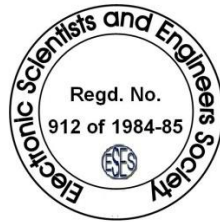


# ELECTRONIC SCIENTISTS & ENGINEERS SOCIETY (ESES)



*Report and activities of the Electronic Scientists and Engineers Society (ESES)*

*- 2021*

**(i) Welcome to the year 2021 :**

The ESES begins the NEW YEAR 2021 with great hope and expectation on the successful development of the killer vaccine of COVID-19 , and with that hope ESES members tried to set aside the horrible experiences of Pandemic disaster of 2020 and to make a fresh beginning they welcome the New dawn through arranging a learned talk of Prof. A.K.Barbara on “ Looking in to things and Scientific discovery”. He ended by associating Physics with Religion.

The session started with sharing of cakes and traditional meal with good will wishes to all the global community for the Year 2021 and finally it came to a close with the National Anthem “ O MourAponerDesh ....” ( View graph 1)





Pictures 1 : The welcome assembly on the eve of 2021

**( A ) Activities at Research level :**

**(a) Programmes organized by ESES on visits of college students to research institutes**

On February 9, 2021 with the COVID -19 situations apparently stated to have improved, the ESES members in collaboration with M.C.Collge Barpeta organized a visit of young college teachers and students to the ST Radar centre . The technical demonstration of the system was conducted by Dr. Alaka Medhi and Dr. Subrat Das, EC members of ESES ( View graphs 2 )during the site visit of the group of 45 students guided by their teachers Dr. Malay kumar Barman, Dr.Pratyush Purkayastha, Ms.Archana Das and Mr.Pranjal Kalita. The discussions on the possible collaborative research programme were then followed but the action plan got deferred as pandemic situation suddenly got worsened. Both parties plan to meet when the situation is improved.





View graphs 2 :Visits of young college teachers and students of M.C College Borpeta to ST Radar centre. DrAlaka Medhi , the EC member of the ESES, demonstrated the functioning of the ST Radar system to the visitors.

**(b) Research seminars attended by the society members:**

The following EC members of the ESES took part in research level discourses in webinar as a part of academic attainment. Because of the Pandemic lockdown and imposed curfew, physical interactive participation were not possible.

1. Dr. Subrat Das on 25 June 2021 ,Topic: The energy of Money- Spiritual Hack to become Rich
2. SamiranPatgiri :
  - (i) “Short time online Course on Python programming and its application on computational Physics ” organized by Dept. of Physics, Kokrajha University, 2020
  - (ii) “Online 21 days tutorial course on Python programming and its application ” 2021 June organized by Kitiflix online school.
3. DrAlakaMedhi participated a international webinar organized by “AGU” on 24-28 May, 2021. on the Topic: Bringing Land, Ocean, Atmosphere and Ionosphere Data to the Community for Hazards Alerts.

## **( C )Organization of Research Seminar**

National Seminar on Advances in Electronics and Allied Science & Technology  
(Online)NaSAEAST-2021  
23- 24 December-2021, *Venue:* ESES Secretariat, Guwahati -781014, Assam, India  
*Organized by*

Electronic Scientists & Engineers Society (ESES)

This seminar on National level was the Annual convention of the ESES arranged in during December 23 and 24 with a pre seminar workshop on December 22 ( along with an interactive session with the unemployed educated women) . which was planned for May 2021, but had to be postponed, because of the imposed lockdown and curfew.

The Brochure NaSAEAST-2021 is attached herewith .

The Session details of NasAEAST -21 are available in the Brochure attached herewith.20 participants took part in the programme . A few viewgraphs are presented here .

The NaSAEAST-2021 was conducted in two modes though planned to have only virtual presentation. The papers from Gauhati University and nearby institutes were presented through physical modes but deliberations for other participants from institutes away from Gauhati are mainly on virtual platform. The papers were 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 exploration to the causes leading to atmospheric changes, covering solar geomagnetic disturbances to natural hazards, like earthquake, worst weather situations.**
- 3. New approaches in the design of need based electronic systems and devices applicable to social interest.**
- 4. Signal Processing.**
- 5. Digital Communication and Networks.**
- 6. Data Mining.**
- 7. Machine Learning.**
- 8. Computational methods in applied Science and Technology.**
- 9. Nanotechnology.**
- 10. Artificial Intelligence and Robotics.**

