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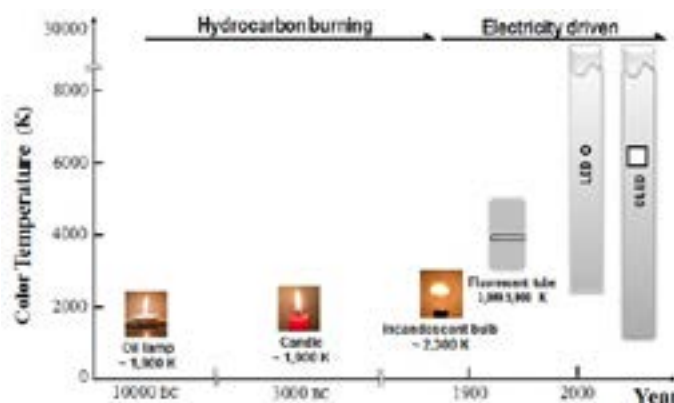


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Candlelight giving OLED for lighting renaissance

Mostly adopted artificial lightings yield blue or violet emission included short wavelength lights, which impose tremendously high threat to human health, ecosystems, night sky, and artifacts. Nowadays, the priority of research and development in lighting technologies is not only to maximize the power efficiency, but also extend to reduce the unwanted phototoxicity and enhance the light-quality. Organic light-emitting diode (OLED) devices can be designed and fabricated with least emission in the violet and deep-blue range which enables a human- and ecologically-friendly lighting with high efficiency and high light-quality. Furthermore, its spectrum tailoring flexibility offers numerous innovative designs in lighting fixtures. Highly efficient candle light-style OLED can be fabricated by using multiple low color temperature blackbody-radiation complementary organic emitters. The resultant orange-white light shows a color temperature as low as that of candles or oil lamps, ~1,800-1,900 K, and is free from mercury, flickering, glare, ultraviolet, and infrared emission, as comparing with the modern electricity-driven lighting sources. Along with its high device efficacy and high spectrum resemblance index with respect to natural light, candlelight OLED can be considered as an ideal candidate for indoor as well as outdoor illumination measure. It is reasonable to state that the candlelight OLED is conducive to human-health and ecological system and will trigger lighting renaissance with blue-hazard free, orange-white light that candles have been providing since 5,000 years ago or oil lamps since 12,000 years ago.



Biography

Jwo-Huei Jou is a Professor of the Department of Materials Science & Engineering at National Tsinghua University, Taiwan and; President of the Chinese Organic Electronics Association. He received his PhD in Macromolecular Science and Engineering Program from University of Michigan in 1986. He joined IBM-Almaden Research Center USA as a Visiting Scientist from 1986-88. He has his expertise in "High-efficiency organic light emitting diodes (OLEDs), polymer, thin film stress, and expert system applications". He is a pioneer of the natural light-style OLEDs, and has received a prestigious "The IDA lighting design award" from the International Dark-Sky Association, USA for his "candle light-style OLED" invention.

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