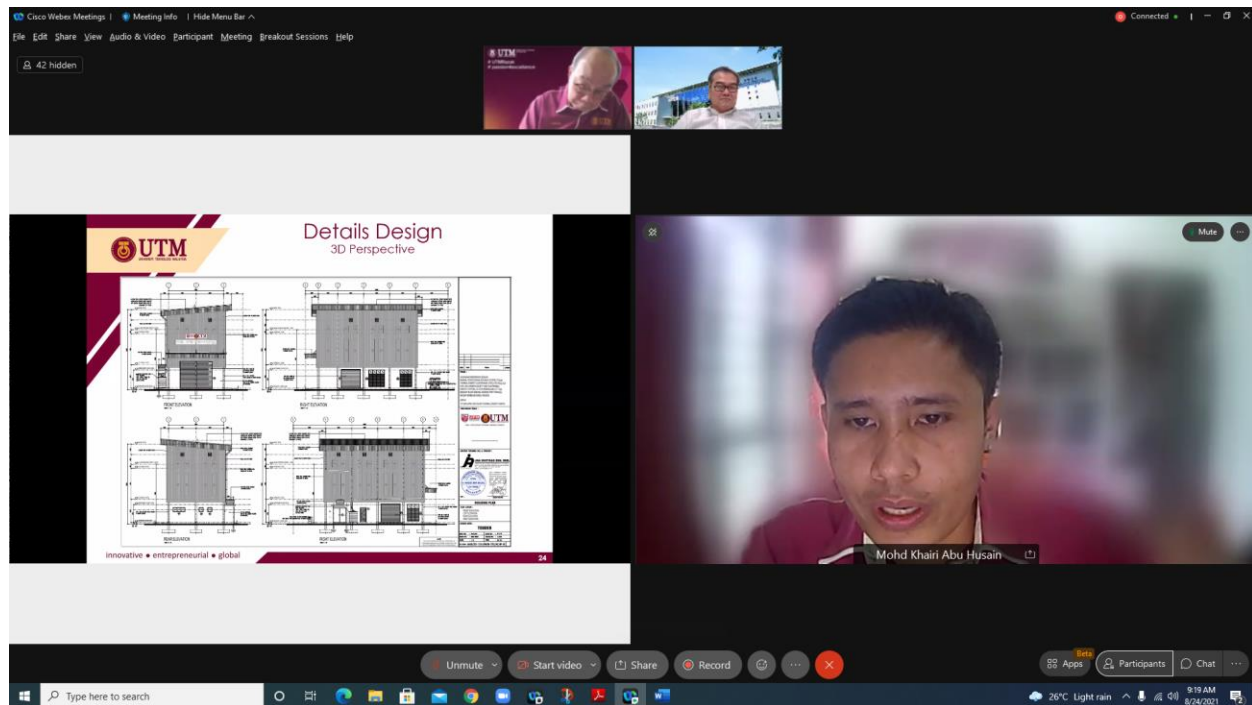


THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021



Progress Report Presentation of Project 1 by Associate Professor Ts. Dr. Mohd Khairi Abu Husain

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UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Development of Advanced Hybrid Ocean Thermal Energy Conversion (OTEC)
Technology for Low Carbon Society and Sustainable Energy System: First
Experimental OTEC Plant of Malaysia

Project #2 : Hybrid OTEC Plant – Operational and Experimental Activities

The 4th SATREPS-OTEC Programme Meeting

AP Dr. Syuhaida Ismail
AP Dr. Anwar Johari
AP Dr. Mohd Khairi Abu Husain
Dr. Chiong Meng Soon
Prof. Dr. Srithar Rajoo
Dr. Tuan Amran Tuan Abdullah
Dr. Chia Chen Ciang
Ts. Dr. Nurul Huda Ahmad (new member)
Ahmad Aiman Azmi (new member)
Azrin Ariffin
Ts. Dr. Sathiabama T. Thirugnana (UTM Ocean Thermal Energy Centre)
E-mail: sathiabama@utm.my
Mobile: +60 12 3152027
inovatif • entrepreneurial • global