There were 14 papers covering all the sessions as detailed ;

**Pre Symposium programme**

**22.12.2021**

- |            |   |
|------------|---|
| 1130 -1135 | Opening of the Pre workshop announcement  |
| 1135-1200  | On development of Science & Technology: Look east Policy<br><i>Prof. A.K. Barbara, President ESES</i>                                   |
| 1200-1300  | Earthquake, Solar activity and geomagnetic Disturbances: Are there associations ?A brief review<br><i>Prof. M. Devi, Secretary ESES</i> |
| 1300-1500  | Break   |
| 1500-1510  | NaSAEAST-21 Joint Convener Dr.S. Das briefed the activities<br>Conducted during 2021  |
| 1510-1520  | Convener of the Cutting & Training Course Mr. Prafulla Kalita presents<br>the summary of the programme                                  |
| 1520-1550  | Interactive communication with participants, President ESES, Secretary<br>ESES and EC members conducted by Dr. S.Das                    |
| 1550-1620  | Reports from the ESES members on the activities conducted during<br>Pandemic: D.Chakrabarty /M.Saikia/S Das/A Medhi/S.Patgiri           |
| 1620-1630  | Comments /suggestions for future programmes   |
| 1630-1650  | Distribution of certificates to the participants of the programme/courses   |
| 1650-1700  | Votes Of Thanks   |

**23.12.2021**

**Session I**

1100-1105	Welcome by the Convener Dr. D Chakraborty ,NaSAEAST-2021
1105-1115	Prof A. K. Barbara, President ESES , briefed the convention purpose and welcome the invited speaker Prof A. Maitra
1115-1120	Introduction to Prof Maîtra By Dr. Alaka Medhi
1120-1220	Radio Wave Propagation Related to Satellite Communications (I) <i>Prof. Animesh Maitra</i> Institute of Radio Physics and Electronics University of Calcutta Kolkata 700009 [Questions /discussion]
1220-1225	Introductions to Prof Gohai Barua by Dr. Monoj Saikia
1225-1325	The Light of the Firefly (I) <i>Prof A.Gohain Barua,</i> Department of Physics, Gauhati University [Questions /discussion]
1325-1330	Vote of Thanks Dr. Subrat Das and closing of the session
1330- 1400	Lunch break

**Session II (Conducted by Dr. Monoj Sikia)**

1400-1420	Measurement of defocus using Computer Generated Holography: The Astigmatic Lens approach. <i>Santanu Konwar</i> Department of Physics, Abhayapuri College, Abahayapuri, Bongaigaon, Assam.,
1420-1440	Synthesis of Graphene Oxide by Tour Method <i>N. J. Dutta, H. K. Sangma, C. Roy</i> B. N. College, Dhubri-783324, Assam
1440- 1500	Latitudinal distribution of the equatorial plasma bubbles: Altitude variability <i>L.N. Sidorova</i> Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation (IZMIRAN), Troitsk, Russia
1500-1510	Vote of thanks and end of the session <i>Samiran Patgiri</i>
1510-1600	High Tea

**24.12.2021**

**Session III**

1100 -1105	Announcement of Opening of the Session Subrat Das, Co-Convener
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1105 -1110	Introduction to Dr D. Chakraborty by Samiran Patgiri
1100 -1200	<i>Dr. D Chakrabarti (I)</i> Department of Statistics Handique Girls' College Guwahati
1200 -1220:	A study on different digital signal processing approaches in extraction of quality information from the atmospheric system-parameters. <i>Subrat Das</i> ST Radar Centre, Gauhati University, Guwahati-14, Assam
1220- 1240	Image processing techniques adopted in density profiles of the upper atmosphere for hazard identification: Special reference to Nepal EQ of 25 <sup>th</sup> March 2015 <i>S. Patgiri<sup>1,2*</sup>, M. Devi<sup>1,2</sup>, A. K. Barbara<sup>2</sup></i> <i>ST Radar Centre, Gauhati University, Guwahati-14, Assam<sup>1</sup></i> <i>Dept. of Physics, Gauhati University, Guwahati-14, Assam<sup>2</sup></i>
1240 -1300	Validation of Wind measurements of Stratospheric Tropospheric Radar installed at Gauhati University, Guwahati India with Radiosonde measurements and model output <i>A Medhi<sup>1*</sup>, S Das<sup>1</sup>, M Devi<sup>1, 2</sup>, A K Barbara<sup>2</sup>, M Saikia<sup>1</sup>, S Patgiri</i> <i>ST Radar Centre, Gauhati University, Guwahati-14, Assam<sup>1</sup></i> <i>Dept. of Physics, Gauhati University, Guwahati-14, Assam<sup>2</sup></i>
1300 -1320	Understanding on coupling processes between upper and lower atmosphere through microwave signal propagation character during earthquake time perturbations K. Pathak*, M.Devi, A.K. Barbara
1320 -1340	Study of atmospheric boundary layer through S T radar of Gauhati University <i>M Saikia<sup>1*</sup>, M Devi<sup>1, 2</sup>, S Patgiri, S Das<sup>1</sup>, A Medhi<sup>1*</sup>, A K Barbara<sup>2</sup>,</i> <i>ST Radar Centre, Gauhati University, Guwahati-14, Assam<sup>1</sup></i> <i>Dept. of Physics, Gauhati University, Guwahati-14, Assam<sup>2</sup></i>
	Vote of thanks/ Session closed announcement by K.Pathak
1340 -1430	Lunch Break <b><u>Session IV</u></b>
1430-1600	Closing Programme

