her.

Meanwhile, we are joined by EC members Dr. D Chakraborty and Mr .P. C. Kalita along with young member Habib.

As a token of the B'Day ceremony, a cake was arranged by Samiran, Alaka, Subrat , Abhay, and Rakesh and decorated with candles it presented a merry occasion; the ceremony started with cakes being distributed by Sir to all present there. We enjoyed the party with cold drinks, sweets, and snacks to go along with the cake. There were wide topics of discussion then starting from health hazards during Pandemics to its social impact.



***The deliberation on scientific discourse then started.***

**Topic: Hazards, and Socio-economic problems**

Under the umbrella of Hazard, the topics covered the recent meteorological rare events that occurred in the NE region which are :

- (a) Snowfall in Shillong after a gap of 50 years and
- (b) Hail storm in early February over Guwahati, an extremely rare event during this season.

The associations of tropospheric parameters especially the temperature at the near-earth surface to the tropopause and the contribution of wet air mass from the Bay Of Bengal along with anthropogenic pollutants were the main points of reference in the discussion.

The Snow-fall over Shillong was another interesting meteorological phenomenon. The discussion covered the wind flow pattern along with the contribution of clean air to such events.

The effects of anthropogenic pollutants and their role in temperature are brought into the ambit of discussions. How the loss of seasonal patterns in weather is affecting agriculture and even health-related issues were also points of discussion.

There was a lively platform for interactive exchange of ideas and scientific arguments then followed and the meeting came to a close after goodwill wishes for a better future on all fronts.

I.





A few Viewgraphs during the rare Hailstorm on the 5<sup>th</sup> of February 2022 , around Gauhati University Campus



Viewgraph of Shillong Snowfall: An event after a gap of 50 years

We all then have hearty lunch with delicious Fish curry brought by Sir and several tasty preparations from Bijoy who is running a successful canteen at GU.

The Day came as a very successful one and will be a pleasant souvenir for all of us to remember all the times to come.

The ***“Rare Meteorological Events”*** of the Day came as a special paper in the IJEAR



## ***(2)International research-related interactive Session ( Online)***

October 13, 2022

Organized by: Dr. Ryu, Ryu, Kwangsun  
Research Professor  
Satellite Technology Research Center/KAIST  
South Korea

Collaborators/Participants: Prof. K Oyama, Japan; Prof. Minakshi Devi (ESES, GU), Mr.P.C.Kalia (ESES, GU)

The opening of the session started with a welcome by the host and announces the agenda of the meeting: (i) To discuss the issue of organizing a Session in AOGS-2023 Singapore; (ii) To view on individual research status and (iii) To discuss possible collaborative supports.

The discussions were initiated regarding the submission of a Session in the AOGS -23 that will be held in Singapore in August 2023. The draft Session-proposal in the discipline of Nano Satellites was read out and accepted.

It was decided that the session would cover a day i.e., both morning and evening slots.

Among the name of the principal organizers, it was suggested by Prof. Devi that Prof . Oyama will be the principle organizer. It was accepted

The proposed names of co-investigators and invitees are all accepted and it was resolved that the organizer will work for encouraging participation from young candidates.

Dr. Ryu also presented his recent achievements in the development of Satellite-based sensors for EIA and Electrojet study.

The systems are of high end and Prof. Devi wanted to know the basic scientific objective of the study, as the systems and sensors seem very well designed.

And in case these are meant for the atmospheric coupling dynamics the group would like to participate in the program, Devi said.

Prof Oyama offered very elaborate and in-depth advice and suggestions to Dr. Ryu in the design and development of satellite-based sensors over a wide spectrum of frequencies. His knowledge of the subject was appreciated by all.

The meeting came to a close after thanksgiving and with the resolution to meet again soon.

On behalf of ESES Prof. Devi thanks Prof. Oyama and Dr. Ryu for the well informative discussion. Also she offered Mr. Bhabesh Kalita young student from GU very encouraging words appreciating his help in the meeting.



(i)



(ii)

View -graph during the ongoing session: (i)Prof. Oyama from Japan and (ii)Dr. Ryu from South Korea



**A Two day**

**National Seminar on Advances in Electronics and  
Allied Science & Technology**

**(NaSAEAST-2022)**

*Organized by*

**Electronic Scientists and Engineers Society (ESES)**

**December 17-18**

Operational mode: Hybrid

**Venue: ESES Convention site**

Guwahati -781035

**Contact Details:**

Mobile No:9864056314/ 8486003260

E-mail: eses.assam@gmail.com / md555gu@gmail.com



## A brief report on the NaSAEAST 2022 ( December 17-18 2022)

Venue: ESES Secretariate Bora Gaon Guwahati 35

Mode of operation: Hybrid

A two-day Seminar under the platform of NaSAEAST 2022 was held during December 17-18 2022, as part of the Annual activity of the ESES. A brief report is presented below

### **Background :**

*The objective of the ESES through such a seminar is to create an in-person interactive platform between young scientists and engineers of the North East Region and experienced researchers & academicians of the country, but the Pandemic situation has compelled the Society to go for Webinar in the last two years. This year too, even with the ease of this situation, the Society has decided to keep a safe protocol by arranging the seminar in a Hybrid mode The deliberations of invited speakers were through online mode, but for school and college students an interactive session through poster display was arranged at the ESES convention site.*

The two days' events are summarised below :

### **December 17, 2022:**

#### **Inaugural of NaSAEAST-22**

The Seminar sets its clock with a welcome to the participants by Dr. Subrat Das, the Convener of NaSAEAST- 22. His invitation to the President of ESES, Prof A.K.Barbara Sir for the formal inauguration of the Seminar had to be made online as his Physical presence at the venue though expected did not materialize due to an unavoidable situation, and his speech was read out by Dr.Samiran Patgiri.

