Sree Narayana College, Sivagiri, Varkala

P G Department of Chemistry

DBT Star College Scheme Supported

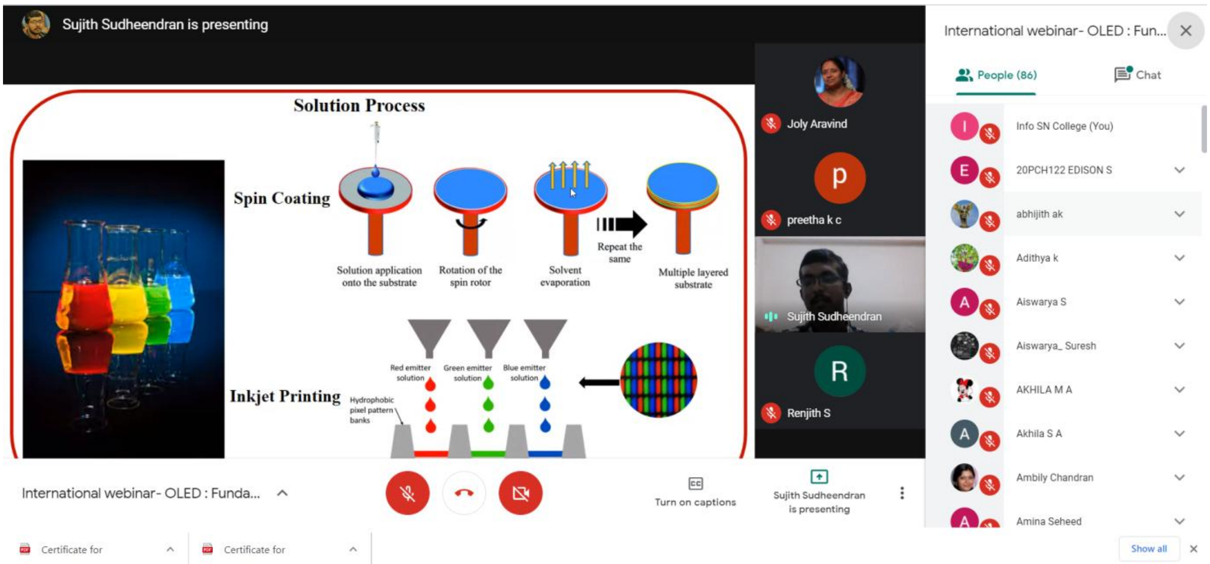
Organic Light Emitting Diodes- Fundamentals and Applications by Dr Sujith S S, Research & Development Engineer, Raystar Optronics, Taiwan on 31st October 2020

The meeting started with the welcome address by Head of the department Dr Joly A. In her welcome address, ma'am expressed her contentment in welcoming everyone to the webinar specially our Chief Guest and alumni, Dr Sujith S S. Principal, Dr K C Preetha, inaugurated the function and spoke about the importance of Organic light emitting diodes in the present world.

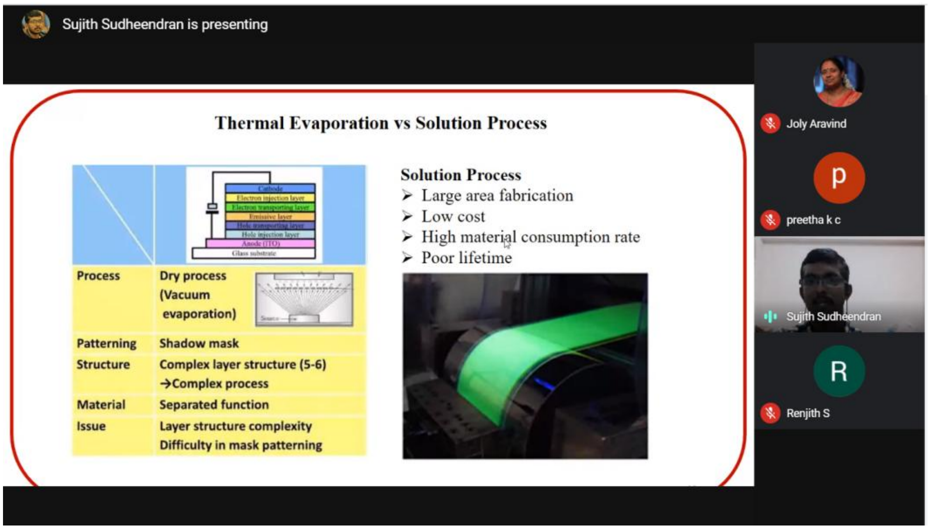
Dr Sujith S S, alumni of our college, expressed his great pleasure being able to interact with our students. In the technical session, he explained the basics of OLEDs, the methods of preparation and the research being carried out in the same field. He could motivate our students and also explained about the various competitive exams to qualify and also the wide range of opportunities available for the them after they complete the course successfully.

