



US 20240244880A1

(19) **United States**

(12) **Patent Application Publication**  
**SONG**

(10) **Pub. No.: US 2024/0244880 A1**

(43) **Pub. Date: Jul. 18, 2024**

(54) **ORGANIC LIGHT EMITTING DIODE  
DISPLAY DEVICE**

*H10K 50/844* (2006.01)

*H10K 50/852* (2006.01)

*H10K 50/86* (2006.01)

*H10K 59/38* (2006.01)

*H10K 102/00* (2006.01)

(71) Applicant: **Samsung Display Co., Ltd.**, Yongin-si  
(KR)

(72) Inventor: **Jungbae SONG**, Seongnam-si (KR)

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

CPC ..... *H10K 50/858* (2023.02); *H10K 50/8445*

(2023.02); *H10K 50/852* (2023.02); *H10K*

*50/115* (2023.02); *H10K 50/865* (2023.02);

*H10K 59/38* (2023.02); *H10K 2102/351*

(2023.02)

(21) Appl. No.: **18/432,114**

(22) Filed: **Feb. 5, 2024**

**Related U.S. Application Data**

(63) Continuation of application No. 17/525,948, filed on  
Nov. 14, 2021, now Pat. No. 11,895,868, which is a  
continuation of application No. 16/912,589, filed on  
Jun. 25, 2020, now Pat. No. 11,177,463, which is a  
continuation of application No. 15/612,710, filed on  
Jun. 2, 2017, now Pat. No. 10,720,607.

(57)

**ABSTRACT**

An organic light emitting diode (OLED) display may include: an OLED configured to emit light of wavelength  $\lambda$ ; an encapsulation layer encapsulating the OLED, the encapsulation layer including: a first inorganic layer disposed on the OLED, the first inorganic layer including: one or more first layers having a first refractive index ( $n_1$ ) and a first thickness substantially equal to  $\lambda/(4*n_1)$ ; and one or more second layers having a second refractive index ( $n_2$ ) and a second thickness substantially equal to  $\lambda/(4*n_2)$ , wherein the second refractive index is smaller than the first refractive index, and wherein the one or more first layers and the one or more second layers are alternatingly stacked on one another.

(30) **Foreign Application Priority Data**

Feb. 2, 2017 (KR) ..... 10-2017-0015085

**Publication Classification**

(51) **Int. Cl.**

*H10K 50/858* (2006.01)

*H10K 50/115* (2006.01)

