

(54) Title of the invention : WEARABLE APTAMER BASED DEVICE TO MONITOR FEMALE REPRODUCTIVE HORMONES FROM INTERSTITIAL FLUID

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(57) Abstract :

A wearable aptamer based device to monitor female reproductive hormones from interstitial fluid, comprising of a plurality of non-invasive microneedles 102 to collect interstitial fluid, an aptamer 103 to enable binding target hormone LH, Estrogen, Progesterone, a low-power potentiostat 104 for converting electrochemical changes in the aptamer 103 into measurable impedance, a skin-contact precision temperature sensor 105 to measure basal body temperature of a user, a signal conditioning circuit 106 for removing noise and amplifies weak biosensor signals for digital processing, a wireless communication unit for transmitting hormone data, and a user interface 107 for receiving hormone data transmitted by the unit and also for analyzing hormone trends, detect LH surge, predicts fertile window, and providing personalized cycle insights.

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