Organic light emitting diodes (OLED) are widely used for the lighting and display applications. OLEDs possesses improved image quality - better contrast, higher brightness, fuller viewing angle, a wider color range and much faster refresh rates Thermal evaporation and solution process are utilizing for the fabrication of OLEDs. OLEDs are mainly classified into passive matrix OLEDs (PMOLEDs), active-matrix OLEDs (AMOLEDs), transparent OLEDs, top emitting OLEDs, white OLEDs, etc. Long time operational stability is one of the drawbacks of OLEDs. Utilization of potential materials, unique device architecture, and effective encapsulation technologies can improve the lifetime of OLED.

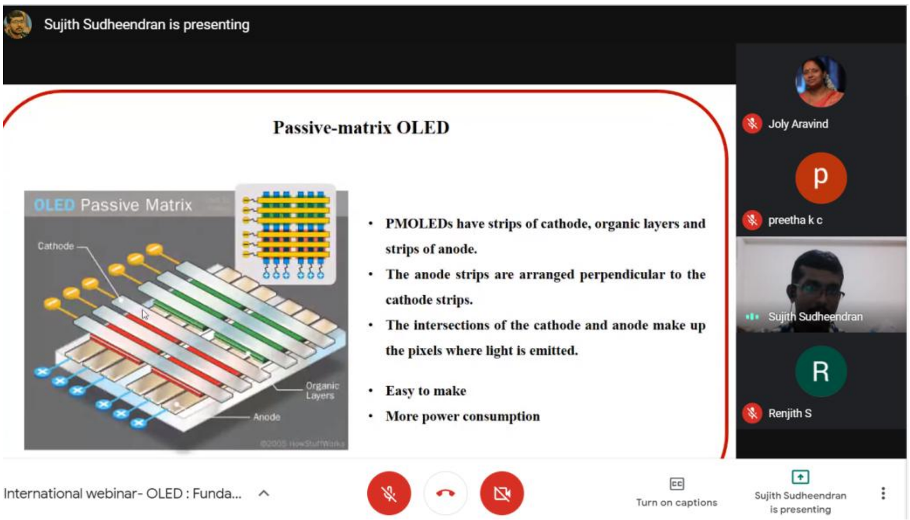
Glimpses from the webinar conducted on OLED- Fundamentals and Applications



Solution process for the preparation of OLEDs

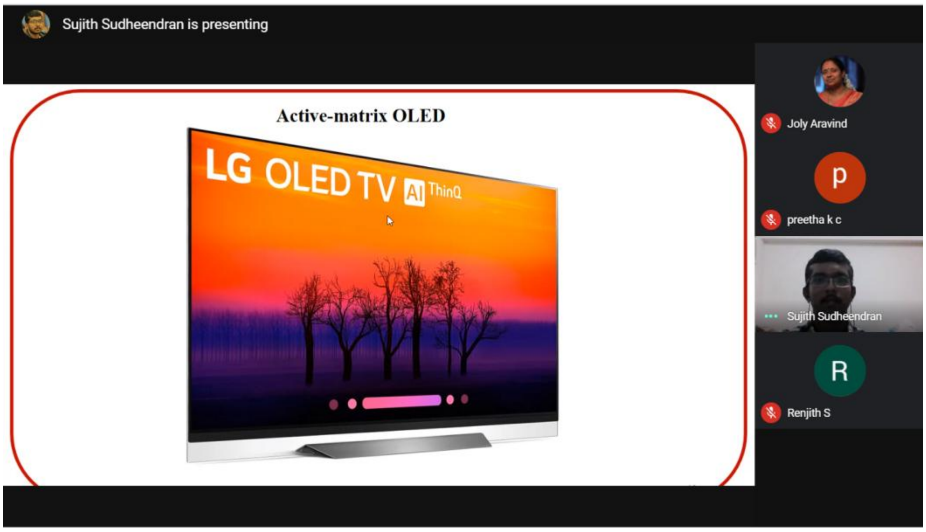


Comparison of thermal evaporation process and solution process in the preparation of OLEDs



