



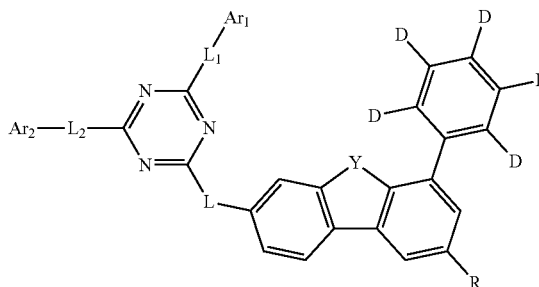
US 20240251668A1

(19) **United States**(12) **Patent Application Publication**
JUNG et al.(10) **Pub. No.: US 2024/0251668 A1**(43) **Pub. Date: Jul. 25, 2024**(54) **NOVEL COMPOUND AND ORGANIC
LIGHT-EMITTING DEVICE USING SAME****H10K 85/615** (2023.02); **H10K 85/6574**
(2023.02); **H10K 85/6576** (2023.02); **C09K**
2211/1018 (2013.01); **H10K 50/11** (2023.02)(71) Applicant: **LG CHEM, LTD.**, Seoul (KR)(72) Inventors: **Min Woo JUNG**, Daejeon (KR); **Dong
Hoon LEE**, Daejeon (KR); **Sang Duk
SUH**, Daejeon (KR); **Jungha LEE**,
Daejeon (KR); **Su Jin HAN**, Daejeon
(KR); **Seulchan PARK**, Daejeon (KR);
Sunghyun HWANG, Daejeon (KR)

(57)

ABSTRACT

Provided is a novel compound of Chemical Formula 1:

(21) Appl. No.: **18/037,606**(22) PCT Filed: **Feb. 22, 2022**(86) PCT No.: **PCT/KR2022/002562**

§ 371 (c)(1),

(2) Date: **May 18, 2023**(30) **Foreign Application Priority Data**

Feb. 22, 2021 (KR) 10-2021-0023630

Feb. 21, 2022 (KR) 10-2022-0022272

Publication Classification(51) **Int. Cl.****H10K 85/60** (2006.01)**C07D 405/04** (2006.01)**C07D 405/14** (2006.01)**C07D 409/14** (2006.01)**C09K 11/06** (2006.01)**H10K 50/11** (2006.01)(52) **U.S. Cl.**CPC **H10K 85/654** (2023.02); **C07D 405/04**
(2013.01); **C07D 405/14** (2013.01); **C07D**
409/14 (2013.01); **C09K 11/06** (2013.01);

where Y is O or S; D is deuterium, L is a single bond, substituted or unsubstituted C₆₋₆₀ arylene, or substituted or unsubstituted C₂₋₆₀ heteroarylene containing at least one of N, O and S; L₁ and L₂ are each independently a single bond or substituted or unsubstituted C₆₋₆₀ arylene; Ar₁ and Ar₂ are each independently substituted or unsubstituted C₆₋₆₀ aryl or substituted or unsubstituted C₂₋₆₀ heteroaryl containing at least one of N, O and S; and R is hydrogen or C₆₋₆₀ aryl that is unsubstituted or substituted with deuterium and an organic light-emitting device including the same. An organic light-emitting device containing the compound of Chemical Formula 1 as a host material of the light emitting layer exhibits significantly improved lifespan without a decrease in efficiency.

4
9
8
3
7
6
5
2
1