The programme started with the message from the president :

*From President ESES :*

*“My welcome to the efforts and endeavor of the **Electronic Scientists and Engineers Society (ESES)**, in organizing NaSAEAST-2021 in the pandemic environment of To-day. We realize now how fruitful to meet, talk and discuss scientific or academic problems through personal contact. But the pandemic has compelled us to arrange NaSAEAST-21 in webinar platform.*

*I am very happy that Prof A. Maitra of Calcutta university has accepted our invitation and would present a talk on “Radio wave Propagation Related to Satellite Communication, a very important topic in the digital world of today . I am confident that the deliberation will be extremely helpful to all the participants and viewers. I welcome Prof. Maitra to the NaSAEAST venue.*

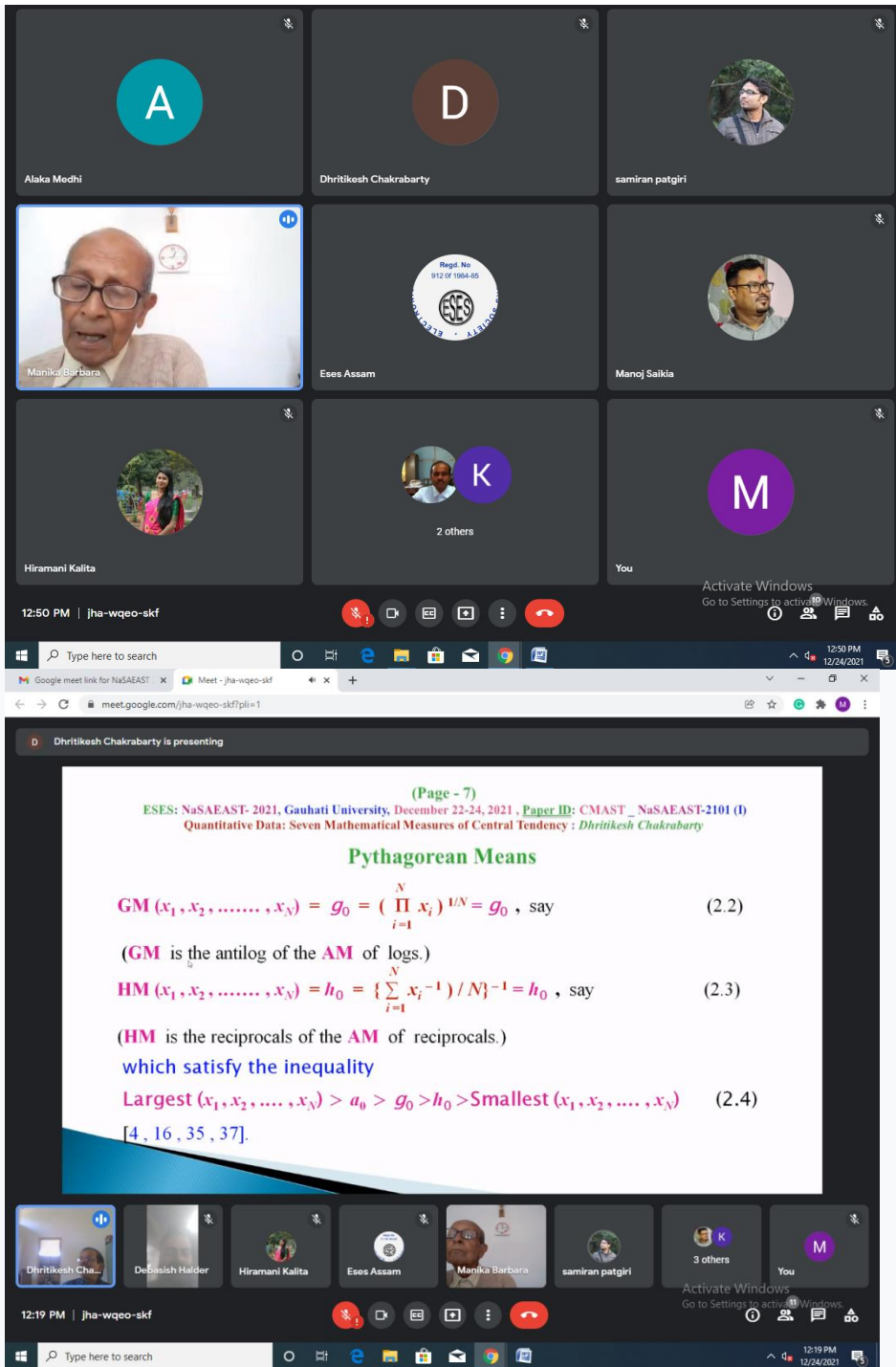
*Today we have also with us distinguished scientist Prof Anurup Gohai Barua of the department of Physics GU. His talk on the Light of the Firefly will provide the beauty of fundamental research. I am sure the young physicists will get ideas and thought from his experiment and results.*