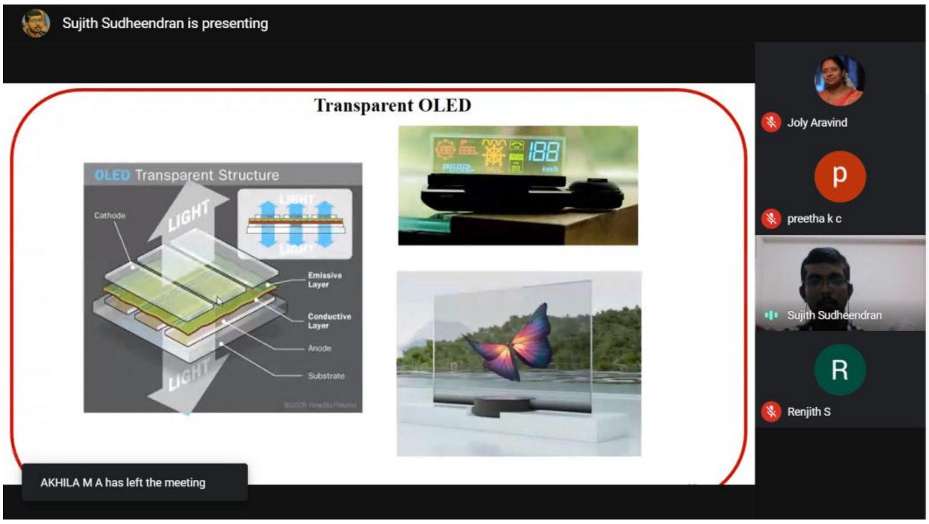
Passive-matrix OLED (PMOLED)

PMOLEDs have strips of cathode, organic layers and strips of anode. The anode strips are arranged perpendicular to the cathode strips. The intersections of the cathode and anode make up the **pixels** where light is emitted. External circuitry applies current to selected strips of anode and cathode, determining which pixels get turned on and which pixels remain off. Again, the brightness of each pixel is proportional to the amount of applied current.

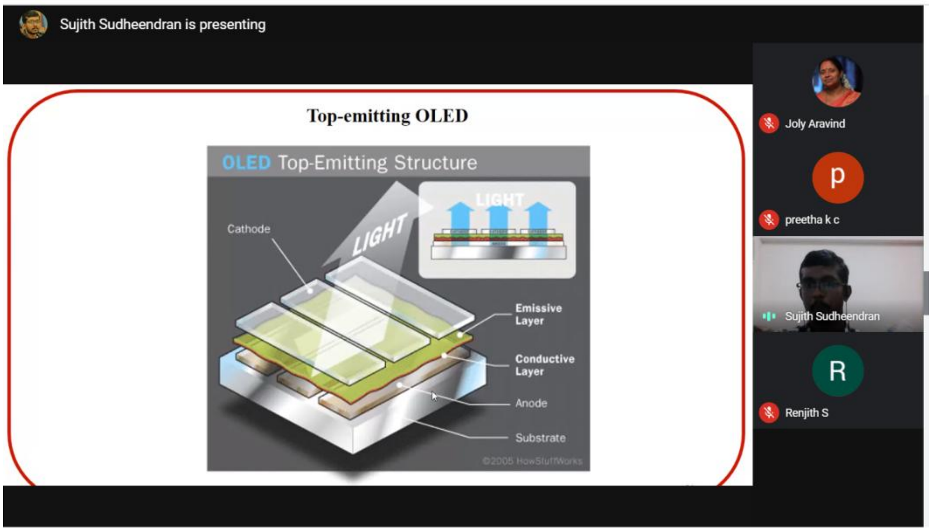


Active-matrix OLED (AMOLED)

AMOLEDs have full layers of cathode, organic molecules and anode, but the anode layer overlays a thin film transistor (TFT) array that forms a matrix. The TFT array itself is the circuitry that determines which pixels get turned on to form an image.