A part of his speech is :

*I congratulate the ESES for arranging its annual convention the NaSAEAST -2022 during 17-18 December 2022, in the New convention site, a situation I consider to be a landmark for the ESES. It is also necessary that we have to go for a Hybrid mode of operation to be in a safe environment even with the ease of the Pandemic situation The decision of the organizers to have deliberations from invited speakers in the online mode is welcome when interactions from distant viewers will be more accessible and thus effective.*

*. I am very confident that in the Special Session on Poster/Model Competition( for college and School students) the identified Themes like Pollution, environment, and weather, On fundamental Laws of Physics/ Science of any branch, and on. Alien in space will attract young talented minds because an opportunity I am sure that many will not miss availing of.*

*I welcome the invited speakers' Prof A Gohain Barua, of Deptt. Of Physics, GU, Prof B.R.Baruah of Deptt of Physics IIT Guwahati, Prof P V Koperkar ex HOD, USIC Shillong and Dr. D Chakrabaty former HOD Statistics Deptt,of Handiqune Girls Collge, Guwahati for their kind acceptance to the invitation and I am sure that their valued deliberation will go highly beneficial to all the participants and viewers.*

*I welcome all my young participants who will join in the poster/model competitions and wish you all the best,*

*With this, I declare the NaSAEAST-22 is open.*

*Prof A.K.Barbara*

*President ESES*

### **Technical Session I (online)**

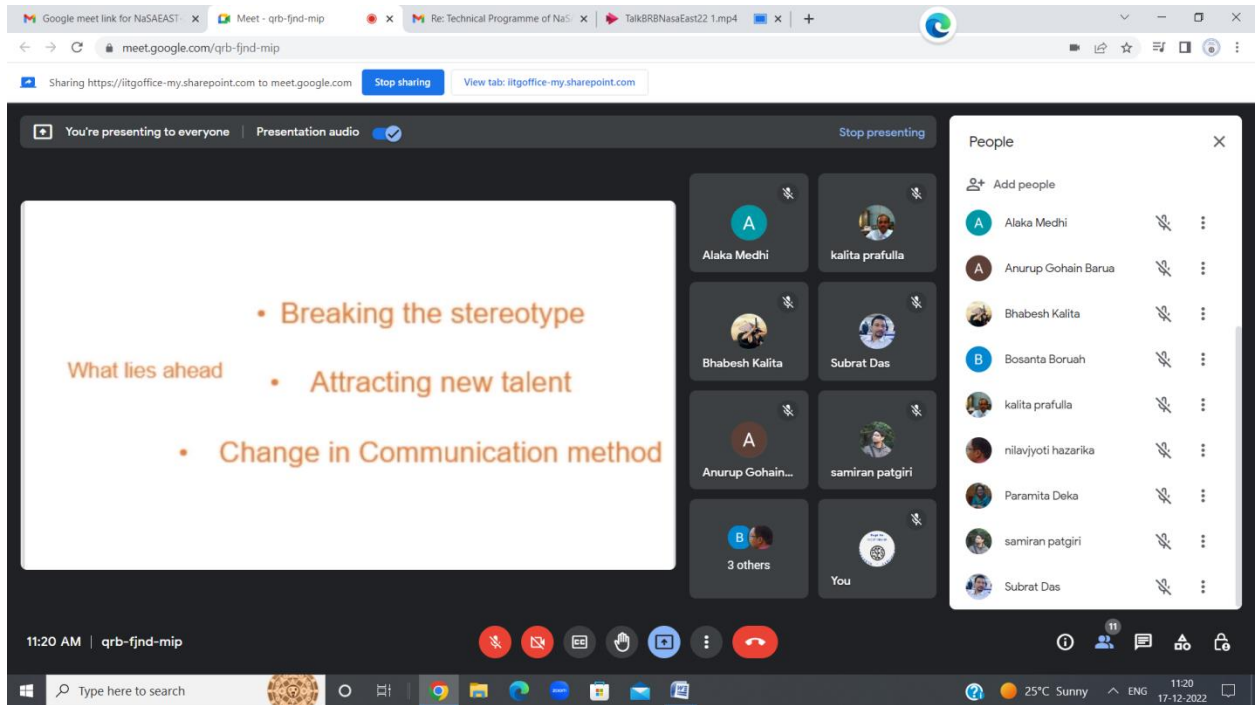
The convener then announces the opening. of the Technical session I, where there were three invitees to present their papers two in the morning and one in the afternoon session.

The Ist speaker of the session was Prof B.R. Baruah, of IIT Guwahati. Upon his formal introduction to the participants by Dr. Alaka Medhi, Prof Baruah presented his topic on the ***Musing of an experimentalist*** in the online mode. In this talk, Prof Baruah explains through logical support that parameters like sincerity, perseverance, and understanding ( out of many) are the qualities necessary to cultivate by an experimentalist right from the conceptional stage of a research problem to the selection of components, design of the experiment, in operation and after the experiments that is in the results (see Slide I).

The screenshot shows a Google Meet interface. The main presentation area displays a slide with the text "Pleasure and excitement" on the left, and three arrows pointing to "before an experiment", "during an experiment", and "after an experiment" on the right. The meeting controls at the bottom show "You're presenting to everyone" and "Presentation audio" is on. A "People" panel on the right lists participants: Bhabesh Kalita, Bosanta Boruah, Dhritikesh Chakrabarty, Dr. Bandita Choudhury, kalita prafulla, Kritika Pathak, Paramita Deka, samiran patgiri, and Subrat Das. The Windows taskbar at the bottom shows the time as 11:08 AM on 17-12-2022, with a temperature of 24°C Sunny.

