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(19) **United States**(12) **Patent Application Publication****Chen et al.**(10) **Pub. No.: US 2022/0361336 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **METAL CIRCUIT STRUCTURE BASED ON FPC AND METHOD OF MAKING THE SAME****C23C 28/02** (2006.01)**C23C 14/58** (2006.01)(71) Applicant: **Aplus Semiconductor Technologies Co., Ltd.**, Changzhou City (CN)(52) **U.S. Cl.**CPC ..... **H05K 1/147** (2013.01); **C23C 14/34** (2013.01); **C23C 18/1637** (2013.01); **C25D 5/022** (2013.01); **C25D 5/10** (2013.01); **G03F 7/0041** (2013.01); **G03F 7/2016** (2013.01); **C23C 28/023** (2013.01); **C23C 14/5873** (2013.01); **H05K 2201/032** (2013.01); **H05K 2201/0338** (2013.01); **H05K 2201/0341** (2013.01)(72) Inventors: **Cheng-Neng Chen**, Changzhou City (CN); **Sui-Ho Tsai**, Changzhou City (CN); **Yun-Nan Wang**, Changzhou City (CN); **Chiao-Hui Wang**, Changzhou City (CN)(21) Appl. No.: **17/314,131**

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A metal circuit structure based on a flexible printed circuit (FPC) contains: a substrate, a first metal layer attached on the substrate, a second metal layer formed on the first metal layer, and an intermediate layer defined between the first metal layer and the second metal layer. A first surface of the intermediate layer is connected with the first metal layer, and a second surface of the intermediate layer is connected with the second metal layer. The intermediate layer is made of a first material, the second metal layer is made of a second material, and the first material of the intermediate layer does not act with the second material of the second metal layer.

