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(54) Title of the invention : A MULTIPLEXED BIOSENSING ELECTRODE ARRAY FOR SIMULTANEOUS DETECTION OF INFECTIOUS DISEASE MARKERS

(57) Abstract :

The present invention relates to a multiplexed biosensing electrode array (100) designed for simultaneous detection of infectious disease biomarkers. The array comprises microelectrode sites (101) with nanostructured surfaces (107), functionalized with capture probes (102), and a microfluidic distribution layer (105) for efficient sample delivery. An integrated signal conditioning module (106) ensures accurate, real-time detection and data processing. Housed in a portable cartridge (111) with inlet (112) and outlet (113) ports, the system enables rapid, cost-effective, and sensitive diagnostics suitable for point-of-care and clinical applications.

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