Slide I: Display a part of the lecture of Prof Baruah

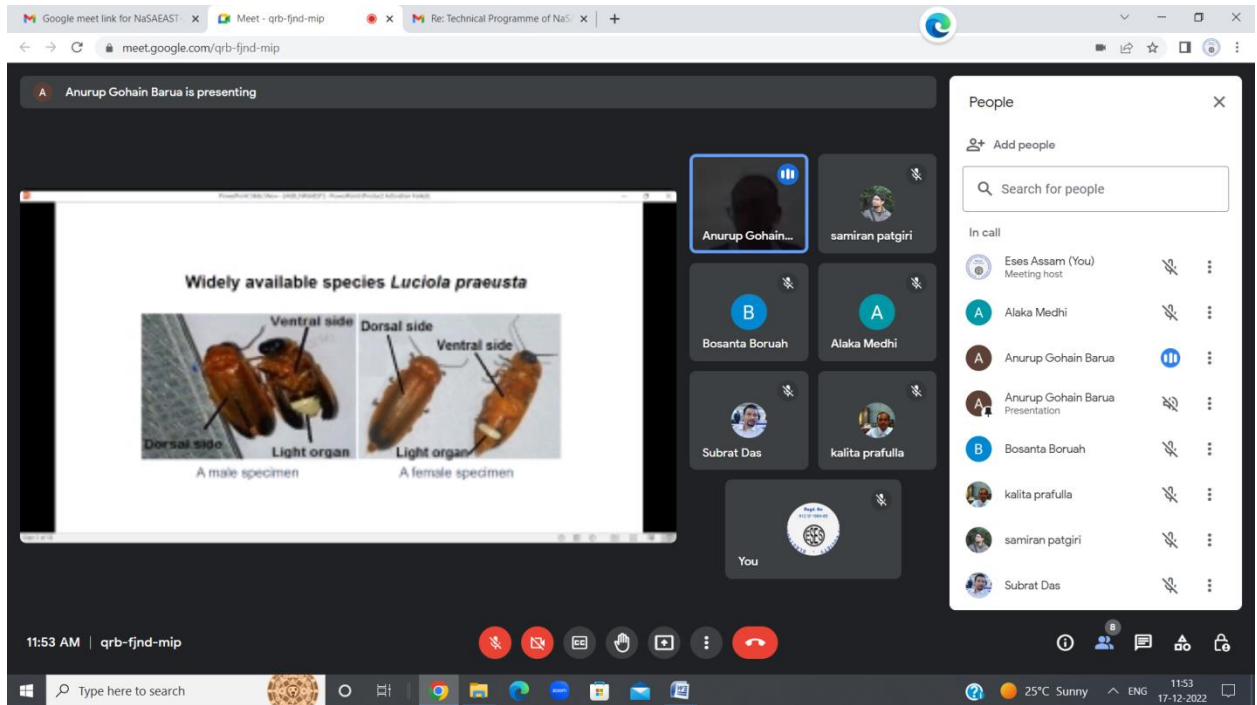
Finally, he draws his conclusion that why an experiment, irrespective of being successful or unsuccessful, can give an important lesson and where to draw a line in terms of the implications of the experiment. However, to build up more young persons as experimentalists Prof Baruah suggested that it is high time to break stereotype modes, involve young talent, and also important to refine the mode of communication ( Slide II).



Slide II: Display a part of the lecture of Prof. Baruah

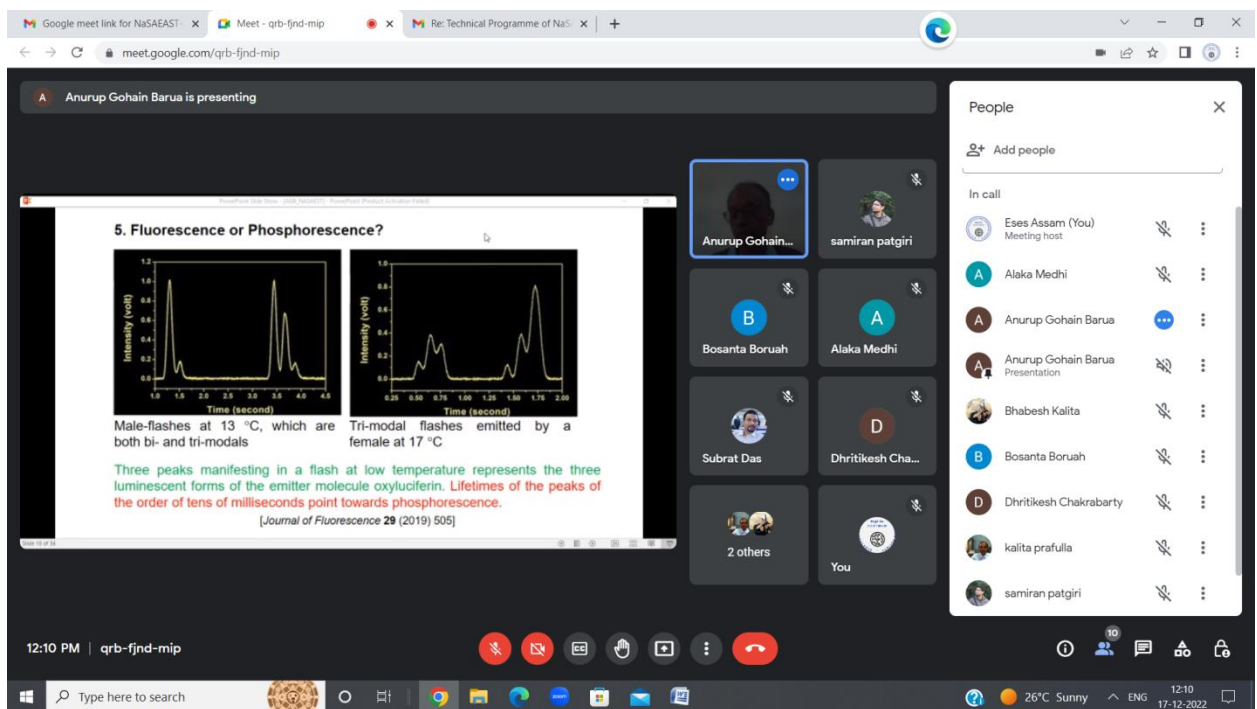
The talk was highly appreciated and followed by lively interactive communication from the participants with great satisfaction to the viewers. Based on this outcome the ESES decided to request Prof Baruah for possible publication of the article in the IJEAR next issue.