*So Prof Gohain Barua my very best wishes to you.*

*Finally I wish to all participant and viewers to make the NaSAEAST a grand success.*

*Thanking you all.”*

A few view garphrs of the pogramme :



A few View graphs of the on going programme : Opening announcem,net by Prof. A.K.Barbara , President of the Society , display of presentation .

## 2) Launching of journal 2021

The Vol. 7 issue 2 of IJEAR, the ESES journal, was formally launched by Prof A.K.Barbara, the President of the Society. His brief speech delivered on this occasion “ I have the pleasure of launching of the IJEAR vol 7 issue 2 and do appreciate the contributions of members of the ESES for completing the volume within the COVID-19 pandemic lock down which virtually crippled all the activities ..... ”, reflects the efforts of the Society members in publishing this volume in the background of the pandemic environment that had seriously affected significant sections of the ESES family . The Editorial board regrets the delay in publishing the issue, but hopeful that the process will be regular from 2022 .

The issue contains three papers . The journal editorial board-members consider that it is their responsibility to bring awareness on the possible effects of environment and solar radiations on the Pandemic , one of the papers selected in this issue is thus based on **Pandemic/Epidemic and SolarTerrestrial environment** .The other manuscripts in the volume are devoted to technical and statistical issues relevant to applied sciences, the basic theme of the Journal.



Prof A.K.Barbara, the President of the Society and the group present during Lunching of the journal .

### (D) Training programmes:

The Society has as in other years, the following training programmes for the year 2021

- 1) Hardware interactive courses for students (deferred to October 2021)
- 2) On net- marketing ( April 28, 2021,programmewas to be conducted by Mr. Digantakakati ) (Deferred to November 2021)
- 3) Entrepreneurship training (was scheduled on May 2021 to be conducted byNabakishoreSingha CM-RF Planning OPT & Quality) (Rescheduled for November 2021 )
- 4) .Cutting and Tailoring for young women ( Convener Mr. P.C.Kalita Dept. of Physics GU , ongoing by following COVID protocol)

A briefing on the ongoing training programme

**Three – month Training programme on Cutting & Tailoring :**  
**Convener Mr P.C. Kalita and Chief Instructor Ms. Gitumni Kalita**

The three-month training programme on cutting and Tailoring is arranged with the aim to open up self employment potentialities to educated young members of the society and in response to our Call-Announcement (viewgraph -3) for participation to the programme, there were more than 20 applications . But as COVID protocol has to be maintained, only twelve applicants are enrolled in the programme, at present. We plan to admit the rest in the next batch of the course, planned for October 2021.

The session started in April 2021 as per the schedule, but we have to extend the course completion date to September because of the curtailing of working-time caused by the imposed curfew and lock down due to the pandemic .