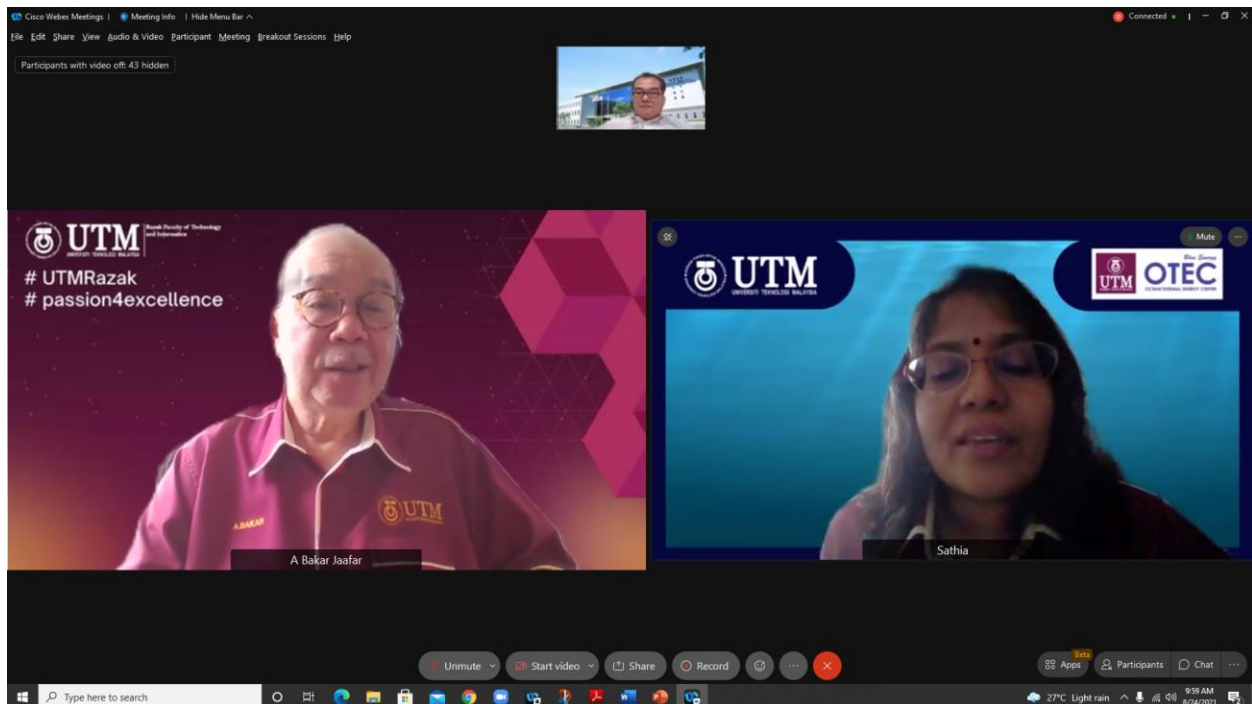
Participants with video off: 41 hidden

1

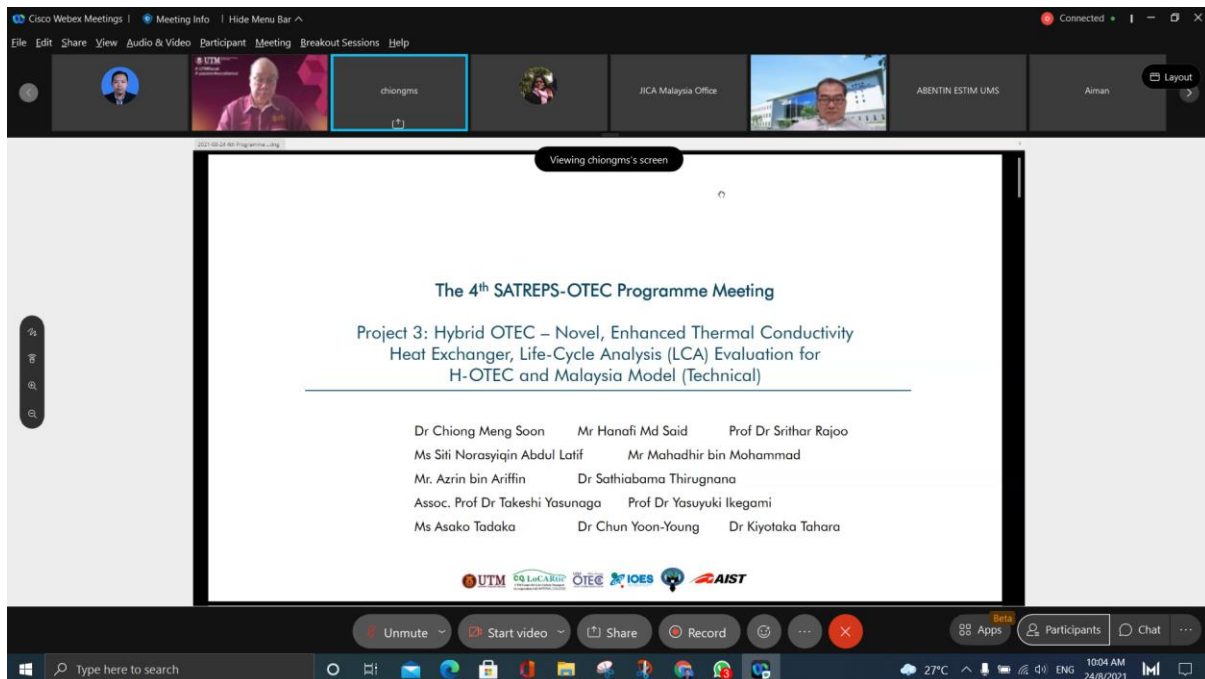
4th SATREPS-OTEC Programme Meeting, 24 August 2021

Progress Report Pre-recording Video Presentation by Project Leader of Sub-Project 2, Ts. Dr. Sathiabama T. Thirugnana

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021



Questions and Answer session between Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FAsc and Project Leader of Sub-Project 2, Ts. Dr. Sathiabama T. Thirugnana

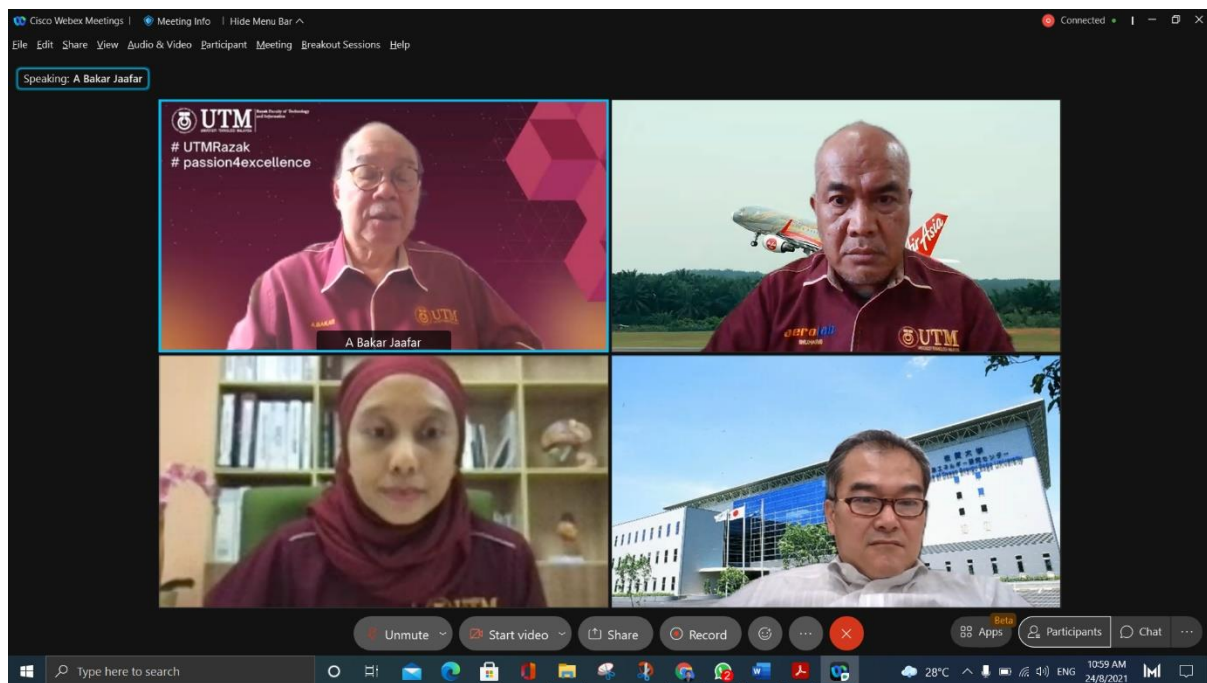


Progress Report Presentation by Project Leader of Sub-Project 3, Dr. Chiong Meng Soon

**THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS
24-26 AUGUST 2021**



Progress Report Pre-recording Video Presentation by Project Leader of Sub-Project 4, Dr Suriyanti Su Nyun Pau



Questions and Answer session between Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FAsc with Prof. Shuhaimi Mansor, Dr. Rahayu Tasnim and Prof. Yayusuki Ikegami

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot shows a Cisco Webex meeting interface. The main content area displays a presentation slide titled "The 4th Meeting of H-OTEC Programme Group 5 (Turbine)". The slide features a grid of participant photos, including Prof. Ikegami, Prof. Shuhaimi, and Dr. Yasunaga. Logos for UTM, IOES, and aero lab are visible. The date "24 August 2021" is shown at the bottom of the slide. A large video window on the right shows Prof. Dr. Shuhaimi Mansor speaking. The bottom of the screen shows the Windows taskbar with the time 11:03 AM on 24/8/2021.

