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Inventors

Dr. Jian Li

Assistant Professor

School of Materials Science & Engineering

Intellectual Property

Microcavity OLED Device with Narrow-Band Phosphorescent Emitters for Full-Color Displays

AzTE Case # M12-046P

Background

The market for thin, bright, and efficient display technology has never been greater. Screens of all shapes and sizes invade our everyday world. The most exciting new consumer technologies are relatively small mobile devices, i.e., smartphones and tablets. At the heart of each of these technologies is a thin bright screen. Televisions hang on the walls of homes around the world. Solid state lighting has the potential to significantly reduce the energy usage required to light homes and businesses.

Much of the display needs of these markets are currently filled by Liquid Crystal Display ("LCD") and Light Emitting Diode ("LED") technology. But, Organic Light Emitting Diode ("OLED") technology is fast becoming an affordable, more efficient solution. OLEDs are generally more energy efficient than LEDs and can produce brighter more color-rich images.

Invention Description

Researchers at Arizona State University have developed an improved device design for OLED manufacturing. A new structure constituting a particular integrated optical microcavity and other components allow these OLEDs to more efficiently emit light. This results in a brighter OLED at power consumption levels similar to traditional OLEDs. This technology can help create more attractive displays for televisions and mobile devices. It can also help advance the fledgling market for solid state lighting solutions.

Potential Applications

- Mobile Device Screens
- Television and Monitor Screens
- Flexible Displays
- Solid State Lighting

Benefits and Advantages

- **Improves Light Emission** This technology improves light emission over standard OLEDs resulting in a brighter display.
- More Efficient Power Consumption A display capable of emitting a brighter image at similar power levels to a standard OLED can improve the efficiency of a device's power consumption.
- **No Increase in Manufacturing Costs** This technology can be incorporated into OLED manufacturing processes without an increase in costs.

Contact

Status:

Patent Pending

Bill Loux

Director of Business Development, Physical Sciences

Arizona Technology Enterprises, LLC (AzTE)

P: 480.884.1992

F: 480.884.1984

BLOUX@AZTE.COM TECHNOLOGYVENTURES@AZTE.COM