The invited talk on *Light Emissions from the Firefly at High and Low Temperatures*, by Prof A Gohain Barua of the Department of Physics, Gauhati University was in online mode and with a brief introduction of Professor presented by Dr. Samiran Patgiri, the deliberation started with examples of two species firefly (of the Indian species *Luciolapraeusta* and *Sclerotiasubstriata*, Slide III ).



Slide III: Display a species taken for study by Prof Gohain Barua

Prof. Gohain Barua then displayed through necessary spectral components ( Slide iv) as how



Slide iv: Intensity spectra at different temperatures, a part of the display of Prof. GohainBarua

as how pulsed emissions from some specimens change in color shifts at temperatures considerably higher and lower than the ones at which they normally flash. When the temperature is raised the peak wavelengths get red-shifted and the emitted pulses become the narrowest which broaden considerably thereafter for small increases in temperature, as demonstrated. These observations are explained through the thermal denaturation of the enzyme and when the temperature is decreased, the peaks get blue-shifted, and the flash durations increase abnormally with large fluctuation; these he associated with cold denaturation of the luciferases of the two species].

This well-presented topic based on fundamental science and extensive experimental observations drew interactions from participants and a lively discussion followed.

The presentation from D Chakrabarty on the topic *Integral Valued Numerical Data: Measure of central Tendency ( invited)*. In this presentation, Dr. Chakrabarty demonstrated through statistical analysis mainly taking mean and mode values of the data set how to obtain a correct measure of the central tendency of the set. Because the tendency of data may not always be towards the central portion of the data in reality. There are situations where the tendency of data is not towards the central/middle portion of the data but towards one endpoint of the data set.

He displayed examples of rainy days of data from different Indian stations and shows that if data on a number of rainy days is collected and the tendency is calculated by the existing measures then the value obtained will be different from  $>0$ . But, the real/actual tendency of a number of rainy days, in this case, is 0.

He finally demonstrated that the central tendency of data may not always be towards the central portion of the data in reality. It may be towards one endpoint of the data set. Thus, tendency Dr.Chakrabarty said that can be regarded as a basic characteristic of data so the central tendency is a special case of this characteristic and can be more appropriate to say “measure of the tendency of data” than to say “measure of central tendency of data”.

*The topic* draws good attraction as the subject has strong application uses especially in weather forecasts. In fact, the interactive session moved on parallel with the presentation.