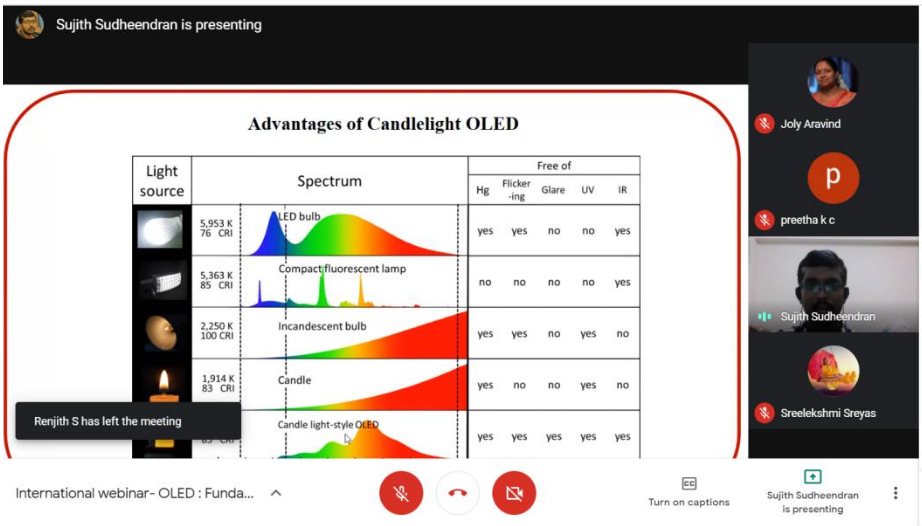


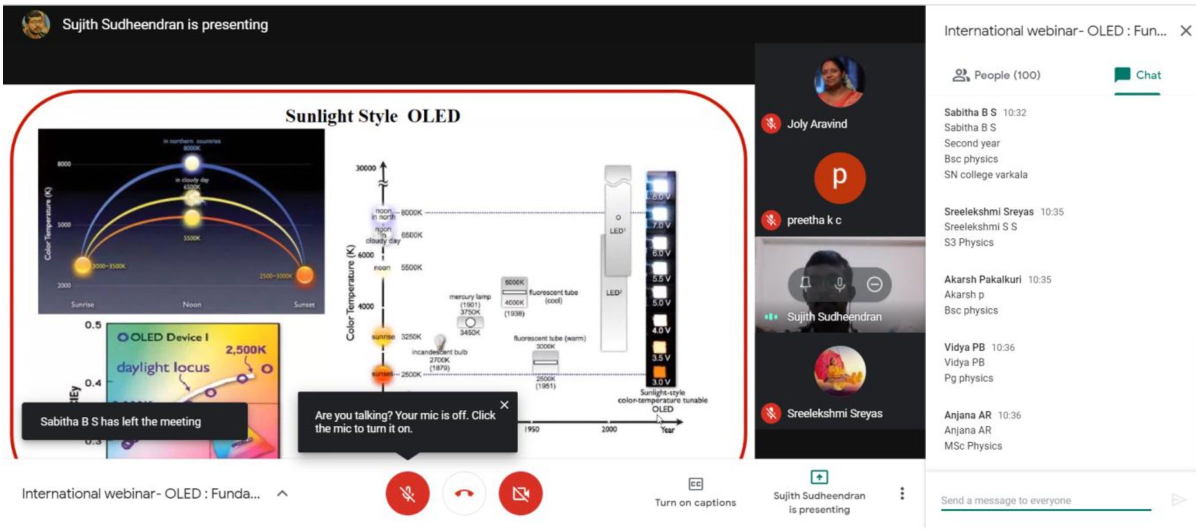
Transparent OLEDs have only transparent components (substrate, cathode and anode) and, when turned off, are up to 85 percent as transparent as their substrate. When a transparent OLED display is turned on, it allows light to pass in both directions. A transparent OLED display can be either active- or passive-matrix. This technology can be used for heads-up displays.

