SCDT – FlexE Centre Webinar Series

The webinars aim to bring together researchers in Flexible Electronics and allied areas from across India (and other countries) on a single platform to promote professional interaction.

Webinar by

Professor G. Rajeswaran
Professor of Practice, IIT Madras
Director and CEO, Grantwood Technologies Inc.

On **"Close Space Sublimation of Organic Materials for AMOLED Displays"**

Date: 14th September, 2021
Time: 7:30 PM to 8:30 PM

Visit www.iitk.ac.in/scdt/webinars.html to access the zoom link to join the webinar.

The event will be chaired by
Prof. Samarendra Pratap Singh
Shiv Nadar University

Abstract of the Webinar

The Organic Light Emitting Diode (OLED) device was invented by Ching Tang and Steve VanSlyke at Kodak Research Laboratories in 1987 and the first full color AMOLED display was developed and demonstrated by Rajeswaran et al in 1999. The first commercial AMOLED displays were delivered in 2002 by SK Display, a Kodak-Sanyo joint venture. By 2020, the AMOLED industry had grown to $30 billion in market size. The recent commercial success of flexible AMOLED displays signals the promise of further growth in the AMOLED display industry. The current generation of vacuum-deposited, small-molecule AMOLED displays utilizes either the Fine Metal Mask (FMM) method or the White OLED plus integrated RGB color filters (WRGB) method for creating the primary color sub-pixels. The FMM method is now widely used in the production of AMOLED displays for smartphone applications while the WRGB method is used for the manufacture of OLED TVs. This talk will review the several drawbacks in the current OLED production technologies, namely, substrate size limitation in OLED patterning, poor materials utilization and low productivity. The prospects of overcoming these limitations with a new method of organic materials delivery called close space sublimation will be explored and early results will be reviewed. A state-of-the-art AMOLED display development facility has been set up at the Indian Institute of Technology Madras to explore next-generation manufacturing technologies based on the close space sublimation of organic materials. India has now emerged as the 2nd largest global market for mobile phones and the prospects look attractive for the emergence of an AMOLED display manufacturing industry in India.

Information about the speaker

Dr. G. Rajeswaran ("Raj") is currently a Professor of Practice in the Department of Electrical Engineering at IIT Madras. He is also the Director & CEO of Grantwood Technologies Inc., Rochester, New York. Dr. Raj received the B.E, M.Tech and Ph.D. degrees, all in Electrical Engineering, in 1976, 1978 and 1983 from the University of Madras, Indian Institute of Technology Bombay and the State University of New York, respectively. Over the past 35 years, Raj has been actively engaged in technology development and the commercialization of LED, OLED and PV technologies. A substantial portion of his research and management career has focused on product delivery. In 2001, Raj was instrumental in the establishment of the world's first AMOLED display manufacturing joint venture (SK Display) in Japan, serving on its board of directors and delivering the first AMOLED display products to the market. Between 2004 to 2007, during his tenure as a vice-president of Kodak's display business unit, Raj established the Kodak technology collaborations with Samsung and LG Display that led to the mass production of AMOLED displays. After 22 years with Kodak, Raj served as the president of Moser Baer Photovoltaic Ltd (India) and its Group CTO during a 5-year tenure in India. During this period, Raj also served as the CEO of Moser Baer Technologies (USA) and director of OM&T B.V (The Netherlands) to develop OLED lighting. He has delivered several invited lectures, tutorials and short courses at international conferences. He has delivered 100+ conference presentations and authored several publications. He holds 16 US patents in the field of LEDs, OLEDs and PV. In 2013, Raj was elected as Fellow of the Society for Information Display for pioneering contributions to the development, manufacturing and commercialization of AMOLED displays.

Samtel Centre for Display Technologies (SCDT) and the National Centre for Flexible Electronics (FlexE Centre) of IIT Kanpur are dedicated to flexible electronics research and commercial deployment respectively

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