



US 20240237213A9

(19) **United States**
(12) **Patent Application Publication**
Adair et al.

(10) **Pub. No.: US 2024/0237213 A9**
(48) **Pub. Date: Jul. 11, 2024**
CORRECTED PUBLICATION

(54) **PRINTED CIRCUIT BOARD WITH
NFC-ANTENNA**

(71) Applicant: **JT International SA**, Geneva (CH)
(72) Inventors: **Kyle Adair**, Lisburn (GB); **Olayiwola
Olamiposi Popoola**, Walton-on-Thames
(GB); **Peter Loveday**, Epsom (GB)

(73) Assignee: **JT International SA**, Geneva (CH)

(21) Appl. No.: **18/277,733**

(22) PCT Filed: **Feb. 8, 2022**

(86) PCT No.: **PCT/EP2022/052993**

§ 371 (c)(1),

(2) Date: **Aug. 17, 2023**

Prior Publication Data

(15) Correction of US 2024/0138068 A1 Apr. 25, 2024
See (22) PCT Filed.
See (86) PCT No.
See (30) Foreign Application Priority Data.

(65) US 2024/0138068 A1 Apr. 25, 2024

(30) **Foreign Application Priority Data**

Feb. 19, 2021 (EP) 21158117.8

Publication Classification

(51) **Int. Cl.**
H05K 1/14 (2006.01)
A24F 40/40 (2006.01)
A24F 40/465 (2006.01)
H01F 27/28 (2006.01)
H01F 38/14 (2006.01)
H05K 1/11 (2006.01)
(52) **U.S. Cl.**
CPC **H05K 1/147** (2013.01); **A24F 40/40**
(2020.01); **A24F 40/465** (2020.01); **H01F**
27/2804 (2013.01); **H01F 38/14** (2013.01);
H05K 1/115 (2013.01)

(57) **ABSTRACT**

A printed circuit board mechanically supports electrical and/or electronic components for an electronic smoking article. The board includes at least one flexible portion and at least one rigidized portion, wherein the flexible portion and the rigidized portion include a common flexible layer stack including at least one structured metal layer. The rigidized portion further includes at least one rigidizing layer stack including at least one structured metal layer, wherein the rigidizing layer stack is arranged on at least one surface of the common flexible layer stack. At least a part of the structured metal layer of the common flexible layer stack in the flexible portion is structured as an electromagnetic coil forming an NFC-antenna and at least a part of the respective structured metal layers of the common flexible layer stack and the rigidizing layer are structured for acting together as an electromagnetic induction coil suitable for wireless charging.