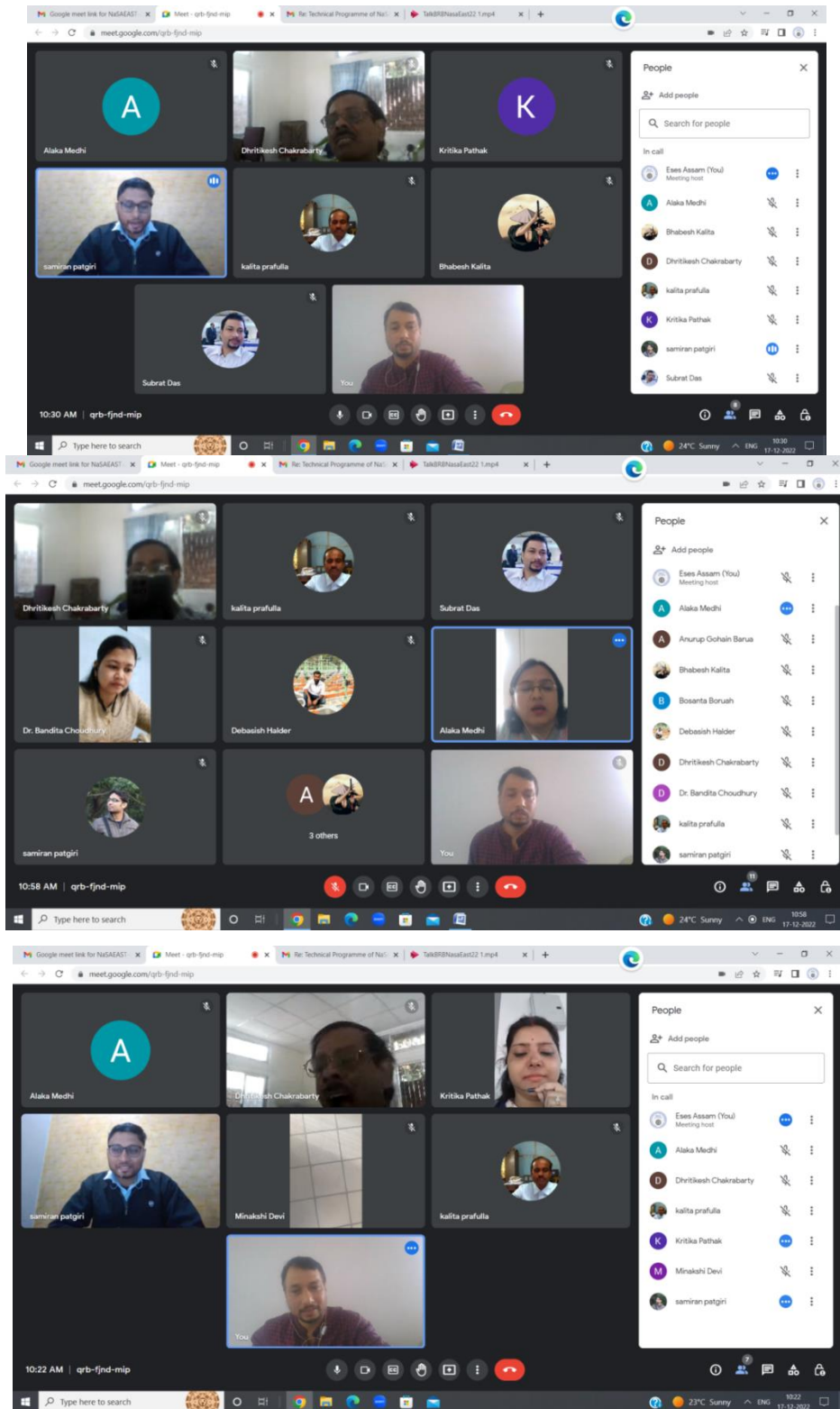


Announcement from the Convener Poster and Model Session: The session ends with an announcement from P.C. Kalita the convener of the special session on Poster and Model Competition regarding the necessary guidelines for joining in the session.

Closing of Session: The convener NaSAEAST -22, Dr. S. Das announces the closing of the program of December 17 with an announcement on the opening of the program on December 18 with the poster and model session

A view of the section of participants is displayed in slide v (Hybrid mode)





Slide v: A view of participants in physical presence and online

18.12.2022

**The Special session on posters and Model display and competition**

From 1030 hrs to 1330 hrs :

The poster session was opened by the Secretary of ESES and the Session Convener Mr. P.C. Kalita welcomed the young participants.

There were 10 displays from school students demonstrating with graphs, symbols, and ray diagrams the fundamental laws of science like reflection, refraction, SH Motion and hologram. In electrical and electronic areas, the significance of series/parallel connections was demonstrated through self-assembled circuits; verification of ohms law was demonstrated as also its application in circuits. One display covers the symbols of different electrical & electronic components from passive to active ones.

**Computer components and assembly:** The convener of this session demonstrated how the different parts of a computer work by separating different units of a computer from memory devices ROM, RAM, peripheral and interfacing devices ( slide vi). The working principle of SMPS was described and the advantage of the SMPS over conventional PS systems are explained through practical examples. The interests of young students in this area have encouraged the organizers

to arrange a such training program for young students in the future.





Slide vi: The Convener of Poster and Model Session Mr. P.C. Kalita demonstrates the working of the different modules of a computer joined by the members and participants



Dr. Bandita Choudyaru accompanied by Dr. D Chakrabaty judged the quality of posters and the performance of students( sslide vii). Based on these criteria Debjyoti Das is selected as the best candidate for the poster presentation.



Slide vii : Dr. Bandita Chudhary in the process of examining the posters. Members joined her,

### **Technical Session II**

The session started with a welcome by the Secretary ESES to the participants

The Paper (Invited) on *Local time, annual, latitude, and seasonal variations of total electron content over Japan* by Prof Oyama and Dr.K. Noguch from Kyushu University, Fukuoka, Japan was brought into the discussion in relation to GPS TEC observation over Guwahati and Okinawa. (with due permission) by Prof M.Devi with active participation from Dr.Arup J Deva Sharma and Dr. Bandita Choudhary. The TEC profiles from Wakkanai to Okinowa are presented with the TEC peak relation with solar activity These are compared with those from GPS-derived TEC over Guwahati. The issue finally brought was to identify an index of earthquake precursor on Anomaly crest station over Okinawa and Guwahati, and decided to take this problem as our future plan of work.



### **The Closing Session**

The Session concludes with a summary of the output of the Semiprepared by the Committee and presented by Dr. A D Sharma with a vote of thanks

The success of the Seminar involves many factors not only efforts from the President Secretary, and members of the organizing committee but on deliberation modes & topics from Invited Speakers as well as participation from academicians, researchers and students. Based on these parameters NaSAEAST 2022 came to a successful ending on the 18th of December 2022

For this success, The President of ESES Prof A.K. Barbara was thanked profusely for his great moral support toward the Society.

The deliberation of invited speaker Prof B . R. Barua of the Department of Physics, IIT Guwahati on the topic *Musing of an experimentalist* was highly appreciated and followed by lively interactive communication from the participants with great satisfaction to the viewers. Based on this outcome the ESES decided to request Prof Baruah for possible publication of the article in the IJEAR next issue.

The invited talk on *Light Emissions from the Firefly at High and Low Temperatures*, by Prof A Gohain Barua of the Department of Physics, Gauhati University was very well presented on fundamental science with extensive experimental observations. The application potentialities are also discussed by the professor in response to the participants' inquiry.

The presentation from D Chakrabarty on the topic *Integral Valued Numerical Data: Measure of Tendency (invited)* draws good attraction as the topic has strong application uses especially in weather forecasts. There are interactions even during the presentation of the work.

The Paper (Invited) on *Local time, annual, latitude, and seasonal variations of total electron content over Japan* by Prof Oyama and Dr.K. Noguch from Kyushu University, Fukuoka, Japan was brought into the discussion in relation to GPS TEC observation over Guwahati and Okinawa. (with due permission) by Prof M.Devi with active participation from Dr.Arup J Deva Sharma and Dr. Bandita Choudhary. The issue finally brought was to identify an index of earthquake precursor on Anomaly crest station over Okinawa and Guwahati, and decided to take this problem as our future plan of work.