The training programme is directed to offer full courses on cutting and tailoring of women dresses of all forms and all sorts of baby- ware.



**Electronic Scientist and Engineers Society (ESES)**  
**Reg. No. 912 of 1984-85**

### **Announcement**

#### **Three Months Training Course On Cutting and Tailoring**

*Organized by the ESES,*

(April 2021 to June 2021)

A cutting and tailoring programme is arranged by the ESES with for a duration of 3 months starting from April 2021 to June 2021 . The course will be conducted at two venues keeping the COVID 19 protocol.

Interested candidates are requested to contact the Convener of the programme or communicate to the ESES secretaries in the following email address;

Convener

Mr.P.C.Kalia

*Venue: Jogipara, VIP, Ghy-15*

*Mobile: 9435860436 / 8472895452*

email address of ESES

eses.assm@gmail.com

- **Extended to September 2021 because of Lockdown and Curfew imposed due to Pandemic**

Viewgraph -3 of Call-Announcement for Participation to 3-months Training programme on Cutting & Tailoring

The ESES members note with pleasure that the vocational training programmes be it on design & assembly of Electronic/Electrical circuits or on Cutting and Tailoring , attract participants of all ages irrespective of educational qualification, an index of success of such events . The participants (list attached Table I) of ongoing three- month course also consist of women members irrespective of ages and qualifications. The programme started with COVID -19 protocol and 14 women have joined in the session. The programme is now extended to October 2021, on requests from the participants.

Table I

List of participants  
On  
Three months training programme on Cuttings and Tailoring

Sl No	Name of the Participant	Age	Educational Qualification
1	Mrs. RinkuNath	18 years	Higher Secondary (HS)
2	Mrs. RuumaniNath	21 years	Higher Secondary (HS)
3	Mrs. Barnali Choudhury Nath	32 years	Master of Arts (MA)
4	Ms. Himasri Das	21 years	High School leaving Certificate (HSLC)
5	Mrs. DoliKakatiNath	35 years	Bachelor of Arts (BA)
6	Mrs. AntasikhaSaharia	28 years	Master of Arts (MA)
7	Mrs. Sibani Das	32 years	School level ( Class VIII)
8	Mrs .SangitaNath	26 years	Higher Secondary (HS)
9	Mrs. KarabiNath Das	27 years	Bachelor of Arts (BA)
10	Ms. KanikaPatgiri	35 years	Higher Secondary (HS)
11	Mrs. Anjali Das Nath	32 years	School level ( Class VIII)
12	Mrs. Anjali Das	26 years	School level ( Class VIII)
13	Ms. Seema Sonar	--	High School leaving Certificate (HSLC)
14	Ms. Chaya Pathak	--	Master of Arts (MA)

A few photographs (View graphs- 4) of the ongoing programme are displayed here, where the participants are trained single handedly by the chief instructor MsGitumoniKalita. The programme is supervised by Mr. P.C Kalita so that strict COVID-19 protocols are being maintained during the sessions.







View graph 4 :The participants at their different stages of learning, in the ongoing training programme on Cutting & Tailoring.They are trained single handedly by Mrs.Gitumonikalia ,the Chief instructor and the sessions are supervised by Mr. P.C kalita, the convener of the course.

### ( C ) . Recreation programe

#### **Saraswati Puja the Goddess of learning: Celebration towards the achievements of ESES Philosophy:**

Every year it is the ritual of the members of the ESES to offer their solemn prayer to Devi Saraswati , the Goddess of Learning & Wisdom. On this occasion, the 14th of February this year, the members and the community around, performed this religious ritual with usual traditional blending, though subdued by the COVID- 19 pandemics. Members offered their adoring invocation to Goddess Saraswati and sought blessings‘ Oh the Goddess of learning , you are the power of Wisdom, and Knowledge ,..... bestow us the greatest wealth of human being “The Knowledge ” and guide us to the path of “Wisdom”.

Finally, with the a learned deliberation from Prof A K Babara the president of ESES on the topic of “Wisdom, power and Science “ , the event came to a close,



Picture 6 :Saraswati the Goddess of learning: On this D- day : the alter and the devotees.