Progress Report Presentation by Project Leader of Sub-Project 5, Prof. Dr. Shuhaimi Mansor

The screenshot shows a Cisco Webex meeting interface during a photo session. The main screen displays a grid of 20 participant video feeds. The right sidebar shows a list of 44 participants, including Abdul Shukur Mohamad, Kimiko Masuda, and A Bakar Jaafar. The bottom of the screen shows the Windows taskbar with the time 11:31 AM on 8/24/2021.

Photo Session (24 August 2021) -1

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

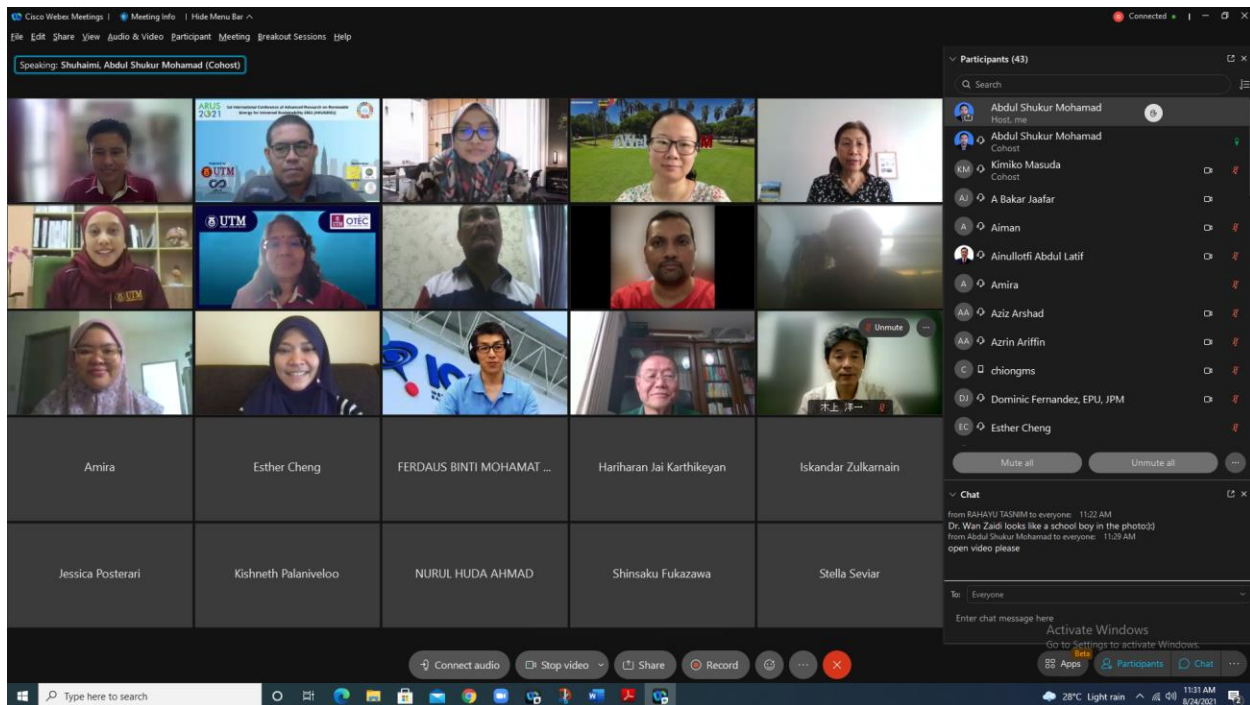


Photo Session (24 August 2021) -2

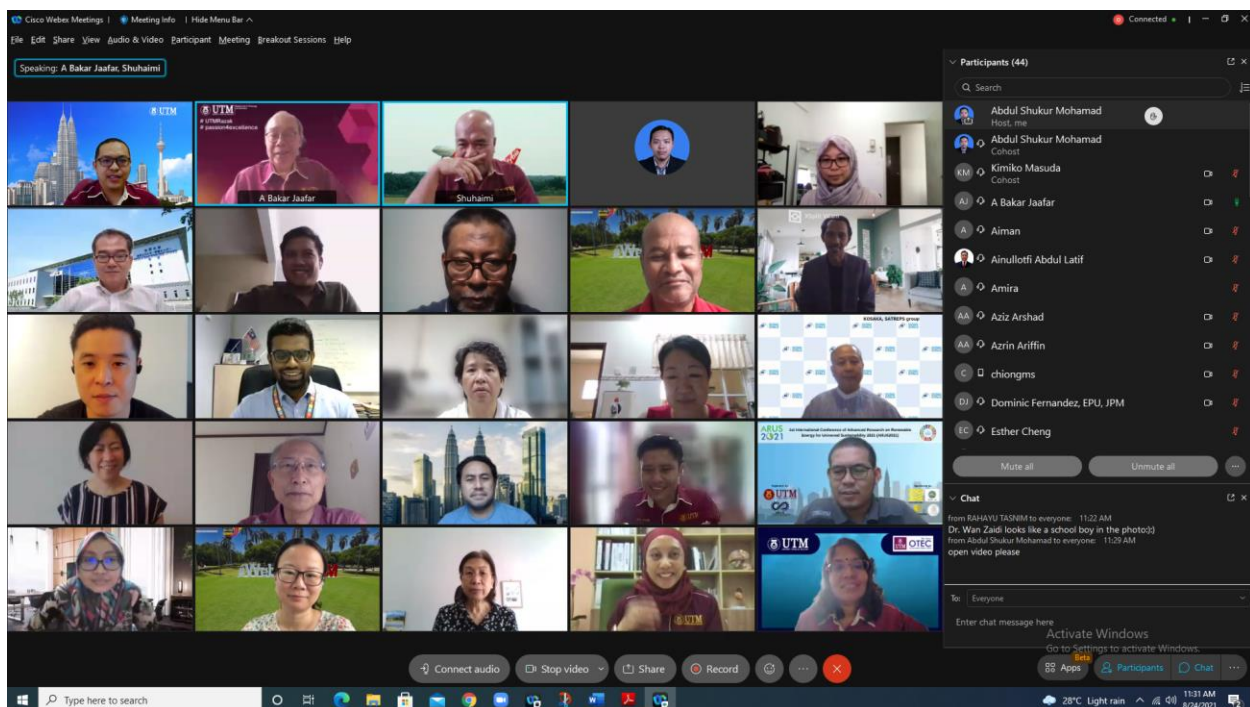


Photo Session (24 August 2021) -3

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

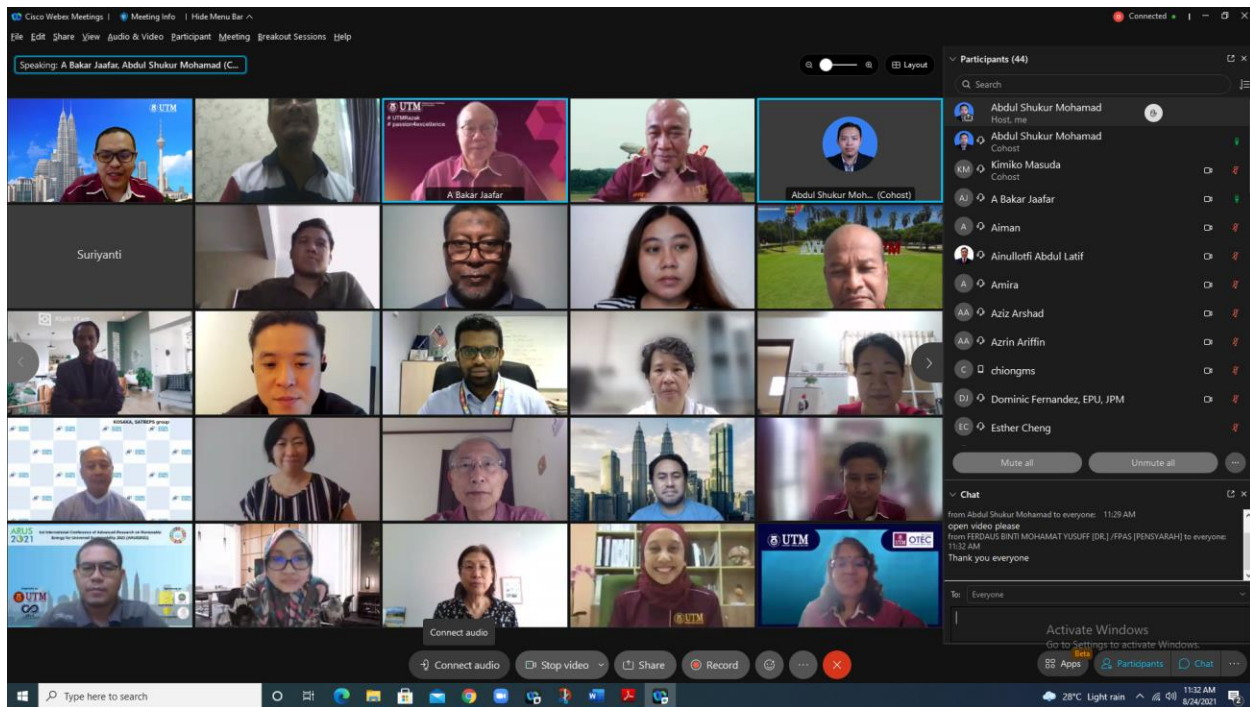


Photo Session (24 August 2021) -4

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

Research findings:
Activity 5: Design and optimize mass cultivation systems that can be integrated into the OTEC system

General layout and seaweed cultivation system to be set up for the trial culture at the International Institute of Aquaculture and Aquatic Sciences (I-AQUAS), UPM, Port Dickson.

Milestone 5: Design and optimize mass cultivation systems that can be integrated into the OTEC system.

Progress Report Pre-recording Video Presentation by Project Leader of Sub-Project 6, Emeritus Professor Dr. Phang Siew Moi, FASc

Speaking: Prof. Phang SM

A Bakar Jaafar

Prof. Phang SM

Prof. Yayusuki Ikegami

Questions and Answer session between Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FASc with Emeritus Professor Dr. Phang Siew Moi, FASc and Prof. Yayusuki Ikegami

