HIGH-SPEED MICRO ORGANIC OPTO-ELECTRONIC DEVICE

This invention deals with the design of a new type of electrodes that allows high-speed OLED with time response as low as 220ps, and better than state-of-the-art high density current (~6 kA/cm2) and luminance as high as 4. 10^6 Cd/m²

ERGANEO
L'AVENIR EST FAIT D'AUDACE

PRESENTATION

This invention results from the combination of micro-organic electronic (OLED) and microwave electronics. It drastically enhances the electrical time response of OLED. As a result, OLEDs can sustain 1ns electrical pulse excitation with high-current density and deliver intense light emission (4.0 10^6 Cd/m2). High-speed organic optoelectronic combine the fast response of optoelectronics and the simplicity of fabrication, which opens numerous applications :

• Fast optoelectronics applications such as LiFi communications, with an enhanced transmission debit rate (>>100Mbit/s).

• Display applications with an increase of the resolution limit of Passive Matrix OLED (PMOLED) display by reaching a much higher pixel's peak luminance.

Organic electronics - Micro-electronics - Opto-electronics - Micro OLED - Display - Optical transmission

Source : Oled-info

COMPETITIVE ADVANTAGES

- Fast OLED
- Ultra-short light pulses <10 ns,
- High current density (> 6 kA/cm²)
- High energy efficiency

INTELLECTUAL PROPERTY

Patent application

APPLICATIONS

- OLED (PMOLED) display
- Li-Fi transmitter
- Optical fiber networks
- Fast optoelectronic components

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DEVELOPMENT PHASE

- ☑ First POC with measurements of optical time response below 10ns, electrical time response below 1ns and current density up to 6 kA/cm².