

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511095644 A

(19) INDIA

(22) Date of filing of Application :06/10/2025

(43) Publication Date : 05/12/2025

(54) Title of the invention : A PORTABLE DIAGNOSTIC KIT FOR EARLY DETECTION OF VIRAL INFECTIONS

(51) International classification	:G01N0033543000, C12Q0001700000, B01L0003000000, G16H0050200000, G16H0050800000	(71) Name of Applicant : 1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India
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(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The invention discloses a portable diagnostic kit (100) for early detection of viral infections, integrating biosensor arrays (101), microfluidic cartridges (102), and an AI-enabled reader (103). The kit further incorporates wireless connectivity (104) for data sharing and a portable power module (105) for field operations. Its rugged housing (106), user-friendly design, and multiplexing capability enable rapid, cost-effective, and reliable diagnostics in diverse environments. The system ensures real-time results, affordability, and adaptability, making it suitable for large-scale screening, outbreak management, and point-of-care healthcare delivery.

No. of Pages : 13 No. of Claims : 6