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

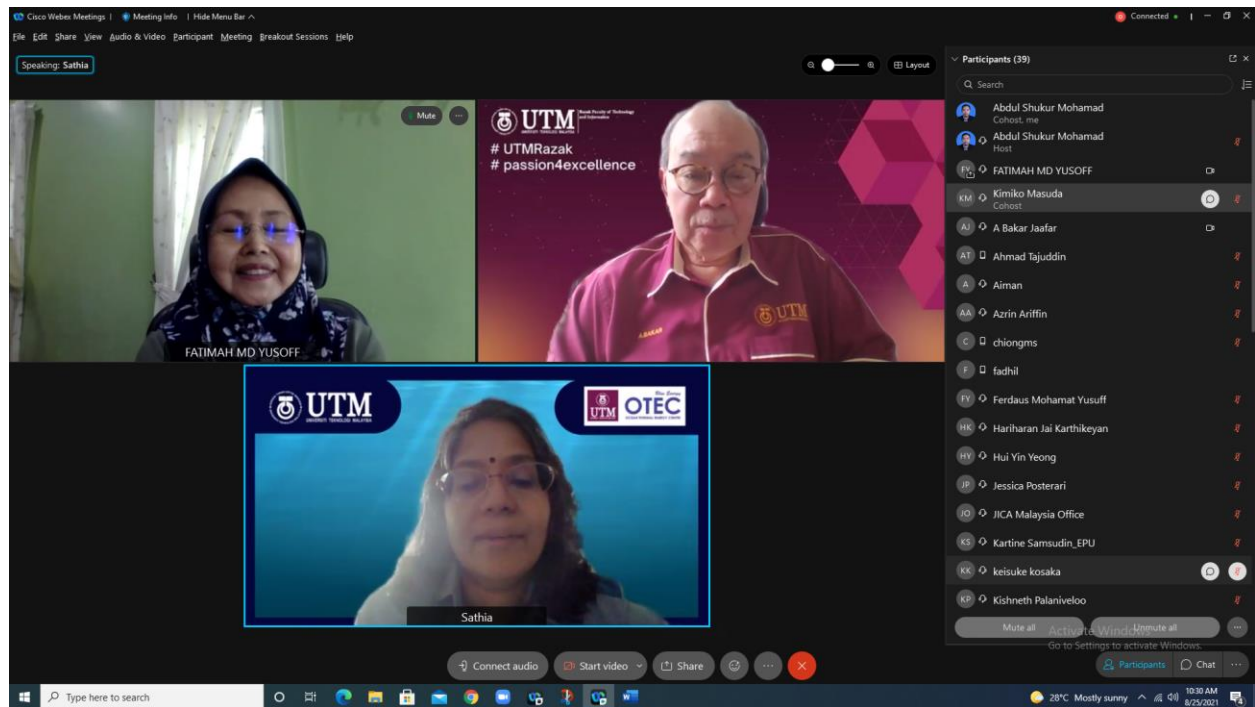
The screenshot shows a Cisco Webex meeting interface. At the top, the meeting title is "Cisco Webex Meetings | Meeting Info | Hide Menu Bar". Below the title bar, there are five participant thumbnails: Nur Leena Wong, A Bakar Jaafar, Prof Phang SM, and two others. The main content area displays a presentation slide from Universiti Putra Malaysia (UPM). The slide title is "PROGRESS REPORT FOR JAN – JUNE 2021 SUB-PROJECT NO 7". The main text on the slide reads: "Utilization of H-OTEC Produced Water for the Cultivation of High Value Commercial Invertebrate Species". On the right side of the meeting window, there is a "Participants (36)" list showing various attendees, including Abdul Shukur Mohamad, Kimiko Masuda, A Bakar Jaafar, Aiman Azmi, Azrin Ariffin, chiongms, FATIMAH MD YUSOFF, FERDAUS BINTI MOHAMAT YUSUFF [DR.] /FP..., Fikri Zhafran, Hariharan Jai Karthikeyan, Hui Yin Yeong, Jessica Posterari, JICA Malaysia Office, keisuke kosaka, Kishneth Palaniveloo, M.Kamimoto, and Mohd Khairi Abu Husain. At the bottom of the meeting window, there are controls for "Connect audio", "Start video", "Share", and "Mute all". The system tray at the very bottom shows the date and time as 9:24 AM on 8/25/2021.

Progress Report Pre-recording Video Presentation by Project Leader of Sub-Project 7, Prof. Dr. Aziz Arshad, FASc

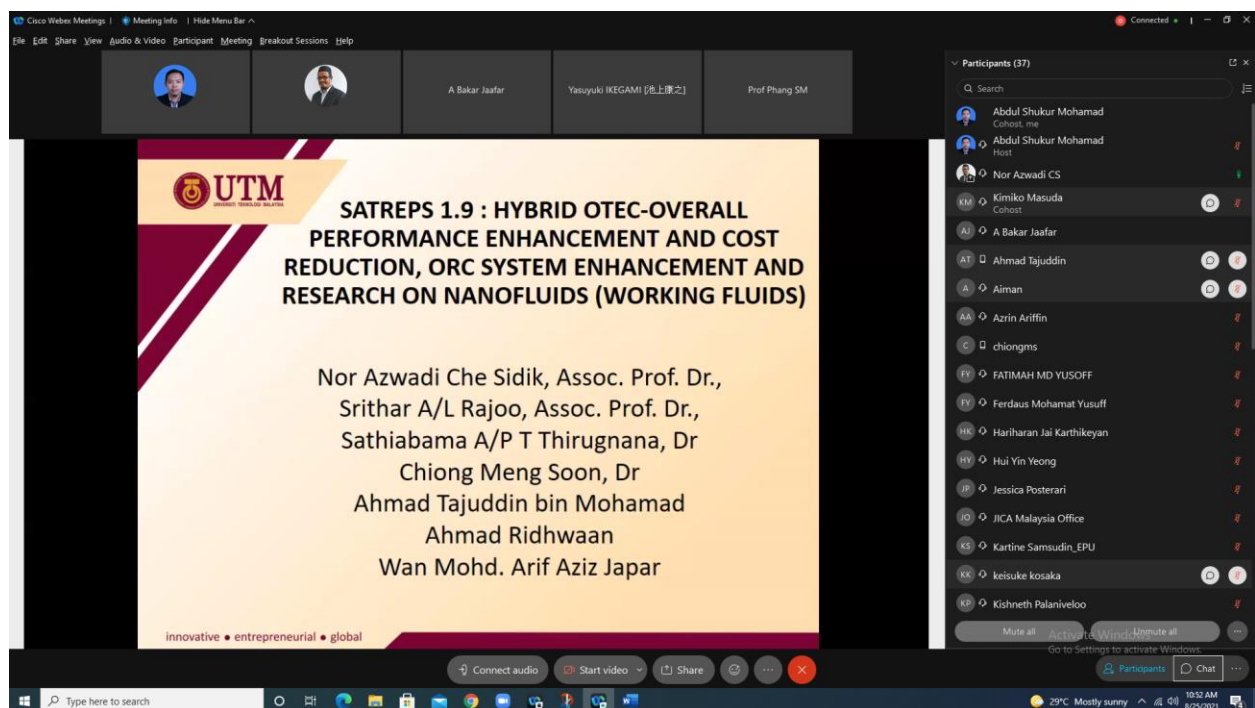
The screenshot shows a Cisco Webex meeting interface. At the top, the meeting title is "Cisco Webex Meetings | Meeting Info | Hide Menu Bar". Below the title bar, there is a small video thumbnail of a participant labeled "FATIMAH MD YUSOFF". The main content area displays a presentation slide with logos at the top for KEMENTERIAN PENDIDIKAN MALAYSIA, UTM, and SATREPS. The slide title is "SATREPS - HYBRID OTEC G8 - WATER QUALITY". The main text on the slide reads: "Assessment of Spatial and Seasonal Variations of Water Quality for Use in Advanced Hybrid OTEC Technology and Application of its Wastewater for Aquaculture Live-food Production". At the bottom of the slide, there are logos for UPM, UNIVERSITY OF MALAYA, UNIVERSITI KEBANGSAAN MALAYSIA, and Universiti Malaysia Terengganu. On the right side of the meeting window, there is a "Participants (41)" list showing various attendees, including Abdul Shukur Mohamad, Kimiko Masuda, A Bakar Jaafar, Ahmad Tajuddin, Aiman Azmi, Azrin Ariffin, chiongms, fadhil, Ferdaus Mohamat Yusuff, Fikri Zhafran, Hariharan Jai Karthikeyan, Hui Yin Yeong, Jessica Posterari, JICA Malaysia Office, Kartine Samsudin_EPU, and keisuke kosaka. At the bottom of the meeting window, there are controls for "Connect audio", "Start video", "Share", and "Mute all". The system tray at the very bottom shows the date and time as 9:57 AM on 8/25/2021.

