

Rapid prototyping of centrifugal microfluidic modules for point of care blood

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ABSTRACT:

We present modular centrifugal microfluidic devices that enable a series of blood tests to be performed towards a full blood count. The modular approach allows for rapid prototyping of device components in a generic format to complete different combinations of blood tests with quick turn-around times using low-cost and rapid manufacturing processes. Individual modular devices are disposed of after testing, while the disc control platform can be re-used. This work presents application examples for blood smear and packed cell volume tests, with the potential to achieve quantitative, reliable and low-cost tests towards a point-of-care full blood count solution.