(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :06/10/2025
(21) Application No.202511095655 A
(43) Publication Date : 05/12/2025

(54) Title of the invention : A BIOTECH DEVICE FOR AUTOMATED BLOOD CELL SEPARATION AND ANALYSIS

(51) International classification	:B01L0003000000, C12M0001000000, G01N0035040000, G01N0033490000, G01N0035000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	: :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The invention relates to a biotech device for automated blood cell separation and analysis, comprising a microfluidic separation unit (101), optical detection module (102), AI analysis unit (103), automated sample handling unit (104), data display module (105), control unit (106), and disposable cartridges (107). The device eliminates centrifugation, provides rapid diagnostic results, and integrates AI-driven interpretation for improved accuracy. It is portable, cost-effective, and suitable for clinical laboratories, emergency care, and remote healthcare settings, ensuring efficient point-of-care hematological analysis.

No. of Pages : 15 No. of Claims : 6