Progress Report Presentation by Project Leader of Sub-Project 8, Prof. Dr. Fatimah Md. Yusoff, FASc

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021



Questions and Answer session between Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FASc with Prof. Dr. Fatimah Md. Yusoff, FASc and Ts. Dr. Sathiabama T. Thirugnana



Progress Report Presentation by Project Leader of Sub-Project 9, Assoc. Prof. Dr. Nor Azwadi Che Sidik

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot displays a Cisco Webex meeting interface. The main content area shows a presentation slide for 'PROJECT 10'. The slide is titled 'PROJECT 10 Progress Report February – July 2021' and is authored by 'Dr. Rahayu Tasnim' for the dates '24th – 26th August 2021'. The right side of the slide features a large red dollar sign (\$) and the text 'The Development of 'H-OTEC Malaysia Model'' and 'The Blue Economics of H-OTEC Malaysia'. The meeting interface includes a top bar with navigation options like 'File', 'Edit', 'Share', 'View', 'Audio & Video', 'Participant', 'Meeting', and 'Breakout Sessions'. A participants list on the right shows 37 participants, including Abdul Shukur Mohamad, A Bakar Jaafar, and others. The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 11:11 AM on 8/25/2021.

Progress Report Pre-recording Video Presentation by Project Leader of Sub-Project 10, Dr. Rahayu Tasnim

The screenshot shows a Cisco Webex meeting during a Q&A session. Three participants are visible in the main window: A Bakar Jaafar, RAHAYU TASNIM, and Prof Phang SM. A Bakar Jaafar's video background features a UTM logo and the text '#UTMRazak #passion4excellence'. The meeting interface includes a top bar with navigation options like 'File', 'Edit', 'Share', 'View', 'Audio & Video', 'Participant', 'Meeting', and 'Breakout Sessions'. A participants list on the right shows 34 participants, including Abdul Shukur Mohamad, A Bakar Jaafar, and others. The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 11:45 AM on 8/25/2021.

Questions and Answer session between Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FAsc with Emeritus Professor Dr. Phang Siew Moi, FAsc and Dr. Rahayu Tasnim

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot shows a Cisco Webex meeting interface. The main content area displays a presentation slide titled "Al-Fatihah Takziah" (In the name of Allah, the Most Gracious, the Most Merciful). The slide is a memorial for Prof. Dr. Mas Bambang Baroto, who passed away on 18 Mac 2021. It includes a portrait of the professor and text in Indonesian expressing condolences. The slide also mentions "Semoga rohnya dicucuri rahmat dan ditempatkan dalam kalangan orang-orang yang beriman" (May his soul be showered with mercy and placed among the ranks of the believers) and "Daripada Seluruh Warga Universiti Teknologi Malaysia" (From all members of Universiti Teknologi Malaysia). The UTM logo and website (www.utm.my) are visible at the bottom of the slide. The meeting controls at the bottom show "Connect audio", "Start video", and "Share" buttons. The participants list on the right includes Abdul Shukur Mohamad, Kimiko Masuda, A Bakar Jaafar, Ahmad Tajuddin, Aiman, Azrin Ariffin, chiongms, FATIMAH MD YUSOFF, Ferdaus Mohamat Yusuff, Hariharan Jai Karthikeyan, Hui Yin Yeong, JICA Malaysia Office, keisuke kosaka, Kishneth Palaniveloo, M.Kamimoto, Mohd Khairi Abu Husain, and MOHD ZAKI ZAINAL ABIDIN.

1 Minute of Silence and Al-Fatihah Recitation for the late Assoc. Prof. Dr. Mas Bambang Baroto, ex Project Leader of Sub-Project 10

The screenshot shows a Cisco Webex meeting interface. The main content area displays a presentation slide titled "2. Summary of SATREPS-OTEC Progress by Project as of 31 July 2021". The slide features a horizontal bar chart comparing the progress of 10 projects across four categories: IP## (red), Talent# (green), Publication*** (yellow), and Milestone** (blue). The x-axis represents the percentage of progress from 0% to 160%. Project 10 shows the highest progress in Talent# (approx. 140%). Project 9 shows high progress in IP## (approx. 100%). Project 8 shows high progress in Publication*** (approx. 100%). Project 7 shows high progress in Milestone** (approx. 100%). Project 6 shows high progress in IP## (approx. 100%). Project 5 shows high progress in Talent# (approx. 100%). Project 4 shows high progress in IP## (approx. 100%). Project 3 shows high progress in IP## (approx. 100%). Project 2 shows high progress in IP## (approx. 100%). Project 1 shows high progress in IP## (approx. 100%).

Legend:

- IP##
- Talent#
- Publication***
- Milestone**
- Financial*

Footnote:

* Based on Financial Statement endorsed by University RMC, up to 31 July 2021, over total approved amount
 ** Based on number of milestones that have been 100% completed, over total number of targeted milestone
 *** Based on published Indexed Paper (WOS/SCOPUS), over quantity of pledged Indexed Publication
 # Based on registered number of students, MSc and PhD, over pledged number of students
 ## Based on IP received (copyright/transfer), over 5 (1 year for each project, not pledged but we recommend)
 / Received copy of ppt for this 4th Programme Meeting

26 February 2021
<http://utm.my/satreps>

SATREPS-OTEC Summary and Conclusion Presentation by Project Director

4

Summary and Conclusion of All Sub-Project Progress as of 31 July 2021 by Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FASc

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot displays a Cisco Webex meeting interface. The top bar shows the meeting title "Cisco Webex Meetings | Meeting Info | Hide Menu Bar" and navigation links: "File", "Edit", "Share", "View", "Audio & Video", "Participant", "Meeting", "Breakout Sessions", and "Help". Below the bar, a status bar indicates "Speaking: Abdul Shukur Mohamad (Host), A Bakar Ja..." and includes icons for "Layout", "Mute", and "Unmute".

