



US 20240251657A1

(19) **United States**

(12) **Patent Application Publication**  
**CHEN et al.**

(10) **Pub. No.: US 2024/0251657 A1**

(43) **Pub. Date: Jul. 25, 2024**

(54) **ORGANIC ELECTROLUMINESCENT  
MATERIALS AND DEVICES**

**Related U.S. Application Data**

(60) Provisional application No. 63/476,205, filed on Dec. 20, 2022.

(71) Applicant: **UNIVERSAL DISPLAY  
CORPORATION**, Ewing, NJ (US)

**Publication Classification**

(72) Inventors: **Hsiao-Fan CHEN**, Lawrence Township, NJ (US); **Scott BEERS**, Flemington, NJ (US); **Tongxiang LU**, Lawrenceville, NJ (US); **Joseph A. MACOR**, Morrisville, PA (US); **Thrimurtulu NEETIPALLI**, Wilmington, DE (US); **Hai T. Le**, New Castle, DE (US); **Jason DENNY**, Wilmington, DE (US)

(51) **Int. Cl.**  
**H10K 85/30** (2006.01)  
**C07F 15/00** (2006.01)  
**C09K 11/02** (2006.01)  
**C09K 11/06** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **H10K 85/346** (2023.02); **C07F 15/0086** (2013.01); **C09K 11/02** (2013.01); **C09K 11/06** (2013.01); **H10K 50/11** (2023.02)

(73) Assignee: **UNIVERSAL DISPLAY  
CORPORATION**, Ewing, NJ (US)

(21) Appl. No.: **18/509,317**

(22) Filed: **Nov. 15, 2023**

(57) **ABSTRACT**

Provided are neutral Pt or Pd compounds comprising a tridentate and a monodentate ligand, wherein the tridentate ligand comprises at least three 5- or 6-membered rings. Also provided are formulations comprising these neutral Pt or Pd compounds. Further provided are organic light emitting devices (OLEDs) and related consumer products that utilize these neutral Pt or Pd compounds.