### **Prize award Session :**

In a short session, the members emphasize the need for such competitions amongst the young enthusiastic young minds to make Science Easy to Comprehend and Attractive to take this as a career. Rituraj Das, a student of class VIII was selected as the best poster presenter, and the award and offered to him by the Secretary ESES at the closing ceremony ( slide viii).



Slide viii: Rituraj Das a student of class VIII received the best poster presenter award from the Secretary of ESES.

### **Vote of Thanks**

Profound thanks were offered to President ESES for his long-standing moral support.

(On academic contribution)

Grateful thanks go to Prof B.R Baruah, Prof A Gohain Barua, and Dr . D Chakrabarty, for their valuable presentations, to Prof Oyama and K. Noguch for their paper on *Local time, annual, latitude, and seasonal variations of total electron content over Japan*, and also to Dr, Arup J Deva sarma and Dr.Bandita Choudhary for full participation in the discussion of Prof M. Devi related to this paper of Prof Oyama, planned to be implemented on Earthquake induced Density features between Okinawa and Guwahati.

(On Overall)

The contribution of the Secretary of ESES Prof. M.Devi was immense without her all-around management it would have been impossible to convene the Seminar, as commented by Mr.P.C.Kalita., who Mr. Kalita also deserves special thanks for his very sincere efforts and involvement in arranging the poster session to make it a success.

Sincere Thanks go to Dr. Subrat Das ( convener NasAEAST -2022 ), Dr. Alaka Medhi, and Dr. Samiran Patgiri for their full support in the conduction of the Seminar in this Hybrid mode of operation.

Special thanks are deserved by Abhay Mali, Rakesh Ali, and Sanjib Kr. Deka for their sincere work in making the New Convention site of ESES presentable for the meeting and also for their total involvement in the entire NaSAEAST period to make it a grand event.

The active participation of the Research Scholars and Faculty members from different institutes who have made a way in the success of the meet was duly acknowledged.

Last, but not least thanks go to young school children involved in the poster/model display, and special to Ms. Hiramoni Kalita for her help in the Poster session.

### **Resolutions Adopted :**

The organizer in the sitting of the closing Session adopted the following resolutions :

(i) Suggested by Dr. Banditav Choudury that activities of the ESES should not be confined to its Secreatrite ( Guwahati) only, but need be convened at different schools, Colleges, and institutes of various parts of Assam,

Resolution: Accepted

(ii) Finally, the NaSAEST 2022 organizer resolves to meet in April 2023 under the platform of NaSAEAST -2023.

Resolution: Accepted









Slide ix: Relaxed after the event

NaSAEAST-22 came to the **Successful Completion** in all the aimed spheres with cooperation from all.





Thank you all, with special to online participants and viewers ( slide x).  
So till next.

Finally to All our Friends across the Globe from ESES members & NaSAEAST participants:

Dear Colleagues,

*Wishing you all a Happy New Year*

*明けましておめでとうございます。(Akemashite omedetō gozaimasu!)* [Japanese]

*새해 복 많이 받으십시오 (saehae bok mani badeusipsio)* [South Korean]

*ч е с т и т а н о в а г о д и н а (Chestita nova godina)* [Bulgarian]

*Buon Anno* [Italian]

*щ а с л и в о г о Н о в о г о р о к у (shchaslyvoho Novoho roku)*

[Ukrainian]

*Natun Basarar subheshara* [Assamese]

Meet you in 2023.

*Mitsutoshi Denei*

(Secretary ESES)

## ANNEXURES

Organizing Committee  
Call Letters  
Program



# National Seminar on Advances in Electronics and Allied Science & Technology (NaSAEAST-2022)

Organised by

**Electronic Scientists and Engineers Society (ESES)**  
December 17-18, 2022      Operational mode: Hybrid

## Organizing Committee

### President:

**Prof. Ananda Kr. Barbara,**  
Former Dean of Science, GU

### Secretary:

**Prof. Minakshi Devi**  
Former HoD Deptt. of Physics, GU  
Founder & Former I.C ST Radar Centre, GU

### Asst. Secretary:

**Dr. Kashyap Prakesh,**  
Executive Member, ESES

### Convener:

**Dr. Subrat Das,**  
Scientific Officer,  
ST Radar Centre, GU

### Jt-Convener:

**Dr. Dhritikesh Chakabarty,**  
Former HoD, Deptt. of Statistics  
Handique Girls' College, Guwahati

### Treasurer:

**Dr. Alaka Medhi**  
Scientific Officer, ST Radar Centre, GU  
**Dr. Samiran Patgiri,**  
Research Scientist, ST Radar Centre, GU

### Convener poster/model competition

**Mr. Prafulla C. Kalita,**  
Foreman (i/c), Physics Workshop,  
Deptt. of Physics, GU

### NOC Members:

**Prof. K P Ray,** Defence Institute of Advanced Technology,  
Pune  
**Prof. P.V Koparkar,** Ex Dean NEHU, Shillong  
**Dr. S K Sarkar,** Ex Head - RSD, NPL,  
New Delhi

**Prof. D Singh,** Professor, IIT, Roorkee  
**Prof. M V N S Prasad,** Professor, Andhra University,  
Visakhapatnam  
**Dr. R K Barman,** Former Head, Science & Technology,  
ASTEC, Guwahati  
**Prof. B.R.Baruah,** Professor, Deptt. of Physics, IIT  
Guwahati  
**Dr. B.K Sarma,** Former HoD,  
Deptt. of statistics, B N College, Dhubri  
**Dr. S.Kundu** Senior Scientist, NESAC, Shillong

