

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0179833 A1 KIM et al.

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

(54) LARGE AREA MONITORING APPARATUS

(71) Applicants: WIT CORPORATION, Hwaseong-si (KR); FINE SEMITECH CORP., Hwaseong-si (KR)

(72) Inventors: Jae Hwan KIM, Hwaseong-si (KR); Jae Won OH, Gunpo-si (KR)

Appl. No.: 18/429,427 (21)

(22) Filed: Feb. 1, 2024

Related U.S. Application Data

(63) Continuation of application No. PCT/KR2022/ 015134, filed on Oct. 7, 2022.

(30)Foreign Application Priority Data

Oct. 12, 2021	(KR)	 10-2021-0134695
May 6, 2022	(KR)	 10-2022-0055983

Publication Classification

(51) Int. Cl. H05K 1/02 (2006.01)H01J 37/32 (2006.01)H05K 3/28 (2006.01)

(52) U.S. Cl.

CPC H05K 1/0271 (2013.01); H01J 37/32733 (2013.01); H05K 1/0218 (2013.01); H05K 3/284 (2013.01); H01J 2237/2007 (2013.01); H05K 2201/068 (2013.01); H05K 2201/09036 (2013.01); H05K 2201/10151 (2013.01)

(57)ABSTRACT

A large area monitoring device for diagnosing easily performance of an equipment in a semiconductor process or a display process is disclosed. The monitoring device comprises a protection layer, a board disposed in an internal space of the protection layer, and at least one electrical element disposed on the board. Here, the electrical element includes one or more sensors, the monitoring device monitors an object to be monitored by measuring at least one of a temperature, a slope, a light, a vibration, a voltage, current, a power or a pressure of the object located outside the monitoring device and a distance between the object and another element, an intaglio structure or an embossing structure is formed to the board, material with different characteristics from the board is filled in the intaglio structure or the embossing structure is formed of material with different characteristics from the board.

