



US 20240179834A1

(19) **United States**

(12) **Patent Application Publication**

Yao et al.

(10) **Pub. No.: US 2024/0179834 A1**

(43) **Pub. Date: May 30, 2024**

(54) **DECORATIVE
FLEXIBLE-ELECTRONIC-FILM
STRUCTURE AND METHOD OF FORMING
THE SAME**

(71) Applicant: **DARWIN PRECISIONS
CORPORATION**, Hsinchu County
(TW)

(72) Inventors: **Hsuan Yao**, Hsinchu County (TW); **Yi
Feng Chen**, Hsinchu County (TW);
Chia Tsun Huang, Hsinchu County
(TW); **Keng-Kuei Liang**, Hsinchu
County (TW)

(21) Appl. No.: **18/126,483**

(22) Filed: **Mar. 27, 2023**

(30) **Foreign Application Priority Data**

Nov. 29, 2022 (TW) 111145556

Publication Classification

(51) **Int. Cl.**
H05K 1/02 (2006.01)
B29C 45/00 (2006.01)
B29C 51/44 (2006.01)

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

CPC **H05K 1/028** (2013.01); **B29C 45/0001**
(2013.01); **B29C 51/44** (2013.01); **H05K**
1/0237 (2013.01); **H05K 1/0296** (2013.01);
H05K 2201/09063 (2013.01); **H05K**
2201/10106 (2013.01); **H05K 2201/10393**
(2013.01)

(57)

ABSTRACT

A decorative flexible-electronic-film structure includes a mechanical member and a flexible electronic molded film. The mechanical member includes a mainboard part and a curved clamping part, and an accommodating slot is formed on the mainboard part. The flexible electronic molded film includes a body part, a side hook part and an electronic component, an inner surface of the body part faces the mainboard part, the electronic component is disposed on the inner surface and corresponds to the accommodating slot, and the side hook part is formed on the periphery of the body part and is curved. The flexible electronic molded film is assembled onto the mechanical member, with the body part overlapping the mainboard part, the electronic component being accommodated in the accommodating slot, and the side hook part being buckled to the clamping part. A method of forming the decorative flexible-electronic-film structure is also provided.

10

