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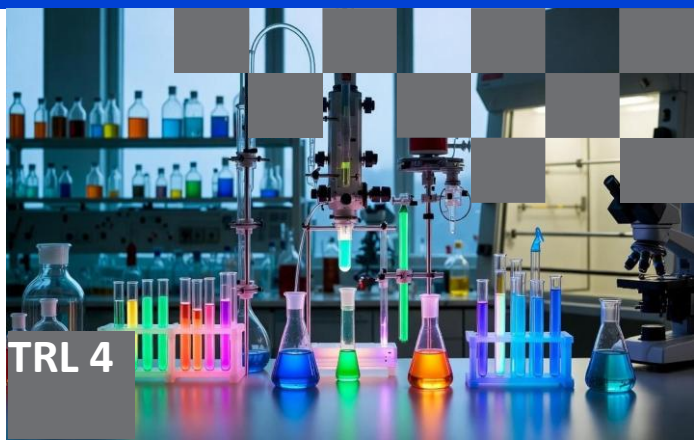
physics

Advanced TADF Emitters for OLED Technology



About the invention

The invention concerns new organic compounds exhibiting thermally activated delayed fluorescence (TADF) and luminescent compositions based on these compounds. The emitters are designed to enable fast triplet-to-singlet conversion, yielding high photoluminescence quantum efficiency and short delayed fluorescence lifetimes.

The introduction of ortho-substituents and modified donor–acceptor linkers leads to improved TADF performance across the entire spectral range, from blue to near infrared. Compositions containing these emitters can be combined with narrow-band fluorophores, providing high color purity and excellent material stability.

The invention includes the molecular structures, synthesis methods and luminescent compositions for next-generation OLED devices.

IP Protection

The invention is protected by a patent application in the Polish Patent Office under the number: **P.448129**

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Applications

- High-performance emissive layers for OLED,
- Light-emitting compositions across a broad spectral range,
- Materials for narrow-band hyperfluorescent OLEDs.

Possible cooperation

- Licensing of new TADF emitters and formulations,
- Joint R&D in OLED material development,
- Application testing and optimization with industrial partners.

Technology readiness level

TRL 4 - Technology validated in laboratory conditions

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