

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0251671 A1

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

(54) ORGANIC ELECTROLUMINESCENCE DEVICE AND HETEROCYCLIC COMPOUND FOR ORGANIC ELECTROLUMINESCENCE DEVICE

(71) Applicant: Samsung Display Co., LTD., Yongin-si

(72) Inventor: Naoya SAKAMOTO, Yokohama (JP)

(21) Appl. No.: 18/612,303

(22) Filed: Mar. 21, 2024

Related U.S. Application Data

(63) Continuation of application No. 16/382,346, filed on Apr. 12, 2019, now Pat. No. 11,968,891.

(30)Foreign Application Priority Data Jun. 26, 2018 (KR) 10-2018-0073189

Publication Classification

(51) Int. Cl. H10K 85/60 (2006.01)(2006.01)C07D 405/14 C07D 409/14 (2006.01)C09K 11/06 (2006.01)H10K 50/11 (2006.01)

H10K 50/15	(2006.01)
H10K 50/16	(2006.01)
H10K 50/17	(2006.01)
H10K 50/18	(2006.01)

(52) U.S. Cl.

CPC H10K 85/654 (2023.02); C07D 405/14 (2013.01); C07D 409/14 (2013.01); C09K 11/06 (2013.01); H10K 85/6572 (2023.02); H10K 85/6574 (2023.02); H10K 85/6576 (2023.02); C09K 2211/1018 (2013.01); H10K 50/11 (2023.02); H10K 50/15 (2023.02); H10K 50/16 (2023.02); H10K 50/17 (2023.02); H10K 50/171 (2023.02); H10K 50/18 (2023.02)

(57)ABSTRACT

An organic electroluminescence device and a heterocyclic compound, the device including a first electrode; a hole transport region on the first electrode; an emission layer on the hole transport region; an electron transport region on the emission layer; and a second electrode on the electron transport region, wherein the emission layer includes a heterocyclic compound that includes a nitrogen-containing monocycle, at least one linker, and two or more carbazole moieties, the at least one linker is a substituted or unsubstituted dibenzofuran group or a substituted or unsubstituted dibenzothiophene group, and at least one of the carbazole moieties and the nitrogen-containing monocycle are bonded to the at least one linker in an ortho relationship.