### **.(D) Additional activities ;During COVID-19 Pandemic :**

The Society members opened up their services this year by providing financial and other assistances to those who have suffered during this pandemic. Because of the imposed lock down and curfew during the pandemic, the EC members of the Society had to offer individual services ( in many cases) to the needy ones of their own locality through as detailed :

Item	Amount	Contributors
1. Financial support for survival to the needy ones	20,000/=	EC Members : Prof A,K,Barbara,Prof.M.Devi. Dr.M Saikia , Dr,S.Das , Dr.AlakaMedhi, Mr S. Patgiri , Mr. P.C.kalita and member Mr. A.Mali
2.Food materials (rice. vegetables, and necessary items)	Un accountable	EC Members : Prof A,K,Barbara,Prof.M.Devi. Dr.M Saikia , Dr,S.Das , Dr.AlakaMedhi, Mr S. Patgiri , Mr. P.C.kalita and member Mr. A.Mali
3, Medical assistances	Rs 16,500/-	EC Member Prof. M.Devi
4. Providing infrastructure to go for large scale professional cultivation as self help, (detailed below)	Un accountable	Main Coordinator : EC member  Mr. S ,Patgiri

### **Mass scale plantation of Sea sum and Pumpkin as a support of self employment to the educated youth :**

The project is coordinated & patronized by the ESES EC member Mr. Samirna Patgiri at his home district during the Pandemic period when there was severe crunching of employment avenues. The entire program was started from July 2020 with ground preparation for cultivation within the allotted area of 7 Bighas for Sea-sum plantation and 12 Bighas for pumpkin cultivation and the program is continued till date with creation of additional infrastructure facilities.

The group consists of 10 members (viewgraph 6) and they worked hard from ground preparation to seeding and harvesting.



Viewgraph 6:

(i) **Seasum Plantation:** The ground preparation for Sea-sum plantation started in late August 2020, with the group members working alone taking no helping hand from outside (view graph 7). The blooming of the seasum (view graph 8) and picking of the harvest and the process of extraction of full grown sea-sum seeds are the final product of their labour (viewgraphs 9).





m

Viewgraph 7 : Ground preparation for Seasum



Viewgraph 8 :Full grown Sea sum plant



Viewgraph 9 : Harvesting and extraction of Sea sum seeds

### **(ii) Cultivation of pumpkin ,**

This programme started in late December 2020 and continued to the early part of 2021 when full grown pumpkins are harvested. However this project is still alive and would be carried on yearly basis as the hardest part of the job that is the ground preparation had been completed with full exercises.

The ground preparation process for pumpkin cultivation is equally laborious as one can view from viewgraph 10 (a,b), as how hard the group exercised their labor in making the land fertile for healthy growth of pumpkin. With the starting of spouting (viewgraph10c) the cultivation is on its way . Finally the job completed with harvesting (viewgraph 10d) and final collection of health pumpkins ( viewgraphs 10e).



View graphs 10 (a,b,) Land preparation for pumpkin cultivation and ( c) Spouting started



View graph :10 (d) Harvesting and (e) pumpkin collected ,the final product.

The Society welcomes and appreciates the contribution and volunteering support extended by the ESES members towards helping the needy ones duringthe Pandemic.

***(E) Seeking Blessings from the Devine God Viswakarma;***

On the Day of September 17, 2021 :

The day of September 17, is a special one to the members of the ESES, a society that foots on the Technical and scientific platform. The members wait for the Day, every year, to offer their solemn prayers to God Viswakarma, the divine architect, engineer and craftsman of supreme technical skill and creativity . With the COVID-19 pandemic still at large, the event of this year 2021, was performed under strict austere mode but the religious ritual -sincerity was echoed through the devoted prayers from the members . The serenity of the environment was maintained by embedding traditional and originality of the entire Puja protocol. The event was beautifully conducted by inter- blending prayers from all the devotees joined in the programme.

Finally , with the folded hands the members sought blessing from the God “Oh the Devine Power, bestow to us the most precious wealth of a Society , the technical & Creativity skill ....”

With that hope and expectation the event came to a close.