### LOC Members:

**Prof. P.H Talukdar,** Former HoD, USIC, GU  
**Dr. Abhijit Sarma** Former HoD, Computer Science  
Department, GU  
**Prof. A Gohain Barua**, Professor, Deptt. of Physics,  
**Dr. Malay Kr Barman**, HoD Physics, M C College,  
Barpeta  
**Dr. Arup Jyoti Deba Sarma**, Rector, Province  
College, Sonapur, Guwahati  
**Dr. Bandita Choudhury**, Assistant Professor, Anand  
Barooah Academy, Pathsalala  
**Dr. Rabindra Mahato**, Associate Professor, Science  
College, Kokrajhar  
**Dr. Nilam. Dutta**, Assistant Professor, Deptt.  
of Physics, B N College, Dhubri  
**Dr. Archana Bora**, Associate Professor, Deptt. of Ap  
Physics, IST GU  
**Dr. Santanu Konwar**, Assistant Professor, Deptt. of  
Physics Abhayapuri College

### Student Members:

**Hiramoni Kalita**  
**Debashis Halder**  
**Bhabesh Kalita**

### Associated Member:

**Mr. Abhay Mali**, ST Radar Centre, GU  
**Mr. Rakesh Ali**, ST Radar Centre, GU  
**Mr. Sanjeeb Deka**, ESES



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Organised by  
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December 17-18, 2022 Operational mode: Hybrid

**President:**

Prof. Ananda Kr. Barbara,  
Former Dean of Science, GU

**Secretary:**

Prof. Minakshi Devi  
Former HoD Deptt. of Physics, GU  
Founder & Former I/C ST Radar Centre, GU

**Asst. Secretary:**

Dr. Kashyap Prakesh,  
Executive Member, ESES

**Convener:**

Dr. Subrat Das,  
Scientific Officer,  
ST Radar Centre, GU

**Jt-Convener:**

Dr. Dhritikesh Chakabarty,  
Former HoD, Deptt. of Statistics  
Handique Girls' College, Guwahati

**Treasurer:**

Dr. Alaka Medhi  
Scientific Officer, ST Radar Centre, GU  
Dr. Samiran Patgiri,  
Research Scientist, ST Radar Centre, GU

**Convener poster/model competition**

Mr. Prafulla C. Kalita,  
Foreman (i/c), Physics Workshop,  
Deptt. of Physics, GU

**NOC Members:**

Prof. K P Ray, Defence Institute of Advanced  
Technology, Pune

Prof. P.V Koparkar, Ex Dean NEHU, Shillong

Dr. S K Sarkar, Ex Head - RSD, NPL,  
New Delhi

Prof. D Singh, Professor, IIT, Roorkee

Prof. M V N S Prasad, Professor, Andhra  
University, Visakhapatnam

Dr. R K Barman, Former Head, Science &  
Technology, ASTEC, Guwahati

Prof. B.R. Baruah, Professor, Deptt. of  
Physics, IIT Guwahati

Dr. B.K. Sarma, Former HoD,  
Deptt. of statistics, B N College, Dhubri

Dr. S.Kundu Senior Scientist, NESAC,  
Shillong

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Memo No.NaSAEAST- 2022/MS-01

Date: 22/11/2022

### Call for Paper/Participation

We are happy to announce that the Electronic Scientists and Engineers Society (ESES) is organizing its annual convention the NaSAEAST -2022 during 17-18 December 2022. The objective of the ESES through such a seminar is to create an in-person interactive platform between young scientists and engineers of the North East Region and experienced researchers & academicians of the country, but the Pandemic situation has compelled the Society to go for Webinar in the last two years. This year too, even with the ease of this situation, the Society has decided to keep a safe protocol by arranging the seminar in a Hybrid mode. For invited speakers from institutes far from the convention center we prefer to have from them an online deliberation, and we keep this option open for college/school students since the poster competition is arranged at this level.

Based on these aims and objectives, the NaSAEAST-2022 welcomes papers from scientists, engineers, academicians, and research scholars on the following themes:

1. State of art electronic system design and application: Future potentialities towards fundamental and applied research.
2. Remote sensing techniques in the exploration of causes of current atmospheric changes including natural hazards, like Earthquakes, Solar disturbances, and Climate modification.
3. Signal processing.
4. Digital Communication and Networks.
5. Computational methods in applied science and technology.
6. Bio Science & Tehnology
7. Pandemics and their growth: Solar Terrestrial environment & background

Participants willing to contribute papers to the Seminar may kindly send their abstracts to the following email addresses, no later than December 14, 2022.

The organizer also welcomes participation with no formal paper presentation and those interested to join may kindly contact the Convener NaSAEAST -2022 or mail to the ESES account so that they are provided with the Google link on the opening of the Seminar.

**Special Session: Poster/Model Competition (for college and School students)**

Themes :

1. Pollution, environment, and weather (Open).
2. On fundamental Laws of Physics/ Science of any branch (School level)
2. Alien in space (College level).
3. Recent breakthroughs in Science and Technology (Open)

Interested participants from Colleges and High Schools may contact the Convener of the Poster/Model session Mr. P. C. Kalita (Mobile No:9435860436).

*Minakshi Devi*

Dr. Subrat Das  
Convener (NaSAEAST -2022).

