

## Title: Microfluidic Chip device to Segregate Platelets from Blood

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**KEYWORDS:** Platelet, Dielectric, Microfluidic Chip, Buffer system

**DOMAIN:** Biomedical Device

### SUMMARY:

The developed microfluidic chip device performs platelet separation from the whole blood buffer system. It is driven by its intrinsic dielectric properties without relying on the use of additional fluorescent/magnetic markers for separation. The novelty of the technology lies in its design and placement of the microchannels allowing high-efficiency separation of the platelet from other blood components. Additionally, a buffer system is used for the separation and enabling post-separation platelet storage in the same buffer system.

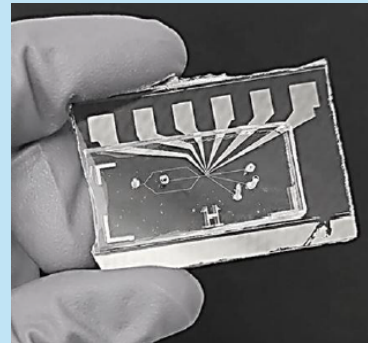


Figure: The Microfluidic chip Device

### ADVANTAGES:

1. The buffer system allows platelet storage for downstream use.
2. Platelet separation without the use of additional fluorescent or magnetic markers can be applied for therapeutic purposes.

**APPLICATION:** Segregation of platelets from whole blood and the same buffer system utilized for platelet storage.

**SCALE OF DEVELOPMENT:** A lab-scale prototype of the device is available, and platelet separation tests have been conducted on the chip.

**TECHNOLOGY READINESS LEVEL:** TRL 4

**IP STATUS:** Indian Patent Application No. 202311038118