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Host Materials for Organic Light Emitting Devices and Other Applications.

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Inventors

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Background

Conventional, inorganic crystal, light-emitting devices are used in many display applications. Unfortunately, because of their high cost and brittle crystal growth, these materials do not work for flexible or large area displays. Organic, light-emitting diodes have better qualities for these applications, use less expensive materials, and allow for better design parameters. The light-emitting diodes must be placed on a host material. Many host materials are unstable and are not suitable as high-energy host materials needed for displays to operate properly.

Invention Description

Researchers at Arizona State University have developed a stable host material for use with organic, light-emitting diodes that are used in flexible or large area displays. The chemistry of the material ensures a high triplet energy gap, making them suitable as a high-energy host material. The bonding effect of the molecule structure provides enhanced stability of the host material over currently existing materials. The innovation is based on metal complexes and improves device efficiency.

Intellectual Property Status:

Patent Pending

Potential Applications

- Flexible displays.
- Large screen displays.
- Wall lighting.
- Electronic devices.

Benefits and Advantages

- **Higher Display Resolution** – Better transmission of energy allows for higher display resolution.
- **Lower Costs** – Inexpensive, readily available materials.
- **Ease of Implementation** – Material can be used in existing manufacturing processes with existing equipment.

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