Prof. Minakshi Devi  
Secretary ESES

Venue: ESES Secretariate, Working Complex Contact Details:

Mobile No:9864056314/ 8486003260

Email: eses.assam@gmail.com / md555gu@gmail.com



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# **National Seminar on Advances in Electronics and Allied Science & Technology (NaSAEAST-2022)**

**December 17-18**

Operational mode: Hybrid

**PROGRAMME**

**Venue: ESES Convention site (New)**



**17.12.2022**

1000 hrs to 1030 hrs      In-house meeting of the ESES members  
ESES Convention Centre

**Opening of the Seminar**

(online)

1030 hrs to 1100 hrs:      President-ESES, Prof. A.K.Barbara opens the NaSAEAST- 2022  
with the inaugural speech

**Technical Session I**

(online)

1100 hrs to 1145 hrs:      **OT\_NaSAEAST-22-01(I): *Musing of an experimentalist***  
Prof. B.R.Baruah  
Professor  
Deptt of Physics  
IIT Guwahati

1145 hrs to 1230 hrs:      **BST\_NaSAEAST-22-01(I): *Light Emissions from the Firefly at  
High and Low Temperatures***  
Prof. A. Gohain Barua  
Professor  
Deptt of Physics  
Gauhati University

1230 hrs to 1240 hrs:      Announcement of the *Model/Poster Session*  
Mr. P.C. Kalita  
Deptt of Physics,  
Gauhati University

1240hrs to 1400 hrs      Lunch break

**Technical Session I (continued)**

1400 hrs to 1445 hrs:      **CMAST \_ NaSAEAST-22-01 (I): *Integral Valued Numerical Data:  
Measure of Tendency***  
Dr. D Chakarbarty  
Independent Researcher  
Ex HoD Deptt.Statistics,  
Handique Girls College  
Guwahati

1445 hrs to 1500 hrs

Closing of the Sessions

**18.12.2022**

**Session on: Poster/ Model Competition**

From 0930 hrs -1500 hrs

Convener : Mr P.C.Kalita .Department of Physics GU

Venue: ESES Convention Centre

**Technical Session II**

(online)

1015 hrs to 1100hrs:

**RSTNZ\_NaSAEAST 22-01(I):** *Application of Remote Sensing Techniques in Climate and weather predictions*

Prof. P.V.Koparkar  
Ex Head USIC NEHU  
Shillong

1100hrs to 1145 hrs:

**RSTNZ\_NaSAEAST 22-02(I):** *Local time, annual, latitude, and seasonal variations of total electron content over Japan*

Prof. K.-I.Oyama<sup>1,2,3</sup>, and Dr.K. Noguch<sup>4</sup>,

1 International Center for Space Weather Study and Education, Kyushu University, Fukuoka, Japan

2 Institute of Plasma and Space Sciences, National Cheng Kung University, Taiwan

3. Coltd Asia Space Environment Research Consortium, Sagamihara, Japan

4. Department of information and computer sciences Nagoya Women's University, Nara Japan

(Based on IJEAR publication, 2019; On invitation permitted to present and discuss with references to Anomaly features of Guwahati TEC )

1145 hrs to 1300 hrs:

Contributory presentations

1300 hrs to 1400 hrs:

Lunch break

1500 hrs to 1530 hrs:

Prize distribution (on Model/Poster competition ) &

Closing of NaSAEAST 2022

Vote of Thanks by Dr. Arup J Sarma

***Other programs of the Society to create harmony and goodwill amongst members :***

**One day with Lord Vishwakarma, the 17th of September 2022 by the ESES members at the new working site of the Society.**



***Oh Lord Viswakarma : Pranam to You  
: Lighting of the earthen lamps surrounding the Lord, a symbolic gesture on the offer of devotion to the divine architect , the pure soothing flames stimulating serenity of the environment bring deeper feelings ...***

**View graph: Lord Vishwakarma installed in the new working platform of ESES**

The decade-old tradition of ESES to respect the valued faith of the Society that brings harmony between all sections, irrespective of religion and social status along with a motto of blending between “Science and Faith”, this year's celebration of Vishwakarma -Day by the ESES is an epitome.

With the new site of the ESES as the base platform (yet to come up to the stage), with the new green environment and young new faces, the ESES started Vishwakarma Day, at 7 in the morning with Vedic Mantra and puja conducted by an acclaimed Hindu priest with full religious ritual. The puja ended in seeking blessings from the Devine Engineer to bestow us the willpower to work toward creating a valued tech-scientific environment.

The next phase begins with the prayer/hymn from the Secretary ESES mostly in Native Assamese and a part in Sanskrit sloka, as a special offer of respect to Vishwakarma from the Society itself. A discussion was then followed on the philosophies behind the ritual, as briefed by the Secretary ESES, which are based on (i) Respect for work culture (ii) Respect for all surrounding devices/systems we live with, treating those with care and gentleness, as every part of our surroundings is an integral part of our life and (iii) Respect for those who put labor for cultivating these exercises irrespective of the status.

The end result was very encouraging and perhaps impressive. In the outcome, we have Md. Hanippua a student from a far-flung area of Assam who volunteered and recited a verse from the Koran as a token of faith to the Devine architect. Yes, it was the blending of faith. It was also the tradition that goes in his native place to keep the Day free of any mechanical/engineering exercises to make “ a day- rest ” for the instruments!

So this is the traditional faith to all, as the teaching of Vishwakarma, irrespective of religion, caste/creed. So why the barrier?

“O Vishwakarma, pranam to you ” we all offered and were Happy at the end of the Day.

The event is closed with gratitude to Prof. A K.Barabra, President of the Society for his incentive in relocating the working station of the Society which has come almost to reality now. The President though was to be with us on this special occasion, but could not make it due to an unforeseen situation. We deeply felt for his absence and promise to arrange a program soon with him on the new site.



A section of the ESES members at the end of the ritual took the blessing of the Lord with Nirmali and Prasad to go with it ( at the new office yet to come up to the stage)

Our appreciation to all those who were involved in the event;

Prof A.K.Barbara ( he could not be present in person), Dr. D Chakrabarty, Mr .P.C.Kalia, Mr. N. Misra, Mr. Bhabesh Kalita, Mr. Sanjiv Deka, Mr. Tarun.Kalita, Mr. Mannaf Kaji, Md. Hanippua , Md. Zaman and Nazimula .



*Minakshi Devi*  
Minakshi Devi  
Secretary ESES