The main area features a grid of 20 video thumbnails. The participants are arranged in four rows and five columns. The first row includes Abdul Shukur Mohamad (Host), Shuhaimi, A Bakar Jaafar, Sathia, and RAHAYU TASNIM. The second row shows Aiman, Azrin Ariffin, FATIMAH MD YUSOFF, Hanharan Jai Karthikeyan, and Hui Yin Yeong. The third row contains JICA Malaysia Office, Kimiko Masuda (Co-host), M.Kamimoto, Mohd Khairi Abu Husain, and Nur Azwadi CS. The fourth row lists Nur Leena Wong, Prof Phang SM, Stella Sevar, Subhashish Banerjee, and syafiqah saufie. The bottom row shows Syuhaida Ismail, Takeshi Yasunaga, and a partially visible participant.

On the right side, the "Participants (29)" panel lists all attendees, including Abdul Shukur Mohamad (Co-host, me), Abdul Shukur Mohamad (Host), Kimiko Masuda (Co-host), A Bakar Jaafar, Ahmad Tajuddin, Aiman, Azrin Ariffin, FATIMAH MD YUSOFF, and Ferdous Mohamad Yusuff. Below this, the "Chat" window displays a conversation log with messages from Sathia, Kimiko Masuda, and others, including a request for a photo.

The bottom of the screen shows a Windows taskbar with the search bar, taskbar icons, and system tray information: "30°C Mostly sunny", "12:30 PM", and "8/24/2021".

Photo Session (25 August 2021)

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

Explanation of Sub-Project and 5 Outputs Presentation by Research Director, Prof. Dr. Yasuyuki Ikegami

Summary and Conclusion of All Sub-Project Progress as of 31 July 2021 by Project Director, Prof. Dato' Ir. Dr. A Bakar Jaafar, FASc

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot shows a Cisco Webex meeting interface. The main window displays a presentation slide titled "H-OTEC pilot plant supplied by Japan side". The slide content includes:

- H-OTEC system** (Power, Desalination) leading to **Power (electricity)** and **Water**.
- DSW multiple use** (Aquaculture, Agriculture, Drinking water, Cosmetics, Spa, etc.) leading to **Variety of Products**.
- Building for the pilot plant in Malaysia** and **Pilot Plant (UPM, 2021)** are shown as part of the process.
- Technology verification** and **Commercial plant design** are listed as key activities.
- Suitable combination in Malaysia** and **Malaysia Model** are highlighted.

On the right, a video feed shows two participants: Yasuyuki Ikegami (labeled "Yasuyuki IKEGAMI [池上康之]") and Takeshi Yasunaga. The bottom of the screen shows the Webex controls bar with options like Unmute, Start video, Share, Record, and a list of participants.

Achievement Report Presentation on Output 1 & 2 by Research Manager, Assistant Prof. Dr. Takeshi Yasunaga

The screenshot shows a Cisco Webex meeting interface. The main window displays a presentation slide titled "The 4th Meeting of SATREPS-OTEC Programme for MoHE with 3 Outputs". The slide content includes:

- Achievement Report and Plans of Output 3-**
- August 26th 2021**
- Yasuyuki Ikegami**
- Institute of Ocean Energy Saga University, Japan**

On the right, a video feed shows a participant: Yasuyuki Ikegami (labeled "Yasuyuki IKEGAMI [池上康之]"). The bottom of the screen shows the Webex controls bar with options like Unmute, Start video, Share, Record, and a list of participants.

Achievement Report Presentation of Output 3 by Research Director, Prof. Dr. Yasuyuki Ikegami

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

The screenshot shows a Cisco Webex meeting interface. The main window displays a presentation slide titled "3. MyROM20+". The slide content includes:

- Vertical Profiles:** MyROM20+ data was used to analyze vertical profiles for temperature, salinity, velocity and density. Vertical sections were obtained for Longitudes 120.6 and 116.
- Resource Analysis:** Temperature data from MyROM20+ was also used to estimate temperature difference at 600, 800 and 1000m for site selection.

The slide also features a map of the region with vertical sections marked at $Lon = 116$ and $Lon = 120.6$. The meeting interface shows a top bar with navigation options (File, Edit, Share, View, Audio & Video, Participant, Meeting, Breakout Sessions, Help) and a bottom bar with controls (Unmute, Start video, Share, Record). A right-hand sidebar lists 41 participants, including Abdul Shukur (Host), Jessica Posterari, Kimiko Masuda (Cohost), A Bakar Jaafar, Ahmad fikri, Aiman Azmi, Ainullofti Abdul Latif, Asako TAKADA AIST, Azrin Ariffin, chiongms, FERDAUS BINTI MOHAMAT YUS..., Fikri Zhafran, and Hariharan Jai Karthikeyan.

Achievement Report Presentation of Output 4.1 & 4.2 by Prof. Takuji Waseda and Ms. Jessica Posterari

The screenshot shows a Cisco Webex meeting interface. The main window displays a presentation slide titled "Material composition for major units of equipment in H-OTEC". The slide content includes:

- A bar chart showing the material composition for various units: H-OTEC, Cold Heat Exchanger, Control Unit, Auxiliary, Pump and Valve, and Frame.
- A pie chart showing the material composition for the H-OTEC unit, with segments for Steel (73.3%), Aluminum (2.1%), and Inconel (2.4%).

The slide also lists the equipment units: Refrigerator (Chiller), Control and Monitoring Systems for H-OTEC, Vacuum Pump (System), and LCD for Monitoring Systems. The meeting interface shows a top bar with navigation options (File, Edit, Share, View, Audio & Video, Participant, Meeting, Breakout Sessions, Help) and a bottom bar with controls (Unmute, Start video, Share, Record). A right-hand sidebar lists 39 participants, including Abdul Shukur (Host), Yoonyoung Chun AIST, Kimiko Masuda (Cohost), A Bakar Jaafar, Ahmad fikri, Aiman, Ainullofti Abdul Latif, Asako TAKADA AIST, Azrin Ariffin, chiongms, FERDAUS BINTI MOHAMAT YUS..., Fikri Zhafran, and Hariharan Jai Karthikeyan.