The alter is prepared to welcome the devine Engineer Viswakarma



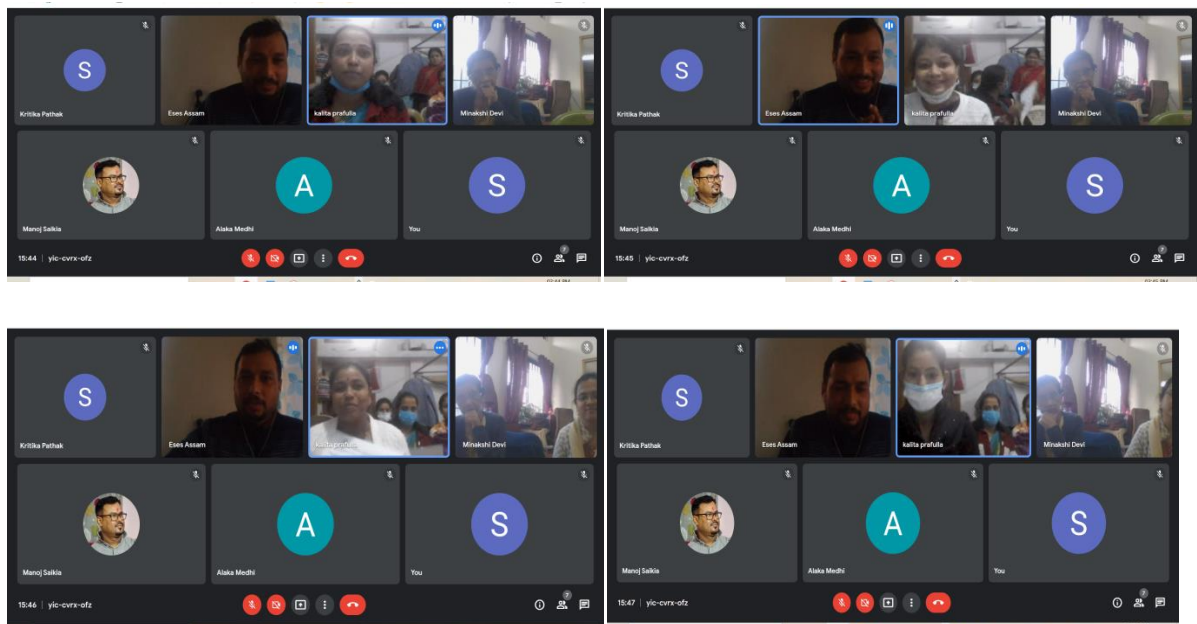


, Devotees praying with folded hands seeking Blessings from the Devine God and sharing of Prased .

**f) Interactive sessions on Appliaction oriented programme ( December 22- 2021)**

The ESES has arranged a one day interactive session with the educated unemployed ladies for initiating a ( even partialy) training programme on the design based cutting and tailoring as a self sustaince scheme . More than 10 particiapnts took part in the programme . Based on the interactive outputs , the ESES has considered to conduct such programme with possible material supports . Dr. Subrat Das the EC member of ESES had convened the session

As aprt of the prgramme the ESES has also distributed certificates tot hose who took part in the cutting andTialorong programme conducted by the Society with Mr.P.C.kalita as convener . a few viewgraph on award of the certificate vare display in Figure 8 .