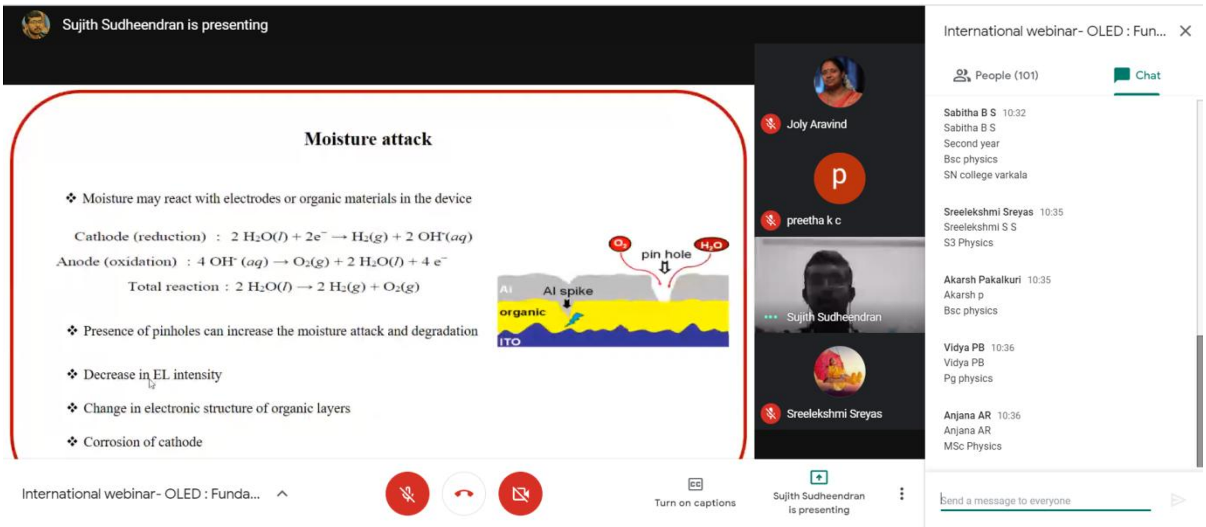


Top-emitting OLED

Top-emitting OLEDs have a substrate that is either opaque or reflective. They are best suited to active-matrix design. Manufacturers may use top-emitting OLED displays in smart cards.







The webinar was concluded with a Vote of thanks proposed by Ms Reshmi Jaya Raveendran, Coordinator and Assistant Professor of Chemistry, S N College, Varkala. Link for the feedback form was shared with the participants. E-certificates were issued to participants.

SREE NARAYANA COLLEGE VARKALA

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DBT-STAR SCHEME SUPPORTED

International Webinar on

ORGANIC LIGHT EMITTING DIODES

FUNDAMENTALS AND APPLICATIONS

By
Dr. Sujith S S
Research and Development Engineer
Raystar Obtronics Inc,
Taichung, Taiwan

Organised by Department of Chemistry
In association with IQAC

On Saturday, 31st October 2020
10:00 AM to 12:00 PM

ABOUT US

Located at Sivagiri, Varkala, the Sree Narayana College was established in 1964. It is one of the Pioneer Institutions in Kerala affiliated to University of Kerala, which provides Research, Post Graduate and Under Graduate programs.

The Department of Chemistry has contributed to the world of Chemistry with lots of personnel working / pursuing their career in Chemistry at different parts of the world.

Last Date of Registration : 30 Oct 2020
Free and e-certificates will be issued.

For Registration
https://forms.gle/wpnz3AZISpzC1ug6

PROGRAM SCHEDULE

Welcome	Dr. Joly A (HOD, PG Dept of Chemistry)
Inaugural Address	Dr. K C Preetha, (Principal, SN College Varkala)
Felicitation	Shri Aji S R M (Executive Member, S N Trusts)
	Dr Soju S (IQAC Coordinator)
Introduction	Smt. Induja P (Asst Professor of Chemistry)
Resource Person	Dr. Sujith S S, Research and Development Engineer Raystar Obtronics Inc, Taichung, Taiwan
Vote of Thanks	Smt. Reshmi Jaya Raveendran, (Coordinator, Asst Professor of Chemistry)

Join through Google meet

https://meet.google.com/ajx-szxa-sos

Join WhatsApp group

https://chat.whatsapp.com/JTMxCF9HPZZ9YIgVPkjlZE

ORGANIZING COMMITTEE

- Patron : Sri VELLAPALLY NATESAN (Manager, S N Colleges
- Dr. K C Preetha (Principal)
- Dr. A Joly (Head, Dept of Chemistry)
- Smt. Reshmi Jaya Raveendran (Coordinator)

Organizing Committee Members

- Smt. Liju P Lekshmanan
- Smt. Ashalatha A
- Smt. Shibitha Thampi R S
- Smt. Induja P
- Smt. Saritha S J
- Smt. Reshma R
- Smt. Lekshmi S Dharan
- Dr. Ambily Chandran