Achievement Report Presentation of Output 4.3 & 4.4 by Dr. Chun Yoonyoung

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

Topics

1. Members and objective
2. Achievement by FY2020
3. Progress of FY2021
4. Plans of FY2021 trainings
5. Summary

Participants (38)

- Abdul Shukur ... (Host, me)
- Yasuyuki IKEGAMI [池上康之]
- Kimiko Masuda Cohost
- A Bakar Jaafar
- Ahmad fikri
- Aiman
- Ainullofti Abdul Latif
- Asako TAKADA AIST
- Azrin Ariffin
- chiongms
- FERDAUS BINTI MOHAMAT YUS...
- Fikri Zhafran
- Hariharan Jai Karthikeyan

Unmute Start video Share Record

Type here to search 30°C 11:53 AM 26/8/2021

Achievement Report Presentation of Output 5 by Prof. Dr. Yasuyuki Ikegami

Participants

- Abdul Shukur ... (Host...)
- Ahmad fikri
- A Bakar Jaafar
- Kimiko Masuda Cohost
- Aiman
- Asako TAKADA AIST
- Ainullofti Abdul Latif
- Azrin Ariffin

Unmute Start video Share Record

Type here to search 30°C 12:07 PM 26/8/2021

Remarks by Japan Science and Technology Agency (JST) Representative, Prof. Masayuki Kamimoto

THE 4TH MEETING OF SATREPS-OTEC PROGRAMME MEETING FOR MOHE WITH 5 OUTPUTS 24-26 AUGUST 2021

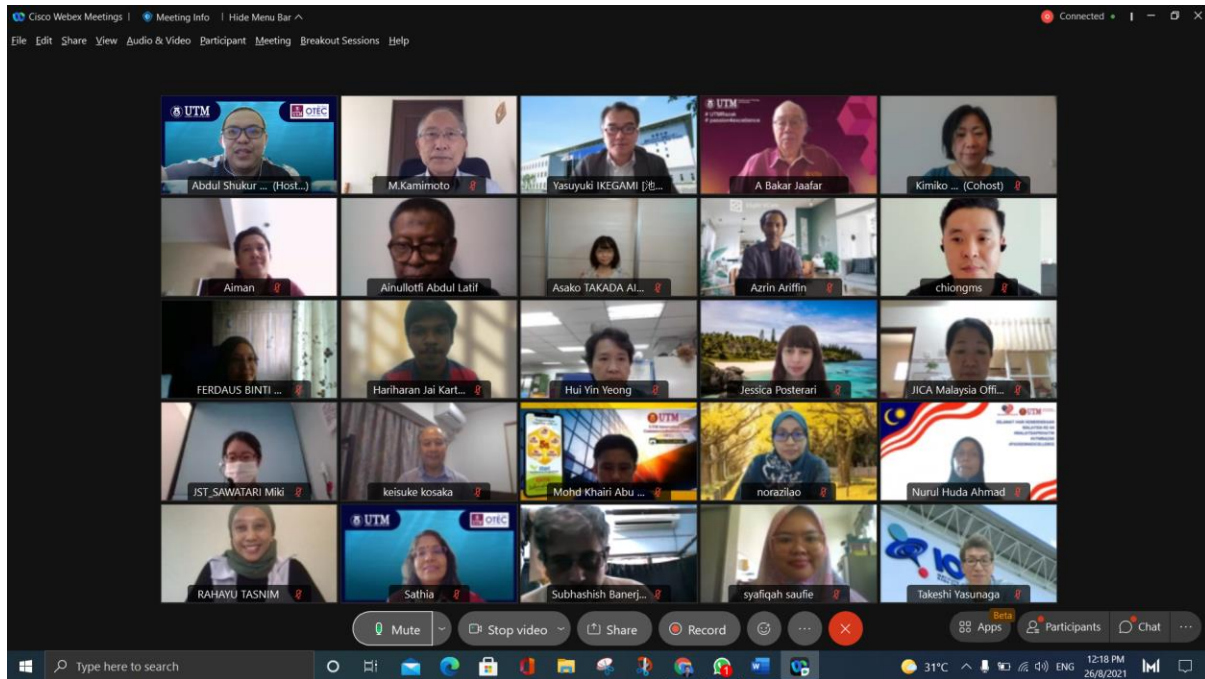


Photo Session (26 August 2021) -1

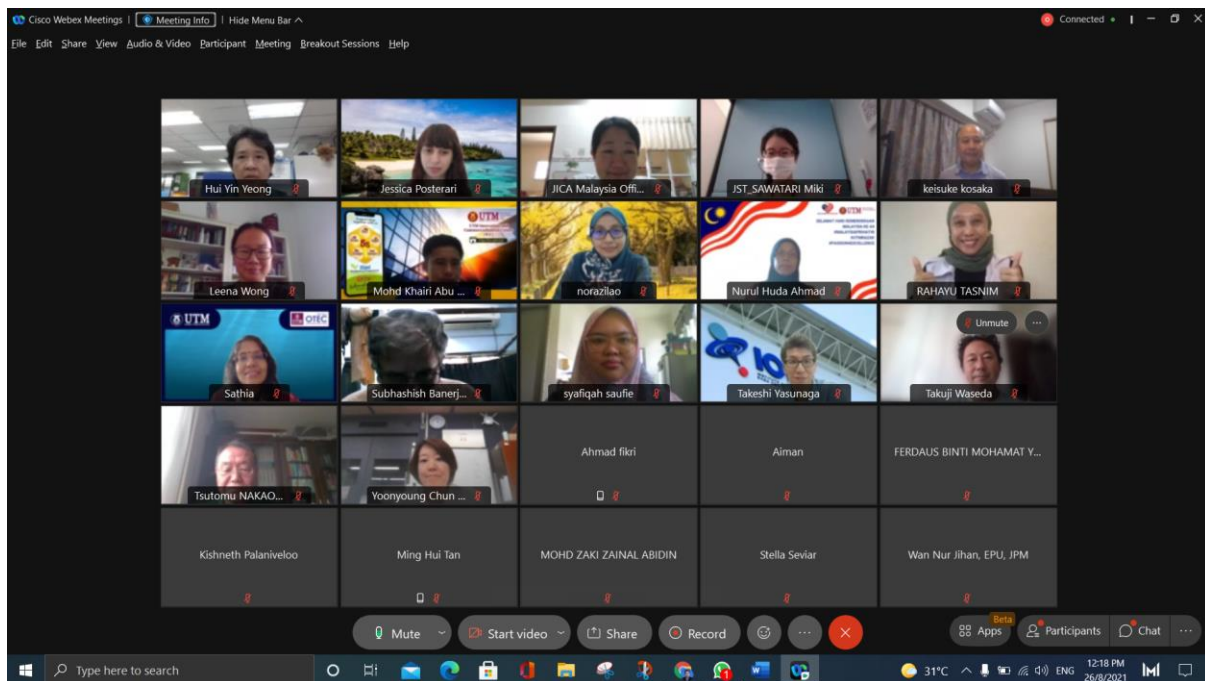


Photo Session (26 August 2021) -2