



US 20240215278A1

(19) **United States**

(12) **Patent Application Publication**
MANAGAKI

(10) **Pub. No.: US 2024/0215278 A1**

(43) **Pub. Date: Jun. 27, 2024**

(54) **DISPLAY DEVICE AND METHOD OF
MANUFACTURING THE SAME**

Publication Classification

(51) **Int. Cl.**

H10K 50/11 (2006.01)

H10K 59/12 (2006.01)

(52) **U.S. Cl.**

CPC **H10K 50/11** (2023.02); **H10K 59/1201**
(2023.02); **H10K 2101/40** (2023.02)

(71) Applicant: **Japan Display Inc.**, Tokyo (JP)

(72) Inventor: **Nobuto MANAGAKI**, Tokyo (JP)

(73) Assignee: **Japan Display Inc.**, Tokyo (JP)

(21) Appl. No.: **18/389,834**

(22) Filed: **Dec. 20, 2023**

(30) **Foreign Application Priority Data**

Dec. 26, 2022 (JP) 2022-208347

Nov. 17, 2023 (JP) 2023-195962

(57)

ABSTRACT

According to one embodiment, a display device has such configuration that each of $\Delta E1_LUMO$ and $\Delta E1_HOMO$ is 0.35 eV or less ($\Delta E1 \leq 0.35$ eV), each of $\Delta E2_LUMO$ and $\Delta E2_HOMO$ is 0.1 eV or more and 0.5 eV or less ($0.1 \text{ eV} \leq \Delta E2 \leq 0.5 \text{ eV}$), the light emitting layer includes a first material and a second material, a band gap of the first material is larger than a band gap of the second material, and a ratio of the first material to the second material is 5% or more and less than 40%.