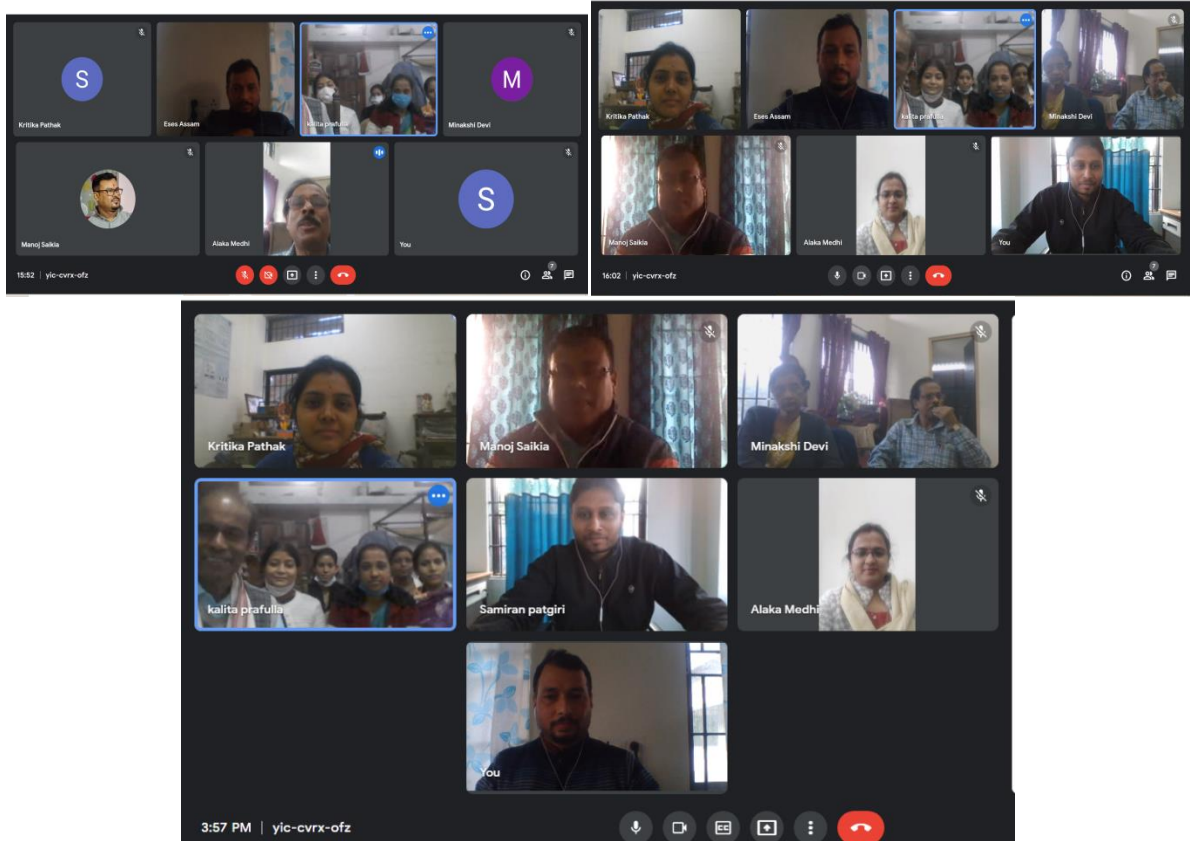
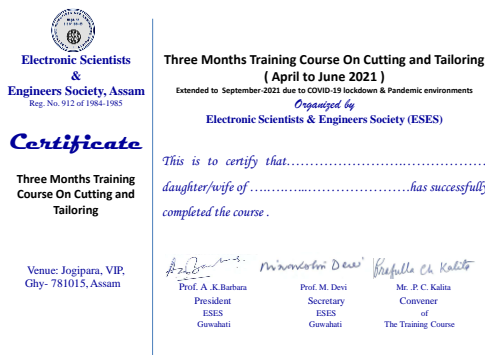


Figure shows ( different windows ) the interactive sessions between unemployed educated ladies and members of the ESES regarding their views related to design based cutting and Tailoring training programme, a future plan of the Society. Dr. Subrat Das , the EC member of ESES convened the programme. As a part of this porogramme the ESES has awarded the ertificate to those participants who had successfully compeleted the cutting and Tialoring taring conducted by ESES in 2021 under the supervision of Mr. P.C.Kalita as convenor .A few viewgraphs are displayed in figure 9. A copy of the cetificate is also displayed.



A copy of certificate awarded to successful participants

Finally ESES bade farewell to 2021 with welcome :

Happy New Year to you all our friends all over the world ;

明けましておめでとうございます Akemashite omedetō gozaimasu!)” (Happy New Year Japanese)

(新年好), Xīnnián hǎo ( Good New year in Chinese)

С НОВЫМ ГОДОМ S novym godom ( happy New Year, Russian)

Честита Нова Година , Chestita Nova Godina ( happy New Year , Bulgarian)

새해 복 많이 받으세요 saehae bog manh-i bad-euseyo ( Korean, Happy New Year)

Buon anno ( Italian , Happy New Year)

*Thank you all for being with us keeping our hopes , aspirations and academic mind alive during the devastating Pandemic*

&

With the hope that

*We will meet you all in 2022*

2022年にお会いしましょう 2022-Nen ni o ai shimashou (Japanese)

МЫ ВСТРЕТИМ ВАС ВСЕХ В 2022 ГОДУ my vstretim vas vsekh v 2022 godu (Russian)

我们将在2022年与大家见面 Wǒmen jiàng zài 2022 nián yǔ dàjiā jiànmiàn (Chinese)

우리 모두 2022년에 만나요 uli modu 2022nyeon-e mannayo ( Korean)

ще се срещнем с всички вас през 2022 г shte se sreshtnem s  
vsichki vas prez 2022 g (Bulgarian)

ci incontreremo tutti nel 2022 ( in Italian)

Minakshi Devi  
Secretary ESES